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The Journal



OF THE

American Medical Association

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GEORGE H. SIMMONS, M.D.

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Original Articles

SOME THERAPEUTIC POSSIBILITIES OF BILIARY FISTULAS *

L. L. MCARTHUR, M.D.
CHICAGO.

Some observations which I have made during the convalescence of my patients from gallstone operations have appeared to me worthy of recording. While this communication is designed as a suggestive and preliminary one, enough has been done clinically to warrant its presentation on this occasion.

In practically every case of operation for gallstone the operator establishes a temporary biliary fistula, either of the gall bladder or the common duct, the purpose being to relieve the cholemia, cholecystitis, or cholangioitis by continuous drainage in much the same way as a urinary cystitis is relieved. Such treatment has proved to be the most efficient yet devised. To hasten the cure some have added to this simple drainage a daily lavage of the gall bladder with an alkaline mildly antiseptic solution. The loss of much of the fluid used for irrigation, frequently observed during such a lavage, naturally suggested the idea of studying the effects of various fluids introduced thus into the duodenum. So striking have some of these been that I desire to call attention to them, as well as to urge their further study by the members of this Section.

First, as a means of deluging the system with water, the temporary fistula many times can be utilized with surprising advantage. I have repeatedly injected in such cases, by continuous irrigation of a warm sterile normal salt solution, 500, 1,000, 3,000 c.c. of fluid, first as an experimental observation, then as a means of flushing out the kidneys, or clearing up a jaundice, or filling up the blood vessels, and in one case even added dextrose as supplying the food calories most easily assimilable.

TECHNIC

In every gall-bladder drainage, a tube is inserted and is held in place by absorbable purse-string sutures, the latter inverting the gall-bladder wall in such a way that when the tube is withdrawn peritoneal surfaces come in contact and the fistula heals. These purse-string sutures make the closure of the gall bladder around the drain practically hermetic for the first few days. To provide, however, against accidental leakage into the abdomen, some temporary protective drain, such as Bullitt, of Louisville, devised, is employed for added safety. If, now, with such a tube, through which the bile has been flowing, thus demonstrating the duct as patulous, we connect the tube of an irrigator con-

taining, for example, normal salt solution, rate of flow being graduated not to exceed five or six drops per second, and the pressure to be not more than twenty inches elevation, continuous flow into the duodenum can be established and maintained without discomfort to the patient. Too rapid flow, or too high pressure, will quickly produce pains simulating mild biliary colic and might deter one from using this procedure, if not cognizant of these facts.

When large quantities of fluids have been thus introduced there has been observed a slowing of the pulse with a filling out of the vessels, a loss of thirst, a moistening of the tongue, and skin, a surprisingly rapid increase in the urinary output (patients complaining of the frequency of urination) and even edema of the feet in a patient lying on an inclined bed.

In the case of the gall bladder, the patulous character of the cystic duct can be determined after the insertion of the drainage-tube before closure of the abdomen by the use of a small glass syringe filled with sterile salt solution. When I have to utilize the common duct drainage I have never tried this procedure until the second or third day, by which time, if leakage occur, it finds itself confined to the space walled off by the prophylactic gauze drain inserted for such an emergency and escapes externally.

In chronic obstructive jaundice we frequently meet an associated nephritis, probably incident to the toxic effects of the cholemia. In just such cases, especially after an ether anesthesia (which, by the way, should now always be discarded for the gas and oxygen) there is imminent danger of an urinary suppression. Under these conditions I have sometimes found it possible to start promptly an active secretion of urine, minimizing thus the patient's dangers.

I am likewise confident that I have been able to dissipate a chronic jaundice far more promptly than it is dissipated when simple drainage alone is used. Moreover, I believe that I have noted the prompt subsidence of a persistent postoperative biliary vomiting on flushing the duodenum with an alkaline salt solution through the biliary fistula, after other methods had been exhausted. Theoretically, a mildly acid fluid in this location is the normal stimulus to contract the relaxed pyloric sphincter; hence I am at a loss for the explanation. Sometimes the fluid has appeared in the vomitus, thus washing out the stomach; sometimes it seems to start up normal peristalsis and disappear in the intestines.

To speculate here on the many interesting problems this avenue of approach suggests would lead too far afield, but, just as appendicostomy has done much for the treatment of chronic ailments of the large intestine, so biliary fistula offers suggestive possibilities for renal, duodenal and small intestine therapy. When one compares the difficulties and dangers which attend the mak-

* Read in the Section on Surgery of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

ing of a duodenostomy or jejunostomy with that of a temporary gall-bladder fistula, it will readily be seen how much easier of production, freer from infective complications, and surer of prompt closure the cholecystostomy is.

I have refrained, therefore, from any but the practical points gleaned by actual experience, leaving for another time the citation of specific cases, varied medications, and statistical results. It should not be inferred that I have ignored the other means at hand, such as hypodermoclysis, intravenous injection or continuous rectal irrigation. My aim is simply to call attention to an added means of accomplishing an end, when, for one reason or another, in a case of cholecystostomy or choledochotomy those already at hand can not be employed. I am absolutely convinced that nowhere in the alimentary tract is absorption so active or so normal. Nor do I wish to be understood as using this route for the instillation of fluids when there is no indication for it, or as claiming that it can be successfully utilized in every gall-bladder or common-duct drainage. Certainly there are cases in which the common-duct opening or cystic canal is so narrow that fluids thus instilled pass so slowly through as to be of little value as a source of water-supply to the general system. Even in these, however, I believe that the catarrhal swelling of their mucosæ can be lessened by isotonic alkaline normal salt solutions, thus hastening the restoration to that norm, for which these same tracts are being drained.

In conclusion, I desire to be understood not as recommending a cholecystostomy as a therapeutic measure for other ailments than those for which it was originally designed—though that may come in the future—but as urging the utilization of already existing fistulas for indications similar to those referred to in this communication.

4724 Drexel Boulevard.

ABSTRACT OF DISCUSSION

DR. A. F. JONAS, Omaha: I am convinced that Dr. McArthur has given us a therapeutic measure which will be very far-reaching in its effect. If we stop to consider that in cholecystitis or gall-stone disease, we have to deal with an infection, we will find that the gall-stones are only a product of the disease. After their removal by operation in the majority of the cases, perhaps 95 per cent., a cure is affected by drainage to the surface. A certain percentage of the patients are not relieved in this way, in a small percentage not over five, the pain persists for a considerable period after the stones have been removed, and after the external drainage canal has healed. It is in such cases that the drainage proposed by Dr. McArthur would seem most effective. If we bear in mind that in gall-stone disease we have to deal with an infection which is transported to the gall passages, by way of the common duct, lymph channels or the circulation, we observe that the first change is a slowing of the biliary secretions, due to a catarrhal condition. As soon as there is a retarded flow of bile, gall-stone formation is possible. After an operation has been performed and drainage has been instituted, we desire to eliminate the infection and to restore the normal flow of bile and its normal fluidity. I have become convinced that after careful drainage we sometimes fail to give complete relief; in such cases we must institute some means by which bile may be caused to flow with greater rapidity. When the bile is not restored to its normal fluidity, it seems that by Dr. McArthur's method of irrigation of the bile passages with normal salt solution we have the means to accomplish this and to relieve patients in whom drainage has failed. Therefore, I wish to commend the method proposed, and I am sure that with an increasing experience we will find a wider field for its application.

DR. W. L. RODMAN, Philadelphia: I am convinced that a therapeutic measure with great possibilities has been given us by Dr. McArthur. As Dr. Jonas said, it is necessary in many cases of gall-bladder disease not only to make temporary drainage, but to keep up the drainage for some time afterward. In this way it seems to me that not only diseases of the gall-bladder itself, but chronic pancreatitis would be very much benefited by this treatment. Furthermore, we all appreciate Dr. McArthur's reference to appendicostomy, and that there are enormous possibilities in this direction. I have employed the operation in the past year in cases in which drainage of the large intestine was necessary, in chronic dysentery and in diarrhea. I have had the best results from free lavage through the appendix, and it seems to me that in similar conditions in the upper abdomen it might be equally useful.

DR. J. W. DRAPER MAURY, New York: Dr. McArthur's results correspond very closely with mine as I have observed them in animals. I have not yet hit on so ingenious a method of draining the duodenum, but I have done a duodenostomy and have been able to save the animal, which otherwise would have died, by washing out the duodenum by continuous irrigation. It is interesting to see how closely the experimental and clinical sides of this work have come together.

THE MANAGEMENT OF THE APPENDIX STUMP *

VAN BUREN KNOTT, M.D.
SIOUX CITY, IOWA

During the past few years much time and some ingenuity have been expended in devising means for treating the stump of the appendix, and many articles have been published advocating methods which differ widely in degree, utility and ease of application. Many of these methods are so complicated and unwieldy as to merit no serious consideration, and more than one of them has been encumbered with some especially designed instrument to facilitate its performance.

The most extreme simplicity which is compatible with thoroughness has long been recognized as most desirable in operative technic, and it is the purpose of this paper to plead for the more general employment of simpler methods in the treatment of the stump of the appendix.

Two years ago Dr. John A. Wyeth, in a masterly address, presented this question before this Section. I can bring to bear on this subject neither the eloquence nor the weight of authority possessed by my distinguished friend, Dr. Wyeth, but, as in my attendance at various clinics in all parts of the country I notice the somewhat general use of procedures more or less complex, and in some instances unsafe, it would appear that the principles involved are sufficiently vital to permit further discussion. The method here advocated is, in brief, as follows:

The mesoappendix is ligated with No. 1 plain catgut. An incision is made between the ligatures and appendix until the latter has been freed to its base. Around the base of the appendix, practically flush with the cecum, a ligature of No. 2 silk is placed and tightly tied; an artery forceps is then clamped on the appendix half an inch distal to the silk ligature. After the tissues in the immediate vicinity have been protected with a gauze sponge or pack, the appendix is divided half way between ligature and forceps, the stump is thoroughly cauterized, inside and out, with pure carbolic acid and after being thoroughly dried, the cecum is permitted to

* Read in the Section on Surgery of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

drop back within the abdomen, no effort of any sort being made to cover the stump.

I have employed ligation of the stump with silk in every instance in which it was possible, in all operations, and have seen no postoperative hemorrhage or other complication which could be charged to the stump treatment in over 2,000 appendicectomies.

It was my practice, until three and one-half years ago, to cover the stump, whenever feasible, by carrying over it from either side a fold of cecum, which folds were retained in position by Lembert sutures. This refinement was finally discarded as unnecessary after the repeated observation that in those instances in which, owing to the extreme infiltration of the stump or the cecal wall, such infolding was impossible, convalescence was as smooth and rapid as when this precaution was observed. About 800 patients have been thus treated with no complication of any sort which could be charged to the stump.

Many cases of postoperative hemorrhage have been reported in which, at operation, the stump had not been ligated with silk or linen, but had been treated by some of the more elaborate procedures, crushing, invagination, etc.

My information as to the occurrence of this accident after such ligation agrees with that of Wyeth, who states that he has been unable to find the record of a single case.

That efforts to bury the stump of the appendix by invagination, infolding, or by stitching over it the stump of the mesentery, prolong the operation and increase the general amount of manipulation necessary must be admitted. That such refinement of the technic is unnecessary has been proved by abundant evidence.

Frequently the attempt to place the sutures to accomplish this burying of the stump will be accompanied by hemorrhage due to the puncture of blood vessels by the needle and at times such hemorrhage may be somewhat difficult to control, much time being lost thereby.

It is a well-known fact that the vitality of living tissues is seriously impaired by prolonged manipulation, and the tendency to wound infection thereby increased. This fact of itself should cause us to "get in and get out" in every operation with as little trauma as possible.

We have all seen efforts made at covering the stump, possibly in unsuitable cases, in which the sutures were placed several times before they would hold, and which when finally secure were only made so at the expense of many tissue cells and much loss of time.

The argument is at times advanced that much danger of postoperative adhesions is engendered by dropping the uncovered stump. I believe this to be a bugaboo with no foundation in fact, particularly if such stump has been thoroughly cauterized with carbolic acid. I have many times had the opportunity to inspect the cecum when reopening the abdomen for other conditions, months or years after an appendicectomy made under the technic described above, and, in most instances, it was only with difficulty, if at all, that the former site of the appendix could be identified on the cecal wall.

That the danger of leakage is increased by failure to cover the stump is another bugaboo which, it seems, should be effectually routed by the experience of Lilienthal, who has in several instances tied off and dropped in similar manner the small intestine with no untoward result.

Believing that our duty to our patients and to surgical art demands that we should prolong neither anesthesia nor manipulation in any instance one moment beyond the actual requirements of the individual case, it is urged that time-destroying and tissue-bruising methods in the treatment of the appendix stump be abandoned for the more rational and safer procedure of ligation and dropping.

500 Security Building.

A CONSIDERATION OF THE FACTORS IN THE MORTALITY OF APPENDICITIS

BASED ON A CONSECUTIVE SERIES OF FIVE HUNDRED AND FORTY-FIVE OPERATIONS, WITH TWO DEATHS *

LE GRAND GUERRY, M.D.

COLUMBIA, S. C.

During the last four years I have had occasion to operate on a consecutive series of 545 appendix patients. Out of this number two were lost, making a mortality of about 0.3 per cent. The mortality rate is, I hope, sufficient justification for presenting the paper.

Appendicitis is by far the most important acute abdominal lesion that surgeons are called on to treat. It is about eighteen years since Fitz, of Boston, gave to the medical profession his classical treatise on appendicitis; it would not be far wide of the mark to say that the birth of the recognition of this disease was in Fitz's paper. He taught us pathology, he taught us what the disease really was, and its scientific and rational treatment followed not only logically but of necessity.

That 545 consecutive operations can be done by an ordinary man under ordinary conditions, with but two deaths, and these two occurring in the first 100 cases, leaving 445 cases without death, proves to my mind, at least, that there is a factor in the mortality that is not fully appreciated, or, if appreciated, is not practiced as it should be.

The 545 cases were divided as follows: Of chronic cases requiring so-called interval operation there were 240, with no death; of course, no one expects mortality in the ordinary cases of chronic appendicitis. Unless some unforeseen calamity occurs, the patients all recover, for the cases are practically aseptic.

Of acute cases there were 92 in which operation was performed within thirty-six hours. If I follow any rule in regard to this work, it is that I always operate as soon as the diagnosis is made, provided such diagnosis can be made within thirty-six hours. The reason for this is obvious: were it possible to operate in all cases within twenty-four hours, in nearly every instance one would operate before the infectious process had gone beyond the appendix; in other words, one would be able to do clean work in an uncontaminated field. The cases are few in which the infection spreads beyond the appendix within twenty-four hours. In cases seen on the third, fourth or fifth day, the clinical, as well as the pathologic, conditions are different.

I quote the following from Maurice Richardson:

After the first forty-eight hours the conditions found at the operation differ materially from those of earlier hours; necrosis has been fully established, localization has become successful or infection has become general; the appendix will be found imbedded in recent adhesions. Contiguous to it, surrounding it, or in some way connected with it, will be found

* Read in the Section on Surgery of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

a foul-smelling exudate teeming with bacteria; this exudate will vary in its location between wide limits of the peritoneum; it may be far to the right behind the cecum; it may be high up, involving the liver and kidney; it may fill the pelvis or cover the bladder; it may be buried among the small intestines; it may be directly under the skin; it may appear in the left lower quadrant of the abdomen.

I certainly question, and believe it perfectly fair to do so, a method that prescribes an invariable rule of procedure when cases are seen at this most critical stage of the disease.

The third-day and fourth-day acute cases are the ones that give mortality. This question often arises: Why are there so many cases of localized appendix abscess? The answer, in my opinion, is that there is a definite and unmistakable tendency toward localization in cases of appendicitis complicated by the presence of pus. In this series of 545 there were 213 of this variety—a very large proportion.

Of these 213 cases, 68 were seen for the first time on the third or fourth day of the disease. The pulse in most cases was 135, temperature 104; vomiting, distention, pinched features and more or less delirium were also present. Such cases as these are the ones in which operation is attended with mortality. None of these patients were operated on immediately; all were treated according to the Ochsner method: they were tided through the period of great danger and several days later were safely operated on for localized appendiceal abscess. I believe that this method has been greatly misunderstood by many people, but I also believe that, properly applied, this contribution of his is a life-saving measure and entitled to the highest consideration. It was never intended that it would take the place of operation, but that it should permit the selection of a safe time for operation. It does convert an operation attended with great mortality into an operation of safety and conservatism.

The mistake made by the man of ordinary ability lies in the fact that he thinks, for example, that because a surgeon of national reputation can operate in all cases as soon as he sees the patients, without regard to time or place, he himself can follow the same method successfully. This belief is, I believe, entirely wrong and fraught with great danger. The real point is to determine what methods the individual himself can use most successfully. In this dangerous class of cases the time for operation is the all-important consideration. Richardson says that some patients "should be operated on immediately, some require a more favorable opportunity, and some permit leisurely selection of a convenient time."

I submit, in support of this position, the above sixty-eight cases seen on the third or fourth day, the patients all treated as above indicated, all coming to operation with ruptured and gangrenous appendices containing pus and all recovering. Some will ask why not do, as Murphy advises, perform rapid removal of the appendix, drainage and enteroclysis. I submit that no method could produce better results in these cases.

Stanton¹ says:

There can be no doubt of the advisability of operative interference previous to the time of the development of peritoneal infection, nor is there any doubt of the satisfactory results and low mortality of operative work in the stage of localized abscess formations. The high mortality of operative in-

terference between these periods is known to all, and the clinical results of Ochsner and many others now overwhelmingly demonstrate that with proper methods of treatment the vast majority of cases seen first during the stages of diffuse lesion can be carried over for operation at a later, more favorable period. The almost absolute uniformity in the progress of those processes leading up to the localization or resolution of the peritoneal inflammation, as it was observed in this study, has served to convince the writer that the claims of those advocating conservative treatment during certain stages of acute appendicitis, are founded on a much more definite pathologic basis than is generally recognized by the profession at large.

The whole question naturally hinges on the cases seen for the first time on the third or fourth day,—cases with acute spreading infection. It must surely have been genuine insight on the part of Ochsner, who laid bare the principle that the chief factor in the dissemination of the peritoneal infection was the vermicular movement of the small intestine. Since in appendicitis there is a constant regurgitation of the contents of the small intestine into the stomach, due to the closure of the inflamed ileocecal valve, the practice of gastric lavage, which empties not only the stomach, but the small intestine, has its foundation in a rational conception of the diseased process. The basic principle is that we thereby secure a condition, approximately at least, of physiologic rest to the inflamed area, which gives Nature the chance she has been seeking to complete the localization of the infection. I wish to emphasize particularly the point that none of these patients were operated on immediately; they were all treated as outlined above. All were safely operated on at a later date; and in each case a gangrenous or ruptured appendix, with pus, was demonstrated at operation. No patient died as a result of the treatment.

I do not wish to be understood as advocating an extreme measure; it has always seemed to me that when one operates on all patients as soon as they are seen, regardless of time or place, one leaves no room for the exercise of the operator's surgical discrimination and judgment. The natural forces working on the patient's behalf, to wit, his opsonins, his leucocytes, his resistance and ability to overcome the infection and develop immunity are absolutely lost sight of; that these natural forces are of the greatest possible help is proved, to my mind at least, by the fact that in so many cases the disease is localized when the patient is first seen.

The question of how to operate and of skill in operating is of greatest importance, and I would not for one moment convey the impression that nothing else was to be considered. The gynecologists learned years ago that it was fatal to operate in cases of pyosalpinx in the acute stage; they learned to wait until immunity was developed; then the mortality became almost *nil*. Whether the case is acute or chronic, clean or suppurating, operation is done through the McBurney incision; drainage, when necessary, is through a stab wound to one side; it is very rare, indeed, when this incision is abandoned. The rule is to remove the appendix; to this rule, however, there are exceptions. I believe it better to enter the free peritoneal cavity by Ware's modification of the McBurney incision, pack off the infected area and remove the diseased tissues.

Of the two who died, one patient with renal tuberculosis developed acute appendicitis, died on the eighth day with postoperative anuria; the second was a little girl, 7 years of age, who had been sick for ten days, and died from a continuation of the peritonitis.

1. Stanton, E. M.: Sequence of the Pathologic Changes in Appendiceal Peritonitis, Surg., Gynec. and Obst., April, 1908, vi. 397.

DEATH IN ACUTE INTESTINAL OBSTRUCTION AND KINDRED CONDITIONS IS DUE TO PHYSIOLOGIC DISTURBANCE

STUDY I. HAS THE DUODENUM A TOXIC INTERNAL SECRETION?*

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Physiologists often quote the sentiments of Montaigne: "With how little anxiety do we lose the consciousness of light and of ourselves." By this they would convey the idea that the act of dying is as painless as the act of falling asleep, and also as little perceived." Nevertheless, so strongly rooted in the human mind is the desire to live that the great profession of medicine has for its chief purpose the lengthening of human life. Hence it is natural that the study of the causes which bring death to a cell, to an individual, or to a race of men, has for long been a favorite and engrossing one. "The supreme fact," says Adami, "that sooner or later death comes to all men, has profoundly affected all human thought, and the various religions of the world may be regarded as the evidence of man's determination to rise superior to the dissolution of his body." In the unicellular organism there is no destruction of the essential living matter, but a multiplication of the same, each spore carrying on the life. In the ordinary interpretation of the word, there is no natural death. "It is with the appearance of the multicellular organisms that natural death enters into the world." In the cellular differentiation it comes about that the germ cells are given the inherent power of life, while the somatic cells through the elaboration of which the individual organism reaches its final development—side-tracked groups, as it were—the sentient genetic agminations, which we recognize as individuals, are destined to hold and live together for a span and then to undergo dissolution. There are in general two forms of death which may befall the somatic cell, the physiologic and the pathologic. The latter form of death may be induced by mechanical, physical, chemical, or bacterial agents. With these in the present paper, which deals with the cause of death in the duodenojejunal obstruction alone, and more remotely with the little understood lethal outcome of gastric, pancreatic and hepatic lesions, I hope to demonstrate that we are not concerned. For if the observations extending, as they do, over a period of four years and embracing more than 400 observations, are in their essentials correct, it may require no great foresight so to interpret them as to lead clearly to the conclusion that the physiologic mechanism of the duodenum and its associated glands is not merely at present but vaguely known, but that it presents to the student of these parts, and through him to the operating surgeon or the internist, a picture of physiologic exchange of secretions, some of them perhaps internal in character, in comparison to which functions of the parathyroid and other better known glands seem simple.

We are entering on the physiologic era in medicine and in surgery, as well, and, as already intimated at the beginning of this paper, no subject offers a more en-

grossing field for thought than that which deals with the cause of death under certain pathologic conditions. I take it that this interest has a double source: first, because of the mystic element which from time immemorial has shrouded the final dissolution of the body in an impenetrable veil, and, second, because for students of disease a knowledge of the cause of death in a given lesion is necessarily the first step toward a knowledge of the factors which may be invoked to prevent that death. The pathologic forms of death, particularly those induced by bacterial agents, are now reasonably clear, but physiologic death—that form of dissolution of somatic entity which follows parathyroidectomy and that associated with adrenal and pituitary destruction or removal—this physiologic form of death is the study with which we have to deal. It immediately and profoundly concerns the future progress of the treatment of diseases of the stomach, the pancreas, the liver, and the duodenum.

There are certain very interesting phenomena which are common to these lesions. Some have been recognized from studies on human beings and on animals. Others, which will be dealt with in the course of this paper, have been the outcome of the studies herewith presented, and it is my effort to correlate the known facts with the new facts referred to. For I understand physiologic death to comprise not alone the dissolution which follows the removal of certain substances from the body by destruction of their secreting cells, as seen in parathyroid and suprarenal removal, but also that dissolution of somatic life which is brought about by the mechanical interference with detoxication of the normal secretions of the body. Such, at least, seems, after careful thought, to be the probable condition which obtains in the duodenum when the normal current of the intestine is blocked. The first thing which naturally suggests itself is that there has been a failure of normal exchange between the known secretions of the duodenal mucosa, the pancreas and the liver, which exchange is accompanied by a detoxication or absorption of certain of the known poisonous products of the digestive ferments. William Welch, however, in commenting on preliminary reports of this work, has said that, if corroborated, the experiments herewith detailed suggested very strongly an actual internal secretion from the duodenum. I lay no claim to having as yet proved this, but am encouraged in the belief that further experimental work along the lines employed, and perhaps by others more qualified than myself, will ultimately prove which of these two views is the correct one. I regard it as conclusively demonstrated, as well by the work of others as by my own, that the death following duodenojejunal obstruction, and probably the death which characterizes acute pancreatic disturbances other than infections and traumatisms, that associated with the symptom known as gastric dilatation or gastric tetany, and that associated with certain operations on bacterially clean surgical fields in which the hepatic ducts have been invaded—that all these now uncorrelated and little understood deaths are due to a common underlying cause as yet not understood.

It will thus be seen that the studies here presented represent but a small and weak link in the chain, which it must take years to forge before the conclusions which I have ventured to suggest are made scientifically acceptable. For their importance in the development of this idea rather than for individual intrinsic merit they are herewith submitted.

* Read in the Section on Surgery of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

* From the Surgical Research Laboratory, Columbia University, New York. This article is the first of a proposed series of studies which seek to correlate duodenal, pancreatic, hepatic, and perhaps gastric auto-intoxications. The work was done under a grant from the Rockefeller Institute.

Of these associated problems, if for purposes of argument in an investigation one grant that there be an association, it has been my fortune to study the one which perhaps presents greater difficulties because of its anatomic position, namely, the duodenum and jejunum. In whatever manner this may be rightly considered, I ask to be allowed to start with the hypothesis that the intestinal barrier which closes the lumen works no ill to the organism save through an interference with the physiologic exchange or balance of the duodenojejunal secretions, and that the resulting death is physiologic in type. Whether these secretions, as already intimated, are endoenteric or exoenteric is not yet known. The extraordinary sensitiveness to operative procedures, however, of the parts, together with the experimental deductions, suggest rather strongly that there are other factors at work in addition to those which may be attributed to the zymotic action of the known secretions, and this, of course, points to an exoenteric or internal secretion of the duodenum.

I ask that it be assumed for the moment—and of this we have adequate proof—that in intestinal obstruction there is no appreciable damage to the individual through the nervous system from the direct trauma of the obstruction; that there is no lethal infection of bacterial origin; that the element of decomposition of food does not enter into the picture at all; in short, that all pathologic forms of death are eliminated, and I will strive to detail the simple and, may be, inefficient measures which I have taken, not alone to prove these things, but to throw light on the intricate questions which are the real subject of these studies.

NERVOUS EFFECT OF INTESTINAL SECTION

Clinically, surgeons have recognized a difference of degree in the shock produced by cutting the intestines in various places. The nearer one approached the pylorus, other factors being equal, the greater the shock. The actual longitudinal section of the pylorus, which is the essence of the well-known Finney pyloroplasty, has always been accompanied by immediate clinical reaction and has formed the basis for one of the arguments against this operation. Nevertheless, experience has shown this shock to be transitory and to present no real danger. This observation in itself is significant of the error of the view that any of the symptoms of intestinal obstruction are rightly to be attributed to the nervous manifestations due to the constriction. It is not to be denied that such nervous phenomena make themselves felt at the pylorus, where a protecting interference with its normal mechanism is always manifest as the result of any injury to the aboral portion of the intestinal canal. Furthermore, operations which will be described later, and in the course of which the highly sensitive pyloric region was entirely removed or seriously injured, and as a result of which the animals recovered without any sign whatsoever of obstructive intestinal autointoxication; and, still further, operations in the remotely aboral portions of the small intestines—and which technically were associated with the same amount of traumatism as those just referred to, and following which there was a similar return to health—these considerations, together with those already referred to, show conclusively that the nervous shock or reaction—let it be called what it may—has nothing whatsoever to do with the cause of death in intestinal obstruction.

It stands to reason that if a dog would live for weeks with ileac obstruction, and would die at the end of a few hours with duodenal obstruction, while the same dog

could be made to live also for weeks with but the slightest gastric drainage, the immediate effect of traumatism may be discounted. Incidentally it may further be noted that whatever nervous traumatism might be associated with the dilatation of the proximal loop would presumably be greater where there occurred the greater dilatation. In the majority of fatal cases of duodenal obstruction there was little or no such dilatation.

INFECTION OF BACTERIAL ORIGIN

For purposes of further study it should be borne in mind that all the deaths arising from intestinal obstruction, except probably cases in which such obstruction occurs in the vicinity of the duodenum, pathologic deaths may be and probably frequently are caused by the entrance of pathogenic germs through the dilated proximal loop, to the vascular system. This has been thoroughly worked out by Roger, of Paris, and MacCallum in Baltimore. These observers, as well as others, have found bacteria in great numbers circulating in the blood when the obstruction has been located in the aboral portion of the ileum or the great duct. No such germs however, have been found in the blood as the result of duodenojejunal obstruction. One is not going far afield, probably, in believing that there exists a line somewhere about the termination of the jejunum where intestinal obstruction causes death from bacterial invasions if it occur aboral to this line, and death from interference of duodenal functions, if oral to this line. Indeed, it seems quite natural that there should be no bacteria from the blood in the one class of cases, first because the pathogenic flora of the duodenum is absent or exceedingly spare, and, second, because death usually takes place before there is much, if any, impairment of the wall of the duct oral to the obstruction such as is commonly seen in those obstructions occurring in the ileum of the great intestine and through which bacteria may escape.

DECOMPOSITION OF FOOD

In almost every text-book article on the subject one finds that the element of food decomposition has in the past been credited with an important rôle in causing death in intestinal obstruction. It is noteworthy, however, that if a series of dogs be allowed to fast for three days and then be given copious doses of castor-oil, and immediately thereafter be operated on so as to produce duodenojejunal obstruction, death will take place in the same average time and under conditions similar to those observed in a series the individuals of which had been copiously fed just prior to operation.

With these premises and in part for academic purposes of argument, it becomes necessary to assume that we shall differentiate in intestinal obstruction two entirely separate and distinct forms of death; the one duodenojejunal and purely physiologic, due to an unknown disturbance of the endoenteric or exoenteric secretion of the duodenum and its glands; the other ileac and purely pathologic; the one a true autointoxication, the other a true exointoxication. Although the series of 400 cases of duodenojejunal obstruction experimentally created in dogs is not a small one, the positive conclusions which are offered by it are regrettably small. Aside from recognized personal deficiencies, this may fairly be attributed to the fact that the experimental studies have now reached a point at which the services of chemists and biologists, rather than those of surgeons alone, are required.

TECHNIC

As in many other cases, the method of studying duodenojejunal obstruction was discovered accidentally

while in the pursuit of other matters. These preliminary studies consisted in efforts to create a delayed gastroenterostomy somewhat after the manner of the well-known McGraw elastic ligature, except that common twine was to be used in the newer technic. Surgeons at the time were interested in the technical consideration whether or not it was necessary to remove a portion of the gastric mucosa at the time of the making of the stoma. The McGraw ligature simply cut a slit and Dr. Weir desired this modified so that an actual fragment should be removed. In an effort to study the degree of shrinkage of the stoma, it became necessary to close the pylorus or duodenum in one series, while this region was left unobstructed in the other series. It was then that the interesting phenomenon was observed, namely, that closure of the oral portion of the intestine almost always resulted in death before the cutting through of the delayed gastroenterostomy. It was a perplexing coincidence that every animal died, to a dog. There was no immediate reaction from the operation other than normal, and during the first thirty-six hours the animals seemed to be in perfect postoperative condition. Suddenly, however, and with a singular uniformity, it was noted that between the thirty-sixth and the seventy-second hour they were seized with symptoms which peculiarly resembled those of parathyreopriva. The heart-beat was accelerated, often rising to 250 per minute. The face was anxious, with an expression not so much of pain as of distress. The gait, while the animal was able to walk, was peculiar owing to a spasticity of the hind legs. This spasticity involved chiefly the flexor groups of muscles and was sometimes so marked that the animals walked directly on their hind toes. There were well-defined muscular tremors; these were fine and seemed to be particularly prevalent in the intercostals. The spasticity would last for perhaps ten hours and be succeeded by a paresis, as the result of which the animal ceased to walk. The entire picture frequently lasted less than eighteen hours, for the course from postoperative seeming health to death was usually extremely short.

At autopsy an early *rigor mortis* was noted. There was neither peritonitis nor any gross lesion discoverable within the abdomen. The oral loop usually was not dilated, and the efforts made to preserve the normal blood supply of the intestine had uniformly been successful. For the purposes of study it was fortunate that the period necessary for this physiologic death to overtake the animal was about the same in length as that which was required by the string to cut the delayed gastroenterostomy. It was fortunate because it at once afforded a means of controlling the observations. Granted that the time of cutting out, in the normal dog's intestine, of the stoma, would be about constant, one had simply to make the other factor, which was the position of the obstruction, a variable one, and judge results in terms of the control. This chronicled the results, as it were, in terms of gastric drainage; for it must be remembered that the slightest drainage of the oral loop will counteract the lethal effects of what we believe to be a physiologic death, due to a disturbance of physiologic intraenteric enzymotic balance.

DETERMINATION OF ABORAL LETHAL LINE FOR PHYSIOLOGIC DEATH

Logically the first step, after determining by a long series that death will follow the closure of the duodenum at any level before drainage might be established through the potential stoma, was to ascertain the effect of placing the obstruction in the jejunum. Another

lengthy series determined, we believe with accuracy, that death would not occur in a medium-sized dog during stoma control, namely, seventy-two hours after the operation, in any case in which the obstruction lay more than 35 cm. aboral to the pylorus. The individuals exposed to this type of experiment will in future be referred to as the "long-looped dogs;" for to them, on account of possible production of antienzymes, or protective bodies of unknown character, there attaches a peculiar and perhaps a lasting interest. These long-looped dogs, barring ordinary accidents, survive the moderate toxemia to which the obstruction gives rise clinically, and will live often for several months without apparent discomfort or loss of body function. On autopsy the oral segment may be found but moderately dilated, and the evenness of digestive function, as evidenced by maintenance of body weight, suggests the phenomenon of gastro-proteid digestion.

The conclusion, then, from this series of cases, was that the addition of a relatively short portion of the jejunum to the oral loop in some unknown manner served to prevent the dogs from dying before the stoma cut through. Thus it would seem either that the jejunal mucosa had the property of absorbing the poisonous products from the duodenal region, and in some way rendering them harmless, or else it secreted an enzyme which acted as an antibody for the poisonous products referred to.

DETERMINATION OF ORAL LETHAL LINE FOR PHYSIOLOGIC DEATH

The next step naturally was to determine the oral limits at the point of obstruction beyond which one might go without encountering physiologic death within the time limit of stoma control. Because of the studies of Roger on gastro-toxic serum, it is of great importance to know whether death in intestinal obstruction be due to the absorption of gastric toxin, or whether death takes place, as I believe may be the case, from a disturbance of the duodenal internal secretion. It should be repeated that this is as yet an hypothesis, but I believe it to be a working hypothesis. Roger states that simple ligature of the pylorus leads to this physiologic death in from seventy-two hours to five days. That, it will be observed, is just outside the limit of the twine control which we have used in our studies. So much, however, that is accidental, is certain to enter into all this sort of work that one feels a hesitancy either in commenting on the results obtained by others or in pressing one's own experimental findings. It is certain, however, that I have observed this fact, namely, given free drainage of the duodenum through the normal channel, the stomach may be obstructed at or near the pylorus more frequently without lethal results, until the cutting through of the stoma, than if the obstruction were in the duct-bearing portion of the duodenum. Of course, in this type of experiment, with the drainage of the duodenal digestive products proceeding through a normal channel, there ceases at once to be a reason why the animal should not live for an indefinite period. It should not be understood that no physiologic toxic elements arise from the stomach, and that the source of the toxicity is strictly duodenal or pancreatic, but I have been struck by the fact that, discounting all consideration of biliary toxemia which one seems justified in doing, the source of the poison lies either in the duodenum, the stomach, or the pancreas. In the light of our present knowledge and measuring the degree of toxicity by a time-drainage unit, rather than attempt-

ing to measure it as Roger has done in terms of toxic units, I was led to assume that the main source of the toxemia was not in the stomach, but in the duodenum. This enabled me, for purposes of study, at any rate, to place the oral limit of the lethal line between the pylorus and the papilla of Vater, because until now the question of the influence of the bile had not yet been worked out. The mere fact that a proportion of animals would die when the obstruction was situated at the pylorus should not be looked on as necessarily proving that the source of death was to be found in the stomach, because it is quite conceivable that an interference of enteric circulation at the pylorus might serve to upset intraduodenal balance simply by deprivation of gastric secretions.

The duct-bearing portion of the duodenum has long been recognized as an area having unknown and profoundly complex physiologic properties, and it is in part the object of this paper to demonstrate that a more accurate interpretation and knowledge of the physiologic processes going on in this short tube must form the groundwork for future therapeutic progress, be it surgical or medical. The morphologic relationship of the stomach, liver and pancreas to the duodenum has been graphically portrayed by Mumford, who says that the pancreas, liver and ducts and the stomach hang like three apples on a single stem—the duodenum; whatever affects one very frequently affects the others. What more striking simile could one have? I submit that these studies have carried us still further and that we are now justified in considering not alone the morphologic relations, but also the physiologic relations, as fixed. Is it not most significant, in view of the close morphologic relationship of these organs, that we have from unknown causes fatal hemorrhages into the pancreas; fatal dilatations of the stomach; fatal sequels to biliary operations which are not adequately drained; fatal terminations to duodenal obstruction—all occurring without the possibility of bacterial toxemia?

ELIMINATION OF THE BILE BY DUCT LIGATION: CHOLECYSTENTEROSTOMY AND TRANSPLANTATION OF POINT OF DISCHARGE INTO DUODENUM

A long series fraught with great technical difficulty was created, in which the bile was intended to drain into the ileum by use of the ordinary suture opening between the gall bladder and the intestine. For some reason, however, although the technical part was accurately executed, there was in every case a failure of the bile to drain. I finally concluded that either there was a change in its composition, owing to infection from the ileum (and for this there seemed reasonable basis for belief, because the contents of the gall bladder appeared milky on autopsy), or else that the secretory function of the liver cells had been abandoned, or had changed to an absorptive one. Such a change is not infrequently met when conditions of exit to a secreting gland are changed. In any event, whether the bile drained or not, it was impossible for it to enter the oral intestinal loop, as the common bile duct had been ligated and divided. The results, so far as the physiologic death of the animal was concerned, were just the same as if the bile had been present in the intestine. Death occurred in short-looped dogs (less than 35 cm.) before stomach-control drainage. Nevertheless, conditions for this study were not ideal because there was either a suppression of biliary secretion or else its absorption into the

blood. In order to enable me to feel that I was not superimposing hepatic changes on those already under consideration, a colleague of mine devised an ingenious means for the direct transplantation of the bile to the aboral loop, by a device hereafter to be described, which will form the basis of a communication from him at a later date. It comprised the reconstruction of the common bile duct. The use of this simple and effective technique allowed of sufficient room between the transplanted biliary intake and the greater duct of the pancreas, either for complete section and invagination of the duodenum, or its ligation, as the case might be. Here again a series of sufficient size demonstrated that the supposed toxicity of the bile, at least in regard to death from obstruction, was erroneous. Parenthetically bile has probably been a much-abused secretion and it is time that any undeserving onus was removed. Hippocrates credited black bile with being the offending agent in digestive disorders. More recent observers, however, namely, Kocher and Moynihan, agree that the flow of bile into the stomach is in no way deleterious to the health of the patient. Since my own observations on the intraenteric and intragastric presence of bile are corroborated as to its harmlessness, is it not interesting that it should be universally regarded as essential to drain in all operative cases in which the gall bladder or ducts have been tampered with? Perhaps one may be excused for offering the suggestion that such drainage, in an as yet unknown way, reacts on the duodenal secretions. It did not matter, then, whether the bile entered into the oral or the aboral loop, whether the common bile duct was simply ligated or cut, or whether cholecyst-ileostomy were done; the lethal outcome appeared very conclusively still to be dependent entirely on the position of the obstruction. In other words, bile, the salts of which are known to possess a very considerable degree of toxicity, was in no way connected with the physiologic death under observation.

RELATION OF THE PANCREATIC SECRETION TO INTESTINAL OBSTRUCTIVE PHYSIOLOGIC DEATH

It had already been shown that death took place in short-looped dogs whether bile was present or absent in the oral segment. The morphology of the parts did not allow a transposition of the pancreatic secretion, in the first place because there were two ducts, and in the second place because they were always short and firmly fixed to the pancreatic tissue. Any interference with this, no matter how delicate, might, as all know, lead to fat necrosis and other conditions which would confuse the point at issue. By transposing the bile, however, I was able to move its point of entry as many centimeters aboral to the papilla of Vater as was convenient. After ligating the lesser duct of the pancreas at its point of entrance beside the papilla and cutting it, one could make certain of having sufficient room to sever and invaginate the duodenum in such manner that all the pancreatic secretion might empty into either the oral or the aboral intestinal loop. Opie, in a recent communication, has commented on the fact that drainage of the greater duct would usually suffice to prevent any undue hardening of the gland because of retained secretion, and I have been glad to corroborate and make use of his observations.

The result of these studies was conclusive in one regard, namely, that quite irrespective of the whereabouts of the discharged bile a large proportion of the dogs lived during stoma control when the pancreatic secretion drained aborally, and they died during stoma con-

trol when it was confined in the oral loop. While I seemed here to arrive in a measure at the crux of the situation, too definite conclusions in interpreting these studies should not be drawn. The excessive sensitiveness of the duct-bearing portion of the duodenum makes it imperative that more than ordinary care should be taken in furthering these studies, and corroborative evidence should also be asked from other observers. That the secretions of the gastric mucosa may be toxic, and that this toxicity may be increased many thousand times by an oral intestinal obstruction, must not be lost sight of. That under certain conditions of deficient drainage the secretions which emanate postoperatively from the hepatic regions are also extremely toxic must further not be forgotten.

But I have accomplished enough to warrant the conservative suggestion that whatever may be the nature and degree of this toxemia, whether in reality it is of a common origin in the duodenum or from separate origin in the glands or stomach, that one which develops from a disturbance in the duct-bearing portion of the duodenum contains poisons of an exceedingly grave nature. It is presumably not to be denied that the increase in the amount of gastro-toxins noticed after pyloric obstruction may, as already intimated, well be brought about by the interference of a normal duodenal limitation of such toxic development. It is a point of perhaps more than academic interest that Weinland has found that an antitryptic ferment existed in the oral portion of the small intestine. Is one justified in supposing that as the pancreatic juice, grossly at least, appears to be the lethal agent, the danger from obstruction grows less and less the further one places it from the pylorus, and, therefore, more and more in the antitryptic-bearing portions of the canal? Let it not be understood that this is intended to state, or even suggest, that trypsin alone, or as such, is responsible for the physiologic death described. No doubt there are many other ferments and antiferments occurring in the duct-bearing portion of the duodenum, and created either by its mucosa or by the cells of the pancreas or liver, but mention is made of the trypsin simply because it is representative of a class, the antibodies to which have been definitely found. It is in interpretation of these experiments that license has been sought for the presentation of the hypothesis offered at the beginning of this paper, which, it will be remembered, submitted that duodenal secretions of either intraenteric or extraenteric origin were in their disturbed function responsible for the death following duodenojejunal obstruction.

Some such hypothesis is at present necessary in order to explain the singular clinical syndrome of symptoms, as well as the singular phenomenon of the protective power of the first 35 cm. of the intestine, the presence of which, in the oral loop, suffices to prevent death before the opening of the stoma control.

THERAPEUTICS

Aside from the purely scientific interest which centers in these studies, the possibility that from them important changes may be made in the therapy of duodenojejunal obstruction is of the very greatest importance. Treatment obviously should be based on the conception that the lesion is an autotoxic one, and that the source of the lethal agent is in the duodenum. The second logical conclusion is that the blood must be filled with the toxic products, of whatever nature they may be, and that the modern method of bleeding followed by transfusion

from a healthy individual is indicated. I can not refrain from suggesting that a third possible therapeutic agent may be invoked, namely, that a protecting serum may be developed from the long-looped dogs. Now that these studies have made possible the preparation of dogs which shall be made moderately sick from a toxemia produced by leaving sufficient of the jejunum in the oral loop just to save them, it should be an easy matter to determine what effect, if any, the serum from these possible immunes might have on the short-looped animals in which there was no protecting jejunum in the oral loop.

Such are the three lines of experiments which are at present being developed, and in regard to the two first, namely, retrograde irrigation of the duodenal oral segment through the stomach, combined by bleeding and transfusion, I am glad to state that enough work has already been done to justify the hope that a noteworthy decrease in the present high mortality of this lesion should follow bleeding, transfusion from the normal, and retrograde lavage. In a dog it is easy to accomplish, the pyloric sphincter offering no obstacle either to alkaline or acid irrigation fluids. It is quite conceivable that some modification of this method might easily be employed on the human being. The technic consists in simply drawing the oral loop to the surface where it is made fast; in inserting a catheter which is connected to a douche bag and allowing the flow to take place toward the stomach. A stomach-tube should first be introduced. Through this, as soon as the duodenal current is established, an immediate flow of the greenish-yellow duodenal contents pours freely from the stomach-tube. In human beings it would be possible, and perhaps worth while, to maintain a slow irrigation of the oral intestinal loop somewhat after the so-called drop method of Murphy for irrigation of the colon. On experimental grounds it would seem desirable that such washing of the oral loop should be done thoroughly before the obstruction was removed, because, as has already been shown, the mechanical presence of the obstruction is no menace to the patient, it being the absorption of the duodenal products which causes the symptoms.

In closing, and in support of the hypothesis presented, I would quote from a few authorities: Adami says: "We are, in short, only at the beginning of a knowledge of intestinal intoxication. Indol may possibly induce symptoms, but something more would seem necessary to account for the greater symptoms of ileus."

Magnus-Alsleben has shown that the contents of the stomach and duodenum are distinctly more toxic than those of the lower part of the bowel. In regard to immunization against enzymes as contrasted to that of bacteria and their toxins, he states that the development of antienzymes is limited and that it does not become extreme.

Vernon, in his recent book on the antiferments, states that enzymes closely resemble toxins in their power of stimulating the tissues to form antibodies.

Korschun states that the relation of renin to antirenin closely observes the laws of toxin to antitoxin.

Sachs immunized geese against pepsin twenty times above the normal.

Achalme made antitryptic serum. Finally, I may close with a quotation from Vernon's preface: "The cellular protoplasm of all living organisms is made up very largely of ferments or enzymes, and many or most of its properties are dependent on their activities."

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ABSTRACT OF DISCUSSION

ON PAPERS OF DRS. KNOTT, GUERRY AND MAURY

DR. W. D. HAGGARD, Nashville, Tenn.: I was particularly impressed with the results obtained by Dr. Guerry in his cases of appendicitis. In reference to the technic spoken of by Dr. Knott, I think that most men are agreed that simple ligation of the appendix is sufficient. I prefer catgut to silk; I see no disadvantages pertaining to the catgut, but see many in the use of silk. I think, too, that in the interval case it does not make much difference, but it is a nicer way to invaginate the appendix. I have been accustomed to employ a technic which seems to be rather general—crushing the base of the appendix, ligating with catgut, invaginating the small crushed stump and closing it up with purse-string sutures of linen. It leaves nothing to be desired. With reference to that ever-recurring but delightful phase of appendicitis, when to operate, I think that we are now more agreed than we were years ago about the time for operation. Ten or a dozen years ago I learned that the cases we lost were the third, fourth or fifth-day cases. I declined to operate and found that a number of patients survived with abscess formation that could easily be evacuated at any time from the tenth to the fourteenth day. Now, if the early opportunity for safe operation has escaped, the patient is in that stage where his own resisting fluids are doing the work of repair admirably and should not be molested. I deliberately carry out the plan advocated by Ochsner, and with much satisfaction. I disagree with the theory that when Nature has carefully walled off the abscess, and it is adherent to the abdominal wall, that it is wise to search out the appendix when it is a part of the abscess sac. There are a great many delayed cases in my section of the country, and we operate on these patients simply by incision and drainage. We do not bother about the appendix, and all the patients recover. I think that it is unwise to break up adhesions that Nature has so carefully produced for the ten days preceding and thus take a chance of disseminating the infection. I think the other is the better plan. I believe that in general it is much safer to incise and drain the abscess. In my experience, comparatively few, about a fourth, require reoperation. In the third and fourth-day cases, we are not operating for appendicitis; we are operating for peritonitis. The golden moment has gone by, and I say to the patient and sometimes to the doctor, who is always most insistent for operation at that inopportune moment, when he did not insist on operation before that, that we are in the position of the man whose house is on fire from the explosion of a gasoline stove; why rescue the stove; the house is on fire? We get the appendix, but the patient dies. Put out the fire and the stove need not be considered.

DR. E. MACD. STANTON, Schenectady, N. Y.: About two years ago I analyzed the pathologic findings in 1,019 cases of appendicitis occurring in the Albany City Hospital and in Dr. Ochsner's service in Chicago, while I was with him. I undertook this study because I was convinced that much of the confusion as to the pathology of the disease as described in the standard works on the subject was due to a failure to recognize the fact that inflammatory processes originating in the appendix pass through a definite sequence of changes, just as inflammatory lesions located anywhere else in the body. This study brought out one fact which I wish especially to emphasize, and that is that appendiceal peritonitis, like any other form of peritonitis, except that due to gross perforations, such as perforating gastric ulcer, will, if one will only stop the peristalsis, undergo a definite and clean-cut sequence of changes, showing almost no tendency to further spread, but, on the other hand, almost invariably ending in the formation of a definitely localized periappendiceal abscess. In the first two days of the disease, we are dealing with the appendix, and if it is removed the peritonitis, if present, will take care of itself. After this period, and until the period of localized abscess formation, we are dealing with a diffuse, undrainable intraperitoneal lesion but little if at all benefited by removal of the appendix, and efficient drainage at this time is impossible. If things are left alone for a few days it will be found that all these patients at the eighth or ninth days have localized abscesses. The patient has not died in the meantime and

there is now an easily treatable—a surgically drainable—lesion. One more thing I wish to emphasize and that is the danger of letting these abscesses go on beyond this period, for it is after about the twelfth day that we find the pus beginning to seek exits of its own, and it is only after this time that we begin to see pyemia, metastatic abscesses and the various complications resulting from old neglected abscesses.

DR. W. L. RODMAN, Philadelphia: I am fully in accord with the position taken by Dr. Knott. There are many ways, and good ways, of treating the appendix, but it seems that the more simple the way the better all things considered. I believe that in the vast majority of instances simple ligation of the appendix, with canterization of the stump, is better than crushing and sequestration of the stump. I think that it is better to do a subperitoneal amputation of the appendix, ever over the end of the stump to diminish the danger of infection primarily, and also to render the danger of adhesions forming subsequently entirely a negligible factor. I have never seen secondary hemorrhage after simple ligation of the appendix, but I have known it to occur in more than one instance after the purse-string suture has been used; in one case I was told that there was a large fecal extravasation into the peritoneal cavity, resulting, of course, in a fatal peritonitis. Therefore, it seems to me that in this operation especially which must be done so often, and done under the most adverse circumstances by operators who have not the best assistants or environment, that the simplest technic is the best. In regard to the treatment of appendicitis as outlined by Dr. Guerry, I am fully in accord with his position. There can be no doubt that such patients should all be operated on within the first thirty-six or forty-eight hours, and if we do not see these cases early, then it is perhaps wise, in the vast majority of instances, to wait until there is a safer time for operation. In other words, it is too late for early operation; it is too early for a late and a safe operation. I think that we cannot give too much credit to Dr. Ochsner for laying down for us a safe rule to follow in these cases. I am satisfied that by complete rest in such instances, and the withdrawal of all food and drink, so as to eliminate peristalsis, we give Nature time to shut off the infection from the general peritoneal cavity. It is the safe method to pursue.

There is one other point in which I agree with Dr. Haggard. I do not believe that in every case it is best to break up adhesions and remove the appendix. I think that as a general rule it will be best to drain the abscess cavity, and then, at a later time, say in from three to six weeks, reopen the abdomen and remove the appendix, when it can be done with perfect safety. I have most positive convictions on the subject of the treatment of appendiceal abscess. It is a safe condition if one will choose the right time and not attempt to do too much. This is not the time for ideal, but for life-saving surgery. Provide for drainage and never mind the appendix unless it prevails or is found after a limited search for it. If one does break down adhesions and looks for the appendix, there are potentialities which cannot be ignored. It is in my opinion dangerous surgery, and to do it is simply courting disaster.

DR. ROBERT T. MORRIS, New York: In regard to the stump of the appendix, it seems to me that we now have the question placed on rather simple principles since the experiments of Seelig showing that the mucosa disappears under the pressure of a simple catgut ligature. If we apply a simple catgut ligature to the stump, sterilize the stump with carbolic acid and neutralize that in thirty seconds with alcohol, this stump then lies against parietal peritoneum, which is just as good as any other peritoneum that the patient happens to have about him. In many cases we waste a lot of time in doing beautiful ideal work about the stump, and we forget that there is a patient. It is all stump and no patient. In a certain class of cases we must get through with the work as quickly as we can. It is with difficulty, perhaps, that we get down through adhesions and pus to the appendix. Are you going to do beautiful artistic work? Not a bit of it. Snap your forceps on the stump and leave them there until the next day. Then take them off. You will not have fecal fistula very often. If one occurs it has a tendency to care for itself.

The Ochsner treatment is one of the most important things that was ever brought forward, but instead of carrying it out exactly as Dr. Ochsner does, I believe in doing an operation consuming three or four minutes. Get in, snap forceps on the appendix, take out the burning gasoline stove, as Dr. Haggard says, and put in a little drain to take out the gasoline, too. You are not doing very much to that patient. You are not lessening his chances very much. Thirteen years ago I reported a series of cases with a 2 per cent. death rate. One or two very prominent men said that these statistics could not be accepted. It meant a selection of cases for favorable report, they said. There was no selection of cases. I operated in all consecutively. To-day half this audience perhaps does better work and gets better statistics than I did then. But at present we must remember that we are on the verge of a new era in surgery, the physiologic era, in which we are going to depend on phagocytosis and opsonins which the patient will manufacture himself to carry off the products of the infection better than we can do it for him with our artistic methods. And if that is true, what is the necessity of walling off with gauze through a big incision? Why fear getting pus on normal peritoneum? Let it get there; leave it there.

In regard to the safe interval that we have heard so much about. I have felt that the safe interval refers to the surgeon's reputation rather than to the safety of the patient. The interval is not the safest time necessarily. The safest time to operate is at the time when the patient is protected by his own hyperleucocytosis which he has called out. If the surgeon waits until that subsides, the patient has to manufacture a new lot of phagocytes for his interval operation.

DR. W. W. SKINNER, Geneva, N. Y.: I am fully in accord with the method of ligating off the appendix without inversion of the stump. Adhesions form not to dead tissue, but to injured and partially living tissue. I have a little modification, one that is a time-saver. I ligate the appendix itself with linen and the mesoappendix with iodine catgut. The two ligatures are held by the assistant side by side, with the ends presenting. I then pass a sharp-pointed hemostat through the clear space which is at the base of the appendix, where the blood-vessels arch over and leave a little clear space, like that which is found near the ovary. The ends of the ligatures are placed in the jaws of the forceps, drawn through, and given a half turn, or maybe a whole turn, which forms a chain stitch. The linen is thrown around the appendix and tied with one knot. The catgut is tied in one knot around the mesoappendix, slipping it down on the mesoappendix so as to ligate it as far as possible from the base to prevent puckering, as sometimes occurs. The appendix and mesoappendix are then cut across, before tying the second knots in the ligatures. This allows the ligatures to slip a short distance in tightening, a very important point, because one can thus crush the stump of the appendix and of the mesoappendix with the ligatures. Danger comes not from dead tissue, but from partially dead tissue. The ligation must be absolute. The advantages of the ligation method have never been fully stated. In the inversion method one makes a little crypt or pocket in which there may be gas-forming bacilli, which by burrowing between the intestinal coats may cause a widespread emphysema of the intestine, and possibly gangrene. The dangers of that procedure have never been fully stated, and I believe they exist.

DR. ERNEST LAPLACE, Philadelphia: Appendectomy must be simplified. It must be performed with rapidity and safety, having in view the prevention of hemorrhage and flow of intestinal contents, and, so far as possible, the prevention of subsequent adhesions. The appendix should be ligated at its base tightly and cut off 1 millimeter above the ligature with a pair of straight scissors. As a result, there is a bulging of mucous membrane; this should not be cauterized for fear of subsequent necrosis. The bulging mucous membrane should be cut off with curved scissors, leaving a sterile fibromuscular structure. This is an ideal method of removing the appendix quickly, safely and with no danger of infection. The stump of the ligated mesoappendix is then brought in contact with the stump of the appendix and tied. The surrounding serous surface is sewed over the stump, removing all danger of adhesion.

The Ochsner method is ideal when it can be practiced. Unfortunately, we do not always know from the first the nature of the infection, which in some instances may, like erysipelas, run a most acute course to a fatal termination. Again, patients do not always give an accurate history of the case, declaring the attack to have started a few hours before, whereas in reality it may have lasted several days. These misleading elements in diagnosis render a certain number of cases unsuited to the Ochsner method of treatment, and, therefore, while appreciating the great value of the method, we should never cease to exercise the greatest judgment in applying it in each particular case.

DR. W. J. MAYO, Rochester, Minn.: Dr. Ochsner's position to-day is exactly his position of ten years, eight years, and five years ago. It is not Dr. Ochsner who has changed, but the rest of us. What was the cause of this particular change? Dr. Ochsner and I have been closely associated, and I have learned very much from him during the last fifteen or twenty years. Dr. Maury brought out a very important point, and that is the great necessity of keeping the stomach empty and removing the fluids that regurgitate back into the stomach. We say to our interns in the hospital at Rochester: "Take the stethoscope off your neck and carry a stomach tube around in place of it." We reduced the mortality in gall-stone and stomach cases 50 per cent. when we discovered that with the stomach tube we could remove these fluids and that by removing many cases that formerly terminated fatally went on to recovery. It can be pretty nearly put down as an axiom that when the surgeon sees the patient on the morning after the operation and notices a little green spot on the clothing, or if the patient is restless and uneasy, he should pass the stomach tube. There is nothing to which we can draw attention that will be of greater importance to us in getting results than the proper use of the stomach tube. Keep the stomach empty. Dr. Guerry's results are marvelously good and show the wonderful improvement which has come about within the last few years in the operative treatment of appendicitis.

DR. A. J. OCHSNER, Chicago: The last time we met in Atlantic City, after the appendicitis fight was over, I predicted that our friends, the enemy, would come over to our side before we met in Atlantic City again. The reason they have come over is this: The country doctor, with but a slight amount of training, but with the good sense of listening and doing exactly what we recommended, went home and carried out this plan of treatment. Afterward he found that his mortality was less than that of the greatest surgeons in the country. That is the reason why surgeons, internists and physicians in general now carry out the fundamental principles involved in that treatment. They consist primarily in absolute rest. I am very glad that Dr. Maury hinted at the secret of it to-day. He removes the cause of the poisoning, the cause of death from intestinal obstruction, by washing out the stomach and removing the septic material, and washing out the stomach again if necessary and never putting anything into the stomach until the danger is over. Never cause any return of peristalsis by giving a large enema, and never give cathartics or food to start up the peristalsis. In that way one will provide conditions such as Dr. Maury provides in his experimental work. In the meantime there has come to our aid a knowledge of the opsonins, of the sterilization of abscess cavities in the region of the appendix and of the pelvis, so that we have now, I believe, conditions which are perfectly plain. So long as the appendix still contains all the septic material it should be removed at once. After that, even if a surgeon has almost superhuman skill, like Morris, Mayo, Deaver and others, he should not remove the appendix until it is safe for the patient. This condition of safety can be accomplished in more than 98 per cent. of all cases of gangrenous or perforative appendicitis by gastric lavage, giving absolutely no nourishment of any kind and no cathartics by mouth, by giving no large enemata, by giving continuous normal salt solution by the drop method by rectum, and by giving exclusive rectal feeding as shown so well by Dr. Guerry.

DR. J. W. D. MAURY, New York: We transfused all these animals, using the simple glass tubes Dr. Brewer devised. They work very well; the blood does not clot in them for eight minutes, and one can exsanguinate the animal before that time.

The transfusion has been preceded by a moderate degree of bleeding. Then we have devised in our laboratory a method for the reconstruction of the common bile duct, which I think may be of interest to you. It was devised by one of the students, and consists in the application of the omentum to the side of the duodenum, along which a simple rubber tube has been placed which has a sponge attached to the end of it, which is passed into the duodenum through a small opening. It is a very ingenious device. Of course, the common bile duct is removed, and the tube takes its place. This tube is ultimately removed by peristaltic traction on the sponge. We have not had an opportunity to employ this technic long enough to see how permanent the good results will be. The fistula is not lined with fibrous tissue but with endothelial cells so that we hope its usefulness will be permanent. We have some cases which have been functioning perfectly for three months.

WORK-CURE

A REPORT OF FIVE YEARS' EXPERIENCE AT AN INSTITUTION DEVOTED TO THE THERAPEUTIC APPLICATION OF MANUAL WORK *

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It may be stated without fear of contradiction that suitable occupation of hand and mind is a very potent factor in the maintenance of physical, mental and moral health in the individual and in the community. Conversely, it has been recognized, though not too well emphasized, that the right kind of work, properly carried on, may be a valuable remedy in certain functional nervous diseases when unsuitable occupation has been the rule, when suitable occupation has been misused or when idleness, either from choice or necessity, has been the habit.

The normalizing effect of suitable manual work or even of well-chosen intellectual work on the neurasthenic or psychasthenic who has been idle or overworked and who has been for years the prey of mental and nervous complications, has only to be seen to be profoundly appreciated. In these cases in which the tired mind tortures itself with doubts and fears and spends the long days in useless self-analysis and in appreciation of mental and physical suffering, it is probable that progress toward health is often indefinitely delayed because no occupation is found or even attempted. But the difficulties in the way, first, of finding a suitable employment for the neurasthenic, and then of inducing the patient to exert himself in his own behalf are very great and have made progress along such lines quite slow. Unfortunately, it is also true that ill-advised work can be productive of positive harm and may result not only in deepening discouragement, but in the intensifying of all symptoms.

I have for a long time felt that adequate study of this problem could be made only in an institution devoted to that object. It is no more reasonable to suppose that such a complex remedial measure as work can be successfully used haphazard than that drugs and other agents should attain their fullest usefulness without the aid of laboratory or hospital experience.

Having these ideas rather clearly in mind, though without the cheering knowledge of similar work having been done elsewhere, I established, some five years ago, a small workshop for the making of hand-woven fabrics in cotton, wool and linen. The venture was looked on as a strange one for a busy general practitioner, and, indeed, the growing industry has been a serious financial

burden and a great consumer of time. But the lessons the shop has taught and the ease with which it has made possible the management of an increasing number of neurasthenic patients have in every way justified the experiment.

The work-cure has proved to be an excellent background and basis for medical treatment of the usual sort and for psychotherapeutic measures of one kind or another. It has also, in a surprising number of neurotic cases, proved almost the only remedy needed to bring about satisfactory improvement.

In pursuance of this industrial idea at Marblehead a number of the artistic crafts have gradually been introduced. These crafts are chosen because of their almost universal appeal, because of their essential dignity and because of the possibilities of very gradual acquirement. The crafts are chosen also because proficiency along such lines is a thing which may well be valued by any one, whatever the education or position in life may be.

From the first, the patient is taught to economize strength—to do deliberately and without undue excitement what simple manual work may be deemed advisable. He is shown, for instance, that he can saw through a piece of wood without grasping the saw with a crushing grip. The simplest mechanical acts are often at first chosen, as they give in themselves the least opportunity for mental and physical fatigue. These mechanical acts are repeated, with frequent intervals of rest, until they are accomplished normally and without fatigue. Gradually the difficulties and requirements of the work are increased, the essential point being the economy of nervous energy and the maintenance of a simple and direct mental attitude.

If the work has no interest to the patient he is asked to do it just the same and he is encouraged to expect results in the shape of better physical strength at least. There is never any pushing or urging, but always a plain statement of facts. "Do this, and you will in the end benefit by it, although at present it may seem to make you worse." The patients, as a rule, enjoy the novelty of the treatment and forget for the time something of their worry and suffering.

It is not hard to believe that after a certain amount of such mechanical education the mental processes take the cue, so to speak, and the patient finds himself thinking as well as acting in a simpler, more methodical way. It has been found by experience that if progress is made gradual enough the occupation may be pursued with astonishing benefit even in cases in which fatigue and pain would seem to prohibit any sort of activity.

The idea that manual work is wholesome and developmental, and that it may pave the way for successful medical treatment, or that it may be in itself a curative agent, is, of course, not new. But the systematic use of manual work for therapeutic purposes in an institution devoted to this object is believed to be decidedly new, if not heretofore untried in this country.¹

It has seemed from the first that, to be most successful, the workshop should be pretty well divorced from

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1. It seems that some such plan as this has been in operation in a public institution in Germany since 1899, in which year the first patient was admitted to the "Haus Schönow" under Dr. Lähr. At about this time also Grohmann in Zurich instituted a similar work, which is still in successful operation. Mention should be made of the excellent work of Dr. Blumer at the Butler Hospital in Providence and in one of the state asylums in New York when his efforts in the direction of the adequate employment of the insane were among the earliest in this country. Dr. J. J. Putnam at the Massachusetts General Hospital has within the past few years been making successful application of industrial therapeutics, as has also Dr. Fuller at the Adams Nervine Asylum. Mention should also be made of the work of Dr. Brown in California. Doubtless a good many individuals and many institutions not known to me are making daily use of similar methods of treatment.

the sanatorium; consequently the attempt has been made to bring about this condition. It may be said that the shops at Marblehead represent primarily a practical industrial plant. The patients are apprentices and pupils; they are, of course, especially provided for in the way of opportunities for rest and in the matter of ordinary medical treatment, but no attempt is made to carry out the elaborate treatment, hydrotherapeutic, electric, etc., of the sanatorium. If the patient needs these things he should stay at the sanatorium until he has received their full benefit.

If we are to restore the patient to the fullest usefulness, he must finally give up these artificial aids, and it has seemed to me that they had better be given up, in the main, when the work is begun. Perhaps this is a mistaken idea and it may prove that industrial treatment may be carried on with success at the sanatoriums. The danger, theoretically at least, is that in the sanatoriums the work will too often be looked on as a pastime, that it will be too apt to occupy a secondary place and, therefore, to fail of its full value to the individual.

A division of the twenty-four hours into changeable periods of work, rest and recreation, plenty of air, wholesome food, wise suggestions and such medical treatment as may be indicated—these simple elements, together with a pretty complete detachment from all other obligations in life, represent in brief the industrial system of treatment.

This plan of treatment must exclude, for the time being, patients who are in need of constant care and nursing; but, owing to its great flexibility, it is available in some form in the management, at one stage or another, of a wide range of affections in which there exists a weakening or perversion of the functioning of mind or body.

If these premises are true, and the evidence is that they are, it should be of interest to the profession to know that such an industrial plant can be started and maintained by a general practitioner without initial capital and with very little outside assistance. The principal aid which the institution has received was in 1906, when I received from the Proctor fund, which is in the keeping of Harvard University, a grant of \$1,000 "to assist in the study of the treatment of neurasthenia by progressive and graded manual occupation." Last year a friend of the institution erected, at an expense of about \$600, an addition to one of the buildings. Other gifts amounting to \$300 have been received from time to time from various sources and applied to the work. Although the plan has turned out to be more of a charity than its founder hoped, it has treated, in the main, people who are able to pay something. I personally have made no attempt to provide food and lodgings; but use has been made of a small hotel in the immediate neighborhood. The work has been conducted, therefore, under somewhat unfavorable conditions, with little or no nursing care and with living conditions such as are ordinarily considered suitable for well people and not for invalids.

The crafts employed at Marblehead have been hand-weaving, wood-carving, metal-work and pottery. They are named in the order of their clinical or therapeutic usefulness. The weaving has proved of unexpected value in that it provides a lively and growing interest with immediate and tangible results and from the fact that, as a general exercise, the old-fashioned hand-loom is a success. These great looms require simple but strong and effective motion of arms and legs simultaneously.

Another advantage is that the coarse-textured woven fabrics do not require too close a use of the eyes.

Wood-carving affords excellent use for hands, eyes and muscles. The wood-work is particularly useful to beginners, as it gives opportunity for broad free arm movements of especial service as a balance to the finer, closer work which taxes the patience and endurance.

The metal-work is perhaps the least useful from the therapeutic point of view, and yet in certain cases it is of especial value. It has against it the facts that it is slow, requires very accurate fitting and measurements and dexterous handling of special tools. In its favor are the moral support and satisfaction which comes from having mastered a hard, intractable material. It is true, also, that some of the processes are relatively simple—notably that of polishing. Another good feature of this craft, particularly for pupils well on the way to recovery, is to be found in the hammering. The interest in the work is often so great that the noise and shock of the hammering pass unnoticed, thus accustoming the patient to harsh sounds—a not unimportant part of the industrial plan.

The pottery industry, although most of this work is done by the craftsmen rather than by the pupils, has developed very rapidly. The potter, who came directly from the State School of Pottery at Alfred, N. Y., proved to be a man of unusual ability. This young man with an able corps of designers and assistants has in a few years developed a ware which now ranks very high among the best ceramic products of this country.

It is interesting and suggestive to note that six out of the ten people now employed in teaching the crafts or as assistants came to these shops originally because of some physical or nervous handicap, but are now performing in full or nearly full capacity the exacting work of their positions.

I approach the matter of classification of cases and tabulation of results with a good deal of diffidence—not that I am ashamed of the results, but because it is so easy to overestimate or underestimate the results of this kind of treatment and because classification of the functional nervous conditions is still very unsatisfactory. During these first years of the institution most of the available energy and money has been devoted to the improvement of the industrial plant. The sanatorium possibilities have been sadly neglected and no attempt has been made to attract patients otherwise than by the excellence of the shops themselves. The figures are more interesting, however, on that account, for they suggest much better results with a constantly improving equipment. During the five years exactly 100 patients have been treated—9 males and 91 females. The accompanying table gives, as nearly as can be estimated, the results of treatment.

RESULTS OF WORK-CURE

Name of Disease.	Number Treated.	Improved.	Much Improved.	No Relief.
Hysteria	18	15	1	2
Insanity *	5	2	2	1
Neurasthenia severe	12	7	4	1
Neurasthenia mild	20	12	8	0
Neuroses	17	8	5	4
Psychoses or fixed idea.....	8	1	3	4
Unclassified	20	14	4	2
Totals	100	59	27	14

* It is not intended to treat at Marblehead any case of insanity. These cases were accepted in the early days of the institution.

Among these cases there were three cases of chronic appendix inflammation, subsequently relieved by operations. There were fourteen cases of defective vision wholly or partially relieved by glasses.

It has been somewhat difficult to keep track of the patients, but relapses have been very rare—relapse, that is, to conditions as bad as or worse than those for which relief was originally sought. Not counting those who have remained as teachers and assistants, the average stay has been three months. Ten patients have returned one or two times for continuance of treatment or instruction. As far as can be ascertained, about 25 per cent. of the patients have in some measure kept up their work and their interest in the work after leaving the shops. In a number of cases outfits of looms and accessory sets of carving tools, etc., have been furnished to pupils who wished to continue the work.

It should be said that the shops have to some extent been used as a school of applied art by persons who are not ill at all, but who wish to study one or more of these ancient crafts. Incidentally, too, there have been pupils who came as students and not as patients who found unexpected relief from cares and troubles in the atmosphere of quiet work.

The shops have already taken steps toward the establishment of a training-school where young women or nurses who wish to become qualified as teachers of these crafts may obtain the necessary training. It is hoped that these young women may extend the usefulness of the shops by acting as private instructors in the homes of patients or by teaching at other institutions.

It must not be inferred that progress has been altogether easy. On the contrary, as has been stated, the school has represented a serious financial burden. Mention should be made here of the fact that several of the craftsmen and teachers, appreciating the humanitarian element of the work and in view of possible future financial success, have been willing to work for a very little money—practically their living expenses—and in one case without any reimbursement, thus making possible the continuance of the institution.

The plant is very nearly self-supporting now, largely from the sale of its products, which are of excellent quality, thanks to the intelligence and constant activity of the skilled designers and craftsmen, to whom too much credit cannot be given.

I have found that the ideas embodied in this work appeal, as a rule, not only to the profession, but to people generally, and, finally, to the patients themselves, who rarely object to the life and who have often, indeed, found in it the elements of happiness and success.

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PRINCIPLES UNDERLYING SURGERY OF THE SPLEEN

WITH A REPORT OF TEN SPLENECTOMIES *

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Our knowledge of the function of the spleen has been so vague, and our ability accurately to determine its physical proportions so unreliable, that it has been impossible to recognize diseased conditions until they reached a stage so advanced that splenectomy became a necessary consequence. Therefore, surgery of the spleen has been destructive in character. Recent investigations lead to the speculation that many of the anemias and associated blood states may ultimately be best treated

by operative procedures directed to the spleen and other blood-forming organs.

In its ontogeny the spleen probably goes back to a time before the development of the cerebrospinal nervous system. This is indicated by the fact that its only known nerve supply consists of filaments derived from the splanchnic sympathetic to the capsule, stimulation of which causes contraction. It is an organ of internal secretion controlled by chemical stimulation through the blood stream, in many respects resembling the liver. We may surmise that this form of stimulation has been quite adequate for function, otherwise the spleen would be more closely associated with the sympathetic ganglia, as are the adrenals and pituitary body. The internal secretion of the adrenals and pituitary produce their effect not only by chemical stimulation through the blood, but also by direct action on the sympathetic ganglia which enables a very small amount of secretion to produce widespread results. The sympathetic nervous system can be compared to a piano, the internal secretions being the fingers of the player, or to an internal telephone exchange within a building; and it enables small organs with scanty secretion, like the parathyroids, to work in harmony with other organs of internal secretion.

Evidently the internal secretion of the spleen is not important, as splenectomy does not produce serious results, the associated organs taking up the function.

A study of the spleen leads to the conclusion that it possesses three distinct functions: First, it takes part in blood formation, in which it is associated with the bone marrow, lymphoid and adenoid structures of the body. Second, it is a destroyer of worn-out red blood cells. Third, it acts as a filter of micro-organisms which may be contained in the blood and which are passed thence to the liver, probably for complete destruction and also as an aid to the liver in carrying on certain functions in relation to the metabolism of the food.

The fetal blood is derived from the spleen, liver, bone marrow, lymphoid and adenoid structures of the body. The liver loses this function some time before birth. In the adult the red cells are largely formed in the bone marrow, and the white cells in the lymphoid and adenoid tissues, including the spleen. In health the spleen loses its power to develop the red blood corpuscles and retains that of white cell production only to a limited degree, its chief function being to destroy worn-out red blood corpuscles. The ancestral blood corpuscle, from which both red and white have their origin, is probably the mesenchyme cell, a form of lymphocyte which appears first in the fetal blood. In leukemia there is a reversion to the ancestral lymphocyte or fetal type. In the grave anemias there is a tendency to reversion to primitive red blood cells, showing granular corpuscles of various sizes and shapes.

The spleen receives its blood supply from the celiac axis, identical in origin with the blood supply of those important derivatives of the foregut—the stomach, pancreas and liver. It does not, however, send its blood directly back into the general circulation, but the splenic vein joins the superior mesenteric and gastric veins to form the portal system.

It would appear that the liver, among other functions, neutralizes toxins and kills bacteria which may be picked up by the portal radicals from the digestive tract. Perhaps the spleen with its huge blood supply acts like a large lymphatic gland performing some analogous function for the general circulation; but that its blood must be still further changed by passage through the liver

* Read in the Section on Surgery of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

before entering the general vascular system is shown by the method of venous return. This association of the liver and spleen is shown in the enlarged spleen so often seen in cirrhosis of the liver, and apparently in such cases without especial effect on the constituents of the blood, and also in the late stage of splenic anemia (Banti's disease) is often associated with secondary cirrhosis of the liver.

The first evidence of a spleen is a collection of mesenchyme cells in the posterior mesogastrium close to the developing pancreas. Its growth is fairly uniform, but there is considerable normal variation in size. It is the largest of the ductless glands, being five by three inches in diameter, weighs about 200 gm., and fits into the curve of the diaphragm behind the ninth, tenth and eleventh ribs, where it is molded to the fundus of the stomach. It is completely invested by peritoneum and is held in place by two folds of this membrane, the gastrosplenic omentum and the lienorenal ligament, both of which are attached about the hilum.

The blood vessels in the spleen travel in the trabecular framework to the pulp and Malpighian corpuscles, and quickly lose all but their endothelial coat. The scanty lymphatics are confined to the capsule. The trabecular framework contains much non-striated muscular tissue, which permits considerable rhythmic change in size during the digestive period.

Its protected situation, covered, as it is, by the lung and overlaid by the stomach and colon, renders it exceedingly difficult to ascertain moderate changes in size. Our ability accurately to map out a moderately enlarged spleen by percussion is open to question. I have examined a number of spleens manually during operation for other causes, and have been surprised at the inaccuracy of the ordinary methods of physical diagnosis made before operation. Comparatively few abnormal spleens are really recognized as such until the splenic border can be palpated below the free margin of the ribs.

Heretofore we have been unable to diagnose with any degree of exactness, until a late stage, the actual physical relations of the spleen to the disease with which it is either directly or indirectly associated. Therefore, our only surgical recourse has been splenectomy. It is altogether probable that certain diseases of the blood are due to an excess or perversion of splenic function, which could be controlled by operative diminution of its blood supply through ligation of an arterial division, or, by partial splenectomy, just as the thyroid gland is treated in Graves' disease.

I believe that surgeons can do much to establish a better understanding of the relation of the spleen to the anemias by routine examination of this organ during abdominal operations where an altered blood state exists.

Splenic enlargements, other than tumors, can be grouped in three general classes:

First, leukemias, in which the spleen pulp becomes converted into tissue resembling bone marrow, and in which the spleen, in connection with all the blood-forming organs, rapidly produces white blood corpuscles of the ancestral type, much as epithelial cells run riot in cancer—a probable reversion to the fetal form of blood.

Second, splenic anemia, the type in which the enlargement of the spleen is accompanied by a diminution of and change in character of the red blood corpuscles—apparently an excess of the adult function of the spleen, producing an unnecessary destruction of the red corpuscles.

Third, splenomegalia, an enlargement of the spleen of unknown causation, without marked blood changes or any apparent serious interference with the health other than mechanical. This class is one of convenience only and is closely related to the splenic anemias.

In addition to these three classes, two conservative groups of enlargement of the spleen can be recognized: First, the compensatory splenic hypertrophy which accompanies cirrhosis of the liver, and, second, enlargements which are the result of infectious diseases, i. e.; tuberculosis, typhoid, syphilis and malaria (ague cake).

The sheltered situation of the spleen renders approach for purposes of operation exceedingly difficult unless the organ is more or less movable, which happens in a considerable percentage of cases.

We have usually made an incision through the left semilunar line and, if necessary, carried the upper end along the costal margin to the ensiform cartilage. Willy Meyer has added greatly to our means of approach by mobilization of the overlying chest wall. "The seventh, eighth, ninth and tenth costal cartilages are divided with the knife immediately in front of the ribs, also the union of three at the sternum." As yet, however, we have not found the Meyer procedure necessary. In some cases a left transverse incision joining the longitudinal will be found convenient.

In advanced disease adhesions will often be encountered, especially to the diaphragm, the separation of which will occasionally be difficult until after the splenic pedicle has been secured.

The most important step in the operation, if the vessels are fairly sound, is to grasp the vascular pedicle temporarily in rubber-covered elastic clamps. This must be done with great care, as the splenic veins are very delicate and tear readily. To grasp securely the pedicle of a large spleen the organ should, if possible, be "turned turtle" or at least sufficiently so to enable the hand to grasp the splenic vessels. With the fingers and blunt dissection a passage way is made around the pedicle and the elastic clamp applied and tightened down sufficiently to control the circulation until the spleen can be entirely separated from its attachments and delivered outside the wound. If splenectomy is the object of the operation, the pedicle can be secured at any time after the application of the elastic forceps, which are applied as close to the root as possible so as to leave ample space distal to the forceps for ligation.

If partial resection is to be done, temporary compression of the pedicle seems to be harmless unless there are gross vessel wall changes, and after the application of the clamp the desired amount can be resected and the hemorrhage controlled by buttonhole catgut suturing with a round needle, in a manner similar to that of resection of the liver.

It has been shown experimentally that reduction of the arterial supply by ligation results in atrophy of the spleen, and that as long as the veins are left intact, necrosis does not occur. If the splenic artery divides in the hilum, ligation of branches would appear to be an active competitor of partial splenectomy. We have not found the marked alterations in the walls of the blood vessels which have been shown to be often present at postmortem and which probably represent a terminal condition.

Our experience in surgery of the spleen has been limited to thirteen cases, three of which were conservative operations. One case was a gunshot injury in which hemorrhage from the lacerated spleen was readily con-

trolled by buttonhole catgut suturing and gauze packing. In the second case, a movable spleen with severe attacks of pain from torsion of the pedicle was cured by fixation by means of suture and gauze packing. The third operation consisted of evacuation and drainage of a typhoid splenic abscess four months after the initial attack of typhoid fever.

Ten splenectomies were performed with nine recoveries. One case was a huge lymphosarcoma. The patient is alive and well now, over three and a half years after operation. The second case was one of tuberculosis of the spleen with primary recovery; present condition unknown. Four cases were splenic anemia; all of the patients recovered and were either entirely cured of their anemia or were greatly improved. Two cases were Banti's disease; one patient recovered and one died. Two cases were splenomegalias, that is, enlarged spleens of unknown origin. Both patients recovered.

Subsequent to four of the splenectomies for splenic anemia the patients complained of pain in the long bones at intervals for several months.

I would call the attention of those especially interested in splenectomy to the very able papers on the subject by Dr. J. Collins Warren¹ and Dr. George Ben Johnson.²

A brief history of the ten splenectomies has been compiled by Dr. Donald Guthrie, and is herewith appended.

CASE 1 (617 G).—Miss B., aged 16, for three months had had attacks of rather sudden pain beginning in the back and referred around the left costal arch, severe at times, usually lasting a half hour to two hours; no nausea or vomiting; pain not attributed to food; no loss of weight.

Examination.—Anemic young girl; heart and lungs negative; stomach large and splashy; tumor in left hypochondrium extending downward and forward to midline; palpation showed it to be spleen. Pelvis negative, urine contained albumin and casts. Blood: Hemoglobin, 75 per cent.; reds, 4,000,000; whites, 4,000. Diagnosis, splenic anemia.

Operation.—April 7, 1904; splenectomy. Pathologic condition, tuberculosis.

Present condition unknown.

CASE 2 (3539 P).—Mrs. M., aged 41, married ten years, with two children, youngest aged 4, no miscarriages, menstruation regular, had had from 8 to 10 years of age repeated attacks of malaria; none for fifteen years. Health was perfect until four years before coming under observation. After birth of last child patient noticed enlargement in region of spleen; it was not noticed again until seven months before examination. The past four to six months there had been some dyspnea with anemia, beginning at that time.

Examination.—Fairly well-nourished woman, anemic, heart and lungs negative, huge tumor extending from fifth rib down across abdomen one inch past midline into pelvis, notched. Liver extended one inch below costal margin, pelvis negative. Blood: Hemoglobin, 50 per cent.; reds, 4,504,000; whites, 4,600. Urine negative.

Operation.—Nov. 14, 1905. Splenectomy: Adhesions to tail of pancreas, a small piece of which was removed. Gastro-hepatic ligaments and adhesions to diaphragm ligated. Some free ascitic fluid. Recovery good. Pathologic report, lymphosarcoma of spleen, weighing 2,375 gm. (8.67 pounds).

More than three years later the patient is enjoying splendid health; has gained 40 pounds in weight.

CASE 3 (8869 G).—Miss S., aged 27, had known of enlargement in left abdomen for fifteen years. She had frequent attacks of digestive disturbance with anemia; two years before coming under observation she had a first attack, lasting five days, of acute pain in the upper abdomen, followed by edema; two weeks later a similar attack; then she was perfectly well for nine months. The following summer she had acute pain

in left hypochondrium with much soreness in region of spleen; was well until summer before operation, when she became weak and much depressed. Three months before operation she had an attack of violent pain through the back, arms and left side of the abdomen lasting four days, followed by general edema; was ill for seven weeks.

Examination.—Jan. 6, 1907. Anemic young woman. Slight icterus; edema present about ankles and face, heart and lungs negative, huge tumor extending from under left costal arch downward and forward to the right, past the midline, filling the whole abdomen, and into the pelvis. Tumor hard and notched. Liver enlarged three inches below costal arch, pelvis negative, urine negative. Blood: Hemoglobin, 80 per cent.; reds, 5,200,000; whites, 4,800. Diagnosis, Banti's disease.

Operation.—Jan. 7, 1907. Splenectomy. Spleen adherent to diaphragm and stomach. Some adhesions to omentum and abdominal walls. Large white cheesy spots on surface. Accessory spleen entirely separate at the base of the omentum, size of pullet's egg, nearly round and very movable; not removed. Hypertrophic cirrhosis of liver with perihepatic adhesions. Ascites, several quarts of fluid. Omentum placed in adherent area to secure adhesions. Patient died twelve hours later from shock and hemorrhage. Pathologic report, chronic hyperplasia, spleen weighing 11 pounds, 12 inches long, 8 inches wide, 3 inches thick.

CASE 4 (1074 P).—Mrs. McD., aged 27, had two children, youngest aged 3. Menstruation was normal; patient had had poor health for years; sick headaches every two to four weeks. For a year she had been weak, tired and unable to work. During this time she had a sharp pain at menstrual period radiating from the left costal arch to the clavicle. She had known for a year of splenic enlargement, which had grown slowly.

Examination.—Fairly well-nourished woman, pale; heart and lungs negative; spleen extended four inches beyond midline and filled the pelvis, hard and notched. Uterus retroverted; urine negative. Blood: Hemoglobin, 57 per cent.; reds, 5,388,000; whites, 3,000; polymorphonuclears, 42 per cent.; lymphocytes, 58 per cent. Diagnosis, splenomegaly.

Operation.—May 17, 1907. Splenectomy and extensive suturing of adhesions to diaphragm and under surface of liver to check oozing. Gauze drain through left loin. Recovery good. Pathologic report, chronic hyperplasia. Weight, 6.33 pounds.

Patient now enjoys excellent health.

CASE 5 (9315 A).—Miss T., aged 37, menstruation normal, eight months before coming under observation noticed enlargement and hardness in left side of abdomen under costal arch. Steady growth to present size. General health fair.

Examination.—Fairly well-nourished woman, pale; heart and lungs negative; large tumor extending from under left costal margin downward and forward into the pelvis a few inches above symphysis, sharp-edged and notched. Urine contained albumin, granular casts, a few leucocytes. Blood: Hemoglobin, 49 per cent.; reds, 4,100,000; whites, 4,600. Cystoscopic examination negative except that catheter met an obstruction in left ureter, probably due to pressure of tumor which was easily passed. Diagnosis, splenic anemia.

Operation.—May 11, 1908. Splenectomy, spleen 12 inches long, 8 inches wide, 3 inches thick. Peculiar mottled appearance. Pathologic report, chronic hyperplasia. Weight, 10¼ pounds.

Patient's health is now excellent; she has returned to work.

CASE 6 (A 11038).—Mrs. W., aged 39, had two children, youngest aged 15. Menstruation regular. Patient had been operated on elsewhere two years ago, left nephrorrhaphy. For ten years she had had a dull aching pain and a sense of pulling in the left lumbar region; for years severe migraine attacks, requiring morphin and chloroform. There was much tenderness over abdomen and pain at left costal arch referred into the lumbar region. A tumor was to be felt in the region of the spleen and left kidney.

Examination.—Thin woman, pale; heart and lungs negative. Tender at left costal arch and in lumbar region; pelvis negative; urine negative; cystoscopic examination negative. Blood: Hemoglobin, 80 per cent.; reds, 4,000,000; whites, 14,000; polymorphonuclears, 56.6 per cent.; lymphocytes, 43 per cent.;

1. Warren, J. C.: Ann. Surg., 1901, xxxiii, 513-533.

2. Johnson, B.: Ann. Surg., 1908, xlviii, 50-65.

eosinophiles, 0.3 per cent.; basophiles, 0.1 per cent. Diagnosis, splenic anemia.

Operation.—Splenectomy. June 27, 1908. Pathologic report, chronic hyperplasia. Weight, 350 gm.

The patient's present health is good.

CASE 7 (A 10324).—Mrs. L., aged 49, had two children, youngest aged 12; no menstruation for two years. Nine months before coming under observation patient noticed tumor in the left abdomen which had grown gradually. Patient had become weak but lost little in weight; had some edema of feet at times; no urinary disturbance.

Examination.—Fairly well-nourished woman, pale; heart and lungs negative; large tumor in the region of the spleen, sharp-edged and hard. Cystoscopic examination negative. Pelvis negative. Blood: Hemoglobin, 70 per cent.; reds, 2,960,000; whites, 6,200. Polymorphonuclears, 93 per cent.; lymphocytes, 4 per cent.; eosinophiles, 3 per cent. Diagnosis, splenic anemia.

Operation.—July 2, 1908. Splenectomy, spleen filling whole of left of abdomen to median line, notched on posterior surface. Adherent to under surface of diaphragm, tail of pancreas, and to posterior wall of stomach. Removed with dif-

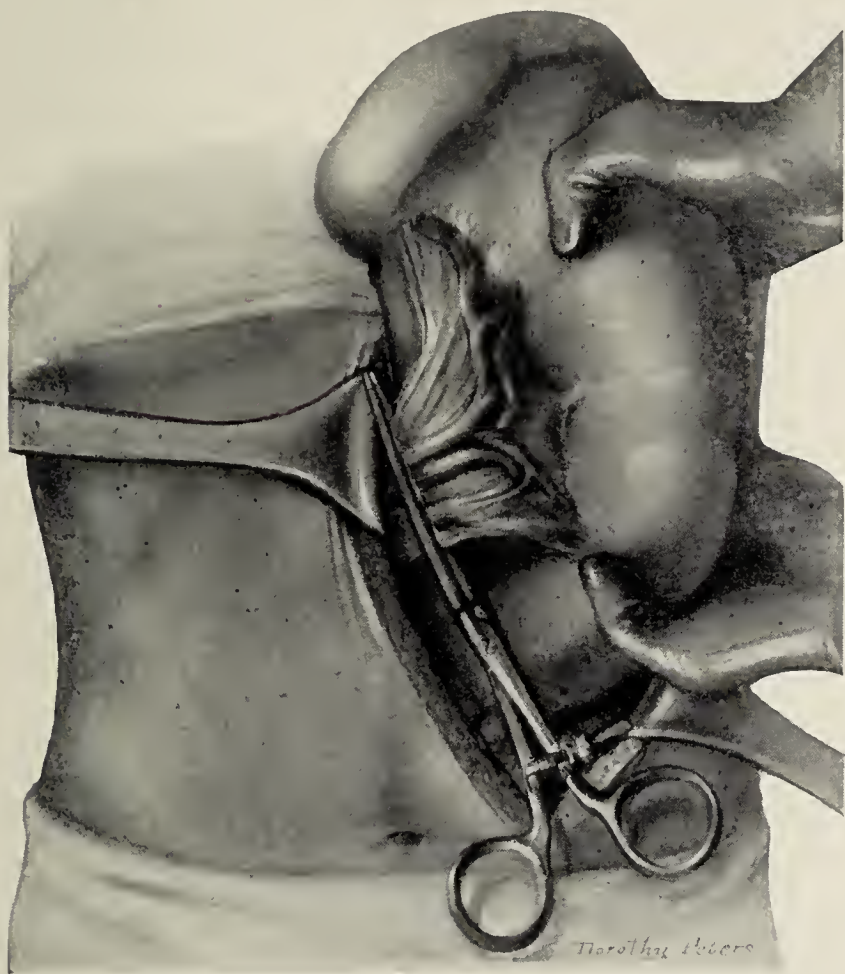


Fig. 1.—Temporary compression of the vascular pedicle of the spleen.

iculty. Pathologic report, chronic hyperplasia. Weight, 7 pounds.

After operation patient was very ill with pneumonia, but recovered. Three letters report steady improvement. She is now in good health.

CASE 8 (A 18026).—H. N., aged 26, had had pain in epigastrium and left costal arch, on and off for two years; weak tired feeling of late. He had lost 20 pounds in the last two years; no urinary disturbance.

Examination.—Poorly nourished young man; heart and lungs negative. Mass in left hypochondrium, moved downward to level of umbilicus on inspiration, rather soft, no sharp edges. Urine negative. Blood: Hemoglobin, 88 per cent.; reds, 4,100,000; whites, 10,200; polymorphonuclears, 65 per cent.; lymphocytes, 22.5 per cent.; eosinophiles, 2 per cent.; basophiles, 0.5 per cent.; transitional forms, 5 per cent. Diagnosis, splenomegalia, abdominal tumor from enlarged spleen.

Operation.—Dec. 30, 1908. Splenectomy, spleen extending a hand's breadth below the rib margin to midline. A number of accessory spleens in pedicle which were not removed. Re-

covery good. Pathologic report, chronic hyperplasia. Weight, 430 gm.

Patient is much improved and able to work.

CASE 9 (A 20818).—Dr. K., aged 30, had had malaria in 1898; was told that spleen was enlarged. Four years before coming under observation, after being in Cuba fifty-one days, he had amebic dysentery. Amebæ were found in stool only second summer, but patient had three summer attacks lasting several months each time. General health was apparently good except for pallor. Weight same, 150 pounds until April, 1908, when he vomited up some blood and passed large amount by bowel; in May, 1908, he had similar hemorrhage just after a meal. Case was diagnosed as ulcer of the stomach. Fasting treatment given. Two months later he had bloody stools. Blood count taken; hemoglobin, 50 per cent.; reds, 3,500,000; whites, 3,000. Splenic enlargement found, which had been noticed in 1898. In August, 1908, patient had severe hemorrhage by mouth and bowel; was confined to bed, very weak and anemic. In October, 1908, he was getting ready for gastro-enterostomy, when he had the most severe hemorrhage of all. Hemoglobin dropped to 15 per cent and reds to 1,000,000. In September, 1908, he had ascites, was tapped six times since; 4½ to 9 quarts obtained each time, last tapping one week before examination.

Examination.—Thin young man, very pale and sallow, heart and lungs negative. Weight, 140. Appetite good, bowels and urine in good condition. Tumor in left hypochondrium, extending from sixth rib down and forward to level of umbilicus, 1½ inches extent to midline. Tender, hard but not notched, liver small, extending from fourth to eighth rib; ascites marked; separation of recti. Blood: Hemoglobin, 47 per cent.; reds, 3,300,000; whites, 2,500. Small lymphocytes, 17.5; large, 7. Polymorphonuclears, 73; transitional forms, 5 per cent.; eosinophiles, 1.5; basophiles, 0.5. Diagnosis, Banti's disease.



Fig. 2.—Lower's forceps for compression of the pedicle of the spleen.

Operation.—Mar. 4, 1909. Splenectomy. Ascites. Liver cirrhotic. Pathologic report, chronic splenitis. Weight, 1180 gm. Patient was aspirated on tenth day; four quarts removed; fluid did not reaccumulate. Improvement in blood and weight good. Patient is gaining rapidly.

CASE 10 (A 22026).—Mrs. B., aged 53; mother died of spleen trouble; father of tuberculosis at 79. Patient had had no children, no miscarriage; menopause six years before coming under observation. At 20 years of age patient was in bed twelve weeks with articular rheumatism. For eight years, off and on, she had pain or ache in epigastric region, usually steady for a month, then relief for four to eighteen months or more, with perhaps two or three days' ease at a time, during period of attack. She said a little blood would come up in the mouth during spell, and ease would follow for a day, but there was no cough or vomit, no food distress, no loss of appetite and only a little loss of flesh in the past six months. She had had no bowel complaint since November, 1908. Ache in epigastrium had been steady. At Christmas time patient noticed a hardness in epigastric region, more to left.

Examination.—Well-nourished woman, pale, skin wrinkled and dry, heart and lungs negative. Tumor extended down and forward from sixth rib, left side to level of umbilicus, one inch inside midline. Tumor moved on respiration, notched and tender. No ascites found. Blood: Hemoglobin, 68 per cent.; whites, 2,500; reds, 3,600,000; small lymphocytes 23, large 3; polymorphonuclears, 72; transitional forms, 1; basophiles, 1. Urine, sp. gr. 1020, acid, trace of albumin, few hyaline and granular casts. Diagnosis, splenic anemia.

Operation.—April 13, 1909. Splenectomy. Pathologic report, chronic splenitis, typical sago appearance. Weight, 8 pounds.

Patient's present condition is good.

ABSTRACT OF DISCUSSION

DR. A. J. OCHSNER, Chicago: The field of spleen surgery is at present exceedingly circumscribed, for the reasons given by Dr. Mayo, and because we do not yet understand the full relation between enlargement of the spleen and anemia. Twenty years ago, in 1889, while the Italians were making use of the advancement in abdominal surgery and applying it to the removal of large spleens, which were so numerous in Italy, I had an opportunity of assisting my chief, at that time Dr. Charles T. Parkes, in the removal of a number of spleens. We soon learned that the spleen in which removal was desirable could not be removed with safety to the patient, and in the case of other spleens there was no occasion for removal. In our part of the country, these other spleens which became enlarged as the result of chronic malaria, were harmless unless the pedicle was twisted. I have since removed a number of spleens and have come to the conclusion that when a spleen is removed in a case in which there is not a splenic leukemia of advanced character, the operation is quite as safe as is the one for removal of the thyroid or of the uterus or any other simple operation, provided that the same systematic plan is followed. There should be no severe traction on the pedicle of the spleen or great manipulation of the veins, because they are exceedingly friable. After severing the pedicle below, care should be taken to protect the smaller veins which often enter the spleen from above. If one is careless, one will find that some of the large veins which pass through the accessory ligament are exceedingly troublesome, but when these things are looked after in patients not suffering from splenic leukemia, the operation is a safe one. I have had one of these patients go through a severe pneumonia afterward under the care of one of our best internists, who found no difference whatever in the course of the disease. If the leucocytosis is higher than 50,000, then one can count on a fatal hemorrhage after the splenectomy. My experience in fifteen or twenty cases is not sufficient to be of any value except as a guide. If there is leucocytosis accompanied by a rise in temperature, then, of course, there is no occasion for the operation, because one would no more operate in this chronic condition while there is an acute infectious condition present than for any other chronic surgical condition. Therefore, if the leucocytosis is the result of the leukemia, one must be guarded in the operation, and not fear hemorrhage from the large vessels at all, but hemorrhage from the small adhesions. The blood will continue to ooze out. Gauze may be sutured over the surface, and the blood will ooze out of the stitch holes. It will ooze out, no matter what one does in these cases of advanced splenic leukemia.

THE PROLIFERATING FORMS OF CUTANEOUS SYPHILIDS *

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When through the works of Schaudinn and Hoffman we have learned to know the germ of syphilis, and when we have found that to be a living spirillum belonging to the class of the protozoa, we can be satisfied that we have made a forward step in the intimate knowledge of syphilis and also of other diseases produced by kindred organisms. In a short article on elephantiasis¹ which was presented to the American Dermatological Association, I remarked that this condition of the penis and scrotum was often due to syphilis, and that all cases of elephantiasis are started by the presence of infectious germs or of parasites, which cause continuous irritations in the tissues and a stasis in the progress of the

lymph. Indeed, after the observation of Blaschko², who found the presence of spirochetes in the syphilitic tissues, in the tunics of the blood vessels, in their divisions, in the surrounding infiltration, in the coagulated lymph, in the lymph spaces and in the lymph vessels, it is not difficult to infer that the presence of the germ is the cause of the proliferation of the tissues.

Cornil and Ranvier³ had already outlined the idea that a prolonged irritation of the derma caused an hypertrophic dermatitis with formation of papillary productions of the skin. This tendency to formation of fibrous tissues in the skin is very marked in the syphilitic inflammations of the skin, which are considered as the exponent type of the formative dermatitis. In the old syphilitic papules the lesion consists only in the enlargement of the papillæ.

In all infectious inflammatory processes of the skin Unna⁴ finds that through the formation of thick epithelium the papillæ are irritated and proliferate. They are deformed, elongated and often subject to secondary decussation. In some cases of proliferating syphilitic lesions the same condition is found. In consequence of the irritating secretion of the mucous patches, of the presence of excretions, of neglect of cleanliness, the epithelium is macerated and causes irritation of the underlying papillæ, which start to proliferate. This condition is found in the secondary period when hypertrophic mucous patches are proliferating (Fig. 1).

In tertiary forms the proliferating papillæ have their origin from ulcerative forms and the epithelium has no relation to the irritation. This vegetating condition of the papillæ is often associated with and has close relation to elephantiasis. Indeed, the tendency of the syphilitic process to produce lymphatic stasis is well established. The edema indurativum of Sigmund, the *adème scléreuse* of Fournier, the edema induratum of Lang, are the result of a firm edema-like infiltration in the skin and subcutaneous tissue. Tschlenow,⁵ following the ideas of Pick, considered elephantiasis of the vulva as a result of syphilis. He referred to a woman with enormous elephantiasis of the labia, in whom the skin was covered with wart-like efflorescences extending to the vagina and the affection had begun with papillary proliferations.

Balzer and Deshayes⁶ found in a patient who had been syphilitic for thirty-three years, suffering with tuberculous vegetating syphilid of the thigh for ten years, an enormous edema of the penis and of the scrotum. When these luetic lesions healed up hypertrophic scars were formed. In the same man the tongue was covered with hypertrophic papillary growths. On those papillary growths specific treatment had very little influence.

From my experience I can state that vegetating papillomata in syphilis can occasionally develop in all periods of the disease. They may be found on an initial lesion, and also on other syphilitic products of the skin and mucous membranes. These vegetations, although harmless, are troublesome on account of their obstinacy and their tendency to recur. In my case, shown in Figure 1, the vegetating papillary growths had their

2. Blaschko, A.: Ueber Spirochætæ Befunde in syphilitisch erkrankten Gewebe. Berl. Klin., 1906, No. 13.

3. Cornil and Ranvier: Manuel d'histologie pathologique, Paris, 1876, p. 1204.

4. Unna, P. G.: Die Histopathologie der Hautkrankheiten, Berlin, 1894, p. 205.

5. Tschlenow, M.: Syphilis und Elephantiasis der Vulva, Med. Oboz., 1902, No. 11; ref. Arch. f. Derm. u. Syph., lxxvi, 299.

6. Balzer and Deshayes: Syphilides tertiaires avec éléphantiasis des organes génitaux et glossite hypertrophique, Ann. de dermat. et syph., 1906, p. 196; ref. Arch. f. Dermat. u. Syph., lxxxvi, 422.

* Read in the Section on Dermatology of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

1. Ravogli: Elephantiasis of Penis and Scrotum Due to Syphilis, Jour. Cutan. Dis., February, 1907, p. 61.

base on an eruption of mucous patches thickly crowded on the labia majora and minora, extending to the perianal region downward and to the clitoris, pubis and fossa erurogenitalis upward in the form of a triangle. Many of these formations were large and pedunculated. Infection in this woman dated back eighteen months.



Fig. 1.—Vegetating papillary growths on the labia majora and minora.

Vegetating forms of syphilis of this kind have their origin in papules, which occur on the skin and on the mucous membranes. In a young woman infected for five years I found two vegetations on the dorsum linguae.



Fig. 2.—Papillomatous growths and elephantiasis of the labia.

They were of the size of a grain of corn, oval, hard, thick, slightly reddish, of a shiny appearance. I had them scraped off, but after healing they are still somewhat perceptible. Allen⁷ referred to cases of vegetations

7. Allen, Charles W.: Syphilis of the Mucous Membranes, A System of Genito-Urinary Diseases (by P. A. Morrow), ii, 230

under the surface of the tongue, lips and soft palate in syphilitics. The surface of the elevated plaques spreads irregularly from unequal lengths of the papillae and forms papillomatous groups of cauliflower appearance.

In late syphilis papillomatous growths come together with a thickening of the tissues in an elephantiasis form. A mulatto woman aged 30 (Fig. 2), infected by her husband at their marriage twelve years ago, previously weak and anemic, is greatly run down in her general



Fig. 3.—Elephantiasis of the penis.

system, showing plainly the effects of the diathesis. No syphilitic symptoms are perceptible, except in her genitals. The labia are greatly enlarged, hard and thick. This was much plainer on the right one, which has reached the size of an orange covered with thick and hard papillary vegetations. Some vegetations have invaded the ostium vaginae, which is nearly occluded, and have extended to the perineum. No pain is connected with this condition beyond the discomfort due to their presence. The papillary growths are hard, elastic, and moistened with secretion of nauseous odor. Their color is rose-red, and in many points they are whiter than the normal skin.

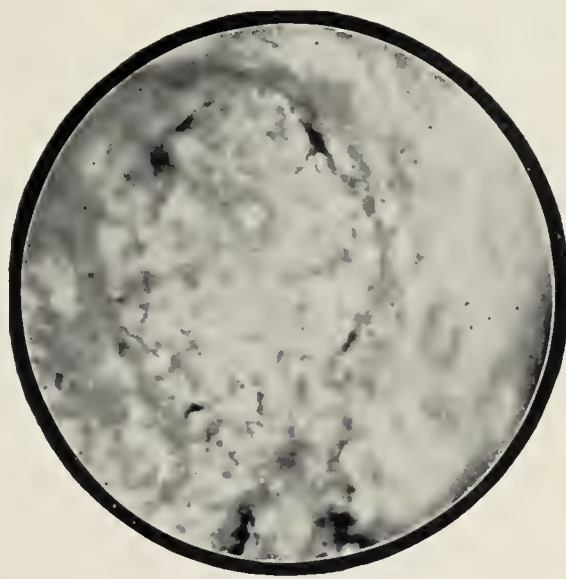


Fig. 4.—Hypertrophic papillae transversely cut, with spirochetes.

Figure 3 shows a colored man, aged 28, who was infected for six years. He had elephantiasis of the penis. The skin and the connective tissues of the organ were thickened, hard and enormously swollen. The glans penis was converted into a mass of vegetations which protruded from a swollen and edematous prepuce.

An ulceration from the radix of the penis extended to the whole right inguinal region. The ulcerated surface was covered with thick hard papillary proliferations of the size of a split pea or larger. They bled easily and overlapped the normal skin for over half an inch. The penis was amputated, the vegetations were scraped off and the surface burned with thermocautery. The wound of the penis healed up promptly, but the granulations came back in the same form.

angular or cubical shape, with one or two nuclei well stained by hematoxylin, and between them are found abundant mitoses. These cells keep getting still larger and stronger and make an enormous mass of epithelial layer of the granular portion. When they reach the papillae they appear fusiform, elongated and forming a columnar arrangement (Fig. 6.)

The papillae are enlarged, elongated and protruding like sprouts in every direction in this mass of epidermic

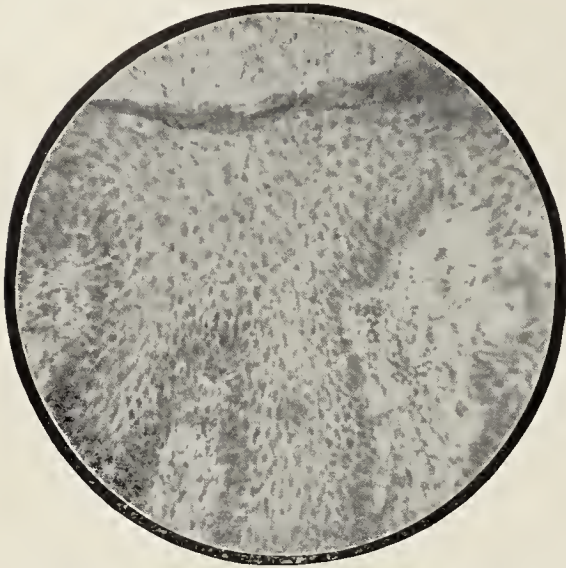


Fig. 5.—Epidermic layer of syphilitic proliferations.

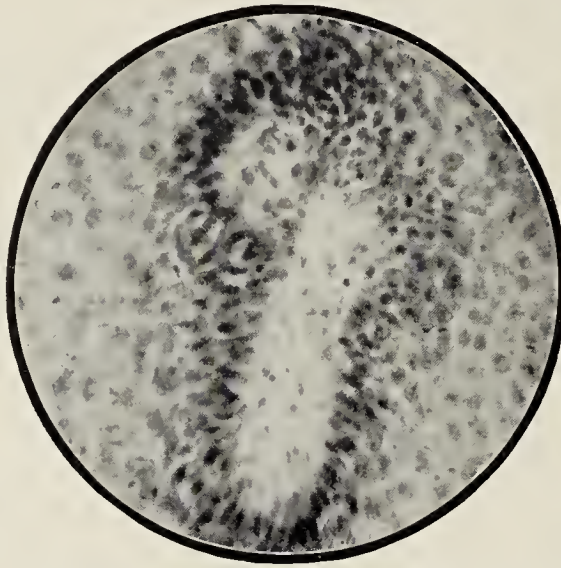


Fig. 6.—Epidermic cells disposed around the papillae.



Fig. 7.—Hypertrophic papillae in a mass of epidermic layer.

I have had occasion to see some forms of proliferating syphilis around the anus forming some obstacle to defecation in the form of a large cauliflower mass.

From each one of the cases I took a small part of the vegetations for biopsy. One little piece was treated with Levaditi stain for spirochetes. In the vegetating papules of secondary nature the spirochetes were found, as can be seen from the micrographs. In Figure 4 they are disposed around the enlarged papillae in the form of small spirilla. In the interpapillary tissues the spirochetes are disposed longitudinally following the disposition of the connective fibers. In the vegetations

cells. In Figure 7 they are made up with connective tissue fibers, and enlarged connective tissue corpuscles; in some places a strong layer of plasma cells can be seen. The tissue forming the papillae are infiltrated with white small cells. Figure 8 shows small inflammatory cells in enlarged connective tissues and an artery and a vein enlarged and filled with blood.

The papillary layer is greatly enlarged (Fig. 9) and infiltrated. The connective tissue fibers are hypertrophic and contain large blood vessels. It is very difficult to differentiate these specimens from those of tuberculosis verrucosa cutis.

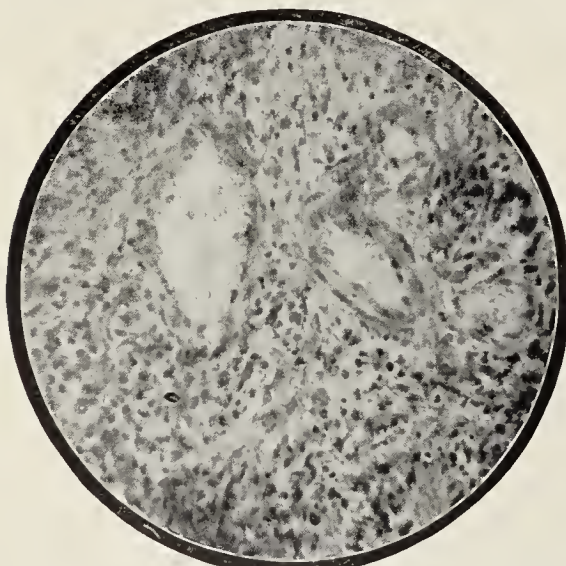


Fig. 8.—Enlarged papillae with enlarged vein and artery.



Fig. 9.—Papillary layer, infiltrated with hypertrophic papillae.

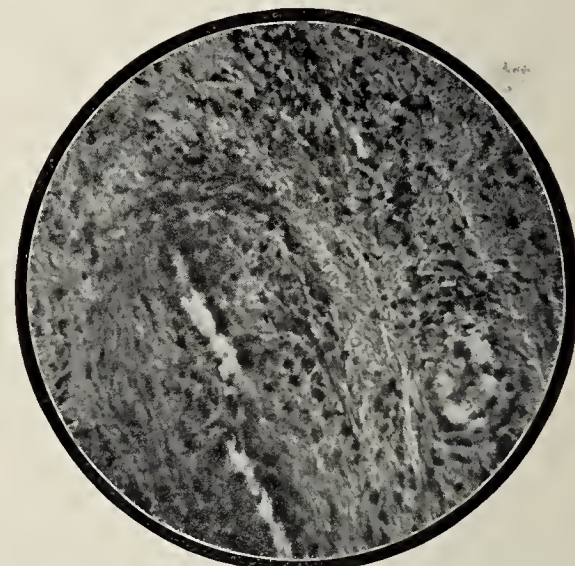


Fig. 10.—Proliferating syphilid; plasma cells; hypertrophy of collagenous tissues; no elastic fibers.

of tertiary period in Cases 2 and 3 I was not able to see the presence of spirochetes.

The specimens treated with ordinary stains, such as hematoxylin and eosin or picric acid and hematoxylin, show an enormous hypertrophy of the epidermis. The stratum corneum is missing and is replaced by a mass of juicy epithelial cells with small nuclei, which do not take the stain. In Figure 5 gradually the epidermic cells begin to show that they are much larger, of tri-

The same condition is found in the deep layers of the derma; only the connective tissue fibers are much enlarged and hypertrophic. Specimens stained with orcein and then treated with hydrochloric acid have failed to show elastic fibers. It seems that the infiltrating process, pressing the elastic fibers, causes their disappearance. The same loss of elastic fibers I have found in keloid, in the elephantiasis tissues, in tuberculous tissues—in short, in all tissues in which thick infil-

trating process has taken place. It seems that the delicate elastic fibers are soon damaged and disappear, leaving the collagenous tissues free to proliferate. (Fig. 10).

In all processes in which a constant irritation is maintained in the tissues of the papillæ proliferate and papillomatous vegetations are formed. The same tendency to proliferations is found in tuberculosis verrucosa, in several kinds of cancer, in blastomycotic lesions, in any process in which parasites, having taken abode in the tissues, mechanically with their presence and chemically with their toxins maintain a constant irritation. The presence of the treponema in the connective tissues of the derma maintains a constant irritation with a tendency to abundant exudation in the form of indurated edema. The collagenous tissues grow and form papillary growths. Indeed, as Virchow stated, every deviation of the nutrition of the tissues is the direct result of the exudation which enters between them. The tissues have the property of nutrition, and every cell has its own life, *vita propria*. This property of the cells of maintaining their own life was studied in the epithelium by Hertwig and Phol, and especially Legrand,⁸ who found that infiltration cells in the imbibed tissues can not remain for a long time, but either they must undergo degeneration or they must divide and proliferate. This condition is well perceived in case of poisonous elements in the skin. In fact, in tuberculosis entis there is seen a central area, the nearest to the poison, where the cells are degenerated, an intermediary one, where the cells are proliferating, and a peripheral one, more remote from the toxic influence, where normal cells are still found. In a general way it may be said that the deleterious action of the parasites on the tissues is produced by their poisonous secretions and also by their mechanical presence. In syphilis the treponema is not only a poison but a virus, which is reproduced in the organism, and keeps extending its deleterious action. It spreads in the system, remains latent for a while, and then finds new locations, where it produces its chronic lesions. The tissues affected with the treponema are infiltrated, and the infiltration undergoes necrosis and ulceration results, while the other cells are proliferating and form masses of papillary granulations. These connective elements are always produced by the existing tissues. The lack of elastic fibers is remarkable in the specimens, as is the immense growths of collagenous elements and of plasma cells. It seems that the elongation and enlargement of the vegetating papillæ represents a process of acanthosis. I have found the same deficiency of elastic fibers in the keloidal productions, and in this same process it seems that the lack of elastic fibers leaves the collagenous substance free to grow and to increase and form vegetations. The growth of epithelium occurring in these vegetating forms of syphilids takes the appearance of certain cancers, especially of the *ulcus rodens*. The epithelium is not capable of cornification and as a consequence undergoes a process of colliquation and a cicatrix can not be formed. Indeed in certain cases it is difficult to make the differential diagnosis of the proliferating syphilid from a papillomatous carcinoma. To the same condition can be referred the not infrequent occurrence of the carcinoma on syphilitic proliferating ulcers.

8. Legrand, L.: *Cancer et milieu intérieur*. Semaine méd., 1909, xx, ii.

In fact the proliferating masses of the tertiary syphilitic ulcers show no special characteristics, and they have common characters with the proliferations of other morbid processes. The imbibition of the tissues from the lymph stasis, the hypernutrition of the connective tissue corpuscles, cause their division and their proliferation. The elastic fibers which maintain the connective tissues in their limits are gradually lost, and the collagenous elements are left free to proliferate without any restraint.

That the spirochete is the starting element of the irritation there is no doubt, as is clearly shown in the secondary vegetating patches. In the tertiary vegetating masses spirochetes were not found. This, however, does not diminish the value of the assertion that the presence of micro-organisms is the origin of proliferating granulations. It is possible that at this period the spirochete cannot be stained, or very likely it is concealed in the deep tissues, causing stasis of the lymph, ulceration, and the tissues so irritated start to granulate, and continue to granulate, but are unable to obtain a good solid epidermic layer to stop their growth.

In reference to treatment, it is not difficult to bring the proliferating patches of the secondary period to recovery. Internal constitutional treatment with external application of calomel, or bathing with solutions of 1 to 500 of bichlorid of mercury, are capable of producing involution of the vegetating plaques. In some cases it is necessary to use strong caustics, as in the case shown in Figure 1 it was necessary to scrape the whole vegetating surface with the sharp curette.

In the case shown in Figure 2 a reconstituent diet with tonics, decoction of Zittmann,⁹ alternating with a saturated solution of iodid of potassium taken internally, has given satisfactory results. Local bathing with bichlorid solution 1 to 1,000 and a local application of emplastrum hydrargyri, have produced the involution of the granulations and a great diminution of the elephantiasic condition of the labium.

In the case represented by Figure 3 the penis was amputated and the proliferating surface was scraped off and burned with thermocautery. In spite of this treatment the proliferations recurred with annoying persistence. The applications of mercurial plasters irritated and did not produce any benefit. The application of resorcin in the form of a salve one drachm to one ounce of petroleum did some good. The cicatrix was obtained only after a few exposures to the x-ray. This produced a shrinking of the granulations, and the epithelium begun to be formed. The resulting cicatrix was somewhat bulky and of a keloidal appearance.

5 Garfield Place.

ABSTRACT OF DISCUSSION

DR. GEORGE PERNET, London, Eng.: I have long been of the opinion that these secondary vegetative proliferating conditions which are seen in syphilitic lesions, in tuberculosis, yaws and a variety of other conditions, are really due to staphylococcus infection. I have looked on them as epiphenomena, and really due to irritation within the derma. To

9. As this decoction is not official in the U. S. Pharmacopeia, and may not be familiar, the formula is here given as it appears in the National Standard Dispensatory:

Decoctum Zittmanni fortius: Take of sarsaparilla root, cut, 100 parts; digest in water 2,600 parts for 24 hours, and add, enclosed in a linen bag, powdered sugar and alum each 6 parts, calomel 4 parts, and cinnabar 1 part; then heat in a covered vessel placed in a steam-bath for 3 hours, stirring frequently, and near the end of the boiling add anise and fennel, bruised, each 4 parts, senna, cut, 24 parts and licorice root, cut, 12 parts. Express, strain, set aside for some time, and decant to obtain 2,500 parts of clear liquid; 2,500 gm. of this are to be divided into 8 parts.

accept this theory, one might have to reconstruct one's views, but that is the conclusion I have arrived at. In the treatment of these lesions, one of the best things I know of is the peroxid of hydrogen.

DR. A. RAVOGLI, Cincinnati: There is no question in my mind that the constant irritation is the cause of the proliferation of the connective tissues of the derma. It is possible, as Dr. Pernet has suggested, that the staphylococcus and the irritation from the different secretions will produce proliferations, but in the particular types that I have presented I am convinced that they are the result of the presence of the spirochetes and the mechanical irritation of the tissues in long-standing syphilitic processes. While any antiseptic, like peroxid of hydrogen, is of some value in the treatment of these lesions, their cure requires a remedy of more decided character, such as the *x*-ray or curettement, and also the actual cautery.

ANIMAL EXPERIMENTATION AND TUBERCULOSIS *

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ETIOLOGY

Everything that we know to-day of the etiology of tuberculosis, everything that has a direct bearing on the prevention and control of the disease, we owe to animal experimentation. Before the infectious nature of the tubercle became established by animal experimentation no advance was made in the knowledge of tuberculosis in any direction except in that of pathologic anatomy. From Sylvius,¹ who in 1695 first described tubercles and drew attention to their relation to pulmonary phthisis, up to the time of Klencke² in 1843, and even of Villemin³ in 1865, who were the first to demonstrate by inoculation experiments on animals the infectious nature of the tubercle—that is, in a period of 170 years—no advance was made in the etiology of the disease, and this long period was wholly occupied by studies of the pathologic anatomy of tubercle, scrofula, caseation, pulmonary tuberculosis, and discussions of their relation to each other and their classification. Knowledge of the exciting causes of these pathologic processes remained theoretical; they were principally attributed to hereditary tendencies, perverted humors, and various types of inflammation.

Klencke,² in 1843, was the first to demonstrate the infectious nature of "tubercle" by inoculating rabbits in the vein of the neck with "tubercle cells" and producing general miliary tuberculosis in these animals. Klencke, however, hardly realized the importance of his own discovery, and little attention was paid to his work until, in 1865, Villemin,³ by extensive and carefully controlled inoculation experiments on rabbits, confirmed Klencke's views and demonstrated beyond doubt the infectiousness of tubercle by reinoculation from animal to animal. He also obtained evidence of specificity, as control inoculations with other morbid material, such as cancer, pus, bits of pneumonic lung, etc., remained negative. He was as successful with material derived

from the *Perlsucht* disease of cattle as with human tubercle, and thus pointed out the identity of the tuberculous process in man and animals. From his experiments he reached the conclusion that the tubercle itself had nothing specific in its histology, and that the disease must be due to a germ. Scrofula he considered sometimes tuberculous and at others non-tuberculous, as he could not always produce the disease in his experimental animals with scrofulous products.

Animal experiments were first used as a means of diagnosis by Marcet,⁴ in 1867, who demonstrated the tuberculous nature of material from suspected cases of tuberculosis by producing with it generalized tuberculosis in guinea-pigs, and Edwin Klebs⁵ demonstrated by animal inoculations in 1868 that the sputum of tuberculous patients contained an infective element which was capable of producing the disease in guinea-pigs. Damsche,⁶ in 1882, used animal inoculations to make a diagnosis of urogenital tuberculosis.

While Klencke's and Villemin's results were accepted, the strife for many years continued over the interpretation of these results. Meanwhile, the positive proof as to the infectiousness of tuberculosis, obtained by subcutaneous inoculation in animals, was supplemented by evidence brought to light by inhalation and ingestion of tuberculous material. Schweninger,⁷ in 1866, at first failed to infect dogs by inhalations of phthisical sputum, but later—1886—he succeeded; and Lippl,⁸ in 1877, produced pulmonary tubercles in rabbits by insufflation of fluid sputum from man through a tracheal fistula. Tappeiner,⁹ in a series of experiments which lasted from 1877 to 1888, demonstrated beyond doubt the infectiousness of phthisical sputum by inhalation experiments, his results being confirmed also by Bertheau¹⁰ in 1880. Tappeiner, in 1880, had failed to infect rabbits by exposing them to the breath of coughing consumptives, and concluded that the infection must be conveyed, if at all, by dried sputum arising as dust, and not by the breath of the patient. The danger of this mode of infection received practical confirmation when his servant, whom he had warned to protect himself from inhaling the dust of the room in which the animals were confined, developed pulmonary tuberculosis and died of it. Giboux,¹¹ in 1882, however, succeeded in infecting rabbits by making consumptives cough in the boxes in which these animals were confined, and thus demonstrated, long before Flügge's classical experiments, the dangers of sprayed particles of sputum from phthisical patients.

Feeding experiments also added irrefutable evidence of the infectious nature of tuberculous material, as well as bringing many facts to support the hitherto unsuspected identity of the *Perlsucht* disease of cattle and human tubercle, by proving that both produced tuberculous disease in animals when taken into the stomach.

4. Marcet, William: The Inoculation of Animals as a Means of Diagnosis in Tuberculous Phthisis, Med.-chir. Tr., London, 1867, p. 437.

5. Klebs, E.: Ueber Entstehung der Tuberkulose und ihre Verbreitung im Körper, Virchows Arch. f. path. Anat., 1868, xlv.

6. Damsch: Die Impfbarkeit der Tuberkulose als diagnostisches Hilfsmittel bei Urogenitalerkrankungen, Deutsch. Arch. f. klin. Med., 1882, xxxi, 78 ff.

7. Schweninger, E.: Ueber künstlicher Erzeugung der Tuberkulose, Gesammelte Arbeiten von Dr. E. Schweninger, Berlin, 1886, i, 242.

8. Lippl: Amtl. Ber. d. 50. Versamml. deutsch. Naturforsch. u. Aerzte, 1877, p. 268.

9. Tappeiner: Amtl. Ber. d. 50. Versamml. deutsch. Naturforsch. u. Aerzte, 1877, p. 269. Wien. med. Presse, 1877, No. 43.

10. Bertheau, H.: Zur Lehre von der Inhalationstuberkulose, Deutsch. Arch. f. klin. Med., 1880, xxvi, 523.

11. Giboux: Inoculabilité de la tuberculose par la respiration des phthisiques, Compt. rend. 1882, xciv, 1391. Centralbl. f. d. med. Wissensch., 1882, p. 716.

* This article is one of a series issued in pamphlet form by the Council on Defense of Medical Research of the American Medical Association for circulation among the public. Six of these pamphlets are now ready, taking up the questions of ethics, diagnosis, cancer, vaccination, etc. See advertising page 8, in this issue.

1. Sylvius: Opera Med. Traj. ad Rhenum., 1695.

2. Klencke: Untersuchungen und Erfahrung im Gebiete der Anatomie, Physiologie, Mikrologie und wissenschaftlichen Medizin, Leipzig, 1843, i, Abschnitt 11; Mikropisch-pathologische Beobachtungen über die Natur des Kontagium, Paragraph 24. See also ii, Abschnitt 1, Par. 16.

3. Villemin, J. A.: Cause et nature de la tuberculose (first memoir), 1865. Etudes sur la tuberculose, 1868.

Chauveau,¹² in 1868, infected calves by feeding them bovine tuberculous masses, and Edwin Klebs,¹³ in the same year, infected guinea-pigs by feeding them with the sputum of consumptives, and in 1870 by the ingestion of bovine tuberculous material, which led him to the conclusion that the *Perlsucht* disease of cattle and human tuberculosis were caused by the same virus. Gerlach,¹⁴ in 1870, demonstrated the infectiousness of milk from tuberculous cows by ingestion experiments on animals, and concluded that such milk was dangerous for human beings. Chauveau,¹⁵ in 1873, fed asses, horses, cattle, and 160 calves, with various kinds of tuberculous material for six weeks, and not a single animal escaped infection.

HISTOLOGY

Animal experimentation has also greatly advanced our knowledge of the histology of tubercle, and during the period from 1862 to 1882 the animal experimentation method was applied to its study, and many experiments were made to prove and disprove the specificity of tubercle from the histologic standpoint. In 1873 Virchow¹⁶ considered giant cells a criterion of tuberculous tissue, and as late as 1880 had reached the erroneous conclusion that *Perlsucht* of cattle and human tuberculosis were not identical, and that bovine lesions should be classed with lymphosarcoma. The findings of pathologic anatomy, however, were reversed by animal experimentation when Heidenhain,¹⁷ in 1872, and Weiss,¹⁸ Rustizky¹⁹ and Zielanko,²⁰ in 1875 to 1878, proved by experiment on animals that giant cells could be produced experimentally with powdered glass, muscle, bone, etc., and Cohnheim and Salomonsen,²¹ in 1877, from evidence based on eye inoculations in rabbits, added irrefutable evidence to the view that *Perlsucht* and human tuberculosis are inoculable, and are caused by the same virus; and established transmissibility to susceptible animals as the true and only reliable criterion of the tuberculous nature of any pathologic lesions. By this criterion the unity of scrofulous and tuberculous disease in man and animals, so long opposed by Virchow, was established.

Thus animal experimentation demonstrated beyond doubt the infectiousness of tuberculous matter in man and cattle, the danger of tuberculous sputum and milk, and the identity of scrofulous disease and tuberculosis in man, as well as tuberculous disease in animals, by subcutaneous injection, by inhalation, and by ingestion experiments on animals, and established the value of animal inoculations in the diagnosis of suspected tuberculous disease (a method which gives evidence from which there is no appeal) before the birth of bacteriol-

ogy and before the tubercle bacillus was discovered by Koch.

Koch's²² epoch-marking paper on the etiology of tuberculosis, announcing his discovery of the tubercle bacillus as the direct cause of all tuberculous and scrofulous diseases in man and animals, appeared in 1882. The unbroken chain of evidence forged by Koch in his logical demonstration of proof was obtained entirely by carefully controlled animal experiments, and gave the world a discovery of incalculable importance to the human race. Koch confirmed Cohnheim's views as to infectiveness being the best criterion of tuberculous disease, and by animal experiments established the value of microscopic search for the bacillus in diagnosis, and the identity of many lesions hitherto looked on as due to different diseases on account of the marked differences they presented both clinically and in the pathologic findings. He proved that all contained the same bacillus, which, when cultivated outside of the body, produced by inoculation in animals typical tuberculous lesions. Miliary tuberculous, fibrous phthisis, caseous pneumonia, as well as scrofulous disease of glands, bones, and lupus of the skin, also *Perlsucht* in cattle, he showed to be due to the same cause—the tubercle bacillus.

PROPHYLAXIS, DIAGNOSIS AND THERAPY

In 1890 Koch²³ demonstrated by careful animal experiments the diagnostic value of tuberculin, pointed out its specific action on the course of the disease and on tuberculous lesions, and proposed the tuberculin test as a practical and efficient method of eradicating tuberculosis from infected herds, and tuberculin injections as a therapeutic measure in the treatment of the disease in man. The discovery of tuberculin was entirely based on animal experimentation, and the value of this agent in the control of cattle tuberculosis, as an aid to early diagnosis of tuberculosis in man, and as a therapeutic agent in the more chronic types of the disease, can hardly be overestimated.

Animal experimentation has been of incalculable value in the diagnosis of obscure cases, and in teaching where the infectious material lurks and how to formulate effective measures for the prevention of the disease. By animal experiments the infectiousness of various secretions from the tuberculous was established. Edwin Klebs,⁵ in 1868, proved the infectiousness of sputum; Gerlach,¹³ in 1870, the danger to man from the ingestion of the milk of tuberculous cows. Cornet's²⁴ exhaustive animal experiments demonstrated the danger of dried sputum, and indicated one of the principal modes of infection to be by inhalation of dried particles of expectorated material contained in dust from rooms inhabited by consumptives. Flugge,²⁵ by animal experiments, proved the danger of droplet infection in the immediate neighborhood of the consumptive by the spraying of small particles of saliva in sputum in violent coughing. Animal inoculations of the dust of infected rooms have also been used to test the efficiency of the measures to guard against room infection. This was done by Hance,²⁶ at the Adirondack Cottage Sanitarium in 1895. The entire system of hygienic care of the sputum and other discharges has been built up on the results of animal inoculations.

12. Chauveau, A.: De la transmission des maladies virulentes par l'ingestion des principes virulents dans les voies digestives, Gaz. de Paris, xlvii, 1868.

13. Klebs, E.: Beiträge zur Geschichte der Tuberkulose, Virchows Arch. f. path. Anat., 1868, xlv, 278. Zur Geschichte der Tuberkulose, Virchows Arch. f. path. Anat., 1870, xlix, 291.

14. Gerlach, A. C.: Ueber die Impffarkeit der Tuberkulose und der Perlsucht bei Tieren, sowie über die Uebertragbarkeit der letzteren durch Fütterung, Virchows Arch. f. path. Anat., 1870, li, 297.

15. Chauveau, M.: Rec. de méd. vét., 1872, 1873. Cited by John, A.: Die Geschichte der Tuberkulose, Leipzig, 1883, p. 30.

16. Virchow, R.: Ueber die Perlsucht der Haustiere und deren Uebertragung durch die Nahrung, Berl. klin. Wehnsehr., 1880, Nos. 14 and 15. Die Uebertragbarkeit der Perlsucht durch die Nahrung, Virchows Arch. f. path. Anat., 1880, lxxxii, 550.

17. Heidenhain: Ueber Verfettung fremder Körper, etc., Inaug. Diss., Breslau, 1872.

18. Weiss: Ueber der Bildung und Bedeutung der Riesenzellen, etc., Virchows Arch. f. path. Anat., lxxviii, 67.

19. Rustizky, J. von: Untersuchungen über Knochenresorption und Riesenzellen, Virchows Arch. f. path. Anat., lix, 218.

20. Zielanko: Arch. f. mikr. Anat., cxi, No. 3, cited by Ziegler: Die Herkunft der Tuberkel-elemente, 1875.

21. Cohnheim and Salomonsen: Sitzungsber. d. schles. Gesellsch. f. vaterl. Kultur, July 13, 1877.

22. Koch, R.: Die Aetiologie die Tuberkulose, Berl. klin. Wehnsehr., 1882, No. 15.

23. Koch, R.: Deutsch. med. Wehnsehr., Nov. 13, 1890, No. 46a; Oct. 22, 1891, No. 43.

24. Cornet, G.: Tuberkulose, Leipzig, 1890.

25. Flugge, G.: Ztschr. f. Hyg. u. Infektionskr., 1899, xxx, No. 1.

26. Hance, I. H.: Med. Rec., Dec. 28, 1895; Feb. 13, 1897.

Not only have animal experiments been used in demonstrating where the infectious material lurks, but, since the discovery of the tubercle bacillus, the same method has taught us the various channels by which the bacillus gains access to his host, and all that we already know of the mechanism of infection and the defensive resources of the living organism. To Cornet's²⁷ exhaustive animal experiments we owe much of our knowledge as to the sources of infection and the channels whereby the tubercle bacillus gains access to the living organism. Through his work on the channels of infection, he found that in most cases the pathologic evidence should furnish a clue to the site of invasion, but that tubercle bacilli are able to penetrate the macroscopically uninjured mucous membrane, and in rare cases even the skin, without leaving locally any evidence of their passage. This has been confirmed by many animal experiments in the recent exhaustive comparative studies of infection by inhalation and ingestion which have followed the world-wide discussion of the relative infectiousness of bovine and human tuberculosis.

Cornet²⁷ concluded that inhalation of infectious dust was the most frequent cause of infection, and that tuberculous infection progressed much more generally by the lymph stream than by the blood stream, and was rather a lymphogenous than a hematogenous infection.

Animal experimentation has taught us all we know of the complex, defensive mechanism by which the living organism resists the progress of bacterial infection and ultimately often heals the lesion and attains acquired immunity. Inspired by Pasteur's achievements in the field of acquired immunity, Dairemberg,²⁸ Grancher, Martin,²⁹ Ledoux-Lebard,³⁰ Richet and Hericourt,³¹ and others of the French school attempted (with, however, but indifferent success) the production of artificial immunization against tuberculosis in animals.

The treatment of tuberculosis by tuberculin, as originated by Koch²³ in 1890, was the first adaptation of the knowledge acquired by him in artificial immunization of animals to the treatment of tuberculosis in man. In America, Dixon,³² in 1889, made experiments in this direction with attenuated bacilli; Trudeau,³³ in 1892, produced a marked degree of artificial immunity in rabbits with avian tubercle bacilli; and in 1893 de Schweinitz³⁴ obtained similar results in guinea-pigs by the use of bacilli of human origin attenuated by prolonged cultivation. In 1895 Theobald Smith,³⁵ by animal experiments, demonstrated the differences of virulence between human and bovine bacilli, and thus opened the way for further studies in cattle immunization. Pearson and Gilliland,³⁶ by animal experiments, were among the first in America to attain a high degree of immunity in cattle by the use of the human type of bacillus. In Europe, during the past decade, von Behring,³⁷ Koch,³⁸ Calmette³⁹ and their associates, by

extensive animal experiments, demonstrated the possibility of producing immunity by preventive inoculations in cattle of living human cultures, and advanced our knowledge of this complex problem of such overwhelming importance in man's struggle against tuberculosis to a point which may lead to its ultimate conquest.

Far-reaching in the saving of human life as the new knowledge of tuberculosis is, it is difficult to define accurately what it has already accomplished, because it has so recently been acquired and has, owing to the vastness and complexity of the problem, been as yet so imperfectly applied to both prevention and treatment, and because the results offered by the falling death-rate are in this disease influenced by so many factors other than those which bear directly on preventive measures aimed solely at the specific infecting agent, the tubercle bacillus.

The death-rate from pulmonary tuberculosis has fallen steadily in most countries during the last forty years, notably in England, where a decrease of 50 per cent. has taken place in that time.⁴⁰ In many countries it has fallen only slightly faster since the discovery of the tubercle bacillus and the more or less complete adoption of preventive measures, while in others it has fallen much more rapidly since 1882, as in New York City, where there has been during the past twenty years a reduction in the death-rate from pulmonary tuberculosis of nearly 40 per cent.,⁴¹ and notably in Prussia,⁴² where the death-rate was 50 per cent. less in 1903 than in 1885. In some places, as in Boston, the death-rate during the twenty years preceding the discovery of the bacillus and the gradual adoption of preventive measures had shown no inclination to fall, while during the twenty years following this discovery it has fallen markedly and continuously. While it is true that the decrease in mortality began before any effective measures aimed directly at the infecting agent had been in force, the steady and continuous decrease in the death-rate makes it fair to assume that the brilliant results obtained have been due, in part at least, to the measures which aim directly at the limitation of the infection and the protection of the well from tuberculous dust.

In Boston⁴³ the death-rate, which in 1862 was 42 per 10,000 living, after slight variations, in 1882 was still about the same; but from 1882 to 1902 it fell from 42 to 21 per 10,000, so that during the past twenty-one years the diminution in the death-rate from tuberculous disease in Boston has been approximately 55 per cent., this decrease representing, in actual saving, 14,412 lives.

The demonstrable results in preventive measures aimed solely at the specific infecting agent would naturally be most noticed first in children, and the results in New York City, where such measures have been most strictly enforced, bring evidence in support of the influence of such measures on the death-rate of tuberculous meningitis and pulmonary tuberculosis in children. Dr. Biggs points out that "during the ten-year period ending 1902 there has been a decrease of more than 40 per cent. in the death-rate from pulmonary tuberculosis and tuberculous meningitis in children under 15 years of age in New York City, and that during a period of twenty years the decrease has considerably exceeded 50 per cent."⁴⁴

27. Cornet: Tuberculosis, in Nothnagel's Practice, pp. 104-106.
28. Dairemberg, G.: Compt. rend. hebdom. Soc. de biol., Dec. 30, 1893, v.

29. Grancher et Martin: Congrès pour l'étude de la Tuberculose, 1891, 1896.

30. Ledoux-Lebard: Arch. de méd. expér., 1898, No. 10.

31. Richet et Hericourt: Etudes sur la tuberculose, 1891, iii.

32. Dixon, S. G.: Med. News, 1889, iv; Med. and Surg. Reporter, 1890, lxiii, 281.

33. Trudeau, E. L.: Med. News, Sept. 3, 1892.

34. De Schweinitz, E. A.: New York Med. Jour., March 23, 1893.

35. Smith, Theobald: Tr. Assn. Am. Phys., 1896, p. 75; Jour. Exper. Med., 1898, iii, 451.

36. Pearson and Gilliland: Philadelphia Med. Jour., Nov. 29, 1902, p. 842.

37. Von Behring, E.: Beitr. z. exper. Therap., 1902, No. 5.

38. Koch, R.: Schutz, Nenfeld and Miessner: Ztschr. f. Hyg. u. Infektionskr., 1905, li.

39. Calmette and Guérin: Compt. rend. de l'Acad. d. Sc., 1906; Ann. de l'Inst. Pasteur, 1908, xxii, 689.

40. Osler's Modern Medicine, iii, 145.

41. Handbook on Prevention of Tuberculosis, Charity Organization Society, 1903, p. 165.

42. Kayserling: Osler's Modern Medicine, iii, 144.

43. Massachusetts State Committee International Congress, 1908, p. 119.

44. Biggs: Arch. Pediat., May, 1904.

The results obtained, however, must depend greatly on the thoroughness and efficiency of the preventive measures adopted, and this perhaps has been best demonstrated thus far in the observations of Dr. R. W. Philip,⁴⁵ of Edinburgh. Dr. Philip, believing that partial measures were of little avail, and that effectiveness in preventive measures aimed at the control of the disease depended greatly on cooperation and coordination of all the agencies which tend to control the infection, gradually instituted a more and more comprehensive program in Edinburgh, in which all these agencies cooperated.

A study of the death-rate during the last twenty years in that city bears witness to the fact that the death-rate varies with the thoroughness with which the preventive program is carried out. The death-rate in Edinburgh was 19.5 per 10,000 in 1887. During the next ten years, when partial and uncorrelated measures were in force, it fell from 19.5 to 17, a percentage fall of 12.82; but during the following ten years, when a more comprehensive plan was adopted, it fell from 17 to 11 per 10,000, a percentage fall of 42.1 as compared with 12.82 during the preceding ten years, when a less efficient and comprehensive plan of prevention was in force.

Judging by what has been added to our knowledge of tuberculosis by animal experimentation in the past, it seems not unreasonable to entertain the hope that its ultimate control will be accomplished by knowledge acquired through the same means, and will probably depend not only on a more thorough and comprehensive application of the knowledge already won, on which all preventive measures are based, but also on the discovery of some specific method of immunization or treatment—a goal that can be attained only through continued and painstaking studies on animals.

NECESSITY OF ANIMAL EXPERIMENTATION FOR FURTHER ADVANCE

From the foregoing review of the history of tuberculosis, it would seem evident that everything that has a direct bearing on the prevention of tuberculosis, everything that has changed mankind's attitude toward it from one of apathy and hopelessness, when the infectious agent which produces tuberculosis was unknown and the disease was thought to be inherited and always fatal, to the growing hope of its ultimate conquest—a hope which has resulted in the great antituberculosis crusade spreading over the world and culminating in the late International Tuberculosis Congress in Washington—we owe to animal experimentation. If it were not for the knowledge which science has won by animal experimentation in the field of this disease in the last twenty-five years, we should still be plunged in the apathy of ignorance and despair toward it which formerly prevailed, and tuberculosis would still be exacting its pitiless toll, unheeded and unhindered. Were it not for animal experimentation, the prospect of ultimately lifting this great burden of suffering and death from the human race would be as dark as it was before Klenke, in 1843, and Villemin, in 1865, succeeded in proving its infectious nature by experiments on animals with tuberculous material, and thus paved the way for Koch's discovery, in 1882, of the tubercle bacillus. The many researches which have flowed from the study of this germ have taught us already how to protect the healthy from infection and are daily teaching us how we may restore to health those already infected.

Thanks to animal experimentation, we know to-day that tuberculosis is not inherited; that it is communicable and, therefore, preventable; and that in its earlier stages it is curable.

Animal experimentation has taught us already much as to the different types of the tubercle bacillus, its virulence, the poisons it produces, and the manner in which it invades the living organism and destroys it. Slowly but steadily animal experimentation is teaching us the avenues of infection whereby the germ gains access to the organs of its living host; what are the defensive resources of the living organism; and the delicate mechanism whereby it combats the poison of the germ, tries to localize the bacilli, to limit their spread, and ultimately to destroy them. Animal experimentation is teaching us daily more of the complex and delicate processes which bring about acquired and artificial immunity, and through which the living organism wins the victory over the invading parasite. In the thorough knowledge and further study of these vital processes by animal experimentation lie the hope of applying to the protection of healthy human beings and the cure of disease, the knowledge won by science in studying Nature's methods of cure through long years of tireless and painstaking observations on animals.

During my lifetime all this knowledge, so practical in its bearing on the saving of countless human lives, has been won by animal experimentation. In my own personal experience, and as a result of my own observations, animal experimentation has led me to conclusions which have had a practical application in the treatment of my patients. In 1886 I was able to demonstrate on animals the influence of a favorable environment on the disease. Inoculated rabbits placed under the most unfavorable conditions attainable, so far as light, air, food, exercise and surroundings were concerned, succumbed to the inoculation, while those turned out in the open air on an island and supplied with abundant food recovered, with only traces of the disease at the site of inoculation. These observations on animals increased my confidence in the influence of a favorable environment on the course of tuberculosis in man, and confirmed my faith in the value of the sanitarium and open-air method, of which I was then trying to make a practical application in the establishment of the Adirondack Cottage Sanitarium. The open-air and sanitarium treatment has already saved and prolonged, and will continue to save and prolong, countless human lives.

In 1893 animal experimentation gave me indubitable evidence that the production of artificial immunity against tuberculosis, which has always been looked on as impossible, was not as unattainable as was generally believed, my vaccinated rabbits and guinea-pigs showing increased resistance not present in the untreated animals; and this strengthened my faith in the value of continuing the study and use of vaccines in the treatment of tuberculosis. Although the progress made in this direction has been slow, the results obtained by many experimenters in many lands have been in accord as to the hopefulness of this line of research; the goal has almost been reached already in the vaccination of cattle through the experiments of Koch, von Behring, Calmette, McFaydean, Heymans, Pearson, and others; and the application of vaccines to the treatment of various infections in the human subject is extending and giving encouraging results.

The conquest of tuberculosis in man and animals, like the conquest of smallpox, of diphtheria, of rabies, anthrax, and many other infections through the produc-

45. Philip, R. W.: Lecture before International Congress, 1908.

tion of some safe method of artificial immunity, seems, even to those hitherto skeptical, no longer visionary and unattainable. More knowledge of the infecting agent, its poisons, its methods of attack, the various defensive resources of the organism and methods that will call them into action, can be obtained only by animal experimentation.

Inoculation experimentations entail no greater suffering to the animal than the prick of a hypodermic needle, and then a painless death if it be killed, or death from tuberculosis if it be allowed to live. Those who cry out against animal experimentation trust us with the lives of their families when sick, but fear to trust us with rabbits and guinea-pigs. Surely the motives of physicians who are trying to learn how to prevent and cure disease, when their livelihood depends on the practice of medicine, can hardly be called into question. Those who in their blind ignorance or through false sentiment are trying by legislative interference to stop or to restrict animal experimentation do not, as we doctors do, have to witness daily the ravages of this terrible disease and live in the midst of the suffering and sorrow which follow in its wake; they seem to be content that all this should continue indefinitely so long as they are not brought into contact with it.

The new knowledge of tuberculosis, of such overwhelming importance to the human race, a knowledge which already gives assurance that generations to come will not die of this disease to the extent that former generations have died, has been won in recent years by animal experimentation. For all this is the death of any number of guinea-pigs and rabbits too high a price to pay? Are we to stop on the threshold of this newly acquired knowledge, and are the fruits of ultimate victory to be denied to humanity? These would seem questions that could safely be left to the common sense of unprejudiced men.

SEA-WATER TREATMENT, GIVEN BY SUBCUTANEOUS INJECTION

WITH THE RESULTS OBTAINED IN CHILDREN *

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Pursuing the theory of the marine origin of life which was elucidated by the French physiologist, Quinton, about ten years ago, a number of French investigators have been experimenting with sea-water. They have found that by dilution a solution is obtained which is isotonic with blood plasma and in which the leucocytes will continue their ameboid movements when kept at blood temperature. This solution contains mineral salts which are necessary to the growth and development of the cells of the body and were found to be in almost the same proportion as that existing in blood plasma.

The studies of a number of French investigators, among whom may be mentioned Quinton, Robert-Simon, Mace, Potocki, Hallion and Carrion, tend to show that by means of this "marine serum," as it is sometimes called, the upbuilding of the mineral constituents of the body cells is accomplished; the action being strictly tonic, apparently not bactericidal, but increasing the cellular resistance to infection. They state

that elimination of waste products through the kidneys, intestines, skin and lungs is increased; that edema is never produced, and that there is no retention of chlorids; while the action of the kidneys is greater; further, that sea-water is superior to any other saline solutions, as shown by the fact that sea-water is more rapid in its action and induces a greater gain in weight. They also state that where other solutions failed in effect, good results followed injections of sea-water. Unfortunately, I have been unable to verify this statement, but I am at the present time experimenting with normal-saline-solution tablets containing sodium chlorid, gr. $34\frac{3}{4}$; calcium chlorid, gr. 1, and potassium chlorid, gr. $\frac{3}{8}$.

The subcutaneous injection of sea-water solution is unaccompanied by pain or other disturbance, so frequently seen in the use of serums. There may be a slight elevation of temperature following the first or second injection, with pain and discomfort at the seat of injection, owing to the distention of the tissues by the fluid.

The sea-water has been obtained from the Atlantic Ocean, well out at sea and from a sufficient depth to insure against contamination by surface bacteria. The solution has been made according to the method of Robert-Simon, diluting 83 parts of sea-water with 190 parts of pure spring-water. This mixture is then filtered cold through a germ-proof Berkefeld filter, the filtrate being put up in sterile bottles. As a number of French chemical firms are putting up this product in sealed glass half-liter tubes, the possibility of contamination by the air is lessened, but so far I have had no bad effects from our modification of this method. When ready for injection the solution is poured into a sterile Horwitz irrigating-bottle. When the solution flows too slowly I increase the pressure by using a rubber bulb attached to the neck of the flask; to the outlet is attached a piece of sterile rubber tubing, on the end of which is a small iridium-tipped platinum needle, which is sterilized by flaming before each injection.

The usual site of injection is just below the angle of the scapula or in the gluteal region. I think the former preferable, as it is not so likely to come in contact with excreta. Subsequent injections are given in the same region, since, with few exceptions, after the first distention of the tissues, there will be little or no discomfort.

The length of time employed in giving and injection is usually from three to five minutes, except where large quantities are used, when it may take fifteen to twenty minutes. Absorption should take place in from three to four hours, and at times even more rapidly.

The amount injected in infants and children varies from 10 to 60 c.c., the usual dose being from 15 to 30 c.c., depending on the age of the patient and the urgency of the case. Injections are given from three times a week to every day for a short period of time, the amount being increased until the desired effect is produced.

The duration of treatment depends entirely on the case, varying from two to three weeks to four or six months. In some infants the condition has improved so much after four or six injections that the patient was discharged, while in other cases, treatment has been continued four or five months.

This treatment seems to be of most value in cases in which nutrition is at fault; in other words, cases of inanition, malnutrition, marasmus and chronic indigestion. During the past six months a study has been made of this class of cases and with few exceptions the results have been exceedingly gratifying. In two fatal

* Read in the Section on Diseases of Children of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

cases the condition of the infants at the time of starting treatment was such that I had no hope of their recovery. One of these patients was in a profoundly toxic state following an acute infectious gastroenteritis, while the second patient was in the last stages of inanition or starvation.

Effects on nutrition especially noted in this series of 30 cases are as follows: There is a slight increase in amount of urine voided following the first few injections; in many instances improvement in the condition of the stools, without any change having been made in the food. This fact is significant because some of these patients were breast-fed, while others had been under observation for varying periods of time before treatment was commenced. There is improvement in the appetite and in the amount of food taken within the first two or three weeks; this is noticeable in older children suffering from malnutrition or chronic indigestion. In infants in whom colic has been one of the distressing symptoms, I have found this to be relieved invariably within the first two weeks. The skin in many cases at the commencement of treatment was found to be harsh, dry and more or less scaly. This condition cleared up rapidly, leaving a perfectly normal healthy skin by the close of treatment; and this is true both of infants and older children. The infants who were either losing weight or stationary would, as a rule, begin to gain after the first few treatments, in some instances gaining as much as one ounce daily while under treatment. In one or two cases there was an initial loss following the first two or three treatments, but this was rapidly made up. Many patients who were restless and wakeful at night improved markedly.

One of the most interesting cases was that of an infant with marasmus, whose mother is actively tuberculous. This infant in ninety days gained one pound and nine ounces. He was treated through the courtesy of Dr. Tallant in the Maternity Hospital, while there being given much fresh air and proper diet. For a number of weeks his weight remained almost stationary, but there was marked gain in muscular strength and in his ability to digest food. He became bright and alert, eager for his bottle and normally sleepy, instead of markedly restless and sleepless at night. After he was taken home his treatments were continued with great regularity, and within two weeks he began to gain in weight so that during the six weeks of the remainder of his treatment his weight increased three pounds. The same statement can be made about another marasmic infant who also was treated at the hospital during the same period of time. She gained two pounds and thirteen ounces in eighty-eight days. Following her return to the dispensary, treatment was continued for only fifteen days, in which time she gained six ounces. When seen two months later she had gained two pounds and one ounce in weight and is now a perfectly normal infant of twenty-one months.

One case of marasmus in an infant of nine weeks with a history of having been bottle-fed since birth, with poor hygiene. The infant was the youngest of ten children, fretful, crying much of the time, with constipation so marked that castor oil was given every day, and was said to have lost weight since birth. When first seen the child's weight was six pounds and thirteen ounces. No change was made in the diet of the infant, except that the bottle was to be given at regular intervals and the sea-water injections of 15 c.c. were started. Castor oil was stopped and for two weeks the infant did well, having a stool each day and was less cross and

fretful. He gained fourteen ounces in weight. For one month he was not seen, and when he returned it was found that he had lost two ounces in that time and looked bad. Injections were started at once and his food changed to one more suited to his condition. During the succeeding month he has received twelve injections and has gained one pound and four ounces and is in a much more healthy condition.

This case shows conclusively the tonic action and the effect on nutrition which is produced by sea-water injections, for, during the month when the treatment was not given, the infant was perfectly stationary, not gaining in weight, strength, assimilation or digestion. Since that time the gain has been marked in these conditions, and at the present time the constipation is entirely relieved, the infant having two normal stools daily.

Any number of similar cases could be cited, but these three will give a general idea of the progress and recovery in cases of this type.

This treatment has been ridiculed because of the fact that overenthusiastic experimenters have found that it may do good in so many kinds of diseases that it has been heralded as a sort of panacea for every kind of trouble. This it is not, although there are many forms of nutritional disorders, either primary or secondary, in which some benefit will be derived from this measure; for instance, the malnutrition in tuberculous disease or following any of the infectious diseases will be much improved by this means. With this treatment it is not intended to relax care on the hygiene or dietetic side; in fact, one should, if anything, be more careful to adjust the diet to the needs of the patient and to pay attention to strict cleanliness, exercise and fresh air. The medicinal treatment also should not be neglected in cases in which drugs are indicated, sea-water injections being used for tonic and stimulative action on the cells of the body.

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ABSTRACT OF DISCUSSION

DR. GEORGE SCOTT, New York: During the past winter Professor Simonet of Paris paid us a visit. He has been experimenting with this method of treating infants, and described a means of pasteurizing the sea water, laying particular stress on the fact that it should be secured at a considerable distance out at sea from below the surface and that small amounts to each patient should be given. I have demonstrated this method to students, and I have obtained very good results. This treatment is still in the experimental stage, however, and I think it must be used only as an adjuvant. One must not be carried away with the idea that it is a panacea. Dr. Simonet laid particular stress on its value in diarrhea and I think that it would be well to try it in this condition. I believe that sea water is a stimulant and a tonic to the nerve cells and in that way the system is enabled to ward off exhaustion. Dr. Simonet desires it to be remembered that this method is still in the experimental stage and he wants to know what we can do here with it in the treatment of summer diarrheas. There is only one thing against it, i. e., the subcutaneous injection. In a hospital that is always a good form of treatment, but in private practice it works up the mother to a considerable extent.

DR. T. LEBOUTILLIER, Philadelphia: I have been giving from 15 to 60 c.c. In some cases of severe anemia I have given as high as from 90 to 120 c.c. in children and as high as 240 c.c. in adults without any bad results whatever. As to the attendant pain, and the trouble with the parents, I thought I would try it on myself and see about how much pain there was in the injection and found that there was not more than is caused by any hypodermic injection; the discomfort lasted but one or two hours. I have found that an infant with the

bottle will make possibly one cry and then go on with the bottle until the needle is withdrawn. Older children make more trouble, but with a piece of chocolate or a cracker that is easily obviated. I had feared that this method would tend to cut down the attendance at the dispensary, but instead it has increased. The same thing is true in private practice. If a child is very ill and in urgent need of the treatment, the parents usually will readily submit. I saw one case of chorea, the patient was 9 years of age, in which the condition rapidly cleared up. In pneumonia when the patients were extremely cyanotic and in very bad condition this form of treatment has been beneficial and I have not lost a case in which it was used. In eczema some remarkable cures have been observed, but in other cases of eczema I have seen no result whatever.

EXPERIMENTAL SURGERY OF THE THORACIC AORTA BY THE METHOD OF MELTZER AND AUER *

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In operations on the thoracic aorta, it is necessary to use a method by which the pleural cavities can be opened without danger. I did not employ the classical apparatus, as they are too complicated and do not permit pulmonary ventilation, except by spontaneous respiratory movements of the subject. They would probably give unsatisfactory results in operations in which, the thorax being widely opened, the diaphragm and ribs can hardly act on the lungs. Therefore, I have used a simpler and a more efficient method, the method of Meltzer and Auer,¹ in which the respiratory exchanges take place even when the lungs are completely motionless.

The principle of this method was discovered a short time ago by Meltzer and Auer. They demonstrated that by ventilating the lungs with a continuous current of air, respiration takes place in an almost normal manner, even in the absence of respiratory movements. Meltzer and Auer introduced a small-sized catheter into the trachea of a dog which had been curarized. The catheter was inserted as far as the bifurcation of the bronchi. Then they passed through it a continuous current of air under low pressure. The air ventilated the lungs and escaped immediately to the exterior through the trachea. The thorax was opened and both the lungs were seen moderately distended and absolutely motionless. The animals could be kept in this condition for three or four hours and even longer. Some time ago Dr. Meltzer showed me his method and suggested its application to surgery. I immediately tried it in a few simple experiments, such as the resection of a pulmonary lobe, the extirpation of a segment of the middle part of the esophagus, followed by a circular suture, the dissection of the mediastinum by opening the two pleuræ and the pericardium, and resection of a small part of the superior vena cava and its replacement by a piece of a jugular vein. The animals recovered completely, with the exception of one that died of pleurisy a few days after the operation.

Then I began some studies on the surgery of the thoracic aorta. The object of the first series of experiments was chiefly to find a suitable technic for performing plastic operations on the large vessels of the thorax without interrupting the circulation.

The experiments were performed on dogs of small and medium size. The animals were anesthetized with

ether. Then a rubber catheter was introduced into the trachea as far as the bifurcation of the bronchi. Before the thorax was opened the catheter was connected with the tube of a foot-bellows which gave a continuous current of air under low pressure. A manometer and a bottle of ether were fastened to the tube. When the pleuræ were opened, the lungs were allowed to collapse a little. Then they were kept moderately inflated by a continuous current of air. If the incision involved one side of the thorax only, the respiratory movements continued. But when the chest was opened by a semicircular anterior incision, the sternum cut and the thorax displaced by strong retraction, the lungs remained unmoved. Nevertheless, the respiration continued in spite of the absence of respiratory movements and the gaseous exchanges of the blood remained almost normal.

Six animals were operated on. In three experiments, the upper part of the descending aorta was cut transversely. A few attempts were made to tube the vessel, on account of which the circulation was interrupted several times for a number of minutes. The ends of the aorta were then united by a circular suture, and during this time the circulation was interrupted from three to six and one-half minutes. The three animals recovered without incident.

In the fourth experiment the ascending part of the aorta was cut longitudinally about 3 cm. above the heart and sutured. This operation involved two interruptions of the circulation, each lasting about thirty seconds. The animal remained in good health.

The fifth experiment consisted in severing the ascending aorta in the middle and in interposing between its ends a segment of a large jugular vein, preserved in cold storage. The circulation was interrupted for seventeen minutes. The animal remained in excellent health, but the hind legs became contractured, the animal walking as if it had wooden legs. The contracture decreased progressively. Nevertheless, at the present time, six weeks after the operation, the legs are still a little stiff.

I then performed a sixth experiment with temporary tubing of the aorta in order to avoid medullary complications. The upper part of the descending aorta was laid open by a longitudinal incision, and a paraffined tube was inserted into its lumen and temporarily fastened. This small operation involved only a short interruption of the circulation. The circulation was immediately re-established, and it was possible to extirpate at leisure the anterior wall of the part of the aorta that had been tubed and to substitute for it a segment of vena cava preserved in cold storage. This operation lasted twenty-four minutes. The tube was then taken out through a small incision of the wall of the aorta and normal circulation was re-established. The animal recovered from the operation without incident. It died suddenly of hemorrhage twelve days after the operation. The accident was due to a fault of technic in preserving the vein in cold storage.

These experiments prove that operations on the thoracic aorta need not be dangerous, and by Meltzer's method they are as simple as abdominal operations.

The suture of the descending aorta is almost identical in technic with the suture of other arteries. On account of the size of the vessel and the thickness of its wall, however, the operation is easier. It is possible to use needle No. 12 and china silk No. 1. Only two retaining stitches are necessary. When the temporary hemostasis is good, the anastomosis can be performed in three minutes. The ascending aorta is very friable, and the

* From the Laboratories of The Rockefeller Institute for Medical Research, New York.

1. Meltzer and Auer: Jour. Exper. Med., 1909, xi, 622.

technic should, therefore, be modified. The thread tears the wall very easily. It is necessary to use U-shaped stitches like those of Jaboulay, although this kind of suture does not give a strong scar if the operation is very aseptic. This inconvenience could be avoided by a reinforcing continuous suture. The immediate results of the anastomoses and of transplantations are excellent. There is no reason to think that the ultimate results would be less satisfactory than those of the operations on the abdominal aorta, which are perfect even after several years.

The problem of operating on the aorta without interrupting the circulation presents several different solutions. In a case of sacciform aneurism, it would be possible to extirpate the sac and to close up the opening without interrupting the circulation, in performing the operation which I described some years ago as longitudinal exclusion. But if it is necessary to resect a large part of the wall or even a whole segment of the aorta, the problem is more difficult. Two other methods are theoretically possible: definitive or temporary lateral derivation and the temporary tubing. I have not yet attempted on the aorta the lateral derivation of the blood. But I have implanted a vein, preserved in cold storage, on the right auricle, in order to establish a collateral substitute for the superior vena cava. The operation was not very difficult. Unfortunately, the animal died of pleurisy two days later. The inconvenience of these methods is their complication. Temporary tubing is much simpler and more rapid. It permits of performing the operation as slowly as necessary, since the circulation goes on through the tube. I do not mean to imply that it is an ideal method, but it renders possible long and difficult plastic operations on the thoracic aorta.

DILATATION OF STRICTURE OF THE MALE URETHRA

WITH SPECIAL REFERENCE TO THE AUTHOR'S IRRIGATING TUNNELED AND GROOVED AND STANDARD SOUNDS *

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A stricture may be defined as an obstruction or closure, partial or absolute, of the lumen of any passage in the body. Thus, as familiar examples, the term "stricture" is applied to obstructions of the nose, throat, intestines and the urinary passages.

Among the commonest strictures are those of the male urethra, because trauma is not infrequent and infections of the urethral mucosa, especially gonorrhea, are common diseases. These always leave behind them, at one or more points of the mucous membrane, damage of sufficient degree and depth to cause the formation of scar-tissue, which, by the process of contracture or shriveling, leads to more or less closure of the canal. This narrowing progresses steadily for the worse as the years go by, in the vast majority of patients.

In a mill-stream the closure of a dam causes a backset or up-stream pressure of water along the main channel and all its tributaries in regular order. When the spill-way is reached by the level of water a balance of back-pressure and overflow is established, and thus a certain

degree of relief is afforded. So in the urinary system, a urethral stricture by more or less closure checks the freedom of the passage of urine and causes back-pressure on the urethra, bladder, ureters and kidneys, in regular ascent from one to the other. The higher the dam in the stream and the tighter the closure of the stricture in the urethra, the more far-reaching and greater the changes in the mill-stream and the urinary apparatus, as the case may be.

Such are the "hydraulics" of stricture and are purely mechanical and truly physical effects of stricture on the balance of the urinary system—a poise which for life-long health thereof should never be disturbed. This is, moreover, exactly the reason why stricture is the most dangerous result of gonorrhea, whose degree and progressiveness are all too little appreciated by the average practitioner.

In selecting the method of treatment of stricture of the urethra, early diagnosis of incipient obstruction is the first step. By this statement is meant the dogma that no victim of injury or infection of the urethra should be discharged as "cured" without gentle, complete examination of the urethra for infiltrations or thickenings which are the starting-points or foundations of stricture. About a month after all other treatment of a gonorrhea, for example, has ceased, and presumably all the inflammation ended and doubtless the limit of Nature's own absorption of the infiltrations established, gentle dilatation of these points may be begun and continued until they disappear either fully or reasonably within the boundaries of all mucous membrane recovery. Unless they are fully resolved or absorbed, examination and perhaps treatment of them are indicated at fixed intervals, which may be determined only in each case as a law to itself. To attempt treatment of such infiltrations earlier than after a month of rest is usually to invite stricture-formation by mechanical irritation, and may be regarded as premature and incompetent interference with what may prove curable by Nature's own processes.

The foregoing method of curing urethral infections and traumatisms may be called prophylaxis and prevention of the many types of stricture which may later, and perhaps repeatedly, require radical and dangerous operations for permanent relief or for maintenance in a condition of even comparative safety for the patient.

The purpose of this monograph is to discuss dilatation of stricture of the urethra. Strictures vary so greatly, however, in character and behavior that no one method will be alone wise or efficient for all forms and manifestations of the disease. A very cogent resumé of the whole question of the treatment of stricture is given by White and Martin,¹ whom I quote below. The bracketed portions at the end of each paragraph are my own comments, and, it is trusted, will be accepted as offered with due deference.

SUMMARY OF TREATMENT

"1. Gradual dilatation is indicated as the treatment of choice in all recent, soft, or dilatable strictures found in any part of the urethra, without regard to the caliber of such strictures." [The key-term here is "recent stricture." If intervention with newly formed infiltrations is begun too soon they will be stimulated to form a traumatic stricture whose character will vary according to the nature, frequency and violence of the treatment and the reaction of the patient's tissues in such cases.]

"2. Continuous dilatation is indicated in uncomplicated strictures which are so tight that no instrument larger than a filiform can be made to pass. This continuous dilatation is prac-

* Read in the Section on Surgery of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

1. White and Martin: Genitourinary and Venereal Diseases, ed. 8, pp. 255-256.

ticed till a small metal instrument can be introduced—No. 12 to No. 16 [French scale]. Then the normal caliber of the urethra is restored by gradual dilatation or by cutting, in accordance with the nature of the clinical behavior of the stricture." [To carry a tight stricture which accepts at first a filiform up to 12 to 16 F. by continuous dilatation might in many cases result in infection of the bladder. In my experience one or two filiforms will dilate the stricture to 7, 8 or 9 F., after which tunneled and grooved sounds may be employed. Uncomplicated strictures are, of course, understood as alone concerned in these statements.]

"3. Internal urethrotomy is indicated in all fibrous, irritable, and resilient strictures anterior to the bulbomembranous juncture. Narrowings at or near the meatus should be treated by the knife whenever it is apparent that they are responsible for definite symptoms. The division is here made on the floor of the urethra. All other anterior strictures are divided along the roof." [Before internal urethrotomy is ever attempted, except in emergencies, a bacteriologic examination should be made of pus present. If vicious germs are present local treatment should be attempted for their destruction before any operation whatever is practicable.]

"4. External perineal urethrotomy is indicated in all fibrous, resilient, or irritable strictures situated behind the bulbomembranous juncture." [The best or one of the greatest indications for external urethrotomy is the presence of pus which would be benefited by the drainage of this operation. The same comment is warranted with regard to the following paragraph.]

"5. Combined internal and external urethrotomy is indicated in the treatment of anterior strictures which are unusually dense or nodular and which are complicated by fistulas."

"6. Perineal section, or external perineal urethrotomy without a guide, is indicated in the treatment of impassable stricture of the deep urethra. When the proximal urethral end cannot be found, suprapubic cystotomy and retrograde catheterization are justifiable."

"7. Excision is indicated in cases of impermeable stricture, nodular or fibroid, where there has been complete destruction of mucous membrane. When so much tissue is removed that it is impossible to bring the divided urethral ends in apposition, transplantation of mucous membrane is indicated." [The majority of strictures are inflammatory. The end result of any excision operation must in greater or lesser degree be an annular traumatic stricture which, probably without a single exception, is the most intractable form of stricture, therefore the application of excision is deservedly a question of the gravest possible doubt.]

"Formulating the operative indications in accordance with the clinical features of the stricture, the following summary of treatment is given:

"1. Narrowings at or near the meatus, if treated at all, are always cut.

"2. Strictures of large caliber (greater than 15 F.) are treated by gradual dilatation. Cutting is almost never required when such a stricture is in the deep urethra; it is sometimes necessary when the stricture is anterior to the bulbomembranous juncture.

"3. Strictures of small caliber are treated by gradual dilatation if possible; when in the deep urethra they often require external urethrotomy; when anterior to the bulbomembranous juncture they usually require internal urethrotomy.

"4. Impermeable strictures are treated by perineal section, followed at times by excision and mucous membrane grafting.

"5. Soft, recent, uncomplicated strictures are always dilated.

"6. Fibrous, nodular, irritable, strictures complicated by urinary fever, fistula, etc., are always cut."

The logical points of the subject of treatment of stricture by dilatation might be designated as the questions of diagnosis, armamentarium, preliminary treatment, actual treatment, and after-treatment.

DIAGNOSIS

Diagnosis is almost synonymous with selection of the case as available for dilatation. It rests on minute history, strict examination and careful observation. All these are essential before the systematic and progressive dilatation may be begun. The matter of diagnosis may be immediately dismissed on the ground that it is sufficiently covered by the foregoing quotation from White and Martin and my parenthetical comments.

ARMAMENTARIUM

The instruments ordinarily required for the dilatation of stricture are filiform whalebone guides; tunneled and grooved silver catheters; tunneled and grooved metallic sounds; soft, flexible lead-core, cone-pointed or olive-pointed, silk or lisle-thread bougies; standard metallic urethral sounds, and assorted, flexible, rubber, silk or lisle-thread catheters.

One great danger of all strictures of the male urethra is that of reflex minor and brief, or major and prolonged anuria. In my careful observation of patients under the dilatation treatment of stricture, a very reliable and rational means of preventing reflex renal inhibition is to provide a reflex vesical action at the end of each treatment by filling the bladder with a blood-warm antiseptic solution. This "artificial urine" the patient voids before leaving the office, the evacuation thus quieting possible mental apprehension by permitting him to perceive the normal action of his bladder and also thus irrigating antiseptically his bladder and urethra under Nature's own pressure and process, and finally soothing the invaded portions of the urinary tract in a degree and manner which almost always forestall balking of the kidneys, with its consequent danger of even minor anuria. In passing, it may be noted that quinin, gr. 5, with fluid extract of aconite, minims 3, and morphin sulphate, gr. $\frac{1}{4}$, for sthenic patients; and quinin, gr. 5, nitroglycerin, gr. $\frac{1}{50}$, and codein, gr. 1, for asthenic patients, are admirable combinations for internal administration with the purpose of preventing reflex complications.

In order to produce the physiologic effect of an acting bladder on the kidneys, at the end of each treatment I have, in years gone by, always used the tunneled and grooved silver or the standard catheter, not only to evacuate the bladder as a preliminary to dilatation in selected cases, but also to provide, as a termination of treatment in all cases, artificial urine in the form of warm antiseptic solution just described.

Thus it will be noted that all cases have suffered at least double invasion of the urethra and bladder—once by the dilating instrument and once by the irrigating instrument. Predominant over all other considerations are the strict asepsis of the bladder and urethra and the prevention of reflex renal inhibition. Hence, this plan of procedure is justified, both as preventive and curative.

The doctrine is well established, however, that the less actively, less violently and less frequently the genito-urinary apparatus is invaded within the limits of reasonable indications of treatment the safer for the constitution as a whole and the better for the urogenital tract focally in the stricture and generally as a physiologic unit in the system.

Activity of treatment is indicated by the character and conditions of each case in itself, and is a matter for the judgment and experience of each individual specialist or surgeon to determine.

Violence of invasion is likewise subject to judgment and experience, and is also a factor of choice between soft

flexible instruments and rigid metallic instruments. The soft flexible lead-core cone-pointed or olive-pointed woven-silk or lisle-thread bongies have largely met the objections to soft instruments set forth by Lydston² in the following words:

Soft bongies and catheters are not so easily managed as stiff metallic instruments, as their flexibility permits them to bend on themselves when they come in contact with a tight stricture. It is difficult, however, to produce injury with them, and, inasmuch as instruments should be coaxed rather than forced through a stricture, their function in the treatment of strictures of small caliber is of great importance.

Skill, gentleness, patience and persistence largely or even totally, in my opinion, give rigid instruments preference over flexible instruments, except in extensive, tortuous strictures. In this particular type of stricture steel instruments produce not only centrifugal dilatation, but also axial traction. Both these effects combined are usually more severe than the delicate urethral and peri-urethral structures will tolerate; therefore, inflammation and aggravation, rather than alleviation and absorption, usually follow the use of steel instruments in extensive tortuous obstructions. The lead-core dilators provide centrifugal dilatation but avoid axial traction in the hands of experts by accommodating themselves to the irregularities of direction of the urethra due to the tortuosities and extent of this type of stricture.

Nevertheless, the fact remains true to-day as when stated originally by Van Buren and Keyes³ in 1874:

In trained hands, however, the steel sound is perfectly safe; it is smoother than any soft instrument, and certainly can be passed into the urethra with less pain than can any other instrument, and is capable of effecting more dilatation, in the same length of time, with the employment of less force.

To this may be added the fact that steel instruments, being smoother, are much more aseptic than the best varnished instruments, and consequently in the long run are the better type of instrument to use.

Frequency of dilatation implies not only actual recurrence of visits to the operator, but also the number of times the obstruction is passed during each treatment. In order to reduce to a single passage of one instrument both irrigation and dilatation, I was led to devise my irrigating tunneled and grooved sounds and my irrigating standard sounds, recently described and illustrated in the *Annals of Surgery*.⁴

By the use of these instruments the armamentarium for the dilatation treatment of stricture is reduced to whalebone filiform guides and a set of my sounds.

PRELIMINARY TREATMENT OF STRICTURE

The preparation of the patient is the next detail for consideration. Rigid asepsis and antisepsis comprise not only proper sterilization of all instruments used and due cleansing of the penis and urethra, but also the establishment of the highest possible germicidal state of the urine. Except, therefore, in totally closed strictures, which require immediate intervention (which does not necessarily mean cutting operation), the visit at which the minute examination and accurate diagnosis of the stricture, so far as possible, are made, should be followed by a few days' course of urinary antiseptics before the actual and repeated dilatation begins. These drugs should always be continued during the treatment in

order to minimize the danger of infection. The most effective combination I know is from 5 to 10 grains each of benzoate of soda and hexamethylenamin three times a day in a glassful of hot water two hours after eating.

One very important detail undoubtedly practiced, but rarely mentioned in preliminary treatment by authors, is care of and relief from the pus-organisms and chronic urethritis whenever possible, before the dilatation begins. Many strictures which are permeable to urine may remain undilated for a short time in order to remove as much infectious material as possible, provided always and, of course, there are no symptoms of urgency or indications for immediate intervention.

Irritability and congestion of many strictures may be greatly reduced by hot sitting or general body baths before each treatment. A few minims of fluid extract of aconite are very serviceable for the same purpose by internal administration.

G. Frank Lydston⁵ states:

The preliminary administration of anodynes, the continuous use of nerve sedatives and antispasmodics, and, if necessary, anesthetics, are frequently useful adjuncts to treatment by dilatation.

In the experience of most genitourinary specialists, the belladonna group (more especially hyoscyamus) is the most serviceable and reliable anodyne sedative and antispasmodic. The tincture may be given in doses of from 10 to 30 drops, three times a day, combined with the antiseptics previously mentioned.

A stricture which requires a general anesthetic is in no sense suited for the dilatation method of treatment. Therefore, only local anesthetics are probably considered in the foregoing quotation. I have obtained the best results with eucaïn, 2 to 4 per cent., and alypin, 2 to 4 per cent., solutions. There is a point, however, against the promiscuous use of even local anesthetics which will be elucidated later in this paper. It concerns, in brief, the likelihood of misleading the operator.

ACTUAL TREATMENT OF STRICTURE

The actual treatment must concern the two broad types of the lesion—the open or large-caliber and the tight or small-caliber stricture. From the standpoint of facility of instrumentation itself, an open stricture may be regarded as one which accepts a 20 F. sound in the hands of an ordinary practitioner or an 18 F. sound in the management of the skilled and experienced specialist.

It probably was noted that the foregoing quotation from White and Martin in the early part of this paper described size 15 F. as an open stricture. It might be said in this connection that a stricture smaller than 18 F. is rather inclined to be on the border-line between complicated and uncomplicated manifestations. It is doubtless, therefore, better judgment to make the distinction on a broader basis and take the limits 18 and 20 F. as specified. Such a rule for the general practitioner is vastly safer than any other.

Dilatation of the open type of stricture at the rate of one or two numbers of the French scale at each sitting, combined with all the foregoing precautions, is, comparatively speaking, a simple matter. It is rendered still more simple and safe and likewise more agreeable to the patient by the use of the standard irrigating sounds of my pattern, precisely for the reason of comfort afforded by the minimum of instrumentation and by the final function of the bladder at the end of each visit.

2. Lydston, G. Frank, in Bangs and Hardaway: American Text-Book of Genitourinary Diseases, Syphilis and Diseases of the Skin, 1899, p. 176.

3. Van Buren and Keyes: Genitourinary Diseases with Syphilis, 1874, p. 113.

4. Pedersen, V. C.: Ann. Surg., October, 1909.

5. In Bangs and Hardaway: American Text-Book of Genitourinary Diseases, p. 178.

Strictures which are of smaller caliber than 20 or 18 F. usually are combined with atrophy of the urethra in front and dilatation with hypertrophy or atrophy behind, so as to render the passage of whalebone filiform guides of supreme and final importance, and a manipulation of no small delicacy. In passing, it must be noted that only genuine whalebone guides are safe. Rubber guides are treacherous and hazardous. Either through age or disease whalebone finally dries, splinters or splits. Consequently no filiform should be applied without first careful inspection, because if the filiform breaks within the bladder immediately a serious operation is necessary. I have already reported a case of fragmented filiform removed from the urethra without operation.⁶

The passage of the filiform must be accomplished with gentleness and precision, and without irritation, pain or bleeding, as far as possible. Gentleness and precision of insertion of the whalebone guide rest with the personal equipment of the operator in terms of his skill, delicacy, patience and experience. Irritation, pain and bleeding are avoided or reduced by instilling local anesthetics, as previously mentioned, or preferably and advisedly by instilling local hemostatics, of which none is more reliable or satisfactory than 1 in 1,000 adrenalin chlorid solution. In this solution eucain or alypin may be dissolved. The patient holds this medication in the urethra five minutes. As previously implied, the use of local anesthetics is frequently inadvisable, and may be avoided by gentleness and deliberation. Otherwise the patient's sensation is abolished, and the operator, therefore, loses one of the best guides as to the degree of dilatation being accomplished and perhaps the degree of traumatism caused.

A urethroscope passed to the face of the stricture is often the means of finding and passing the lumen. Otherwise a number of whalebones are variously and differently bent at their tips and passed into the urethra in turn. Each filiform, after failure to pass, is left *in situ* until the urethra is reasonably filled with them. After every three or four have been inserted without passing the obstruction, each filiform of the whole number within the urethra is again tried in succession until, by mutual guidance and support, finally one enters the lumen of the stricture and its tip is passed into the bladder. All the other filiforms are then cautiously removed from the urethra.

I prefer filiforms two feet long. The half-length is coiled within the cavity of the bladder, and next nine inches are within the urethra and the remaining three inches outside the penis. Thus it is possible always to prove the freedom of motion of the filiform within the tunnel of the sound. This is, indeed, a most important detail, because at all times the operator must be sure that the sound, as it progresses through the stricture, is not buckling or folding the filiform on itself as it is advanced forward. In the original description⁴ of my special sounds it was noted that the tunnels for all the sizes are identical in diameter and length. The object of this design was to provide a uniform "feel" or sensation to the operator as to this matter of freedom of the filiform within the tunnel of the sound.

I determine the freedom of the filiform in two ways, more or less interchangeable at will. First, as the sound is advanced by a true and actual "coaxing" through the urethra, every moment or two the filiform is pulled out by perhaps an inch or less. If it moves freely, the next advance by "coaxing" is accomplished. If the filiform

does not move freely, the sound is retired by the amount of the last advance, the filiform again tested, and if it moves without resistance the advance of the sound is renewed and continued, step by step, until the stricture is fully passed. The second method of proving the freedom of the filiform within the tunnel is to hold the free end of the filiform fixed in the left hand and to advance the sound steadily over it. If any feeling of binding or resistance is perceived, the advance of the sound stops and then the first method of passing along the filiform is applied. Frequently, however, the sound will advance so easily that only the second or less troublesome test of the "play" of the filiform within the tunnel will be required.

Occasionally the difficulty of passing a filiform is so great that the wisdom of a temporary continuous dilatation is indicated. By this term is meant that one or two whalebone guides are left in the urethra and bladder, passing through the stricture, for several days. During this time they gradually swell, and gently induce, both by swelling and by mechanical presence, an opening of the stricture. After this has occurred, almost always instrumental dilatation may be begun and continued.

It may be noted that I have not mentioned woven filiform guides. This has been because, like other woven instruments, they are in ordinary experience and probability not as easily sterilizable as the whalebone guides. They also not infrequently possess the disadvantage of too great flexibility. This was set forth admirably by Gouley⁷ as follows:

Though the soft bougies of Leroy answer well in many cases, I have often verified the fact that the instrument coiled in front of the stricture, and sometimes doubled itself so that the point appeared at the meatus when it was believed to have passed into the bladder; these very common failures are due to the too great flexibility, and to the want of spring of such bougies. For these reasons I have, for many years, used in their stead slender probe-pointed shafts of whalebone . . . which possess great advantages over both the French and English capillary gum bougies, being more elastic than either of the latter, and less liable to coil in the urethra, while they adapt themselves admirably to the inflections of the canal, and can be made so small as to enter the narrowest constrictions.

As a rule, at the first treatment all strictures which are suitable for dilatation at all may be enlarged by two or three numbers from size 7 F., which is the size of the smallest sound of my pattern for irrigation and dilatation considered advisable and safe on the ground stated in the original description.⁵ A stricture which will not take 7 F. usually demands treatment other than dilatation.

Thus, when the patient leaves the office the urethra has been brought up to 9 or 10 F. caliber.

The question might be asked why the size 7 F. is taken. The grounds are two: First, Maisonneuve probably had had large experience with stricture of urethra before devising his urethrotome. The guide of this instrument is size 7 F., apparently because this diameter is about as small as may wisely be employed in a rigid instrument from the standpoints of injury to the urethra and of stability of the guide for passing the knife. Second, strictures smaller than 7 F. are almost invariably complicated in varying degrees and manners; particularly common is chronic infection of the urethra with dilatation and hypertrophy or dilatation and atrophy of the bladder-side of the lesion. Any and all these conditions are benefited by the drainage of an open operation. Thus it will be seen that selection of the

6. Pedersen, V. C.: Med. Rec., New York, Nov. 20, 1909.

7. Gouley: Diseases of the Urinary Organs, 1873, p. 51.

size 7 F. is warranted by clinical observation and judgment, and does not rest on merely arbitrary opinion.

The efficiency and prolongation of each dilatation are increased by leaving the sounds *in situ* five or ten minutes. This fact is analogous to that taught by gynecologists, namely, that slow dilatation of the cervix uteri is more lasting than rapid. Such dicta hardly need discussion or argument.

Either in open or close strictures, as previously defined, when the proper degree and duration of a given enlargement are accomplished, the obturator of the sound is withdrawn and the bladder treated according to indications, namely, evacuated and irrigated until as clean as may be, and finally filled with the antiseptic solution, the artificial urine previously described. The sound, carrying the filiform with it, is now withdrawn and the patient allowed to rest a few moments and thereafter to empty his bladder.

Instead of withdrawing the filiform with the sound, the filiform may be left *in situ* in order to maintain the dilatation and to avoid the difficulties and dangers of passing it again at the next visit, provided there has been great difficulty in so doing at the initial session.

The application of these sounds to dilatation of stricture has been made by myself and my associate, Dr. Walter B. Brouner, for more than a year,⁸ with unbroken success and unquestioned satisfaction. Patients on whose intelligence reliance may be placed, who have had non-irrigating dilators applied by the hands of others and of myself and then have had my irrigating sounds passed, state that there is no comparison between the two as to comfort at the end of the treatment. These statements by patients hold true no matter whether the tunneled grooved irrigating or standard irrigating sounds are employed. For this reason at the present time I employ no other form of sound than the irrigating type, and rarely enter the bladder without providing the patient with antiseptic fluid as an artificial urine as the last step of treatment.

AFTER-TREATMENT OF STRICTURE

Careful inquiry among patients coming from general practitioners elicits the fact that the after-treatment of stricture is more or less neglected. It comprises two steps, the after-treatment of active instrumentation and the later prevention of relapses of the strictures. During active treatment the patient should always have a few moments' rest in the office, and should be told to observe between treatments sexual rest as far as possible and urinary rest by the avoidance of alcohol, condiments and adherence to proper, that is, simple diet.

Urinary antiseptics are wisely administered for at least the first twenty-four hours after each dilatation. Antispasmodics are best provided for by the free drinking of water, light diet and abstinence from sexual intercourse and alcohol. Mental reassurance of the patient is very necessary, as to the facts that there will necessarily be a little pain on urination, occasionally a little discomfort during erection, and sometimes a little discharge for the first day or more after instrumentation. The patient should know that all these things are normal results of the mechanical treatment, are unavoidable and not matters of concern.

As to the terminal after-treatment, that is, the avoidance of recurrence of the stricture, a patient with stricture should be taught that, since the stricture is funda-

mentally only a scar, it cannot ordinarily be literally removed from the passageway; only its power of obstruction is corrected. He should know, therefore, that, like all other scars, strictures with age and time tend to dry or harden and shrivel or contract and thus to reclose or reobstruct the urethra. When he understands that this is the law of all scar-tissue, and therefore the law of stricture, he will be only too ready to report once or twice a year for observation, and, if necessary, correction of any slight relapse present.

Attention to these details and the employment of the irrigation method of dilating the strictures as embodied in these sounds will, I am convinced, render the management of stricture-cases far more felicitous. If one might utter an epigram to sum up the dilatation treatment of stricture for the general practitioner and general surgeon, it would be in the majority of cases: Maximum results, minimum interference.

NOTE.—In addition to the authorities already cited, the following, which were consulted in the preparation of this article, may be found of interest by the reader:

Lett: Practitioner, 1908, lxxx, 45.

Watson: Boston Med. and Surg. Jour., 1907, clvii, 549.

Desnos and Minet: Traité des maladies des voies urinales, Paris, 1909.

Teyass: Med. Press and Circular, 1881, xxxi, 27.

Englisch: Wien. Klinik, 1887, pp. 121-216.

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ABSTRACT OF DISCUSSION

ON PAPERS OF DRs. JUDD, BARTLETT* AND PEDERSEN

DR. LINCOLN DAVIS, Boston: I have been especially interested in tumors of the bladder and in the transperitoneal operation advocated by Dr. Judd. My experience has been limited to three cases, but I have been very favorably impressed with the advantages of this method in the way of giving accessibility to the field of operation, and allowing a thorough and complete removal of the tumor. The operation is especially indicated in cases of broad-based tumors, or where there is infiltration of the bladder wall, or in cases of simple papillomata, where it is difficult to reach the tumor through the ordinary suprapubic incision on account of a thick abdominal wall. In two of the cases in which I went into the peritoneal cavity I made the ordinary suprapubic incision, but found it impossible to reach the tumor, which was very sessile. By enlarging the incision and making an opening into the peritoneal cavity, and packing off the intestine, it was an easy matter to split the posterior wall of the bladder and bring the tumor within reach. After opening the peritoneal cavity and posterior bladder wall I feel safer if a drainage tube comes out through the suprapubic space extraperitoneally. I do not think that it prolongs convalescence to any extent, and it is much safer. I do not believe that this operation is necessary in all cases of papilloma, but I do think it is especially indicated where there is any evidence of malignant disease. As to its dangers, I suppose that there is a slight increased danger, but I do not believe it to be very great. Preliminary cystoscopic examination is of the greatest importance in the case of tumors of the bladder. One can determine accurately the number of growths present, their size and position, and usually one can make a pretty shrewd guess as to the nature of the growth. I think it is very important to go over the whole surface of the bladder because a growth which is very apparent to the cystoscope, a villous growth floating in the fluid medium, may collapse and lie against the wall of the bladder, so that it is difficult to find it after the bladder is opened. In this country the tendency seems to be toward more radical operations for tumors of the bladder, as is evidenced in the work of the Rochester clinic. In Germany and in France they use the operating cystoscope more than we do. Of course, in the hands of Nitze, wonderful results have been achieved with the operating cystoscope, and clinicians are returning to that method with the idea that there is less liability to recurrence. I think that the data gathered during

8. The shop drawings for these sounds bear the following dates: Beniqué curve irrigating sound, March 15, 1907; standard curve irrigating sound, March 29, 1907; short curve irrigating sound, Dec. 21, 1907; tunneled and grooved irrigating sound, Jan. 27, 1908.

* The papers of Drs. Judd and Bartlett appeared last week.

the next few years will be very interesting, showing which method will give the best results.

DR. WILLIAM E. LOWER, Cleveland: To secure early diagnosis of tumors of the bladder, it will be necessary to continue to do more missionary work among the general practitioners, and teach them that all cases of hematuria must be investigated, because in a large percentage of cases the bleeding is caused by some form of tumor of the bladder. It is important to determine the location and the attachment of the tumor. Of course, this can only be done by cystoscopic examination. Then a sufficient exposure of the field of operation by way of the peritoneum, if necessary, but outside of the peritoneum, if possible. There is no doubt that in cases with infection there is increased danger in going through the peritoneum, not in the skilled hands of the expert clinician, but in the hands of the occasional operator. The patient should be placed in an exaggerated Trendelenburg position. Hemorrhage must be controlled, and the wound in the bladder closed immediately. I insist that it is important that the bladder be closed immediately after operation, no drainage to be inserted, and no retention catheter to be introduced. In the majority of cases there is no leakage, and if a few drops of urine escape, no harm is done. The patients are up and about in a week or ten days, and the results, as a rule, are extremely satisfactory. I do not believe that it is possible to operate on all patients with malignant tumors. What does Dr. Judd do in unquestionably malignant tumors if he cannot do a radical operation?

DR. STEPHEN H. WATTS, Charlottesville, Va.: In connection with stricture of the urethra, I wish to direct attention to the value of resection in very extensive, almost impermeable cases. My attention was called to this by two cases that have recently come under my care, very extensive strictures, accompanied by fistulous openings in the perineum. Several openings were situated in the scrotum at the junction with the penis. I went into the perineum and divided the scrotum into two parts, turning the testicles out on either side. In that way I obtained a good exposure of the entire urethra up to the penoscrotal junction. I excised the stricture, took away all scar tissue possible to get good tissue approximation. You do not have to loosen up the ends of the urethra to any great extent, but it is surprising how easily you can free the urethra and how readily the ends come together. In one of my cases I excised an inch and a half and in another case an inch and a quarter, the ends coming together with little tension. The approximation was made over a rubber catheter in the urethra. Both patients did beautifully. I want to emphasize the importance of excising these extensive strictures and bringing the ends together. I believe that this is not done often enough. I saw one patient who had been operated on four times, and you can readily imagine the condition of the perineal urethra. It was nothing but a mass of scar tissue. In this case I could not have done anything else. I would like to have this procedure more universally adopted.

DR. J. BLOCK, Kansas City, Mo.: I was very much delighted with all the papers and particularly with Dr. Judd's, dealing with the removal of vesical tumors by the transperitoneal route. Of course, every case becomes practically a law unto itself. We ought to determine the size and location of these growths, especially in the case of a small tumor. If there is only one tumor the intravesical removal is relatively easy. As was stated before, the Nitze operating cystoscope, in the hands of a competent man, will accomplish all that is desired without a major operation, but I can very readily see that in the case of a very large tumor, especially when situated at the base, broadly attached, it will be necessary to select a more accessible route, and that is where the transperitoneal operation has its place. I was somewhat astonished a short time ago to read a report of three or four such cases in which an operation was done by a prominent operator, and where after reading the description of the operation one could readily perceive that the same work could have been done by the suprapubic method without incurring a possible risk of infecting the peritoneum.

Dr. Pedersen's paper is of unusual interest, especially since he includes every form of stricture, but I was surprised that he did not lay more stress on the feasibility and appropriate-

ness of treating all strictures, except the most resilient, by dilatation. You can accomplish as much by dilatation as by a cutting operation, and inasmuch as no form of treatment is an absolute guarantee against the recurrence of the coarctation, the easier method would seem the best to adopt. Like Dr. Watts, I prefer excision. I have excised strictures where it was necessary to divide the scrotum to get access to the part, for the reason that the stricture was situated near the triangular ligament. Several times, in boys not over 10 or 12 years old, suffering from traumatic stricture, as much as half an inch was removed and excellent results were obtained by simply coapting the freshened proximal and distal ends of the tube with sutures and allowing a Nélaton catheter to remain in place to serve as a splint.

DR. JOHN H. GIBBON, Philadelphia: I first saw this operation Dr. Bartlett describes performed by Dr. Richard H. Harte, of Philadelphia, six or eight years ago. Up to that time I did not know that it was possible to excise the hydrocele sac without rupture. I have done it on one occasion since then, but the Doyen operation is so much simpler and gives such good results that I usually employ it. There is no doubt that the operation which he describes is the perfection of the excision operation.

DR. F. C. VALENTINE, New York City: Posner, in speaking of the so-called impermeable stricture, defined it as an evidence of the physician's inaptitude and the patient's lack of patience. He holds, and my experience has confirmed his view, that there is no such thing as an impermeable stricture. With patience, and if the patient will submit, I have found that all strictures are permeable to at least the smaller filiform bougies. A permeable stricture was defined by the essayist as one admitting a 20 French in the hands of the general practitioner, and an 18 in the hands of the specialist. With a lumen of that size, the patient can always empty his bladder, and therefore the principal danger of that class of stricture, that of an ascending vesical infection, is most unlikely. If I understood Dr. Pedersen correctly, he considers the whalebone sounds safe, as compared with woven filiform bougies. I cannot agree with him, for the very reason that the whalebone bougie is likely to splinter, and yet there are cases in which it is useful. He also said that a 7 French is the smallest stricture that would admit of dilatation, and therefore one would have to resort to other remedial measures, alluding, of course, to urethrotomy. In this, again, experience leads me to differ. For the treatment of apparently intransitable stricture I would start from the proposition that if conditions do not permit traversing the urethra, suprapubic puncture twice or even three times daily will give the needed immediate relief. Within a day or two, a fine filiform can usually be coaxed through the urethra. This accomplished, the way to effective dilatation is prepared. Of course, with an infected bladder, under the circumstances now being considered, cystotomy is imperatively required. When, however, dilatation, which the author so ably advocates, is feasible, the cardinal objects of treatment—reestablishment of free normal vesical evacuation, restoration of the urethra's suppleness, and a normal mucosa—are best attained.

DR. E. S. JUDD, Rochester, Minn: With reference to the point which Dr. Davis made, that he felt safer in making suprapubic drainage,—while we have drained in some cases, it has always been in cases in which we interfered with the prostatic urethra; otherwise we prefer not to drain.

I class these cases with resection of the intestine or gastroenterostomy. There is here no more reason for draining than there is in those operations. The convalescence is shortened considerably if one is able to close up the bladder.

As to the difficulties in complete removal of the bladder, we have not as yet satisfactorily removed the entire bladder, and conservative operations in cases where the growth is too extensive for removal have not been satisfactory. We have removed the small growths with the cystoscope, but it has been in unsatisfactory cases and had showed the greatest number of recurrences. My point in this paper is that in most cases of tumor of the bladder the growth is situated at the base, a part of the bladder that cannot be reached easily through a suprapubic incision. If the tumor is in one of the

upper quadrants, we prefer to remove it through a suprapubic incision.

DR. V. C. PEDERSON: With regard to incision of the urethra, I intended to lay down the general rule that no other method should be adopted until dilatation has been given a fair trial. It has always seemed to me that excision of the urethra, substituted for an inflammatory condition, a traumatic condition, and every one knows that the most intractable of all strictures to treat are the traumatic ones, consequently I have never found a stricture which to my best judgement required excision.

With regard to Dr. Valentine's proper criticism, in an abbreviated paper one can hardly do the subject of stricture justice. He has assumed that I did not say that some strictures are so tight as to require the retention of a filiform bougie for two or three days, whereas the limit I stated, namely 7 French, applied only to the initial application of tunneled sounds in a closed stricture. A 15 French sound is a little too small for the average case unless a guide is also used. Dr. Valentine stated that the acme of cure is the restoration of the mucosa to its normal condition. I do not believe that that is possible in the preponderating majority of cases of stricture because strictures proceed from destroyed mucous membrane which cannot be restored. Stricture is sometimes periurethral scar tissue which cannot be removed but only dilated or stretched so as to obviate the obstruction. The cutting operation must be followed up by the passage of sounds and only recently I saw a case in point that had been operated on a number of times ineffectually simply because no bougies were passed afterward.

A COMPARATIVE STUDY OF DIGALEN

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Among those drugs which act as direct stimulants to the heart's action none have been found which are able to replace the preparations of *Digitalis purpurea*. It has long been clearly recognized, however, that digitalis medication is complicated by a number of undesirable secondary effects. Briefly, these are its accumulative action, its tendency to produce disorders of appetite and digestion, and, finally, its irritant action, which interferes with its use by the hypodermic method. These untoward effects are so marked at times as to prevent the use of the drug; they always make great caution necessary in the administration in order that dangerous toxic effects may not follow.

The use of digitalis is further complicated by the fact that its therapeutic effects often do not appear until about the second day after medication is started, a drawback which makes it of practically no value in cases of acute heart failure. In certain cases the effect fails to appear even after several days, while in others the first indication that the drug has been absorbed is the appearance of symptoms of poisoning. These latter disagreeable features of the drug's action are usually ascribed to differences in the reaction of the patient, but it seems equally or even more probable that they are often due to variations in the potency of the drug used, the preparation being in one case much weaker, in another much more active than the normal.

Many attempts have been made from time to time to secure a digitalis preparation without these various undesirable qualities. Unfortunately, however, these efforts have not resulted in much success, although a large number of special formulas have been used in preparing the crude drug for therapeutic use. In this connection, the so-called pure principles of digitalis have been suggested

as offering a solution of the problem. These, however, although possessing the desirable effects of the crude drug are by no means free from its undesirable secondary effects. Of these digitoxin, the glucosid which occurs in the greatest amount in digitalis leaves, is by far the most potent. The use of digitoxin in therapeutics is made practically impossible, however, by its excessively irritant action, its tendency to produce disorders of digestion, its marked accumulative action, and, less important, its insolubility in water, which makes its administration difficult excepting in tablet form. In 1904, however, Cloetta¹ announced that as a result of several years' labor he had been able to isolate a digitoxin from digitalis leaves which was almost entirely devoid of these drawbacks. This new digitoxin (for sale under the trade name digalen) from a physical standpoint differed from the crystalline product of Schmiedeberg and Kiliani in being amorphous and in being much more soluble in water. From the therapeutic standpoint, according to Cloetta, it differed even more widely, being easily absorbed, the digitalis effect appearing within twenty-four hours, being without accumulative or toxic action and being so free from irritant qualities as to make it suitable for subcutaneous, intramuscular or intravenous injection. Moreover, being a definite chemical substance, it afforded a preparation entirely devoid of the variability so often present in the crude drug.

Aside from Cloetta's own investigation, the only work done regarding the identity of digalen with crystalline digitoxin was carried out by Kiliani,² who has done far more work on the chemistry of digitalis than any other investigator. He was unable to accept Cloetta's view, but rather pointed out that the formula given by Cloetta³ for digalen does not correspond to that for the crystalline substance, the former having a formula of $C_{14}H_{23}O_5$ with a molecular weight of 287, the latter of $C_{34}H_{54}O_{11}$, a molecular weight of 638. Kiliani concludes that digalen is only a high percentage of digitalein.

Clinical results would seem to indicate that Cloetta and a number of the clinicians who reported invariably good effects from digalen were in error (or based their conclusions on an inadequate number of cases) regarding the superiority of amorphous digitoxin over the older preparations of digitalis. A review of the literature (Reitter,⁴ Vlach,⁵ Frankel,⁶ Mueller⁷) shows that digalen is not devoid of cumulative action; that it possesses marked irritating properties, so irritant as to make subcutaneous injection practically impossible, causing edema and pain, lasting in some cases for two and three days and often causing great pain when given intramuscularly, or if given intravenously causing in some cases edema and thrombosis (Kottmann,⁸ Hochheim,⁹ Liverato,¹⁰ Veiel,¹¹ Teichmann¹²); that it causes disturbances of digestion apparently as often as the older galenicals, with loss of appetite, nausea and vomiting (Eichhorst,¹³ Veiel,¹¹ Teichman,¹² Mueller⁷), and that its effects do not appear more rapidly than from corresponding doses

1. Cloetta: München. med. Wehnschr., 1904, li, 1466-1468.
2. Kiliani: München. med. Wehnschr., 1907, liv, 886, 1112; Ber. d. deutsch. chem. Gesellsch., 1907, xl, 2996.
3. For Cloetta's reply to this criticism see München. med. Wehnschr., 1907, liv, 987.
4. Reitter: Wien. med. Wehnschr., 1905, lv, 2245.
5. Vlach: Prag. med. Wehnschr., 1906, xxxi, 43.
6. Frankel: Arch. f. exper. Path. u. Pharmacol., 1907, lvii, 123.
7. Mueller: München. med. Wehnschr., 1909, lvi, 904.
8. Kottmann: Ztschr. f. klin. Med., 1905, lvi, 128.
9. Hochheim: Zentralbl. f. inn. med., 1905, xx, 545.
10. Liverato: Cron. d. clin. med. di Genova, 1905, xi, 276.
11. Veiel: München. med. Wehnschr., 1906, lili, 2140.
12. Teichmann: Therap. d. Gegenw., 1907, xlviii, 199.
13. Eichhorst: Deutsch. med. Wehnschr., 1905, xxxi, 49.

(based on the manufacturer's claim that 0.3 mg. amorphous digitoxin (Cloetta) = 0.150 gm. folia digitalis) of the older preparation. Mueller,⁷ in a series of 18 cases, observed effects from doses of 6 c.c. of digalen on the second day, namely, increased amounts of urine or a decrease in heart rate. From doses of 5 c.c. the effect appeared first on the second and third day, doses of from 3 to 4 c.c. on the third to the fifth day, and from doses of 2.25 c.c. the action appeared on the fourth to the fifth day. From doses of 400 mg. of folia digitalis (in terms of digalen 2.66 c.c.) the effect appeared on the second day; 300 mg. of the leaves (equal to 2 c.c. digalen) produced effects on the third day, and Mueller remarks that these effects were not only more constant, but were also more powerful than from digalen. To facilitate comparison, these results are summarized in the following table.

TABLE 1

Time of onset of the therapeutic effects of digalen and folia digitalis with corresponding doses (doses of folia digitalis based on the manufacturers' claim that 1 c.c. digalen = 150 mg. of the leaves).

Doses in c.c. per day..	6	5	4	3	2.66	2.25	2
Day effects from digalen appeared	2	2-3	3-5	3-5	....	4-5	..
Day effects from folia dig. appeared .....	..	..	..	..	2	....	3

Waltl¹⁴ and Teichmann¹² also were unable to observe effects in the cases reported by them until the second or third day, and Frankel,¹⁵ from observations of the pulse and amplitude, reports that a digitalis action is manifest after 0.3 gm. doses¹⁶ of digitalis leaves as follows:

Patient.	Effects, Hours.	Patient.	Effects, Hours.
1	22	5	25
2	20	6	23
3	17	7	23
4	24	8	24

Regarding the claim that digalen is an efficient remedy in acute heart failure, von Ketly¹⁷ reported that the effects did not appear more quickly when given subcutaneously than by the mouth. Kottmann⁸ reported, however, that if digalen was given intravenously in large doses, 5 to 15 c.c. (amounts which were necessary to produce a distinct digitalis action) the action appeared in from two to five minutes. The danger of this method of exhibition makes such a use very questionable, however, as Teichmann¹² observed edema and thrombosis and, in one case, after a dose of 4 c.c., general tonic-clonic convulsions.

It seems rather strange that digalen has been accorded so much attention at the hands of the clinician in view of these reports and that so few experiments have been carried out on animals. A few investigations have been carried out, however, and these have tended to show that digalen had a true digitalis action—a result entirely in accord with Kiliani's report, however, that digalen was only an impure digitalein—the latter glucosid also having the same effect as digitoxin on the heart, excepting that it is manifested to a lesser degree. It seems doubly strange on account of Kiliani's denial of the chemical identity of this new digitoxin with the older crystalline substance that comparative studies were not made along the lines used in the biologic standardization of the digitalis series. Neave,¹⁹ apparently the only investigator to make such a study, reported from his experiments on

frogs and rabbits that, although digalen has the characteristic action, it is very much less active than a like amount of crystallized digitoxin, 1.2 mg. amorphous digitoxin (Cloetta) causing a rise in blood-pressure of only 14 per cent.—a slowing in rate of 2 per cent. as compared with a rise in pressure of 21.9 per cent., a slowing in rate of 14.7 per cent. from 0.5 mg. crystalline digitoxin.

Owing to the claims of the advertising literature which ignores these various reports, and in view of the statement of Kottmann and others that digalen equaled crystalline digitoxin in activity, as it should if chemically identical with it, a series of experiments were undertaken at this laboratory to determine biologically the relation of its activity to that of digitalein and crystalline digitoxin.

The most accurate method of determining the therapeutic value of digitalis preparations is biologic rather than chemical. Of the various biologic methods, that of using the typical action of digitalis on the frog's heart as a final reaction is more commonly used than all other methods, but determinations of the rise in blood-pressure of the minimum lethal dose for mammals have also been used as tests for the activity of the preparations under question. The method adopted at this laboratory for general use is a frog-heart method. The frogs, *Rana pipiens*, are carefully weighed and the dose estimated in terms of grams of body weight of the animal. The drug is injected into the anterior lymph-sac and at the end of an hour the animal is pithed, the heart is exposed and its condition noted. The heart should have just stopped beating and should be in firm systolic contraction. If the dose has been too small to bring this about, larger amounts are given until the desired results are obtained; if too large, the dose is reduced. Five different samples of digalen²⁰ were examined according to this method. These were all obtained in the open market, but one had been in stock at this laboratory for about two years and two others for about three years; the remaining two (Samples 4 and 5) were obtained during the summer. The appearance of the various samples was very much the same, although the older preparations appeared somewhat more tinged with yellow. One sample, however, that of 1905, had evidently undergone some marked chemical change since it contained a considerable amount of a dark brown granular substance,²¹ a precipitate not present in any of the other samples.

These various samples were tested for their effect on the frog's heart in the manner described above and gave the results shown in Table 2.

From the summary it will be noted that the several samples of digalen varied in value from about 0.02 to over 0.04, the older preparations generally testing weaker than those of more recent manufacture, thus indicating deterioration with age, despite the claim that digalen is a stable preparation of digitalis.

In order to compare the value of these samples of digalen with digitoxin and digitalein, experiments were carried out on frogs, using the same experimental procedure as nearly as possible. The results, using Merck's crystalline digitoxin and Merck's digitalein, are as shown in Table 3.

20. Through the courtesy of the manufacturers the dates of manufacture for the several samples were obtained, viz., No. 1, 1905; No. 2, 1906; No. 3, 1907; Nos. 4 and 5, 1908.

21. I am indebted to Mr. M. I. Wilbert for this sample and for the statement that when the precipitate first formed it was nearly white and that it had become dark on standing. It is also to be noted that in no instance had these samples been opened, so that this change came about as a result of natural causes and was not a deterioration due to opening the bottle, etc.

14. Waltl: Deutsch. Aerzte- Ztg., 1904, p. 461.

15. Frankel, A.: Arch. f. exper. Path. u. Pharm., 1907, lvii, 131.

16. It is to be noted that this amount of leaves corresponds to 2 c.c. digalen, which produces its first effect about the fourth to fifth day, according to Mueller.

17. Von Ketly: Therap. Monatsh., 1906, xx, 272.

19. Neave: Scot. Med. and Surg. Jour., 1907, xx, 390.

TABLE 2
Determination of the systolic stoppage of the heart of *Rana pipiens* in one hour. Drug injected into abdominal lymph-sac. The doses are given in milligrams per gram of body weight.

DIGALEN No. 1		
Number of Frogs Used.	Dose Mg.	Result.
1	0.020	..
1	0.030	..
1	0.035	..
1	0.035	..
1	0.040	+ (?) Diastole.
DIGALEN No. 2		
1	0.020	..
1	0.025	..
1	0.030	..
1	0.030	+
1	0.035	+
DIGALEN No. 3		
1	0.020	..
1	0.025	..
1	0.030	..
1	0.035	+
1	0.040	+
DIGALEN No. 4		
1	0.020	..
1	0.020	..
1	0.025	..
1	0.025	+
1	0.027	..
1	0.030	+
DIGALEN No. 5		
1	0.010	..
1	0.015	..
1	0.020	.. (?) Diastole.
1	0.022	+
1	0.025	+
1	0.030	+
Summary.		
Digalen No. 1.....	0.040 (?)	Minimum Lethal Dose.
Digalen No. 2.....	0.030	Mg.
Digalen No. 3.....	0.035	
Digalen No. 4.....	0.027	
Digalen No. 5.....	0.022	

TABLE 3
Determination of the systolic stoppage of the heart of *Rana pipiens* in one hour. Drug injected into the abdominal lymph sac. The doses are given in milligrams per gram of body weight.

DIGITOXIN IN 25 PER CENT. ALCOHOL		
Number of Animals Used.	Dose Mg.	Result.
1	0.006	..
1	0.007	..
1	0.008	+
1	0.008	+
1	0.009	+
DIGITALEIN 7 PER CENT. ALCOHOL, 25 PER CENT. GLYCERIN		
1	0.025	..
1	0.026	..
1	0.026	+
1	0.027	..
1	0.028	+
1	0.028	+
1	0.029	+

The results of these experiments on frogs would indicate that digalen, basing conclusions on the assay of the best testing samples, occupied a place between crystalline digitoxin and digitalein, the comparative values, according to the above tests, being crystalline digitoxin 0.008, digalen 0.022, and digitalein 0.028.

Experiments were also carried out to determine the comparative effects of the various samples of digalen on blood-pressure. For this purpose, cats of about the same weight (3,000 to 3,600 grams) were used and were anesthetized for the experiments by ethyl carbamate (urethane) and chloral given by the stomach. The blood-pressures were taken from the carotid artery and the injections of the drug made through the external jugular. In working with digitalis it is ordinarily advisable, on account of its accumulative action, to take no reading except the first as determinative, but in this series, after an interval of an hour, further injections were made and the readings incorporated to make up the average. In all cases 2 c.c. doses were used, and the rise

in blood-pressure and the decrease in heart-rate estimated in per cent. The results of this series of experiments are given in Table 4.

TABLE 4 Summary of experiments made on the blood-pressure of cats.		
	Average Decrease in Rate.	Average Increase in Blood-Pressure.
	%	%
Digalen No. 1 (two readings).....	2.0	7.1
Digalen No. 2 (two readings).....	7.7	3.6
Digalen No. 3 (two readings).....	6.9	5.0
Digalen No. 4 (four readings).....	5.0	7.7
Digalen No. 5 (four readings).....	6.2	10.2

The results tabulated in this summary agree in a general way with those obtained in the experiments on the frog's heart, viz.: the oldest preparations give the smallest increase in pressure. Exceptions are to be noted, however, in the case of Sample 1, which gives a relatively marked increase in blood-pressure, but failed to stop the frog's heart in systole. Also Sample 2, which assayed on the frog's heart somewhat higher than Sample 3, has somewhat the lesser effect on the blood-pressure.

Blood-pressure experiments were also carried out with digitoxin (Merck) and digitalein (Merck) in order to compare their effect with that obtained from the use of digalen.

The digitoxin was dissolved in 25 per cent. alcohol, the digitalein in 25 per cent. glycerin and 7 per cent. alcohol, the solvents used in the manufacture of digalen.

Digitoxin in three experiments, using 0.2 mg. doses in two cases and 0.4 mg. in the other, gave an average rise in pressure of 22.1 per cent., along with a decrease in rate of 7 per cent.

Digitalein, in an average dose of 1 mg., gave a rise in blood-pressure of 9 per cent.; the heart-rate was slowed on the average 10 per cent.

In view of the fact that the average rise in blood-pressure from 2 c.c. doses of digalen (0.6 mg. amorphous digitoxin) was only 6.7 per cent., and that the average decrease in rate from the same dose was only 5.6 per cent., one may conclude that digalen is considerably less active than crystalline digitoxin and that it is of about the same potency as corresponding amounts of digitalein. This conclusion is also borne out by the following series of experiments.

White mice of the same lot were weighed, placed in separate jars and injected beneath the loose skin of the back with digalen, digitoxin (Merck) and digitalein (Merck). The doses were calculated in terms of grams of body weight. Increasing amounts were injected until the minimum lethal dose was obtained. The results of these experiments are given in Table 5.

TABLE 5 Determination of the minimum lethal dose for white mice, subcutaneous injection. Dose in milligrams per gram of body weight.		
DIGITOXIN IN 25 PER CENT. ALCOHOL		
Number of Mice Used.	Dose.	Result.
1	0.008	..
1	0.011	..
1	0.014	+
1	0.016	+
1	0.017	+
DIGALEN SAMPLE NO. 5		
1	0.030	..
2	0.040	..
1	0.050	+
1	0.060	+
DIGITALEIN 7 PER CENT. ALCOHOL, 25 PER CENT. GLYCERIN		
1	0.015	..
1	0.025	..
1	0.040	..
1	0.055	..
1	0.065	+
1	0.070	+

From this table it is apparent that the minimum lethal dose for digalen again is considerably larger than that for digitoxin (for mice about four times). Digitalein, as in other methods of testing, assayed weaker than digalen, but, according to this method, appeared to be very little weaker comparatively.

With regard to the general action of digalen on both frogs and mammals, it appears to possess considerably more stimulant action on the central nervous system than other digitalis preparations. In almost every case in the frog experiments the early symptoms of absorption were convulsive movements. At times these were clonic, but more often were tonic in character, the legs being extended and remaining in hyperextension for some time. The effect of digalen on mice was much the same, except that the convulsions were usually clonic in character. In the blood-pressure experiments no convulsions were so clearly present, the animal being anesthetized, but it was noted that struggling was often a sequel of the injection of even small amounts of digalen and that, to prevent this, further small doses of ethyl carbamate were necessary. It is of interest, in this connection, to remember that Teichmann¹² reported such symptoms of excessive central nervous system stimulation in a patient who was given 4 c.c. digalen intravenously.

CONCLUSIONS

Digalen is not a uniformly stable preparation, as is shown by the gross appearance of Sample 1 and by biologic tests of the five different samples. Biologic tests also indicate that digalen is relatively much less potent than corresponding amounts of crystalline digitoxin, but that it is of about the same activity as digitalein.

The experience of clinicians indicates that digalen is much less effective than is claimed and that the secondary action of the digitalis group appears equally often after its use as with the older and cheaper galenicals. Its use in cases of acute heart failure, whether by intramuscular or intravenous injection, seems to open serious objection (on account of the pain and danger of thrombosis) and it would apparently be better practice in such cases to use either strophanthin given intramuscularly or one of the preparations of the suprarenal glands by intravenous injection.

Twenty-fifth and E Streets N. W.

The Influence of Carbohydrates and Fats on Protein Metabolism.—That carbohydrates are most probably important factors in protein metabolism is shown by E. P. Cathcart (*Jour. Physiol.*, October, 1909, xxxix, 311.) in a series of dieting and fasting experiments on human individuals. The amount of creatin appearing in the urine was taken as an indication of the condition of the protein metabolism in that individual, since it was shown, by Benedict as well as by Cathcart himself, that creatin was a constant excretory product during inanition and hence purely of endogenous origin. As soon as food is supplied the creatin practically disappears from the urine. The hypothesis is put forward that the carbohydrates are absolutely essential for endocellular synthetic processes in connection with protein metabolism; that a resynthesis takes place in the tissues (muscles) and that the greater part of the muscle protein tissue nitrogen which is set free as the result of work does not appear in the urine but is reutilized; "further, that the foodstuff which plays the most important rôle in this resynthesis is carbohydrate. Fats apparently must undergo some change which requires time to produce." It is also found that with a carbohydrate diet, practically nitrogen- and fat-free, there is a fall in the output of urinary nitrogen; with a fat diet, practically nitrogen- and carbohydrate-free, there is a marked rise in the output of urinary nitrogen.

TWO CASES OF CREEPING ERUPTION

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This condition of dermatomyiasis is apparently rare; I can find but one good description, Hamburger's article in the *Journal of Cutaneous Diseases*, 1904. Since studying the two cases here reported, two others have been sent to me, so the apparent rarity of the condition may be due chiefly to its passing unrecognized.

It would seem very much more satisfactory if we could find the larvæ of this parasite, but everybody in this country seems to have failed to do so, though several Russian investigators state they have done so.

CASE 1.—The patient, Mrs. B., first had an attack of the eruption on the right ankle in September, 1908. This lasted two months. The patient went to a hospital, but did not understand what the disease was and apparently went away



Creeping eruption on plantar surfaces of feet, Case 2.

without any treatment. I did not see this, but according to the patient's description there was a very small elevated pimple like a mosquito bite, which itched badly, and from this a little red line extended and healing at back end as fast as it extended. The patient could distinctly feel and see the parasite's progress; it ran up and down the ankle four or five inches, came back again, then across. Some days it did not move and others it progressed an inch or two inches.

The second attack was about three months after the first. The eruption made its appearance on the dorsal surface of the left hand. I saw and followed the attack; it was characteristic in every respect according to the description in Hamburger's article. A raised red line 2 mm. in diameter and covered at varying intervals with small vesicles commenced in the middle of the back of hand and traveled around the back of the hand in loops, back and forth, and finally ended down between the forefinger and thumb and then apparently died. I failed to demonstrate any larvæ. The patient is now well.

I treated the second attack with various caustics, antiseptics and by incisions, but cannot say that the treatment had any

effect as the disease seemed to stop spontaneously. No idea can be formed as to how the patient became infected.

CASE 2.—The patient, Sergeant F. P., Eighth Band, C. A. C., first noticed small red pimple on middle of plantar surface, left foot, very itchy; from the pimple extended a small red line, serpentine in character; it seemed to extend about one inch in twenty-four hours. Two weeks later there was a similar condition on top of the fourth toe of the right foot, the line extending around the toe to the plantar surface of foot, running toward the heel for two and one-half inches, turning to the left about one and one-half inches, then doubling back on itself to the right aspect of foot. The patient could distinctly see and feel the progress of the parasite. The itching at night would keep the patient awake. These lines of eruption corresponded exactly to the description of creeping eruption as given by Hamburger in his article on the subject. Repeated examinations of small portions of skin and tissue failed to demonstrate the larvæ of the parasite, but in each instance stopped the progress of the disease at that point.

This case has been observed for about three weeks, and at present the eruption has practically disappeared. With the exception of a few scales along the line of the parasite's travel, the patient has entirely recovered. This case I believe to be specially interesting, because, so far as I am able to find out, it is the only case reported in which the eruption has occurred on two different parts of the patient at the same time.

Continuous observation on my part showed that this line increased about three-quarters of an inch in twenty-four hours. No idea can be formed as to how patient became infected.

MODIFIED TECHNIC IN RESECTION OF THE RECTUM *

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The accompanying schematic drawing will serve to illustrate a method of resecting the rectum employed by myself and Dr. Gronnerud in a special case. The growth for which the technic was employed extended

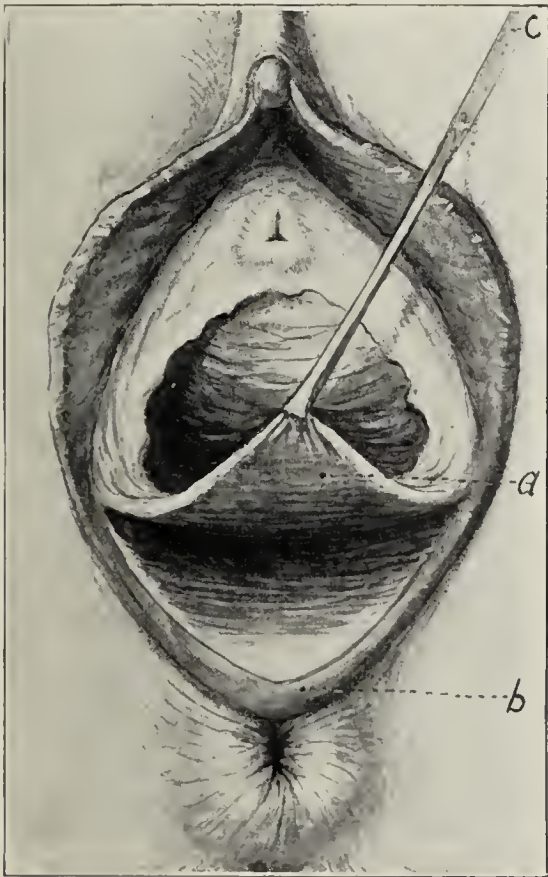


Fig. 1.—Mucocutaneous incision, corresponding to perineorrhaphy and extending from caruncle to caruncle, which was first made; also method of splitting the rectovaginal septum, a and b, and of elevating the posterior vaginal flap, a.

This illustration and those following are by Dr. Zan D. Klopfer.



Fig. 2.—The rectovaginal septum, a and b, has been divided, the flap, a, raised, the rectum exposed and the index-finger carried up through the divided septum to the peritoneal reflection, d.



Fig. 3.—Dissecting fascia and levator ani muscle, l, from rectum, g.

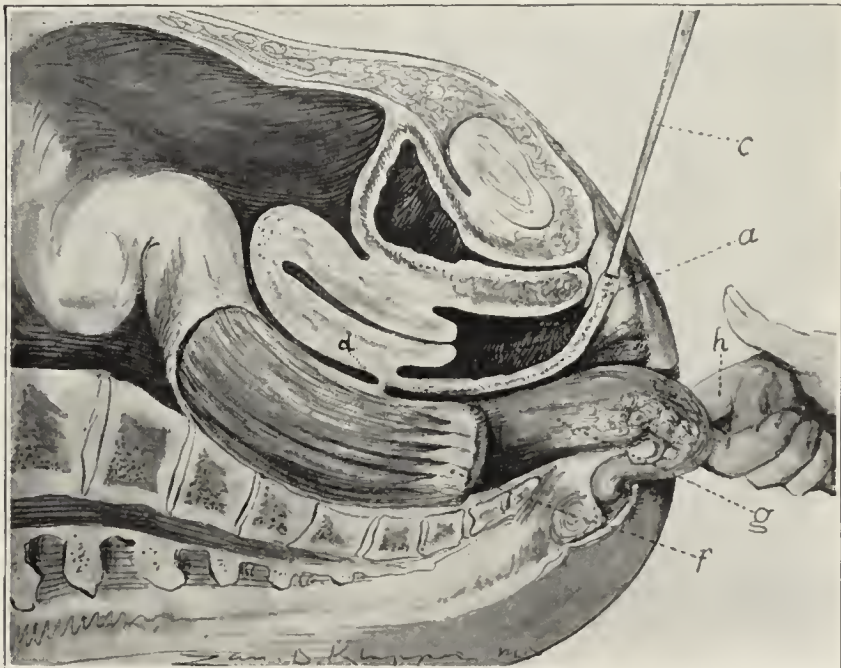


Fig. 4.—Lateral view. The rectum has been dissected from the cellular tissues, then pulled downward and outward with the finger, h, which has been passed between the rectum and coccyx. This exposes the tumor mass, g.

* Read at the Eleventh Annual Meeting of the American Proctologic Society, Atlantic City, June, 1909.

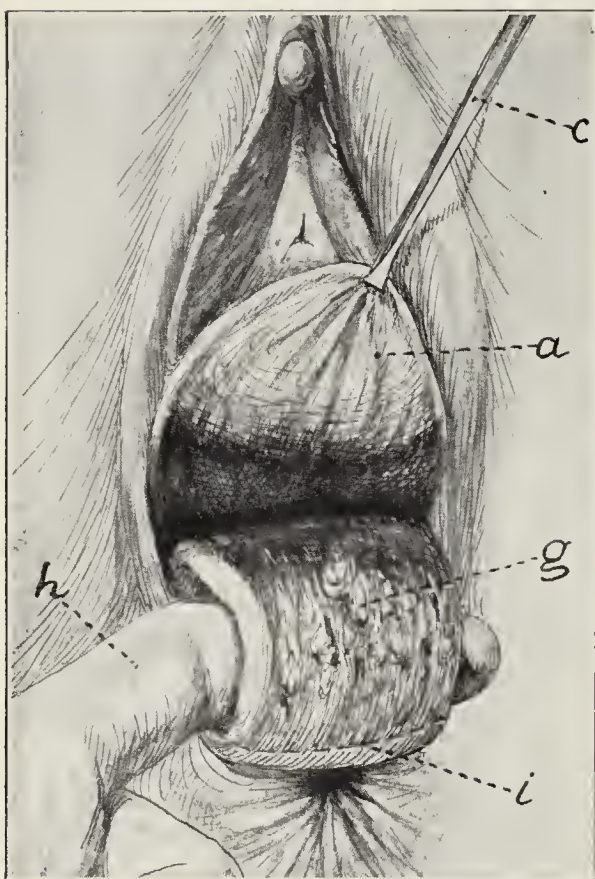


Fig. 5.—Front view of the same position as shown in Figure 4; i, line for distal incision.

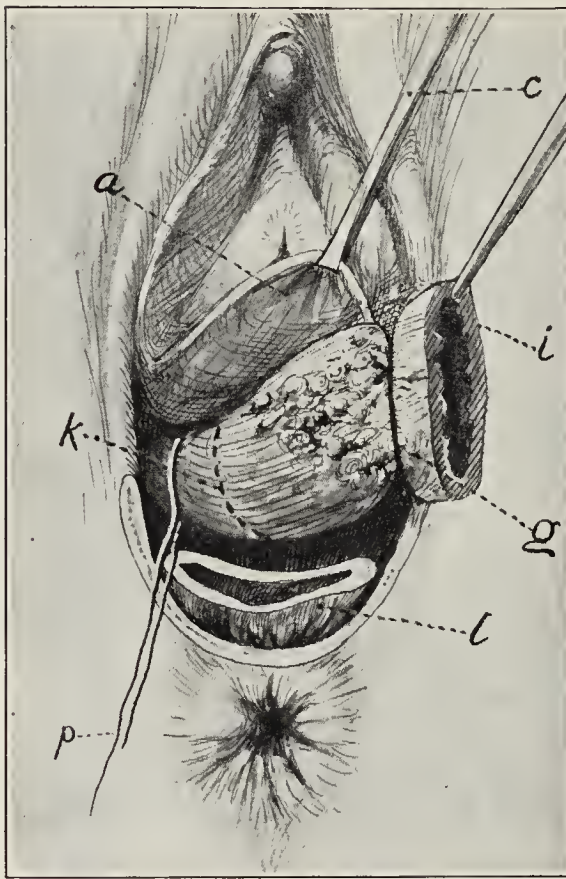


Fig. 6.—The distal incision has been made and the loosened end of the bowel containing the growth, g, elevated; l, is the anal canal; p, ligature for temporarily tying off the bowel; k, line for proximal incision.

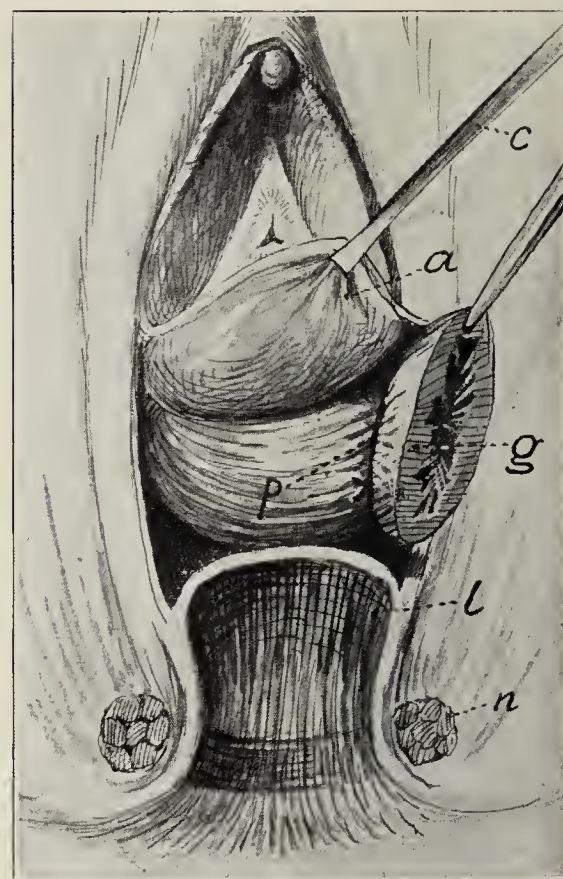


Fig. 7.—In this cut the tape, p, has been tied, the growth removed, and the sphincter, n, and the anal canal, l, incised and laid open.

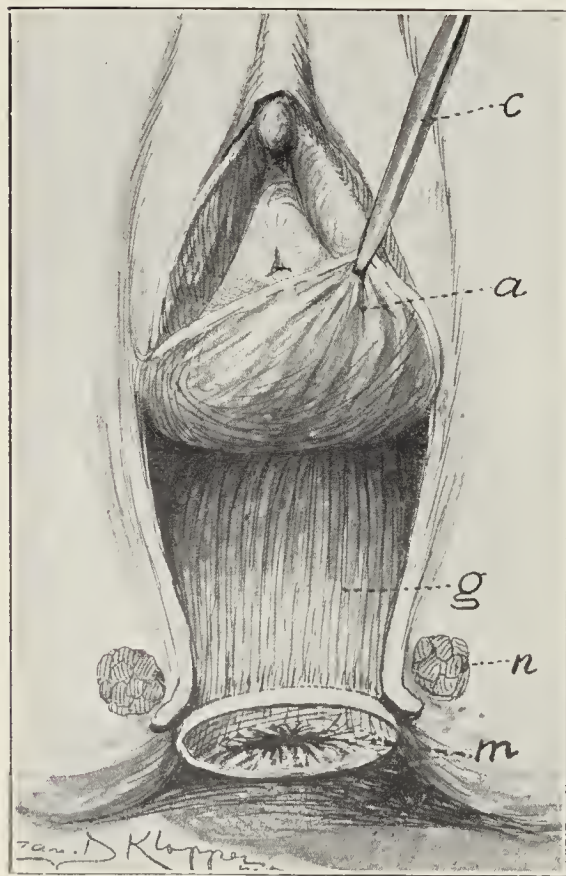


Fig. 8.—Rectum, g, adjusted in the divided anal canal preparatory to suturation.

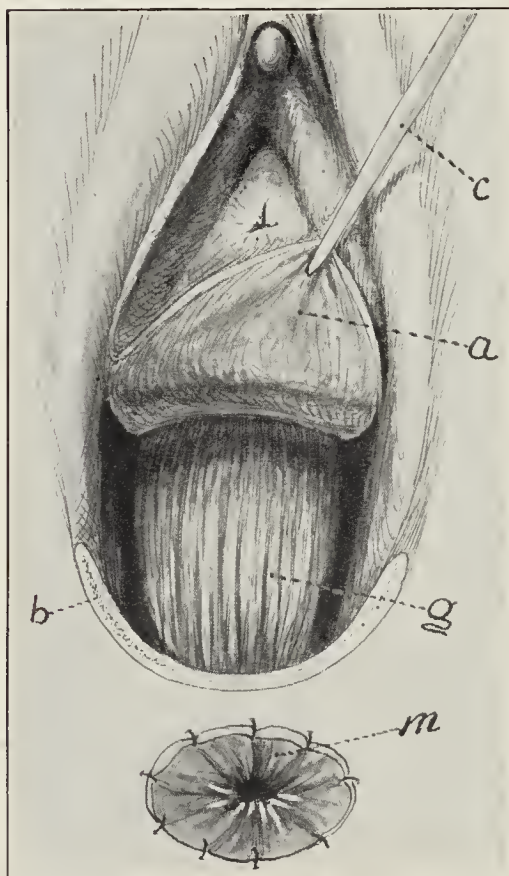


Fig. 9.—Rectum, g, being pulled through the everted and undivided canal and sutured externally at m, after which it retracts as shown in Figure 11.

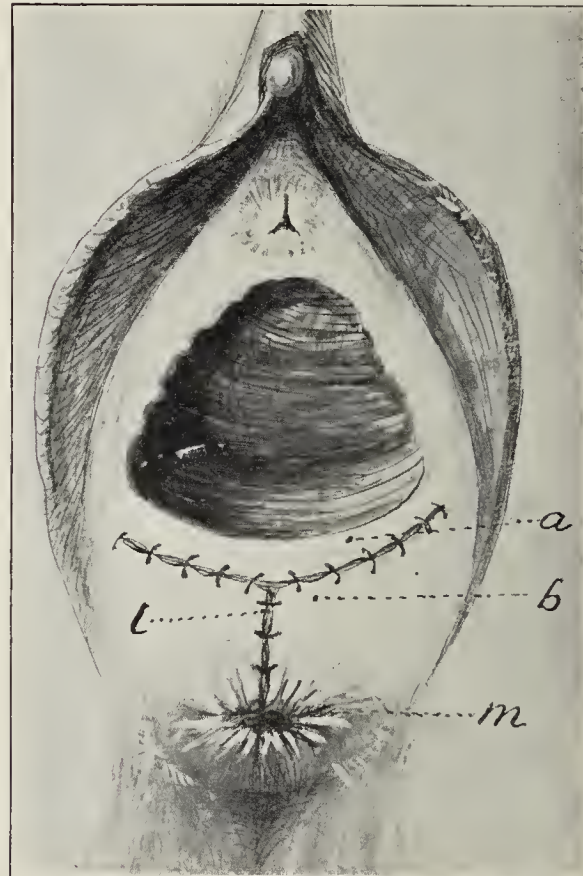


Fig. 10.—Lines of suturing in the completed operation, when the anal canal has been divided as shown in Figures 7 and 8.

upward from the proximal border of the levator ani muscle for about $2\frac{1}{2}$ inches.

After removing the growth, as illustrated, we divided the anal canal and completed the operation as shown in Figures 7, 8 and 10. In some cases, however, I think it preferable to evert the anal canal, pull the upper part of the rectum or sigmoid, as the case may be, through this eversion and effect the end-to-end anastomosis on the outside and complete the operation as shown in Figures 9 and 11.

After the growth had been removed the incision was closed with buried catgut sutures and silkworm gut for

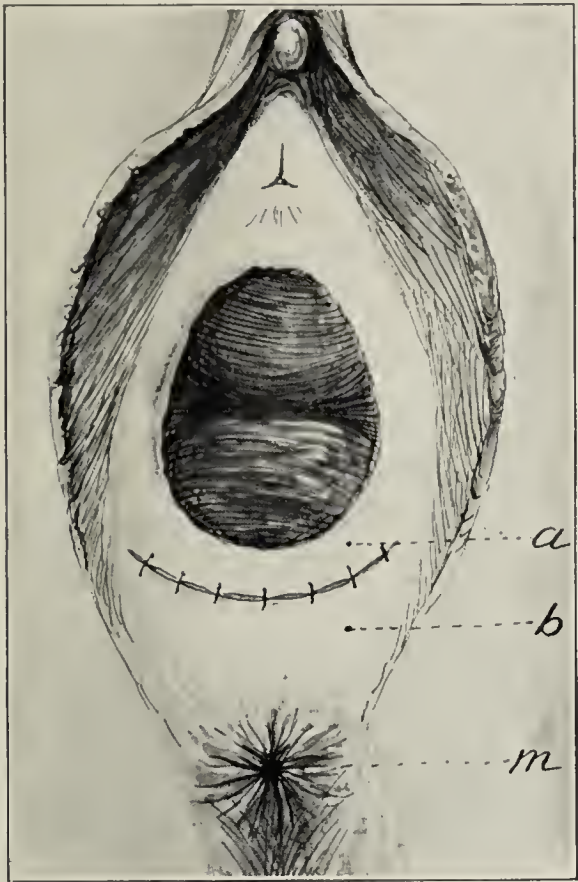


Fig. 11.—Line of suturing the rectovaginal septum in the completed operation when the anal canal has not been divided as shown in Figure 9.

the skin. The posterior vaginal flap, covering up, as it did, the field of operation, prevents the urine, vaginal and uterine secretions from coming in contact with the wound. Moreover, should it be found necessary, the reflection of peritoneum at d, in Figure 2, could be divided and the operation extended into the abdominal cavity.

The legends under the illustrations show the various steps in the operation.

103 State Street.

INTRACRANIAL NEURECTOMY OF THE SUPERIOR AND INFERIOR MAXILLARY NERVES FOR TIC DOULOUREUX

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History.—H. L. B., aged 68, applied for surgical treatment July 18. Patient gave a history of a most terrible tic douloureux of the left face and head from which he had suffered the most intense pain for ten years. He said further that he had had periodic attacks for thirty-five years, but the continuous pain had been present for nine or ten years. Until five years ago the area supplied by the ophthalmic division of the fifth nerve had been the one most affected, especially the infraorbital branch, and he had submitted to an operation

in Omaha, where this nerve was divided. This gave no relief, but rather intensified the pain in the area supplied by the supratrochlear and supraorbital branches of the first division and the superior and inferior maxillary divisions. While the patient was in the hospital for three days previous to the operation he showed slight symptoms of dementia, at times wandering about in a semicomatose condition. He had an extremely sensitive sore on the left side of his nose, which had been present for a long time. During this preoperative period of three days he had two epileptic attacks, to which he had been subject ever since the pain had become so intense. He could not bear the touch of the hand on any part of the area supplied by the nerve, although I noticed that he was not very sensitive in the area of the infraorbital nerve supply which, as stated above, had been cut. He complained also of great soreness of the gums, so sensitive that at times he could not close his mouth and he rarely ate anything but liquid diet. Shaving of the left face and head caused great pain. Some conjunctivitis was present.

Operation.—On the fourth day after admission I performed Cushing's operation for removing the Gasserian ganglion. Instead of clipping the zygoma with bone forceps as he suggests I used the Gigli-Haertel saw, first making two small grooves underneath the zygoma near the helix and malar bones with a sharp pointed probe and drawing the flexible blade through the opening with a curved forcep. This gave a most satisfactory severance of the arch and there was absolutely no deformity as accompanying photographs (Figs. 1 and 2) show. Following the suggestion of Cushing and others I nipped away a small portion of the skull at the junction of the great wing of the sphenoid and the squamous portion of the temporal bone, with a chisel and in so doing ruptured the middle meningeal artery which lay very deeply embedded in the meningeal groove in the bone, being more superficial than I had anticipated. After enlarging the opening to about $1\frac{1}{2}$ inches I tied the ruptured meningeal and was bothered with no more hemorrhage from this source. I want to emphasize the necessity of clipping the opening in the bone to include the crista infratemporalis and thus give



Fig. 1.—Neurectomy in tic douloureux; area of total surgical anesthesia at end of fourth week after operation.

a much clearer field for operative procedure; the lower the bone incision the better. After tying the artery I raised the temporal lobe with a flexible retractor about 1 inch in width and explored the cavity. Few of the accounts mention the almost absolute necessity of using a head light and many operators making the operation for the first time are apt to omit this most important detail. As all of the literature states, the hemorrhage is most annoying. Everything in the cavity bleeds. I tamped the bleeding points with very small sponges attached to the ends of straight forceps with little effect on the hemorrhage. I found that by pack-

ing the cavity tightly with dry gauze and leaving it for a minute or two I could control the hemorrhage entirely for the time being but this became very tedious work when such packing had to be replaced after the slightest manipulation of the intracranial structures. I examined the sheath of the dura which enclosed the ganglion and found that it was hard, almost like gristle and I was unable to separate the two layers with a blunt dissector. I am sure that this condition was pathologic for the consistency of the dura was much tougher, thicker, and more like gristle than the flexible fibrous dura. Unable to cope with the hemorrhage to the

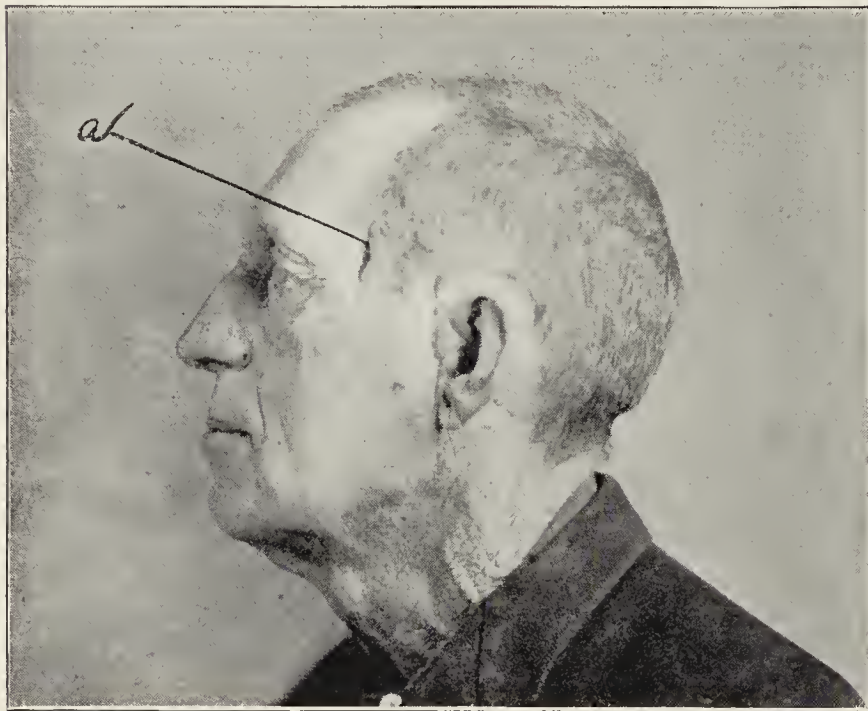


Fig. 2.—Four weeks after operation; a, gap where drainage was left.

extent of separating the sheath, dissecting out the ganglion and extirpating the sensory root, etc., I had to content myself with intracranial neurectomy of the superior and inferior maxillary nerves. I divided these at their entrance into the foramina rotundum and ovale and pushed the severed roots down through their exit through the foramina.

I then packed the cavity with iodoform gauze, sewed together the edges of the temporal muscle and fascia, leaving the opening in the skull to close naturally and tacked the edges of the skin together with fine linen leaving a small opening for the end of the iodoform packing. When the hemorrhage is so extensive I believe the packing left in the cavity for twenty-four hours serves to control it and can do no harm except lengthen the period of repair.

The operation lasted two and one-half hours. At the end of the second hour the patient's pulse became very weak, but he rallied well after hypodermoclysis with physiologic salt solution. Just before finishing, physiologic salt solution should be given per rectum to relieve the great thirst which follows long anesthesia. As a parenthesis I might add that operators will do well to give the saline enema just before discontinuing the anesthetic in all operations of any duration.

Postoperative History.—Patient rallied well and reported complete anesthesia of the left side of face and head in the area designated in Figure 1. There was some sensation in a small area supplied by the uncut supraorbital and supra-trochlear nerves, but in spots there was sensory paralysis due no doubt to the handling of the ganglion and pulling of the ophthalmic divisions. I removed the packing at the end of the second day. The wound healed rapidly. For the first few days there was some discharge which gradually subsided. The wound had completely healed by the end of the second week except the small opening where the packing had been removed and this had granulated by the end of the fourth week. The surgical anesthesia at this period is shown in Figure 1, and Figure 2 shows the healed incision with a small scar and no deformity from severing the zygoma.

How long this surgical anesthesia will last I am at a loss to say, but even if the relief is only temporary the operation without removal of the ganglion is perfectly justifiable. Whether relief becomes permanent time alone will show. To remove the ganglion as Cushing suggests, i. e., dissect it away from the sheath, clip the three divisions and "evulse the sensory root," requires the greatest skill in technic, a skill which can only be acquired by performing the operation on several cadavers before attempting it on the living patient. In any case the hemorrhage may compel one to abandon complete extirpation of the ganglion and to be content with intracranial neurectomy of the superior and inferior maxillary nerves, an operation which in itself demands the most careful study and preparation before attempting. In my opinion, the Cushing operation is the most practicable for the entire removal of the ganglion, and his method is the best to follow even if the nerves alone are cut. The greatest difficulty after entering the cranial cavity is the separation of the sheath and the removal of the ganglion intact, but any skilled operator with technic perfected by work on the cadaver should be able to accomplish this when there is no pathology in the region of the cavum Meckelii.

Seventh and Edmond Streets.

A NEW INTERLOCKING INTESTINAL STITCH *

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Up to the present time the interlocking intestinal sutures consist of an interlocking mattress suture described by Dr. Raymond Turek,¹ description of which is given below, and an interlocking suture described briefly by Dr. Frank Suggs,² U. S. A. This latter suture when completed is similar to the suture described for the first time in this article, but differs entirely in the manner in which it is inserted, requiring a needle with two eyes, also that the needle be rethreaded for each stitch by the operator and rethreaded in the wound, as one stitch already inserted remains in the needle. This is known to be a difficult task even with wet suture

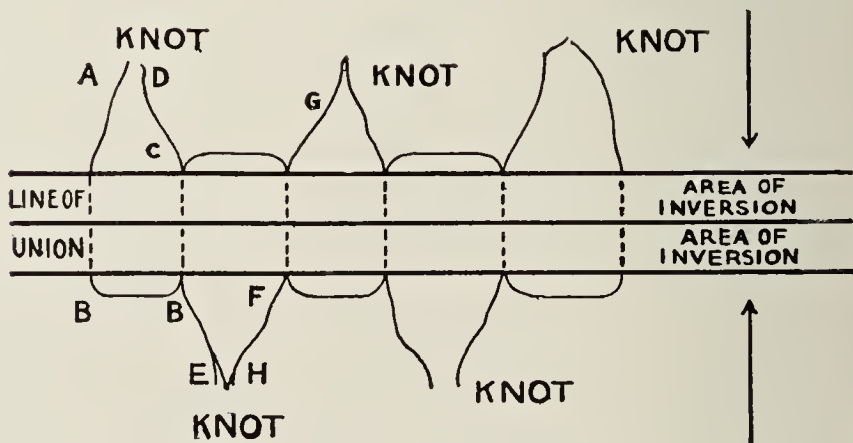


Fig. 1.—Suggs' method of suture.

material and intestinal needles under the best conditions. Furthermore, I wish to state in regard to these stitches that, although they are similar, after being inserted, they were originated independently of each other. Two months previous to the appearance of the description of Lieutenant Suggs' stitch I had demonstrated my stitch before the Advisory Committee of the Laboratory for

* From the Laboratory for Surgical Research, Harvard Medical School.

1. Turek, R.: *Ann. Surg.*, December, 1908.

2. Suggs, F.: *Letter, Ann. Surg.*, April, 1909.

Surgical Research at Harvard Medical School, and had been using the stitch on dogs for some time. I here-with reproduce Dr. Suggs' illustration (Fig. 1) and quote as follows from his article in order that the differences in the two methods may be made clear:

A needle is used with two eyes placed near together at the end. One eye, No. 1, is threaded with suture A, and the needle is passed through the two edges to be brought together, in the Lembert fashion, and out at B (Fig. 1). Here eye No. 2 is threaded with another suture and the two are carried back by the needle through the tissue as before, emerging at C. Unthread eye No. 1 and we have the free suture end D and also E that was left behind (long). Now rethread eye No. 1 with a new suture and pass the two again through the tissues to F, leaving behind as before the free end G. Unthread eye No. 2 leaving H free. Proceed thus to the end of the suture line.

Before tying A to D and E to H, etc., see that D has been passed from within outward beneath the loop at C and the same for E at B.

The Turk interlocking suture, as may be seen by the diagram, consists of an overlapped mattress suture, with the ends of the suture crossed when tied, so that they interlock. This stitch has the advantage of absolutely preventing any leakage between the stitches. Two of Dr. Turk's illustrations are included (Figs. 2 and 3) in order that his stitch may be illustrated, and that the advantage of any interlocking stitch over the simple or mattress suture may be shown.

While trying Dr. Turk's stitch on dogs, in the laboratory for Surgical Research, it occurred to me that an



Fig. 2.—Halsted mattress sutures; illustrating the manner in which spaces between sutures are increased on tying the knots. This feature is exaggerated in the drawing to bring out the weak points more fully.

interlocking, continuous stitch might be devised. This idea resulted in the following suture, which is really interrupted when completed, but is applied as a continuous suture, since, if one cared to have the thread long enough, only one needle and one piece of thread need be used to complete the union in a lateral anastomosis, gastro-enterostomy or simple closure of an intestinal wound.

The ordinary intestinal needle is threaded with a good-sized piece of paraffined linen, or whatever suture material may be chosen, one end being pulled out so that it is slightly longer than the other; the needle is then inserted in the Lembert fashion, first through one piece of intestine and then through the other, so that, when pulled through, but for an end, the stitch consists of but one strand; the needle is again inserted as for the ordinary mattress suture and emerges on the side from which it started, but when the thread is pulled up the

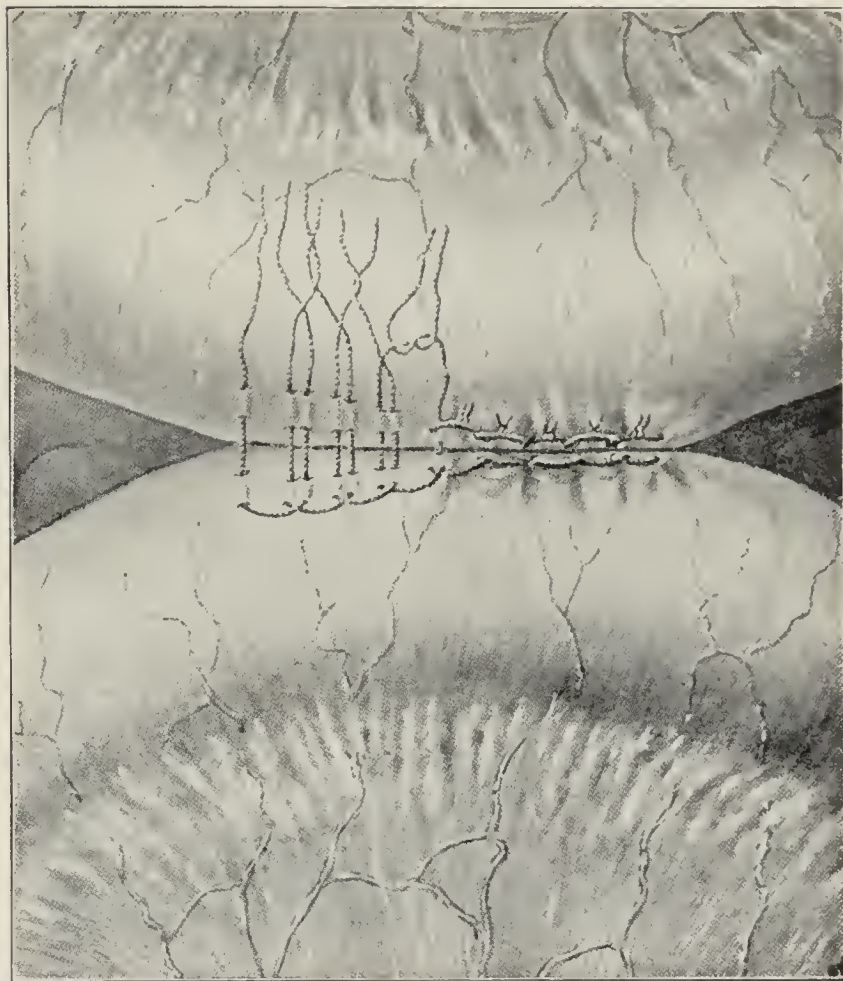


Fig. 3.—Turk interlocking suture with all knots on one side, showing manner of insertion of loops, and crossing of loose ends to form the chain. (After Turk.)

suture in the second set of holes contains two strands of thread, owing to the unevenness of the ends when the needle was threaded. There is now a simple mattress suture with one loose end and a double end within the needle, and another loose end on the opposite side of the stitch (Fig. 4); this latter loose end is now grasped with the fingers of the left hand (Fig. 4) and pulled gently, the needle being held in the fingers of the right hand so that the thread between the two hands is taut, with the result that the double strand of thread on the needle side of the wound separates and one strand bellies out close to the wound, the other remaining straight and taut as is shown in the illustration. Now if the assistant cuts the strand which bellies out (Fig. 4), it will be found to be the second end of the mattress suture and will leave one mattress suture and one-half of another already inserted. The loose end which has just been cut is now carried once around its mate (the uncut suture), thus providing for the lock when the next suture is applied. As the next step the needle is slid back along the thread a short distance, in order that, when the needle is again inserted for another mattress, the end will stick out so that it may be grasped as in the previous case. The second limb of the mattress is now made, and, as in the first case, there is a double strand in the stitch-holes. Again the loose end of the double strand is pulled on by the fingers of the left hand, the needle being held in the

right; the assistant cuts the thread which bellies out; again the suture is carried around its mate to be interlocked, and again the needle is slid back for the next stitch, and the process repeated until the circuit is completed.

There are two questions which one might naturally ask now, the principle of the stitch being understood. How is the last stitch interlocked with the first in finishing the circuit; and how could one go on if it became necessary owing to the stitch being used up or the needle broken, to take a new needle or a new thread? The same method applies in both cases.

In my first operations I used one long suture and found it very inconvenient, owing to the length of the thread to be pulled through the stitch holes, so I evolved the following

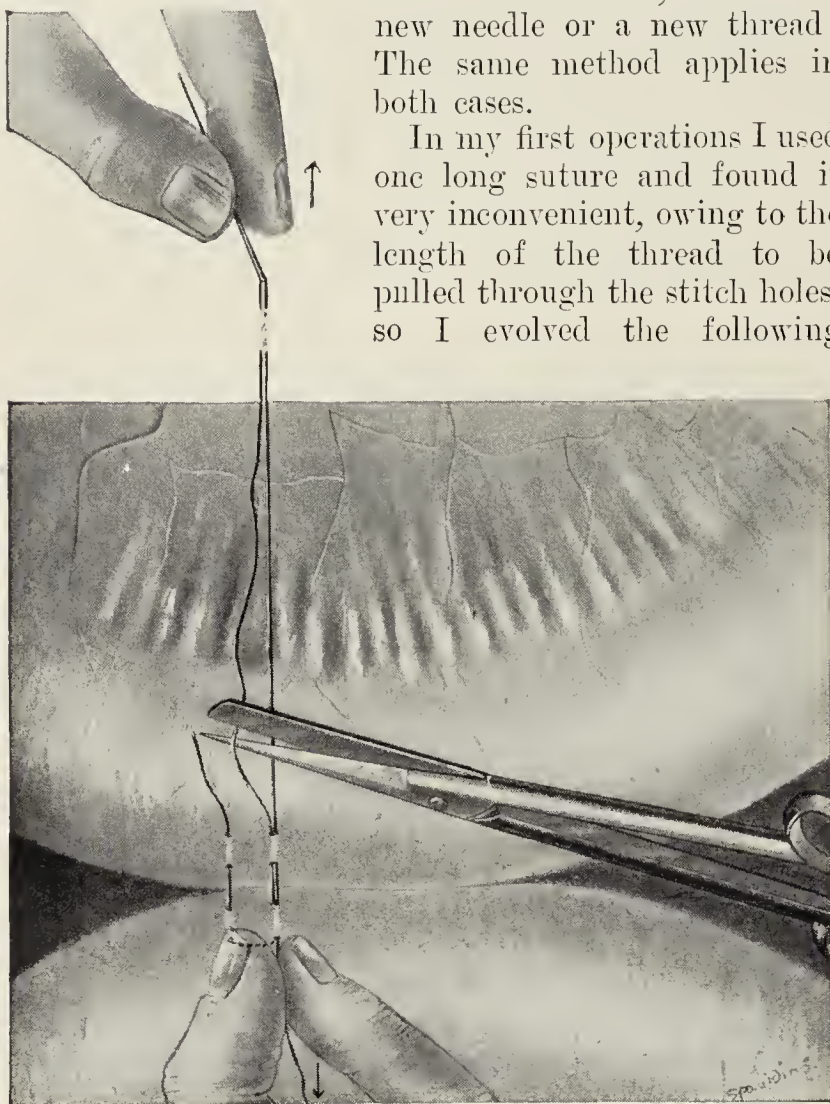


Fig. 4.—The two strands in the second set of stitch-holes; also showing the method of pulling on the tail thread, so that the strand forming the second limb of the mattress may be cut. This illustration also shows plainly how one mattress stitch and one-half of the next mattress stitch are inserted at one time. (After Turek.)

technic, which allows a new stitch to be substituted for the old one at any time. When the thread is becoming so short that another suture cannot be inserted with it, it is carried through the second part of the mattress as in the foregoing, but instead of two strands being left in the last stitch-holes, the loose end is pulled through, so that there is only a single strand left (Fig. 5). The mattress suture now stands with its proximal end locked, but its distal end inserted with a single strand as a simple mattress suture would be. The fresh suture is now inserted beneath the loop, on the side opposite the free ends and crosses to the other side between the free ends, not being inserted in the bowel at all (Fig. 5). The free ends are now tied, and as this is done it includes the end of the new suture so that it is interlocked, and a fresh start is made as in the beginning, an end being left free every time until the operator comes back around the circuit to the first stitch. Now as to locking the last stitch with the first in completing the circuit, I have left this part of the description until the last in order that the reader might not be

confused at the start in understanding the principle of the stitch.

The joining of the last and the first stitch is provided for when the first stitch is inserted, by laying in a new suture as described above, with the exception that, instead of being locked to the distal limb of the first mattress suture inserted, it is locked to the proximal, as though one were about to stitch in both directions. Here it is left, being placed out of the way, while the suture continues around the posterior to the anterior line of stitches. Nearly always, as the anterior line of suture nears the point where it was begun, the thread will be found becoming too short and then, instead of inserting a new suture beneath the loop and between the free ends as just described, one goes to the suture left locked to the distal limb of the first stitch and proceeds to the end just dropped, making the final lock by passing the needle between the two free ends and out beneath the loop, thus completing the circuit, each stitch being interlocked with the other and each knot being tied first on one side and then on the other.

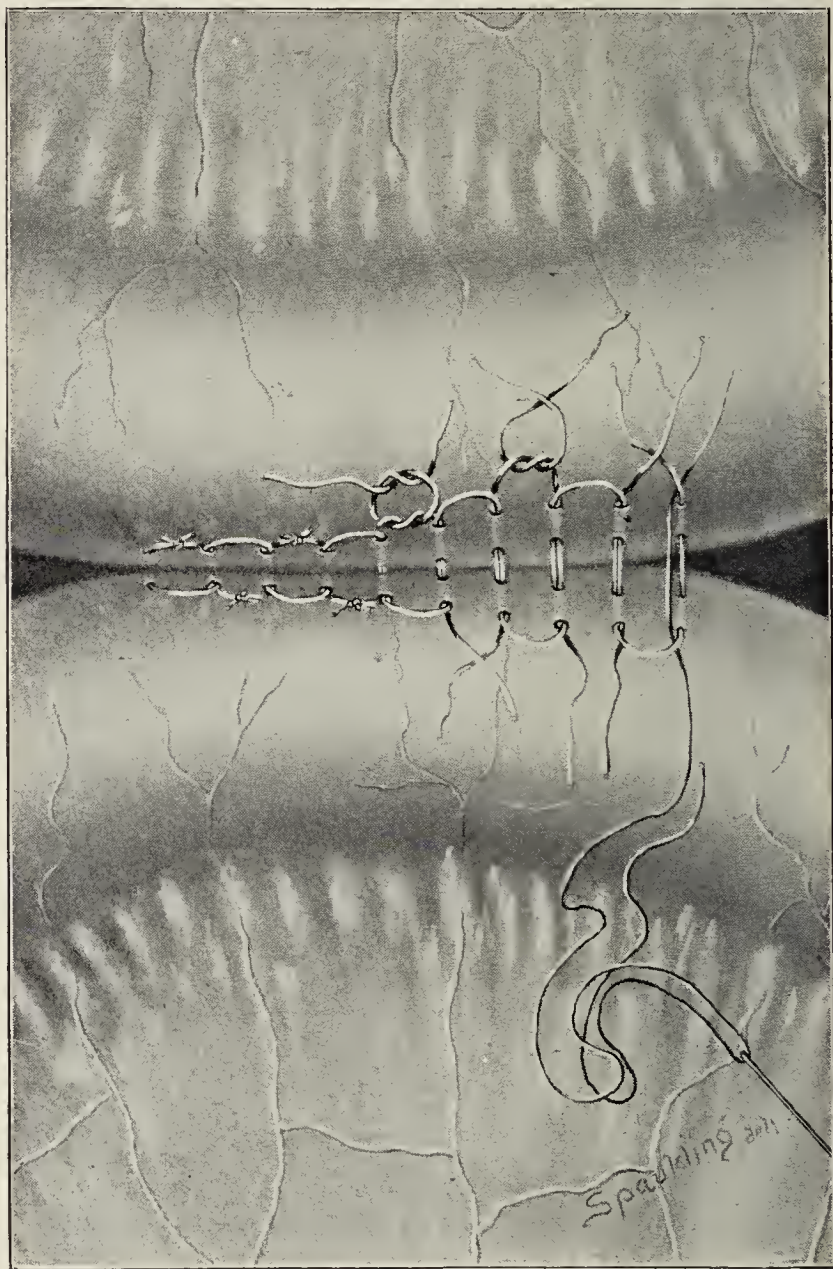


Fig. 5.—Manner in which the stitch locks in the stitch-holes; also stitches locked and tied. At the right end of suture is shown how a new suture is locked into the suture before it. (In the same manner the last suture is locked with the first in completing the circuit.)

If one chooses to use but one long thread for the whole circuit, the ends of the first suture must not be tied but left in the jaws of a hemostat, so that the last stitch, as the circuit is completed, may be interlocked with it.

One or two small points, which make the application of the stitch easier, may be added.

In doing an anastomosis of any two pieces of intestine, it will be found safer and easier to begin the stitch so that the corner between the anterior and posterior line of sutures be half turned, in order that when the end of the suture approaches the point where it was started, one does not have to sew deep down where the two walls of the bowel are held closely folded together by the posterior row of sutures. One should also be careful to avoid twists in the two strands of the suture, and these should all be taken out before the suture is inserted.

Care should also be taken not to leave the tail suture (that is, the suture to be grasped by the left hand and pulled back) any longer than is necessary to tie, because by doing so the length of the suture is sacrificed just so much, and a new suture is necessary so much sooner.

This suture has many advantages over the Turk stitch. In the first place, it does not require as many stitches, because there is no overlapping, and that much distance is saved for every stitch. It may be inserted much more rapidly, because each stitch inserted really means one and one-half stitches inserted. It saves the extra stitch-hole which occurs in the overlap in the Turk stitch, the lock being all in one set of stitch-holes. Its pull in locking is one stitch on another, where they cross in the stitch-holes, and not on a piece of bowel which is within the grasp of the two stitches, as they lock in the Turk stitch. This seems to be a distinct advantage, for, if in the locking process there is much pull, there must be considerable pressure on the tissue included between the two stitches, if they are locked as in the Turk stitch, by grasping a piece of tissue between them. While it is no advantage except to save one from confusing ends, one may tie each stitch as it is inserted, while in the Turk stitch the first stitch cannot be tied until the second one is put in.

Over Dr. Suggs' method this suture has the advantage of requiring no special needle, and of requiring no rethreading or unthreading. It also has the advantage of carrying through the bowel only the same thickness of suture material as would be carried through it in the use of any suture, that is, two strands, while in Dr. Suggs' method four strands must be carried through each time that the needle is inserted, since the needle is threaded with two separate sutures. It will also be found that, with a needle carrying two sutures on it, it is not easy to carry out the Lembert principle because of the difficulty of pulling four strands of suture material through the delicate wall of the bowel without ripping it.

I have applied this stitch to ten dogs, in some doing gastro-enterostomies and in some lateral anastomoses; I have inserted only one row of stitches, and in some of the lateral anastomoses the union has been made so near the knuckle of intestine that the strain on the anastomosis must have been very great. The dogs have all been killed and the specimens removed at the end of twelve days, and in all cases smooth union with no leakage has been found. There have been no adhesions from the free ends of the sutures, as they bury themselves by the infold caused by the mattress sutures.

I believe this suture to be the quickest, easiest and safest of all mattress or interlocking sutures.

I wish to express my thanks to Dr. Oliver Tinkham and Mr. Roy MacAusland, who have at various times acted as my assistants in these operations.

EPIDEMIC POLIOMYELITIS IN MONKEYS

THE ACTIVITY OF THE VIRUS *

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In our previous communications on experimental epidemic poliomyelitis¹ we described its successive transmission through two series of monkeys and discussed the nature of the virus that causes the disease. In the first place, we stated that by employing the intracerebral mode of inoculation of the virus the disease could be readily transmitted from monkey to monkey, possibly through an indefinite series, but that successive transmission could be accomplished also by means of inoculation into a large nerve (sciatic), into the circulation, the peritoneum and the subcutis. In the second place, we showed that the virus was filterable through a Berkefeld filter and withstood glycerination. In the present article we wish to describe certain additional facts that have been ascertained concerning the virus of epidemic poliomyelitis.

The virus was shown, by inoculation experiments, to be contained in the spinal cord and brain, but it was not known whether it was present also in the blood and other organs. We have produced the disease in a monkey by injecting an emulsion of the regional (axillary and inguinal) lymphatic glands, communicating with a nodule caused by a subcutaneous injection of the virus, that had induced paralysis. Two other monkeys were inoculated at the same time: one from the spinal cord and the other from the local subcutaneous lesion. The former developed paralysis and the latter is still well.

The degree of resistance of the virus is being studied. It has been determined that the spinal cord from a human case (Keefe) of poliomyelitis retains its virulence, apparently unimpaired, on being kept frozen at 2 to 4 C., in the Frigo apparatus, for a period of at least forty days; and when kept also for at least fifty days at a temperature about +4 C., during which time the latter specimen of spinal cord became slowly softened through autolysis and overgrown superficially with mold. These experiments have a bearing on the epidemiology of the disease and indicate that the cessation of the cases of the disease which occurs with the onset of cold weather does not depend on the destruction, although it may have to do with an effect on the multiplication, of the virus.

Moreover, the spinal cord of an affected monkey still transmits the disease, after having been suspended for at least seven days, over caustic potash, in a desiccator.

The activity of filtrates has been confirmed, and the possibility of their action being due to soluble toxic bodies and not to living organisms has been excluded by transferring the disease by means of the spinal cord obtained from the monkey that succumbed to a filtrate.

Can the virus be cultivated artificially? Portions of a bacteria-free filtrate were inoculated into bouillon containing 10 per cent. of rabbits' serum which had been rendered perfectly clear and sterile by being put through a Berkefeld filter; 1 c.c. of the filtrate was mixed with 9 c.c. of the bouillon and incubated. On the second day the fluid in the upper half of the tube was cloudy; the turbidity increased, and on the fourth day the fluid was used for inoculation into a monkey which developed

* From the Laboratories of the Rockefeller Institute for Medical Research.

1. THE JOURNAL A. M. A., Nov. 13, p. 1639; Dec. 4, p. 1913; Dec. 18, p. 2095, 1909.

paralysis on the thirteenth day. A single loop of this turbid fluid did not set up turbidity in other tubes of the same medium.

A second series of cultivation tests, which is still in progress, has been carried out with a human ascitic-fluid bouillon made perfectly clear by filtration through Berkefeld filters. Perfectly clear filtrates, prepared from the spinal cord of affected monkeys, added to the ascitic-fluid bouillon, develop turbidity in the thermostat in twenty-four hours or less, and this turbid fluid inoculated into fresh clear tubes of the same medium causes them to become turbid. The clear filtrates do not produce turbidity, on incubation, in simple bouillon. None of the turbid fluids contained bacteria that could be seen under the microscope or cultivated in nutrient agar, and the dark-field microscope showed no definite bodies.

In a few instances in which parallel injections were made into the subcutaneous tissues and the brain, the monkeys inoculated in the first way developed paralysis and the other escaped infection.

Does an attack of epidemic poliomyelitis followed by recovery afford immunity to reinfection? Experimental poliomyelitis in monkeys is a very severe disease and, in our series, it has caused death in fully 40 per cent. of the inoculated animals that developed paralysis. When recovery occurs, residues of paralysis remain, and when death occurs or these animals are killed some weeks later, atrophy of the gray matter of the spinal cord, corresponding to the paralyzed limbs, is present. We have reinoculated several of the recovered monkeys and have noted in some instances failure of the virus to act while causing paralysis in the control monkeys. A single example will be given:

Monkey 45 was inoculated into the brain on Nov. 6, 1909; on November 13, tremulous and sick; on November 15, left leg was weak. Next day the leg was paralyzed. On November 24 general health was good, but paralysis persisted. On November 30 health was excellent except for paralysis. On this day the animal was reinoculated, together with two controls. Both of the latter became paralyzed, but the reinoculated animal has remained well.

Can the course of an intracerebral inoculation be modified by the simultaneous injection beneath the skin of a virus altered by heating? In seeking for facts relating to artificial protection from or resistance to infection, a considerable quantity of an emulsion of virus-containing spinal cord, which had been warmed to 55 or 57 C. for one hour, or to 60 C. for half an hour, was injected beneath the skin at the same time that a usual intracerebral injection of virus was given. The two monkeys employed in the experiment developed paralysis in the usual manner.

Brief mention should be made of other species of animals that have been employed for inoculation. Besides many rabbits and guinea-pigs, 1 horse, 2 calves, 3 goats, 3 pigs, 3 sheep, 6 rats, 6 mice, 6 dogs and 4 cats have had active virus introduced into the brain, but without causing any appreciable effect whatever. These animals have been under observation many weeks.

In the literature on epidemic poliomyelitis in human beings, reference is made to sensory cutaneous disturbances. We have found lesions similar to those present in the spinal cord and brain in the intervertebral ganglia, obtained from the paralyzed monkeys, in every instance in which we have looked for them.

105 East Sixty-second Street.

BARIUM CHLORID POISONING

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LA JUNTA, COLO.

History.—An employee of the Holly Sugar Company, Holly, Colo., feeling the need of a cathartic, visited the chemical laboratory of the company and swallowed what he supposed was one and one-half drams of Rochelle salts, but which in reality was barium chlorid. This was at 2 p. m. Inside of thirty minutes he was attacked with violent nausea and vomited twice a very large quantity, which he said was mostly undigested food, he having partaken of a heavy meal just prior to the ingestion of the supposed salts. Three bowel movements, large and loose, followed immediately. He then rode half a mile to his room and was again attacked with vomiting and purging of an intense character, so violent in fact that he made no attempt to keep count of the number of movements. At this time, about 3 p. m., he was seized with a violent pain in the left side, over the sigmoid flexure, and retraction of both testicles. This lasted only a few minutes, and as the patient was feeling easier, no physician was called. During this time the kidneys were very active, moving freely and often. At 5 p. m. the patient noticed a sudden inability to move his limbs, rapidly extending over his arms and trunk, and, at last being alarmed, summoned Dr. O. W. Swope of Holly. Dr. Swope examined him a few minutes later, finding his condition as follows:

Examination.—Pulse 38, forcible; respirations not counted but breathing labored and irregular; temperature, 95 2/5; pupils dilated; total paralysis extremities and trunk. Morphine gr. 1/20 and strychnin gr. 1/30 were administered, hypodermically. No history could be obtained pertaining to any old or recent disease, and no suspicion was entertained of his having taken any medicine other than the Rochelle salts which he had intended to take, until the proximity of the barium chlorid bottle and the exclusion of any acute pathologic condition causative of the symptoms, suggested the possibility of barium chlorid poisoning. As the patient was without a nurse, no record was kept of his condition during the night and the next morning, but the patient was constantly nauseated and the bowels moved often. By noon the next day, on his arrival at the hospital in this place, his condition was as follows: Pulse, 64; temperature, 95 3/5; respiration, 30, shallow and interrupted. Patient could swallow with difficulty; extreme nausea but no vomiting; no bowel movement for six hours; not a muscle of his body could be moved; control of sphincters was normal.

Treatment and Course of Case.—A stomach lavage of boracic acid solution was used to relieve the nausea, if possible, and a high enema, four ounces of epsom salts in one quart of water, given. The abdomen and spine were surrounded with hot water bags, strychnin, gr. 1/30, administered hypodermically, and the whites of two eggs in four ounces of water ordered given every two hours. At 3 p. m. temperature was 97 2/5, pulse 86, intermittent. Strychnin gr. 1/30 given hypodermically. At 7 p. m. temperature was 97 4/5, pulse 86, regular and full. At this time the stomach lavage was again employed and a high enema of four ounces of magnesium sulphate in one pint of water given; also strychnin, gr. 1/30. Urinalysis showed a specific gravity of 10:26 with albumin 0.1 per cent. At 9:30 p. m. the patient began to move the fingers; at 11 o'clock he could move the arms; at 11:30 he turned over in bed, and at 1:30 a. m. he was able to move any part of the body. At 6 a. m. he was given half an ounce of epsom salts by mouth and egg albumin was ordered for every hour during the day. At this time temperature was 98 and pulse 76. Temperature reached normal by noon of the same day. The following morning he was given a light breakfast, and as this was found to agree with him a full diet was given thereafter. The patient was then discharged.

It is questionable, of course, whether the late employment of such simple remedies as were used had any effect on the recovery of the patient or whether he was saved by the facts that the stomach was full of albuminous food at the time of the ingestion of the drug and that the latter was immediately rejected from the body by vomit-

ing and purging. Magnesium sulphate, by enema, as concentrated as possible, was used on account of its being the chemical antagonist of barium chlorid.

Shoemaker states that $2\frac{1}{2}$ grains of barium chlorid have caused death when given in divided doses. The U. S. Dispensatory mentions two cases. In one, in which 60 grains were taken, the patient recovered; while in the other death followed the taking of 300 grains in five hours. I have been unable to find any other references in a number of available works on materia medica. I find that the weight of the one and one-half drams, by measure, taken by this patient, would be approximately 250 grains.

CHRONIC SUPPURATIVE PAROTITIS CAUSED BY THE STREPTOCOCCUS MUCOSUS CAPSULATUS

REPORT OF A CASE

C. H. MCKENNA, M.D., AND D. J. DAVIS, M.D.

Surgeon and Pathologist, respectively, to St. Joseph's Hospital
CHICAGO

SURGICAL REPORT BY DR. MCKENNA

The tumor in this case resembled, in contour, firmness and close connection with the ramus of the jaw, a sarcoma, but a positive diagnosis could not be made without the removal of a piece of the tissue for microscopic examination. In doing this a small amount of pus escaped from the depth of the gland and was sent to the laboratory for examination.

History.—Miss T. L. reported at the hospital complaining of a swelling in the region of the right parotid gland accompanied by severe pain in opening her mouth. The swelling had appeared three days previously (May 22, 1909). The family and personal history are negative except for the following points:

The patient had had measles and diphtheria. About twelve years ago an abscess had appeared on the right side of the face in the same region as the swelling mentioned above. This had been opened and drained by the family doctor. Since that time exposure to cold caused the patient pain and swelling in the same region and would last only a short time and then recede completely. The patient was always troubled with boils and carbuncles. The patient lives at home and works downtown as a clerk. She gets very little exercise, arises early and retires early; she does not eat much and very often skips her meals. She uses tea and coffee moderately.

Examination.—Negative except the above-mentioned swelling, which was a solid, spherical tumor situated in front of the ear and extending over the upper ramus of the jaw on the right side and so intimately associated with the jaw-bone that for a time it was thought that there might be a connection between the two. The patient was treated at the hospital for one week before being operated on, during which time an attempt was made to reduce the swelling by hot compresses frequently applied. The mass was so persistent that it was decided that it should be opened and a piece removed for examination. The report of this examination by Dr. Davis follows. The wound was drained for one week and the patient made an uneventful recovery.

BACTERIOLOGIC REPORT BY DR. DAVIS

In smears obtained from the operation wound Gram-positive diplococci and short chains were found in small numbers outside the many polymorphonuclear cells present. Cultures made on plain media give a pure growth of an organism presenting all the characteristic features of the *Streptococcus mucosus capsulatus*. It was Gram-positive, non-motile, arranged in pairs or in short chains and possessed a definite capsule. The growth in twenty-four hours on blood-agar slants was raised, moist, profuse and mucoid in character, and when left in the incubator forty-eight hours the slimy mass largely disappeared,

leaving a smooth shining surface. On blood-agar plates about the colonies was a distinct greenish halo. This organism was practically non-phagocytal *in vitro* by human leucocytes plus human serum, and three small loops in 1 c.c. of salt solution injected into the peritoneal cavity of a guinea-pig caused death in forty-eight hours. The organism was recovered in pure culture from the peritoneal serofibrinous exudate and the heart blood of the animal.

Pieces of the parotid gland from the region of the abscess were sectioned and presented evidence of a marked chronic inflammatory reaction. The gland tissue was infiltrated with large numbers of round cells and a few polymorphonuclear cells and considerable increase of the connective tissue in places occurred.

Encapsulated streptococci have been described by numerous observers. Howard and Perkins¹ were among the first to describe this organism and it was they who first called it *Streptococcus mucosus*. Schottmüller,² Newmann,³ Richardson,⁴ and Longcope⁵ have all described organisms which probably are identical with this streptococcus. Buerger⁶ has recently given a good review of the subject.

This organism not infrequently occurs in the sputum in various throat and lung infections, especially croupous pneumonia, and is commonly found in ear discharges in otitis media, which explains its relative frequency as the cause of acute meningitis. Of seven cases of infection with this organism reported by Schottmüller, three were acute meningitis. I have isolated it in pure culture in a case of meningitis following otitis media and have cultivated it from the throat in cases of acute articular rheumatism, lobar pneumonia, "grippe," and from the ear discharge in otitis media. Longcope obtained it from an abscess in the breast wall and from the blood in a case of lobar pneumonia, and Howard and Perkins from an ovarian abscess and the organs post-mortem. It evidently may localize in various parts of the body, though preferably it localizes in the respiratory tract or its accessory structures. I have not been able to find reported other cases of chronic suppurative parotitis due to this organism.

100 State Street—839 Lakeside Place.

PERFORATING ULCER OF THE SIGMOID—A SEQUEL TO MEASLES

J. C. MURPHY, M.D.

ST. LOUIS

Involvement of the intestinal tract in measles is by no means an unusual complication, diarrhea and dysentery being occasionally seen. In a careful review of the available literature found in the library of the New York Academy of Medicine, I failed to find any record of intestinal perforation in this disease; but it is logical to presume that it could occur. Various authors state that post-mortem findings have shown Peyer's patches to present the same ulcerated condition found in typhoid fever. Dawson Williams,* of London, in speaking of gastrointestinal complications of measles, mentions a case in which dysentery occurred and post-mortem examination showed intense enterocolitis of sigmoid and rectum, with ulceration identical with that seen in true dysentery.

1. Howard and Perkins: Jour. Med. Research, 1901, vi, 163.

2. Schottmüller: Med. Wchnschr., 1903, I, 909.

3. Newmann: Centralbl. f. Bakteriöl., 1904, xxxvii, 48.

4. Richardson: Jour. Boston Soc. Med. Sci., 1900-01, v, 499.

5. Longcope: Univ. Penn. Med. Bull., 1902, xv, 51.

6. Buerger: Centralbl. f. Bakteriöl., 1906, xli, 314.

* Williams, Dawson: Twentieth Century Practice of Medicine, xiv, 145.

REPORT OF CASE

History.—A. S., farmer boy, aged 14, one of several children, had had good health until he became sick with measles in February, 1909. The attack was of unusual severity with marked gastrointestinal complications, dysentery persisting after the usual symptoms had disappeared. The dysentery ultimately ceased and was soon followed by symptoms consisting of pain, increase in size of abdomen, nausea, fever, and constipation, which seemed to the observer to indicate intestinal obstruction. I was called by the attendant on March 5 to operate for a supposed intestinal obstruction.

Examination.—Patient's temperature was 104, pulse 120; appearance indicated sepsis; abdomen was enormously distended; there was complete dullness from one iliac crest to the other; and from umbilicus to pubes.

The examination did not suggest intestinal obstruction to me. The boy's condition being critical and the nearest hospital sixty miles away, I undertook the operation amid very dirty surroundings, two other children being sick of measles in the same house, which contained three small rooms.

Operation.—After such preparations as were possible, the boy was placed on the kitchen table, and after the usual toilet of the operative field the abdomen was opened by a median incision, which was followed by the discharge of huge quantities of pus and fecal matter. The abscess cavity, however, was well walled off. After cleansing the cavity a ragged hole was seen in the sigmoid, large enough to admit two fingers. The opening in the bowel was surrounded by an indurated area, such as one finds in ulcer. On account of the considerable destruction of tissue, and for fear of disturbing the adhesions, no effort was made to suture the bowel. The cavity was wiped clean and drainage established.

Postoperative History.—The patient was put to bed in good condition and placed in the Fowler position. The subsequent history was uneventful, the bowels moving normally on the second day. The after-treatment was left to the attending physician. I saw this boy about three weeks after the operation, the abdominal wound was practically healed, bowels moving normally and general health good. It is now over eight months since the operation; the patient is in perfect health with no symptoms of cicatricial stricture of bowel which I feared might occur. The apparent rarity of bowel perforation in measles prompts the report of this case.

4263 Morgan Street.

DIVERTICULUM OF THE STOMACH

JOHN M. LITTLE, M.D.

BOSTON

In a clinic characterized by a large percentage of digestive disturbances, I have found it easy to distinguish a certain number in which the symptoms were due to gastric or duodenal ulcer. This statement I make, because in all cases in which operation has been performed on this diagnosis, I have demonstrated the ulcer on the table. The following case is reported because of the definiteness and simplicity of the symptoms, their difference from the symptoms of the more usual conditions, and their complete explanation by the pathologic findings at operation. These last may be briefly described as narrowing of the pylorus and diverticulum of the stomach caused by stretching of its wall, the whole being due to the scar of an old ulcer completely healed.

History.—A. B., aged 56, fisherman (Hosp. No. 457), was subject to indigestion for some years but two years ago began to have severe pains in epigastrium after eating. At times he would vomit, very bitter substance; and the vomiting gave immediate relief. Otherwise the pain would last perhaps from fifteen minutes to half an hour. Since then he has eaten only liquid food. The eating of anything solid always causes this pain, which is unbearable. He has always been well and healthy in every other way.

Physical Examination.—A well-developed and nourished healthy looking man. Physical examination shows nothing abnormal. He shows the epigastrium to be the seat of the pain and says there is tenderness there at the time the pain is there. There is now no tenderness on deep pressure.

Operation.—Oct. 18, 1909, after the usual preparation, the patient was operated on under ether anesthesia. The stomach, the capacity of which was normal, was washed out on the table. A four-inch incision was made in midline between ensiform and umbilicus. With the exception of the following condition, the abdominal contents were normal. There was a whitish-looking scar running from the upper part of pylorus downwards and to the left along the anterior stomach wall. To the right of this was what I took at first to be the duodenum but which turned out to be a diverticulum of dilated stomach wall, lying in front of the duodenum and capable of holding about six ounces. There were no adhesions or palpable thickenings of the walls. The stomach was opened by an inch incision on its anterior aspect. The finger carried forward, toward the pylorus, entered a ring of tissue which just admitted it. Feeling around, the finger entered another ring, which just barely admitted it. This latter turned out to be the pylorus lying behind and above the former, which was the opening into the diverticulum. Inspection showed no ulceration of the mucous membrane, which looked normal. With a finger in the pylorus, an incision an inch and a half long was made in the pylorus extending (longitudinally to axis of stomach) from the duodenum across the pylorus into the diverticulum. This incision was then sewed up transversely to the axis of the stomach. This pyloroplasty caused, at the same time, enlargement of the pylorus and drainage of the diverticulum. The hole in the anterior wall was then closed in like manner by an over-and-over stitch through all layers, followed by a continuous Lembert suture. The abdominal wall was closed by layers.

Recovery was uneventful. The patient has been on ordinary diet and has had no symptom since.

317 Dartmouth Street.

APPENDICITIS DUE TO THREADWORMS

T. H. CULHANE, M.D.

ROCKFORD, ILL.

The patient, a married woman aged about 21, suffered with intense pain at McBurney's point, together with intense nausea. She had no desire for food and, when food was taken, it was immediately rejected. On Sept. 8, 1909, about two weeks after I first saw the patient, I operated, removing the diseased appendix. The contents of the appendix were forcibly expelled on my finger, and live worms could be seen crawling therein. The appendix contained about eighteen threadworms. The mucosa of the appendix was congested and thickened, and contained many punctate hemorrhagic spots. The patient made a good recovery.

1025 South Main Street.

APLASIA OF THE UTERUS

CHARLES L. PATTON, M.D.

SPRINGFIELD, ILL.

Several years ago I reported¹ a curious malformation of the internal genitalia in a child, classifying the malformation as either pseudohermaphroditism masculinus externus or bilateral inguinal hernia of the ovaries with aplasia of the uterus. Since reporting this case I have seen two other cases in which I was unable to detect a uterus. Neither of these presented the condition found in the labia majora in the reported case, but both gave evidence of a marked interference with the development of the internal organs of generation.

1. Patton, C. L.: Case of Malformation of the Internal Genitals with the Reproductive Glands in the Labia Majora, Am. Jour. Obst., October, 1904.

Second Case.—An Italian woman, aged 34, married, housewife, was seen by me with another physician, March 7, 1906. Her family history was without interest, so far as we were able to determine, for it was difficult to converse with her, since she spoke no English and her husband was, at best, a poor interpreter. The patient sought medical advice on account of a pain in the right side and to ascertain the reason for never having menstruated.

She stated that every four weeks she felt tired and complained of feeling sore all over. She had severe backache at this time. At 15 she had a hemorrhage from the lungs. There was at the time of examination no evidence of lung involvement. The patient's temperature was $99\frac{1}{2}$. On abdominal palpation nothing was elicited except a slight tenderness on the right side in the region of the appendix. The external genitals, to all appearances, were perfectly normal for one of her age. The vagina was small in circumference and terminated in a blind pouch two inches from the introitus. No cervix could be detected by palpation or speculum examination. Vaginal and rectal examination revealed no uterus. It was impossible to outline the ovaries. The inguinal canals were free. The patient's habit, appearance, voice and breasts were distinctly feminine.

Third Case.—Mrs. A. L., referred March 18, 1909; married, white, aged 32. The family history is negative. The patient's physician states that the patient suffered from tuberculosis four years ago but that she has since made an apparent recovery. At the time of this illness her weight fell to 109 pounds. She had "spasms" when a young child but was not troubled with this difficulty subsequent to that time until last January, during which month she had three attacks. In each instance these attacks came on at night and occurred during sleep. She cried out, bit her tongue, foamed at the mouth, spit blood and had general convulsions. The actual spasm lasted but a short time, after which she went into a deep sleep from which it was difficult to arouse her. She states that she knew nothing of these attacks until told of them the next morning.

The patient had been married eight years and has been very anxious to have children but she has never been pregnant. Her menstruation first appeared at the age of 12 and has been regular and of the four-week type. She flows for four or five days, without pain, and passes a normal amount of menstrual discharge. She passes small clots occasionally. She has had a constant leucorrhea for years. It is small in amount, without odor and is thin and yellow for the first few days following menstruation, when it becomes thick and sticky.

The patient consulted her physician to engage him for her confinement. She states that she has not ceased to menstruate but that she has become progressively larger and that she has felt fetal movements. She has had no nausea or vomiting but she has been nervous and has had "abnormal cravings." She thinks that she is about six months pregnant and she has her layette complete.

The patient is of medium build, normal in appearance and has good musculature and a fair amount of panniculus. She weighs 149 pounds.

The abdomen is symmetrically distended from the pubes to two inches above the umbilicus. Palpation reveals no tumor and the abdomen is everywhere tympanitic. The abdominal walls are soft and easily depressed with the palpating hand. The breasts are pigmented and the follicles slightly enlarged. The chest is negative.

The vulva is entirely normal for a woman of her age and the pubes are covered with hair as in a normal woman. The hymen is ruptured but the perineum is intact. There is no bluish tinge to the vagina.

The vagina is shallow but of normal circumference and the examining finger comes in contact with the vault without encountering a cervix. No uterus can be detected by bimanual examination through the vagina or rectum. Both ovaries are easily palpated and are apparently normal in size and position. Speculum examination reveals no cervix, but at the vault where the cervix should be located are two small depressions that have an appearance similar to that of the ureteral openings as viewed through a cystoscope. A filiform probe can be

passed through these openings for about two inches. The tissue surrounding these openings differs in no way from the mucous membrane of the rest of the vaginal canal.

These malformations have, for many years, been a subject of interest to the embryologist and to the clinician. Many classifications have been made, but none, I think, is more satisfactory or less cumbersome than that of Müller, which I give here briefly:

1. Defectus uteri.
2. Uterus rudimentarius.
3. Defectus cervicis uteri et cervix uteri rudimentaria.
4. Uterus unicornis.
5. Uterus unicornis cum cornu rudimentaria.
6. Uterus bicornia.
7. Uterus bilocularis.
8. Uterus didelphys.
9. Hypoplasia uteri.
10. Slight developmental anomalies of the uterus relating to position, abnormal plications, etc.

Many of the cases reported in literature as cases of "defectus uteri" or complete absence of the uterus are wrongly classified. This condition is rarely encountered in the living, although it is not uncommon in monsters. Other gross defects in the organism are usually found in connection with this malformation. Many of the cases reported as defectus uteri cannot be accepted because no autopsy was performed and the condition was diagnosed by physical examination of the patient alone. In these cases one may be unable to palpate a uterus, but in the vast majority there are masses of microscopic or macroscopic uterine tissue found at autopsy, occupying the region that the uterus should occupy. These cases should be classified under the heading of "uterus rudimentarius." Many grades of this condition may be seen, varying from microscopic bits of uterine tissue on the posterior surface of the bladder to macroscopic masses resembling in shape the normal uterus, but very much reduced in size. In all probability Cases 1 and 2, reported above, belong to this class.

In cases of "defectus cervicis uteri" the entire cervix is absent or is represented by a narrow fibrous band replacing the normal structure. The vagina is normally developed or there may be an atresia of the upper portion. The uterus is represented by a cord or band of tissue or in some other way shows a marked error in development. The third case of this series certainly comes under this division, although I have been unable to find a similar case in literature.

I report this case not for the interest attached to it alone, but that it may be on record for others who are interested in the subject of uterine malformations.

The third case appears to me to be unique for the following reasons:

1. Clinically there is an aplasia of the uterus.
2. There is an entire absence of the cervix.
3. The ovaries are apparently normal in size and position.
4. Menstruation has been normal in amount, regular and free from pain, despite the gross defect in development of the uterus.
5. The tubes, or the bodies of an extremely small didelphic uterus, open directly, by separate openings, into the vagina.
6. There is a pseudocyesis.

Cases coming under the remaining heads of Müller's classification are more frequently met and more nearly approach the normal.

Suite 25, Illinois National Bank Building.

MENTHOL TREATMENT OF SCREW-WORM

B. C. DAVIES, M.D.
MONROVIA, CAL.

While it is true that cases of screw-worm from the fly *Comptosmyia macellaria* are rare in the United States, still they do exist and are exceedingly resistant to the treatment outlined in the text-books.

The infection is invariably complicated by the pre-existence of an atrophic rhinitis or an ulcerated condition, permitting the larva—screw-worm—to burrow, and thus escape the action of most solutions used to dislodge and destroy it.

Chloroform (in solutions used as a spray and inhalant) is satisfactory and sure for the worms that are hatched and lying in the open, but it does not penetrate sufficiently, neither is its action prolonged enough to destroy the worm, after it has burrowed into the diseased tissues from an atrophic rhinitis, or the egg while it is being hatched.

A thorough curettage of the nasal passages may be done under general anesthetic, but at considerable risk of rupturing blood-vessels and thus affording opportunity for entrance of an embolus or spreading infection to surrounding cavities, in some cases producing death.

After struggling vainly with chloroform in varying solutions—from 20 per cent. to pure chloroform—and thus relieving the patient of some two hundred worms in several treatments, I discovered that the number of worms still increased daily. I therefore realized that I was but collecting the day's hatch, as no worms were visible after using a chloroform spray and picking out the resultant dead ones. Inspired by a recent article on the eradication of the hookworm by the use of menthol, I therefore instituted a treatment with sprays of menthol. Preceding the menthol, peroxid of hydrogen was sprayed into the nose two or three times, the patient blowing his nose freely between applications. Then a 20 per cent. solution of menthol was sprayed into the nostrils very thoroughly under twenty pounds' pressure. Usually within half an hour numbers of the worms were expelled, and in three days, after spraying twice daily, they ceased altogether and showed no return.

Weak solutions were first used but proved useless. The nasal tissue that is in condition to permit growth of this parasite has lost all sense of pain, thus permitting the use of strong solutions.

Therapeutics

[EDITOR'S NOTE: The following is the first of a series of five articles by Professor Osborne on the revision of the Pharmacopeia. These special articles will take the place of the regular therapeutic matter, which will be resumed on the completion of this series.]

SUGGESTIONS FOR THE PHARMACOPEIA
OF 1910.

USEFUL DRUGS OF THE PHARMACOPEIA OF 1900

OLIVER T. OSBORNE, M.D.
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NEW HAVEN, CONN.

1. Let the new Pharmacopeia contain such drugs only as are of positive therapeutic value.

2. When a drug or preparation of a drug is prescribed that is not official in the Pharmacopeia of 1910, let it be officially declared that the standard of purity and the

method of making preparations not recognized in the Pharmacopeia of 1910 be the standard set and the methods of preparation ordered in the last Pharmacopeia in which the preparation was recognized.

3. Let it contain such new drugs as have been proved of therapeutic value.

4. Let there be issued a supplement to the Pharmacopeia, in 1915, which shall make official such new drugs as have been proved to be of therapeutic value during the years of 1910-1915.

5. Let the 1910 Pharmacopeia give the most simple titles possible to all new drugs, especially to the synthetic drugs. If it is considered impossible, or inadvisable, to make an official title of a drug simple, an official abbreviation should follow the name of the drug.

6. Let the 1910 Pharmacopeia give official approval to only the best of the preparations of the official Galenic drugs, and not officialize the little used and useless preparations of these drugs.

7. Let the 1910 Pharmacopeia not give official approval of all of the known salts (of iron and mercury, for instance), but officialize only the best. (The Committee on Revision can just as well decide this question as it can decide the new drugs that are worthy of a place in the United States Pharmacopeia, or as it can decide the strength a tincture shall have, and certainly the tinctures were radically changed in the 1900 U. S. P., whether everyone was pleased or not.)

8. Let the average adult dose appear after each drug and each preparation of it, not the range of dose, i. e., minimum to maximum, as there is no exact under or over limit of dose. The dose is enough to accomplish the object aimed at by the prescriber, and all he cares to know is the average dose.

9. As the U. S. P. gives the official titles of drugs in Latin, it should also give the genitive after each title. This would be of especial value in teaching the correct writing of prescriptions. It is not always easy to determine the declension to which a Latin noun belongs, or whether it may not be indeclinable.

10. Let the official preparations of a drug be enumerated under the title of that drug.

DUSTING POWDERS

The dusting powders may be named as acetanilid combinations, bismuth preparations, boric acid alone or combined, various preparations containing iodine in some form, and the more simple powders, such as lycopodium, talcum, zinc oxid and zinc stearate.

It would seem hardly necessary, with all of the powders that are official, to prescribe, for a dressing, one that is not official. But even among physicians there is a tendency to appeal to the unknown and the mysterious, hoping that a lauded proprietary powder will heal a wound more quickly than something the ingredients of which is known. This is probably the reason that so many nostrum powders are prescribed. It should be remembered that dermatol is official under the name of bismuth subgalate, and that aristol is official under the name of thymol iodid. (thymolis iodidum). The following simple combination is probably as good a drying antiseptic powder as can be ordered:

R.	gm.	
Acidi salicylici	1	gr. xx
Acidi borici	49	or
Talei	50	āā, 3ii

M. et Sig.: Use externally as a dusting powder or dressing.

It should be declared, although by some surgeons it will be considered a heresy, that the intensely obnoxious

iodoform dressing is unnecessary for the healing of wounds or the cure of disease. It will not kill germs, although it may, like any other dry dressing, inhibit their growth or development. It is a good deal like the zodiacal cross on the tail of the R in recipe, and is used after an operation as an invocation to the gods that the wound will speedily heal. To stigmatize with the odor of iodoform a walking patient is beyond excuse; almost permanently to perfume a private residence with iodoform seems hard to defend; to iodoformize a hospital permanently seems unnecessary.

The only excuse for the use of iodoform seems to be in an oil emulsion as an injection into tuberculous joints or tendons. In such use there is no obnoxious odor exuded or wafted about by the patient.

To have a physician's office, his clothing, his operating bag, and his obstetric bag reek with iodoform seems, in this advanced age of estheticism, indefensible.

There are many inodorous iodine synthetic dusting powders. If any one has been found by a large number of physicians and surgeons to be an improvement on the official thymol iodid (aristol) they should report such to the Committee on Revision of the Pharmacopeia, asking that the committee consider making it official in the Pharmacopeia of 1910.

OINTMENTS

The Pharmacopeia and National Formulary make official 60 cerates, ointments, salves, mulls, petroleumums and collodions. A physician should be able to select from this large mass of official greases those that he desired to use, without recourse to proprietary articles. The United States Pharmacopeia alone contains 6 cerates and 24 ointments. As our criticism is now on the United States Pharmacopeia, which is about to be revised, the question of whether or not all these cerates and ointments are needed, in our aim to reduce the bulk of the Pharmacopeia to scientific and sensible utility, should be discussed. It is doubtful if the acetate of lead cerate, the resin cerate, and the compound resin cerate are needed. If they are but little used by physicians, surgeons or specialists, they should be omitted from the next Pharmacopeia.

There would seem to be no question that there are too many official ointments. The stramonium ointment is so similar in its action to the belladonna ointment that it might well be omitted.

If there is any reason why the ointment of galls is better than the ointment of tannic acid, it must be because it is milder. It would seem, then, that the tannic acid ointment could be diluted by the prescriber to meet the astringency desired, and the ointment of galls omitted from the Pharmacopeia.

There are six ointments of mercury. It surely does not seem that all are needed. The official unguentum hydrargyri dilutum is superfluous. The official unguentum hydrargyri could be ordered diluted to meet any strength the physician desired. The red oxid of mercury ointment will doubtless act, or could be diluted to act, similarly to the yellow oxid of mercury ointment. Or the yellow oxid of mercury ointment could be strengthened by prescription to suit the individual desires. Both such similar preparations seem unnecessary. The nitrate of mercury ointment is probably very rarely prescribed, and might well be omitted from the Pharmacopeia.

It has never been shown that potassium iodid ointment could have any activity. If iodine in ointment is desired, the official unguentum iodi is sufficient.

Iodoform ointment should certainly be omitted from the next Pharmacopeia. If iodoform is needed it may be prescribed in any strength, in ointment, which the surgeon desires. To officialize the ointment is superfluous.

The veratrin ointment should be omitted from the Pharmacopeia. It is dangerous to use and should not be made official.

The zinc stearate ointment seems unnecessary. The object of producing stearate of zinc is to have a powder that is oily and that will adhere to the skin. To put this powder into an official ointment would seem to be absurd. It can have no action different from the zinc oxid ointment. This ointment should, then, be omitted from the next Pharmacopeia.

ASTRINGENTS

All the vegetable astringents contain tannic acid, and the cause of the astringency is tannic acid. The only possible advantage of a nauseating vegetable astringent over tannic acid itself is that, as it contains resinous substances, it gradually gives off its tannic acid through a considerable length of the intestine; on the other hand, tannic acid, as such, forms tannates in the stomach and high up in the intestine, and the astringency is then lost to the remainder of the intestine. This advantage of the tannic-acid-containing vegetable drugs is equalled and surpassed by a number of non-official tannic acid preparations (and the Committee on Revision must decide which are best and which should receive recognition in the next Pharmacopeia), all of which have the advantage of not breaking up or being dissolved in acid media, therefore not causing the irritation to the stomach that tannic acid does, but slowly break up and dissolve in the alkaline media of the intestines. These preparations are much more elegant, pleasanter and easier to take, cause no disturbance of the stomach, and act more successfully as astringents in the intestine than do gambir (catechu), krameria (rhatany), kino, hemotoxylon, geranium, rubus (blackberry), quercus (white oak bark) and rhus glabra (sumach fruit). All of these named drugs and their preparations make about 26 articles that could well be left out of the new Pharmacopeia. This would decrease its bulk just so much and remove preparations that are absolutely not needed. Also, not all of the preparations of witch hazel are needed.

Gallic acid does not have the local astringent action of tannic acid; therefore, there is no advantage in using gallic acid instead of tannic acid when local astringency is desired. To expect tannic acid in any form whatsoever, or gallic acid in any form whatsoever, administered by the gastrointestinal canal, to act as an astringent after absorption, to stop either profuse secretion or internal hemorrhage, is to expect what may happen in the sequence of events, but will not happen from the action of these remedies. In other words, there is probably no internal astringent action from the small part of these drugs that may enter the blood. If it is thought that a tannic acid preparation will have such internal effect, gallic acid should be administered, as the part of tannic acid that is absorbed is generally absorbed as a gallate. A diminution in albuminuria after the administration of gallic acid, which sometimes seems to occur, is often a mistaken observation from some chemical condition of the urine not allowing the albumin to be precipitated by heat. The cold nitric acid test will disillusionize the supposed diminution of albumin after the administration of this drug.

(To be continued)

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[For other information see second page following reading matter]

SATURDAY, JANUARY 1, 1910

DEATHS OF PHYSICIANS IN 1909

During 1909 the deaths of 2,199 physicians in the United States and Canada were noted in *THE JOURNAL*. On the estimate of 135,000 practitioners, this is equivalent to a death rate of 16.29 per 1,000. The annual death rates as recorded in the previous seven years were as follows: 1908, 17.39; 1907, 16.1; 1906, 17.2; 1905, 16.36; 1904, 17.14; 1903, 13.73, and 1902, 14.74. For the last six years, therefore, there has been only a slight variation in the mortality rate. The age at death varied from 22 to 100, with an average of 59 years 5 months and 29 days. The number of years of practice varied from one to seventy-nine, the average being 31 years 6 months and 22 days. The chief death causes were, in the order named: heart disease, cerebral hemorrhage, violence, pneumonia, nephritis and senile debility.

Causes of Death.—There were 429 deaths assigned to general diseases; 314 to diseases of the nervous system; 291 to diseases of the circulatory system; 186 to diseases of the respiratory system; 140 to diseases of the digestive system; 159 to diseases of the genitourinary system; 161 to violence, and 53 to unknown or vaguely-described causes. Among the principal assigned causes of death were: valvular heart disease, 212; cerebral hemorrhage, 191; pneumonia, 145; nephritis, 135; accidents and senile debility, each, 102; tuberculosis, 97; cancer, 75; suicide, 45; angina pectoris, 37; typhoid fever, 35; after surgical operations, 34; diabetes, 30; septicemia, 27; appendicitis, 24; anemia, 19; meningitis, 18; gastritis, 17; cholelithiasis and influenza, each, 16; paresis, 15; homicide, 14; arteriosclerosis, 11; erysipelas, 10; drug addiction, 9; locomotor ataxia, 8; tetanus, 6; and small-pox, yellow fever, anterior poliomyelitis and Asiatic cholera, each, one.

The causes assigned to the 102 accidental deaths were as follows: 21 to poison; 14 to falls; 13 to gunshot wounds; 11 to railway casualties; 10 to runaways; 8 to drowning; 6 to automobiles; 5 to street cars; 4 to burns; 3, each, to asphyxiation and fractures of hip, and one, each, to motorcycle, earthquake, lightning, and kick of horse.

The methods chosen by the 45 who committed suicide were: firearms, 21; poison, 19; cutting instruments, 3, and asphyxiation and strangulation, each, one. Of the 14 homicides, 12 were by gunshot, one victim was beaten to death and one was stabbed. Feuds or affrays were

responsible for 5 of the homicides, and one murder was committed by a victim of alcoholic mania.

Ages.—Of the decedents, 21 were between 91 and 100 years of age; 183 between 81 and 90; 405 between 71 and 80; 475 between 61 and 70; 396 between 51 and 60; 297 between 41 and 50; 239 between 31 and 40, and 78 between 22 and 30. The greatest mortality occurred at the ages 68 and 70, in each of which 57 deaths were reported; at 59, when 56 deaths were recorded, and at 62, when 54 died.

Years of Practice.—By periods of ten years, the deaths were as follows: In their first decade 227 died; second decade, 373; third decade, 453; fourth decade, 444; fifth decade, 359; sixth decade, 239; seventh decade, 58, and eighth decade, 4. Of the latter, one had practiced 72 years, two 73 years, and one 79 years.

Military Service.—During the year, 356 physicians died who had taken part in the Civil War, and, of these, 118 were in the Confederate service. Of the Federal soldiers, 112 are recorded as medical officers. The veterans of the Mexican War numbered 3; 27 had served in the Spanish-American War, and 17 in foreign wars. The Medical Corps of the Army sustained a loss of 20 officers, past and present; the Navy lost 22, the Public Health and Marine-Hospital Service 7, the Medical Reserve Corps 2, and the United States Revenue Cutter Service, the Canal Zone, and the U. S. Indian Service, each, one. The deaths of 24 past or present acting assistant surgeons in the Army were reported during the year. The National Guard lost 22 by death during the year, of whom 5 had attained the rank of surgeon general. One of the deceased served for several years as surgeon general of a Central American republic.

Medical Positions.—Medical colleges lost 126 professors, lecturers and instructors during the year; hospitals, 295 members of staffs; municipalities and counties, 190 health officers or city or county physicians; and boards of education and school boards, 79 members. There were 21 deaths of members of state boards of examination and registration; 26 of members of state boards of health; 51 of coroners; 80 of members of boards of United States Pension Examining Surgeons, and 115 of railway surgeons.

Two of those who died had been members of Congress; 17 had been state senators; 49 members of the legislature; 41 mayors; 40 aldermen; 83 in civil or municipal offices; 18 had served as postmasters, 24 as editors; and 20 were medical missionaries, or ordained clergymen.

Among the more prominent dead of the year are:

Charles Denison, Denver, specialist on climatology.

William Tillinghast Bull, New York City, eminent abdominal surgeon.

Daniel Roberts Brower, Chicago, dean of the neurologists of that city.

Thaddeus Asbury Reamy, Cincinnati, pioneer gynecologist and obstetrician.

Phineas Sanborn Conner, Cincinnati, surgeon and teacher.

Thomas J. Happel, Trenton, Tenn., for many years secretary of the State Board of Health and a trustee of the American Medical Association.

Joseph Martin Emmert, Atlantic, Iowa, sanitarian.

Sarah Hackett Stevenson, Chicago, pioneer woman practitioner and teacher.

William Thayer Smith, Hanover, N. H., teacher and writer on hygiene.

William Biddle Atkinson, Philadelphia, for thirty-five years Secretary of the American Medical Association.

Frank W. Reilly, Chicago, one of the first to attempt to instruct the people in public hygiene.

THE DEFENSE OF MEDICAL RESEARCH

The need for meeting agitation hostile to medical research is manifest from what that opposition has already accomplished and what it is still striving to do. Through such hostile agitation there was passed in Great Britain in 1876 a legislative act placing on medical investigators certain well-defined restrictions. Work of the first importance has been stopped in Great Britain, and British medical men have been compelled to go abroad in order to carry on investigations of great practical value. The names of Lord Lister and Sir Lauder Brunton need only be mentioned as instances of medical men whose investigations were hindered by the British act.

In spite of the enforcement of such drastic legislation as was obtained in Great Britain in 1876, not the slightest diminution in the antivivisection agitation has occurred—indeed, Great Britain may be regarded as the center of it. There are no less than fifteen antivivisection societies in Great Britain, and every one of them advocates the abolition of the use of living animals for medical purposes. The British experience is, therefore, highly significant as to the probable future of this movement. Just as our forefathers had to carry on the long struggle which has resulted in the legalized use of human bodies for medical and surgical instruction, so are we concerned with a similar long struggle for freedom of medical research.

In England, about a year and a half ago, a society was formed to instruct the public regarding the benefits obtained through animal experimentation and the practical results to medicine and surgery obtained by this method of medical advance. Already it is believed that an important change in the attitude of the public has been brought about through this educational campaign.

It may seem to some who have not followed the agitation in this country that there is only a remote possibility here of any legislation which would seriously interfere with medical progress. This sense of security is, however, to a large extent unjustifiable. At least six antivivisection societies now exist in this country,

actively engaged in efforts to secure restrictive legislation; one of them publishes a monthly paper, while the others confine themselves to distributing literature. This literature, in the form of pamphlets, leaflets and press articles, is sent widely to newspapers in parts of the country where proposals for legislation are being urged. At least two of the societies are well supplied with money; indeed, this year one of them was left ten thousand dollars for antivivisection agitation. Evidently so long as money is readily available for promoting hostility to the use of animals in medical research there will be the problem of meeting that hostility.

The conviction has grown in this country, as in Great Britain, that the proper method of repelling the attacks of the antivivisectionists is to enlighten the public regarding the use of animals for medical advancement and regarding the benefits to man's estate that have come therefrom. With this conviction as a basis there was appointed last year by the American Medical Association a Council on Defense of Medical Research. This council is composed of representatives of various medical sciences who live in widely separated parts of the country. During the past year the council has been actively investigating the conditions of animal experimentation in laboratories throughout the United States, has taken precautions against the abuse of animal experimentation, and against misconceptions of the conditions and purposes of medical research, and has planned a series of papers which will serve to diffuse information among the public regarding laboratory procedures and the results of laboratory study of disease.

The results of the investigation conducted by the council will be reported during the present year. In this number of *THE JOURNAL* appears the first of the series of papers arranged by the council.

These papers, written by experts, will deal with the importance of animal experimentation in the development of various phases of medical science and practice. The series will include a consideration of the relations of animal experimentation to the treatment of diphtheria and tetanus, meningitis, rabies, smallpox, dysentery and cholera and typhoid fever, plague, tuberculosis, syphilis, tropical protozoan diseases, and diseases caused by metazoan parasites; the papers will likewise take up the contributions made by animal experimentation to our knowledge of disturbances of internal secretions, the physiology of the circulation, pharmacology, venoms and antivenins and the principles of serum therapy. The subjects of two papers will be experimental surgery, surgical technic and aseptic surgery. Others will discuss cancer research, the relations of animal experimentation to hygiene and sanitary science, including the diagnosis and control of contagious diseases, the economic importance of diseases which have been lessened by animal experimentation, the use of animals in cattle bureaus, the experience with animals in laboratories, the ethics of animal experimentation, the educational value of opera-

tions on animals, and the more complex interrelations of research and practice.

The purpose in gathering this large body of evidence regarding the conditions of animal experimentation, and the results that have been derived from it, is to place before physicians facts with which they can meet criticisms directed against the laboratories and the laboratory workers. These papers will show how methods and information used daily in medical and surgical practice have had their origin in experimentation. They will also make clear the manner in which abolition of animal experimentation, or serious interference with it, will definitely check or disastrously retard the progress of medicine in fields where there is urgent demand for more exact knowledge.

Those who are doing their utmost to hamper the activities of medical investigators are sending broadcast statements only too often quite inaccurate and misleading. Nevertheless, these statements are popularly regarded as fair accounts of the procedures which attend medical investigation. The agitators are making converts because their activities are not met by corresponding activities on the part of medical men, and because their statements are not contradicted by the information which medical men are in a position to offer. Laboratory workers, unfortunately, who best know the falseness of the charges, are yet without sufficient power to answer effectively. One reason is that these workers are not engaged in public affairs, but are primarily students. Furthermore, even when they do speak, their motives are questioned—they are declared to be under the necessity of advocating the practice which provides them with a livelihood. The only persons in a strong strategic position to defend research and to preserve the freedom necessary for unrestricted progress in the knowledge of disease are the practicing physicians and surgeons. They are able through their special training to speak with authority concerning the benefits derived from animal experimentation, for they are employing information thus derived in the daily treatment of the sick. They are also in a position to know the methods employed in medical laboratories to advance knowledge of disease. On the other hand, they meet, in the course of their duties, persons whose feelings have been harrowed by the tales of torture that the antivivisectionists put forth, persons of humane temper seeking for the facts. The laboratory workers must depend on the practicing physicians and surgeons to be interpreters of their work and the spirit in which that work is performed.

ANTITYPHOID INOCULATION

Inoculation or vaccination with killed typhoid bacilli is practiced principally in order to prevent the development of typhoid fever; it has also been used during the course of the attack in the hope that it would promote recovery. In either case the aim is to stimulate the

physiologic mechanisms whereby the body protects and immunizes itself against typhoid bacilli.

In regard to the inoculation form of treatment of the established disease, it must be said that it does not rest on as substantial a basis as does inoculation for preventive purposes. As just stated, it is aimed to stimulate the processes of immunization, but it does not appear that sufficient account has been taken of the fact that abundant stimulation may be and usually is caused by the infecting bacilli in the course of the attack, and of the further fact that there is a distinct limit to the power of response. Moreover, the direct effects of such inoculation on the processes of antibody production have not been followed closely and experiments have not been conducted on animals to determine the effect of injection of killed bacilli after infection has taken place. The available results of this treatment are in no way decisive as to its merits, and for the present it may be dismissed as being in the tentative and experimental stage and as not adapted as yet for general use.

Inoculation with typhoid vaccine has been used also in the case of chronic carriers of typhoid bacilli in the hope that it would hasten the disappearance of the bacilli, but thus far, unfortunately, without the desired result.

On the other hand, antityphoid inoculation for preventive purposes is a perfectly rational procedure, fully warranted by the results of experiment, and at this time, we may say, by the results of experience also. That injection of killed typhoid bacilli in normal persons actually sets the machinery of immunization in full motion is shown by the subsequent appearance in the blood of newly formed and specific antibodies. At first the lysin was regarded as the most important of these antibodies; but now that distinction must be shared with the opsonin, while the agglutinin still is looked on as a measure rather than a means of immunity. It is, of course, quite possible that other antibodies of even greater importance than the lysin and the opsonin are called forth, but which we at present are unable to detect and to measure. The antibodies mentioned appear in an orderly and typical manner after inoculation; measurement of their concentration in the blood reveals that, after a period of latency of two or three days, there sets in a steady increase, which reaches its maximum on about the tenth to the twelfth day and is then succeeded by a slow and gradual return to low level. By repeated injection of bacilli at the height of the curve the production may be still further increased and prolonged. The lysin, opsonin and agglutinin usually appear to run parallel in the curve of immunization, but deviations have been observed, especially in the latter part of the curve. It is asserted that increase in agglutinin may persist for two years, but no systematic observations have been made to determine just how long the antibodies remain above normal after inoculation. There is, however, experimental evidence to the effect that the once immunized organism retains the power to respond with

increased promptness and effectiveness to the corresponding infection, even if all the antibodies evoked by the primary immunization have disappeared from the blood.

We owe the working out of the details that make practicable the use of preventive antityphoid inoculations on a large scale to Wright in England principally, and to Pfeiffer and Kolle in Germany. The methods of Wright and of Pfeiffer and Kolle are essentially the same. Definite quantities of typhoid bacilli, killed by heating at 60 degrees C. for an hour or so, are injected subcutaneously, absolute sterility of the "vaccine" having been determined by cultural tests. Wright used twenty-four-hour to forty-eight-hour cultures in 1 per cent. peptone broth accurately neutralized, the single dose being seven hundred and fifty to a thousand million bacilli, determined according to the Wright method of counting. Pfeiffer and Kolle used twenty-four-hour agar cultures; two milligrams of which constitute one dose. In both cases the injections may cause practically the same local and general reactions. Soon after the injection some local swelling, pain and tenderness may develop with more or less enlargement of the regional lymph-nodes; in a few hours chilliness or distinct chills may ensue, followed by some fever, headache, general depression and weakness. As a rule these reactive symptoms last twenty-four to forty-eight hours, occasionally a little longer. The reactions are rarely severe, and, on the whole, the inoculations must be regarded as harmless. Various efforts have been and are being made to free the vaccine from its toxic properties without its losing any of its antigenic or immunizing powers, and we may look for substantial improvements in this direction.

It has been one of Wright's contentions that immediately after the inoculation, during the "negative phase," the anti-infectious powers of the body are reduced and the danger of infection consequently increased; hence special stress was laid on such adjustment of the dose that the negative phase could be eliminated so far as possible at the same time as good immunizing responses were obtained, and especially in case inoculations were to be given in the presence of a typhoid epidemic. In experiments on animals, however, Pfeiffer and Friedberger find that the general resistance to various infections is increased immediately after immunizing injections, and, judging from the experience with antityphoid inoculation, it does not appear that there are any good grounds for the fear that inoculation in the presence of epidemic typhoid may lead to undesirable consequences. The inoculations preferably are repeated twice, at intervals of ten days, the dose for the second and third injections being usually double that for the first. The reactions after the second and third injections are usually quite insignificant.

Extensive practical tests with antityphoid inoculation have been carried out among British and German colonial troops. Altogether nearly thirty-five thousand men have been inoculated, and the statistics show that the morbidity and mortality from typhoid fever have been

very greatly reduced among the inoculated as contrasted with the non-inoculated. According to the last German report, the man who refuses inoculation is twice as liable to have typhoid as the man who accepts, and four times as liable to die of it. Particularly important are the latest statistics from the British service,¹ which show that for each case of typhoid fever in the inoculated there were ten among the non-inoculated, and that for each typhoid death among the inoculated there were ten among the non-inoculated. The death-rate from typhoid fever per thousand non-inoculated was greater than the incidence per thousand of the disease among the inoculated.

The protective efficacy of antityphoid inoculation consequently is firmly established, and no doubt its use will be greatly extended in the near future, especially, of course, in military services,² where the method, so to speak, originated and where there is such great need of means to control typhoid fever, but also in the efforts to limit the spread of typhoid fever wherever it occurs. Now that we understand the rôle of contact in the spread of typhoid fever, the need of protection in the household, in hospitals and institutions on the part of all who come in contact with typhoid patients or their belongings is quite self-evident. It is easy to see, too, that the danger from the chronic carrier of typhoid bacilli under special conditions might be materially lessened by inoculation of his intimate associates.

PRESERVATIVES AND PRESS AGENTS

Many and devious are the ways by which those who would "doctor" our food attempt to create public sentiment in favor of chemical preservatives. During the last few months a harmless looking letter signed "H. L. Harris" has appeared in the newspapers of those cities and towns in which deaths from ptomain poisoning (much-abused term) have recently been chronicled. This letter—we use the singular advisedly—does not vary in its wording in different papers, except for the opening sentence. It begins by referring to the death which the writer has seen reported in the paper written to, and then continues:

"It is certainly appalling to learn how rapidly ptomain poisoning cases have increased since the enforcement of the pure food law. According to press dispatches there have been in the United States since the enforcement of this law 16,492 cases of ptomain poisoning, 573 of which were fatal. Prior to the enactment of the pure food law borax and boron compounds were used on meat, fish, fowl, sausages, oysters, etc., consequently such food, which readily becomes contaminated, was kept in a hygienic, healthful condition. . . ."

1. Leishmann, W. B.: Statistical Tables of Recent Results of Antityphoid Inoculation, *Jour. Roy. Army Med. Corps*, 1909, xli, 163. In this series the "vaccine" was prepared by heating to 53 C. for seventy minutes; it is said that "vaccine" so prepared does not lose so much of its immunizing property as that heated at a higher point.

2. See the valuable article by Major F. F. Russell, Medical Corps, U. S. Army, on the Prevention of Typhoid Fever by Vaccination and by Early Diagnosis and Isolation, *Military Surgeon*, 1909, xxiv, 479.

And much more to the same effect. The letter closes with the suggestion that the law should be so amended "as to permit the use of modern non-injurious preservatives." Not only in the form of letters do we find these much-reiterated sentiments of Mr. Harris. Overworked editors occasionally use them *en bloc* to fill a gaping void on the editorial page. For instance, we find in the *Alliance (Ohio) Review*, Dec. 4, 1909, an editorial (?) entitled "Ptomain Poisoning," which begins:

"A recent case of ptomain poisoning in Alliance has caused the thought that it is certainly appalling to learn how rapidly ptomain poisoning cases have increased since the enforcement of the pure food law. According to press dispatches there have been . . ."

And so on; the Harris letter *verbatim et literatim*. As many of our readers will remember,¹ the H. L. Harris who thus champions the cause of boron compounds as food preservatives is the press agent of the Pacific Coast Borax Company, sometimes called the "borax trust." Harris also writes under the name of "H. H. Langdon," and on the stationery which carries this name he calls himself a "Food Expert," although the New York City directory has him listed as a "journalist." He has for years, under one or the other of these names, been writing "articles" systematically attacking pure-food legislation in general and Dr. Wiley in particular. It would be well for physicians to notice with some care both the correspondence and editorial columns of their local newspapers when cases of ptomain poisoning have been chronicled. The chances of a pro-borax article appearing subsequently are good in proportion to the care exercised by the clipping bureaus which furnish the borax company with such news items, and the carelessness of the editors of the papers which accept the Harris-Langdon inspired communications—either for correspondence or as "editorials."

These articles are not likely to appear in the metropolitan dailies, because nearly all such papers belong to an association which furnishes them with lists of press agents. But it is the papers of the smaller towns that Harris-Langdon delights to dupe into printing his contributions in favor of chemical preservatives. It is in such towns that the wide-awake physician can do yeoman service in the interest of public health by enlightening those editors who, through no fault of their own, are, or may yet be, misled into giving free publicity in the interests of the sophisticators of foodstuffs. Of course, in those cases in which the editor calmly appropriates Harris' "dope" and prints it as his own, the physician will not be thanked for mentioning the fact—but the editor should be advised, just the same.

THE WORK CURE IN NERVOUS CONDITIONS

The treatment of neurasthenia, hysteria, and allied conditions is the subject of an article by Dr. H. J. Hall, in this issue of *THE JOURNAL*, which is especially interesting in that it shows what can be done by a general prac-

titioner with sufficient interest in the subject to individualize. Undoubtedly, the value of work in the treatment of such conditions has been demonstrated more or less successfully in individual cases by many neurologists. Dr. Hall's article, however, deals with a more extensive trial under conditions especially arranged for the purpose. Rational occupation has been employed in the treatment of insanity for a long time, though it has not been employed so extensively as it deserves. We are apt to associate the "rest cure" with neurasthenia; indeed, that is popularly all that is considered necessary in that condition, and it is not to be supposed that the work cure will displace it completely except in selected cases. As Dr. Hall says, it is no more reasonable to suppose that such a complex remedial measure as work can be used successfully in haphazard fashion than that drugs can be so used. Whether or not the work cure can be advantageously separated from the regular sanatorium treatment remains to be seen, but his experience seems to bear out his assertions; it is probable that in the future existing institutions will make arrangements for this method of treatment, though purely industrial colonies may be established by general practitioners in various parts of the country. The occupation treatment may even become a fad and may require judicious curbing, as is the case with the physical-culture craze which is now running riot. On the other hand, institutions for the work cure—by being self-sustaining, so to speak—might be able to reduce the excessive charges now apparently necessary for treatment of nervous patients, and would be a boon to individuals in modest circumstances who need medical advice regarding their infirmities. A well-directed change of occupation with continuous medical oversight has decided value in many neurotic conditions. In cases in which the conditions approached actual insanity, the patients have been restored to health by judiciously selected work, while without it they would probably have become incurably insane.

STANDARDS OF MEDICAL EDUCATION

In his address before the last meeting of the Association of American Medical Colleges, the report¹ of which has recently come to hand, President Henry S. Pritchett of the Carnegie Foundation for the Advancement of Teaching, reviews briefly the conditions underlying medical education as he sees them. He calls attention to the fact, often ignored, that the public itself is vitally interested in the maintenance of good professional standards both of medical education and for license to practice. No matter what medical sect practitioners may join, they must be trained in the fundamental sciences which underlie all medical practice, such as anatomy, physiology, pathology and the like. He shows that the public cannot possibly differentiate between the various medical sects, and their only protection is to insist that the man licensed to practice shall be well educated and thoroughly grounded in the fundamental sciences. This should apply to all practitioners regardless of sect. For the interests of the public, therefore,

1. *THE JOURNAL* A. M. A., Oct. 25, 1907.

1. *Proc. Assn. Am. Med. Colleges*, 1909, p. 19.

medical education should be taken off the commercial basis and fair standards should be enforced. While it was probable that the medical school would eventually be associated with the university, President Pritchett calls attention to the harm done to the cause of medical education by the desire of some universities to have medical schools as a part of their organizations without due regard to standards. He points out that many colleges and universities are to-day lending the shelter of their charters and the support of their names to medical schools which are purely commercial, and that such a connection is a disgrace to any true college or decent university. President Pritchett says that "no college has the right to undertake a medical school unless it is to serve medical education and the betterment of medical practice. To undertake a medical school merely for the sake of institutional completeness or to be able to print a few more names in the catalogue is a betrayal of education, not a service in its interests."

Medical News

ILLINOIS

Hospital Soon Ready.—The Whiteside Public Hospital, Sterling, is completed and ready to receive patients.

Wants State Sanatorium.—In the December Bulletin of the Illinois State Board of Health, the secretary, Dr. James A. Egan, makes a strong plea for the establishment of a state sanatorium for tuberculosis.

MARYLAND

Society Meetings.—At the annual meeting of Talbott County Medical Society, held December 22, the following officers were elected: Dr. Charles F. Davidson, Easton, president; Drs. Philip L. Travers, Easton, and Joseph A. Ross, Trappe, vice-presidents; Dr. Clifford M. Stelle, Cordova, secretary-treasurer; Dr. James A. Stevens, Easton, delegate to the Medical and Chirurgical Faculty; Dr. Charles H. Rose, Cordova, alternate; and Drs. Samuel C. Trippe, Royal Oak, William S. Seymour, Trappe, and S. Denny Wilson, Easton, censors. —Dorchester County Medical Society, at its annual meeting, held in Cambridge, December 14, elected Dr. Victor C. Carroll, Cambridge, president; Dr. C. Frank Magnire, Hurlock, vice-president; Dr. William H. Houston, Fishing Creek, secretary; Dr. Benjamin L. Smith, Madison, delegate to the Medical and Chirurgical Faculty; and Dr. Eldridge E. Woolff, Cambridge, alternate.

Baltimore

Personal.—Dr. Martin S. Sloan of the Louisville Sanatorium has been elected a resident physician of the Endowment Sanatorium for Consumptives, vice Dr. Foster, resigned. —Dr. Howard A. Kelly was thrown from his motorcycle December 23, receiving painful wounds and contusions of the head and arms.

New Cottage for Tuberculous Children.—Mrs. Henry Barton Jacobs will erect a new cottage for children at the Endowment Sanatorium for Consumptives to cost from \$10,000 to \$15,000, dependent on the raising of a maintenance fund by the public. There are at present six children in the institution and the new cottage will accommodate about ten.

Trade Organizations Object to Sanitarian.—Dr. Marshall L. Price, secretary of the State Board of Health, has incurred the displeasure of the trade organizations, who suggest a druggist in his place. The seat of the discontent appears to be in the enforcement of the pure food bill. Dr. Price received his practical training in public hygiene under Dr. John S. Fulton, and under his direction, Maryland is being recognized as one of the most advanced states in the union in this regard. The Maryland system of control of tuberculosis has recently been adopted in New York and other states. The administration of the pure food law, while it unquestionably belongs to the state board of health, is not the most important part of the functions of that body.

City Will Take Over Tuberculosis Work.—The city of Baltimore, on January 1, takes over the tuberculosis work of Baltimore, which has been in the hands of the Instructive Visiting Nurses' Association for the past five years. The work will be under the care of the health department and the employment of fifteen nurses has been authorized by the board of estimates, and 1,700 patients will be turned over by the association. The city will be divided into fourteen districts with one nurse in each district, who will be held responsible for the cases therein, and for the inspection, fumigation, and removal, when necessary, of furniture in case of death from tuberculosis. She will instruct patients and friends as to the best methods of living, etc.

MASSACHUSETTS

Money for Hospital.—Frederick F. Ayer, New York City, sent a check for \$50,000 to the Lowell General Hospital, December 14, making his benefactions to that institution \$200,000.

Personal.—Dr. James A. King, Millville, is spending the winter in Berne, Switzerland, at the clinic of Prof. Dr. Kocher. —Dr. Kendall Emerson, Worcester, has been elected chairman of the committee on school hygiene, vice William H. Burnham, resigned.

Free Public Lectures.—The free public medical lectures which the faculty of the Harvard Medical School have given in recent years will be resumed January 2. They are given at the school on Saturday evenings at 8 o'clock and on Sunday afternoons at 4 o'clock. The subjects and the speakers for January are: January 2, Dr. F. P. Benedict: "The Influence of Mental and Muscular Work on Nutritive Processes" (illustrated). January 9, Dr. Maurice V. Tyrode: "What the Public Should Know About 'Patent Medicines.'" January 16, Dr. William T. Porter: "The Growth of School Children and Its Relation to Disease." January 23, Dr. Walter B. Cannon: "The Glands of Internal Secretion and Their Relations to Health and Disease" (illustrated). January 30, Dr. Clarence J. Blake: "Hearing and Speech." January 8, Dr. Milton J. Rosenau: "The Story of Vaccination." January 15, Dr. Calvin G. Page: "Clean Milk" (illustrated). January 22, Dr. John B. Blake: "Sprains, Strains and Fractures; Simple Facts of Diagnosis and Treatment" (illustrated), and January 29, Dr. John H. McCollom, "Smallpox" (illustrated).

MICHIGAN

Lodge Practice.—Oakland County Medical Society, at its last meeting passed by a vote of 32 to 5, an amendment to the constitution, stipulating that after January 1, no member may continue to do such lodge business and continue to be a member of the society unless he obtains for his compensation fees equal to those established by usage in the community in which he resides. This action was taken only after the House of Delegates of the state society had passed a resolution calling on county societies to take action directed against this abuse.

Annual Meetings of Societies.—At the annual meeting of Kalamazoo Academy of Medicine, held in Kalamazoo, December 13, the following officers were elected: President, Dr. George F. Inch, Kalamazoo; vice-presidents, Drs. John B. Jackson and Orton H. Clark, Kalamazoo, and George F. Young, South Haven; secretary-treasurer, Dr. Charles E. Boys, Kalamazoo; censors, Drs. David J. Levy and Daniel H. Eaton, Kalamazoo; delegates to the state medical society, Drs. Leslie G. Rhodes, South Haven, and George F. Young, South Haven, and alternates, Drs. Edward P. Wilbur, Kalamazoo, and Labb. —Lenawee County Medical Society, at its annual meeting in Adrian, December 14, elected Dr. George H. Lamley, Blissfield, president; Dr. Oat Whitney, Jasper, vice-president; Dr. Artemus W. Chase, Adrian, secretary-treasurer; and Dr. Lucian G. North, Tecumseh, delegate to the state society. —At the annual meeting of Saginaw County Medical Society, held in Saginaw, December 16, the following officers were elected: Dr. Pearl S. Windham, Saginaw, president; Dr. William L. Dickinson, Saginaw, vice-president; Dr. J. Neil McLean, Saginaw, secretary-treasurer; and Drs. William F. English, Bert B. Rowe, and Elmore E. Curtis, all of Saginaw, directors. The society decided to cooperate with the state society in its plan for legal defense, and elected Dr. William J. O'Reilly, Saginaw, as a member of the joint committee for this purpose. —Menominee County Medical Society, at its annual meeting, held December 14, elected the following officers: President, Dr. Earl V. McComb; vice-president, Dr. Henry T. Sethney; secretary-treasurer, Dr. Calvin R. Elwood, and censors, Drs. Robert G. Marriner and Henry A. Vennema, all of Menominee.

MISSISSIPPI

Hospital for Meridian.—A movement has been inaugurated in Meridian by the trustees of the Mississippi Medical College for the establishment of a state hospital in that city. A site for the hospital has been donated adjacent to the college.

Colleges Open.—The fourth annual session of the Mississippi Medical College, Meridian, opened October 4. The opening address was delivered by Dr. William W. Hamilton, Meridian. Dr. George W. Stephens, professor of chemistry and toxicology, has been added to the faculty. The opening exercises of the University of Mississippi Medical School were held September 3 at Vicksburg. Addresses were made by the governor, Chancellor A. A. Kineannon of the University, Dr. Dudley W. Jones, president of the state medical association, and others.

Medical Society Meetings.—The Tri-County Medical Society of Copiah, Lincoln and Pike held its annual meeting at Brookhaven, December 14, and elected the following officers: President, Dr. Thomas Purser, McComb; vice-presidents, Drs. James M. Dampeer, Crystal Springs, Oscar N. Arrington, Brookhaven, and Clark H. Rice, McComb; secretary-treasurer, Dr. Dudley W. Jones, Brookhaven, and censor, Dr. W. S. Lampton, Magnolia. Warren County Medical Society held its annual meeting in Vicksburg and elected Dr. Sydney W. Johnston, Vicksburg, president; Dr. Vincent Bonelli, Vicksburg, vice-president; Dr. James H. Fox, Vicksburg, secretary-treasurer; Dr. B. Iverson Hicks, Vicksburg, censor, and Dr. W. B. Dougherty, Vicksburg, delegate to the state association. At its annual meeting in Greenwood, the LeFlore County Medical Association elected the following officers: President, Dr. William T. Mathews, Greenwood; vice-president, Dr. H. L. Shannon, Ittabena; secretary-treasurer, Dr. William B. Dickens, Greenwood, and delegate to the state association, Dr. Benjamin F. McNeal, Ezra.

MISSOURI

Personal.—Dr. George O. Coffin, Kansas City, formerly city physician, suffered a slight cerebral hemorrhage, December 6. Dr. Frederick A. Patterson has been continued as acting superintendent of State Hospital No. 2, St. Joseph. Dr. Charles B. Irwin is said to be the appointee as physician at the Kansas City Tuberculosis Hospital.

Medical Society to Erect Building.—The Jackson County Medical Society has purchased a lot on Thirty-fourth street and Gillham Road, Kansas City, and plans are being made for the erection of a building which is to be the home of the physicians of the city and county. It will be used as a meeting place, and will be equipped with a medical library and museum.

Society Meetings.—At the annual election of the St. Louis County Medical Society, held in St. Louis, December 8, Dr. Leander W. Cape, Maplewood, was elected president; Dr. Ralph W. Mills, Webster Groves, vice-president; and Dr. Pierre M. Brossard, Maplewood, secretary-treasurer. Jackson County Medical Society, at its annual meeting, December 7, elected the following officers: Dr. Bennett C. Hyde, president; Dr. Jefferson D. Griffith, vice-president; Dr. Edward L. Stewart, secretary; Dr. William F. Kuhn, treasurer; Dr. Frank C. Neff, censor; and Drs. William J. Frick, Herman E. Pearce, James Q. Chambers, and Albert J. Welch, delegates to the state association, all of Kansas City. The St. Joseph-Buchanan County Medical Society, at its annual meeting, December 8, elected the following officers: Dr. Charles R. Woodson, president; Drs. Frederick H. Ladd and Levi S. Long, vice-presidents; Dr. Charles Wood Fassett, secretary (reelected); Dr. John M. Bell, treasurer; Dr. O. Beverly Campbell, censor; Dr. Arthur B. McGlothlin, delegate to the state association, and Dr. Harrison S. Forgrave, alternate, all of St. Joseph. The society accepted the offer of the Ensworth Medical College for a meeting place, and also decided to continue the post-graduate work of instruction on the plan published by the American Medical Association.

St. Louis

Neumann in St. Louis.—Prof. Heinrich Neumann, Vienna, arrived in St. Louis December 8, and delivered a course of clinical lectures on diseases of the ear.

Physicians Interested in New Life Insurance Company.—The Inland Insurance Company has been incorporated with a capital stock of \$150,000. Drs. Burwell W. Gunn, Paul R. Baer, Johannes Demmler, Theodore Greiner, and Benjamin Shanklin are members of the board of directors.

Fail to Report Contagious Cases.—Six physicians of the city were arraigned before Judge Tracy, December 15, for fail-

ing to report cases of contagious diseases to the board of health as required by ordinance. One was fined \$250 and costs, two \$50 and costs each, one was acquitted, and two cases were continued.

Personal.—Dr. Leo Loeb, formerly director of the laboratory of experimental pathology in the Medical Department of the University of Pennsylvania, has accepted the position of pathologist to the St. Louis Skin and Cancer Hospital.

Fined for Illegal Practice.—W. T. Johnson is said to have pleaded guilty, November 29, to three charges of practicing medicine without a license, and was fined \$50 and costs for each offense. Moses Helseher, who styles himself "Moses II," is said to have been found guilty of practicing medicine without a license, December 10, and to have been sentenced to pay a fine of \$500 and be imprisoned thirty days in the county jail.

Municipal Tuberculosis Organ.—The November number of the Bulletin of the Municipal Commission on Tuberculosis of St. Louis announces that it will hereafter be under the editorial management of Dr. Kenneth W. Millican. The Bulletin contains 80 pages, the principal article being an address on "A State Campaign Against Tuberculosis," delivered before the Conference of Charities and Corrections at Farmington, on November 6, by Dr. H. Orville Brown, superintendent of the State Sanatorium for Tuberculosis. It contains also a report of deaths from tuberculosis in St. Louis during August, reports on the progress of the campaign, sanitary rules for city employees issued by the mayor of St. Louis on the recommendation of the commission, a brief review of recent literature on tuberculosis, and much other pertinent editorial comment. The Bulletin should do effective work in the campaign against tuberculosis in Missouri, and should receive liberal support from the authorities and the people of St. Louis.

NORTH CAROLINA

Personal.—Dr. Harry Q. Alexander, Matthews, has been reelected physician of the State Farmers' Union. Dr. Silvio H. Von Ruek, Asheville, is spending the winter in post-graduate work abroad. Dr. James M. Sloan has been appointed surgeon of the Carolina and Northwestern Railway at Gastonia, and Dr. Lucius N. Glenn, assistant surgeon. Dr. E. Reid Russell, Charlotte, one of the founders of the North Carolina Medical College, and head of the Eye, Ear, Nose and Throat Department, has resigned and moved to Asheville. W

Watts Hospital Opened.—On December 1 the handsome new Watts Hospital, Durham, was formally opened to the city and county by Mr. George W. Watts. The hospital occupies a magnificent site in the center of a park of 28 acres, and is donated to the city and county with an endowment of \$100,000, with a single condition "that no worthy poor be excluded from its doors." The hospital will accommodate 100 patients, and by the wishes of the donor will be under the control of the Durham County Medical Society and Durham Academy of Medicine. W

County Society Elections.—Wilson County Medical Society, at its December meeting, elected Dr. Henry B. Best, president; Dr. Carl Moore, vice-president; Dr. Elijah T. Dickinson, secretary, and Dr. Benjamin S. Hering, delegate to the state society, all of Wilson. Mecklenburg County Medical Society recently elected the following officers: President, Dr. Andrew J. Crowell; vice-president, Drs. Francis O. Hawley and Leone B. Newell and Charles A. Meisenheimer; and secretary-treasurer, Dr. Robert H. Lafferty, all of Charlotte. At the meeting of the Guilford County Medical Society in Greensboro, December 2, Dr. Charles S. Gilmer, Greensboro, was elected president; Dr. Charles W. Moseley, Greensboro, vice-president; Dr. J. Parran Jarboe, Greensboro, secretary-treasurer, and Dr. William P. Beall, Greensboro, censor. Cumberland County Medical Society, at its annual meeting, elected the following officers: Dr. Seavy Highsmith, Fayetteville, president; Dr. Percy W. Olive, Wade, vice-president; Dr. William S. Jordan, Fayetteville, secretary, and delegate to the state society, Dr. Jacob F. Highsmith, Fayetteville. Gaston County Medical Society has elected the following officers: President, Dr. George R. Patrick, Lowell; vice-president, Dr. John H. Jenkins, Dallas; secretary, Dr. Lucius N. Glenn, Gastonia, and delegates to the state society, Drs. David A. Garrison and Lucius N. Glenn, Gastonia.

NEW YORK

Addition to Hospital.—The two additional buildings for the maternity department of the Rochester City Hospital are nearing completion. They are of brick, two stories in height, fireproof, and will cost about \$100,000.

New Standard Certificate of Death.—Beginning with January 1, the New York State Department of Health requires the use of the recently-revised United States Standard Certificate of Death. The form has been approved by the United States Census Bureau and the American Public Health Association. The uniform adoption of this certificate will greatly facilitate the study and comparison of mortality statistics.

Medical Society Meeting.—The eighty-sixth annual meeting of the Medical Society of the County of Erie was held in Buffalo, December 20. The following officers were elected: President, Dr. Grover W. Wende; vice-president, Dr. Bernard Cohen; secretary, Dr. Franklin C. Gram; treasurer, Dr. Albert T. Lytle; chairman of registration committee, Dr. F. Park Lewis; chairman of committee on public health, Dr. Ernest Wende; and chairman of board of censors, Dr. John H. Grant, all of Buffalo.

State Rabies Treatment.—Contending that in many instances rabies is due to laxity of public health control, Dr. Eugene H. Porter, State Commissioner of Health, believes it is the duty of the state to furnish treatment to those afflicted with the disease. Preparations have been completed at the State Hygienic Laboratory to take up this work. Time and money have been lost in the past by sending the victims of rabies to New York City, while the laboratory at Albany will be sufficiently central to furnish treatment to every citizen in the state.

New York City

New Headquarters for Board of Health.—The board of estimates, on December 10, voted to purchase for \$850,000 a twelve-story building at Sixteenth street and Irving place, to be used as headquarters for the Board of Health and other departments.

Appropriations for Hospitals.—Within the past month the city has appropriated \$2,500,000 for hospitals for the treatment of tuberculosis on Staten and Blackwell's islands. When these hospitals are completed, the city will have 2,500 beds in special tuberculosis hospitals.

Physical Tests Before Graduation.—By a ruling of Superintendent Maxwell all pupils in the elementary schools will be required to pass satisfactory examinations in physical culture before graduation. The requirements are: success of the pupil in carrying out certain instruction in regard to cleanliness of face, nails, mouth and clothing; the pupil must acquire good posture and expression of vigor; gymnastics for the boys and folk-dances for the girls.

New Wing for Hospital Opened.—The new south wing of the Long Island College Hospital, Brooklyn, which is part of a memorial erected by J. Rogers Maxwell to his brother, Henry W. Maxwell, has been opened. This wing contains the Skene Memorial Amphitheater, named in honor of Dr. Alexander J. C. Skene. The wing will accommodate 165 adults and 65 children, and contains two operating rooms, an x-ray room, and a mortuary chapel. The amphitheater will seat 300 students.

Society Election.—The Eastern Medical Society of the City of New York has elected the following officers: President, Dr. Abraham J. Rongy; vice-presidents, Drs. Abraham Hymanson and Meyer M. Stark; recording secretary, Dr. Maurice O. Magid (reelected); corresponding secretary, Dr. Harry E. Isaacs; treasurer, Dr. Joseph Bieber; trustee, Dr. Charles Goodman; and chairmen of committees: Ethics, Dr. David Robinsolin; admissions, Dr. Sidney D. Jacobson; house, Dr. David J. Hyman, and library, Dr. Emil Altman.

PENNSYLVANIA

Physicians Arraigned.—Dr. R. J. Branner, State Health Inspector, is bringing many prosecutions against physicians of Schuylkill county for neglecting to report births within the ten days required by law. On December 9, the following physicians were arraigned before Justice of the Peace H. B. McCool: Drs. John McCrystle and George A. Merkle, of Minersville; Alexander L. Gillars and George H. Boone, of Pottsville; Paul B. Dunn, of Mahanoy City; S. H. Brady, of Girardville; Daniel J. Langton and Christian Grubler, of Shenandoah. The cases against Drs. Gillars, Merkle and McCrystle were dismissed and others entered bail for their appearance at court.

Philadelphia

Poor Directors Choose Officers.—At a meeting of the Directors of the Poor of the Oxford and Lower Dublin District, held in Holmesburg, December 16, the following medical officers were elected: Dr. Joseph R. Knight, physician for poorhouse and Fox Chase District; Dr. Clarence J. Lewis, physician for Holmesburg; Dr. Thomas Allison, physician for Frankford.

Appropriation for Health and Charities Cut.—Councils subcommittee on finance to the Common Council on December 16, the six department appropriation bills that had been received favorably by the committee and the amounts asked for and received. Among the others was the Department of Health and Charities, which asked for \$1,517,831 and received \$861,540. In the health and charities appropriation the Health Bureau gets \$321,000.

Phipps Institute to Affiliate with the University.—Formal announcement is made by the University of Pennsylvania that the Henry Phipps Institute for the Treatment and Prevention of Tuberculosis will be united with the university. This change will not take place until after the completion of the new buildings, which are to be erected by Mr. Phipps at a cost of more than \$500,000 at Seventh and Lombard streets.

SOUTH CAROLINA

Society Meetings.—At the annual meeting of Greenville County Medical Society, December 6, held in Greenville, Dr. Ernest W. Carpenter, Greenville, was elected president; Dr. Wyatt Y. McDaniels Taylors, vice-president; Dr. Charles O. Bates, secretary; and Dr. R. D. Smith, Greenville, treasurer. —The annual meeting and banquet of the Charleston County Medical Society was held in Charleston December 13, and the following officers were elected: President, Dr. Archibald E. Baker; vice-president, Dr. Charles P. Aimer; secretary, Dr. William C. O'Driscoll; treasurer, Dr. Rowland Alston; librarian, Dr. Julius C. Sosnowski; censor, Dr. Charles M. Reese, and delegate to the state association, Dr. Allen J. Jervoy, all of Charleston.

GENERAL NEWS AND COMMENT

The Knights of Modern Chivalry and the Days of Reckoning

For several months physicians have been receiving from one Ira Clay Hicks, M.D., letters on the official stationery of the Senate Chamber of the State of West Virginia. Not all these letters, however, have been mailed from, or dated at, Charlestown, W. Va.—most of them coming from Albany, N. Y., while some emanated from Huntington, W. Va. The wording in all has been essentially the same and has called attention to the fact that "the writer is interested in a fraternal order now being perfected pursuant to the laws of New York; and known as 'Supreme Court, Knight of Modern Chivalry.'" Dr. Hicks states that while he does not know personally the physician he is addressing, he knows him to be "one of the leading physicians in your town, from recommendation and Polk's Directory" (!), and he has therefore taken the liberty of recommending his addressee to an "important appointment." The appointment in question is that of becoming "city court Esculapius for the purpose of making examinations and attending disabled members." The "string" attached to this "appointment" is that the physician shall "kindly forward us your check . . . in the sum of \$25."

To lend an air of respectability to this scheme, not only is the State of West Virginia rung in, but the American Medical Association also is used. Says Dr. Ira Clay Hicks:

"I am a member of the A. M. A. and I can authoritatively say that the proposition is absolutely and entirely ethical."

If by "authoritatively" Dr. Hicks means that he speaks on the authority of the American Medical Association, the sentence quoted contains two clearly defined untruths, for Ira Clay Hicks is not—and never has been—a member of the American Medical Association, and the Association has never pronounced the Knights of Modern Chivalry in any sense an "ethical" or any other kind of a proposition.

When the "order" was first started, the physicians who were written to were told that "there are only two hundred appointments to be made," and an imposing reproduction of a certificate of the National Surety Company of New York was shown. The certificate stated that a "schedule bond" had been issued in behalf of the trustees who were to have charge of the amount of money sent in by "the two hundred original subscribing members . . ." The plan evidently worked well, for we find before the time of the first "schedule bond" had expired another was issued to cover the amounts sent in by "the three hundred additional original subscribing members."

The "chief justice" of the order is N. Napoleon Hicks, or Norman N. Hicks, who advises physicians that they have been recommended to him by Dr. Ira Clay Hicks. N. N. Hicks, who sometimes writes from Albany, N. Y., and sometimes from Schenectady of the the same state, has, we understand, been connected with at least two other insurance

concerns which have ceased to exist. In his letters he tells physicians that he has "an exceptionally extraordinary proposition to make." As an additional bait, prospective applicants to membership are sent photographic reproductions of checks sent in by physicians who have already bitten. Altogether, the plan seems to have worked very well—from the standpoint of the "organizers."

Apud of the above, the following from the *Boston Herald* may interest those who have parted with the \$25 necessary to become "city court Esculapius":

DOCTORS GAVE \$25 TO FAKE SOCIETY

WERE TO BECOME EXAMINERS OF "KNIGHTS OF MODERN CHIVALRY"
NOW UNDER BAN OF NEW YORK INSURANCE SUPERINTENDENT

Albany, N. Y., Dec. 22.—That scores of physicians all over the country have contributed \$20 each for a benefit certificate in the "Knights of Modern Chivalry," with an additional \$5 as a fee for the title of "City Court Esculapius," or in plain terms, medical examiner, developed to-day when an order was obtained from Supreme Court Justice Chester placing Supt. Hotchkiss of the state insurance department in charge of the affairs of the organization.

The society was organized last June by N. Napoleon Hicks. Although \$6,665 has been paid in, almost wholly by physicians, no insurance has been paid, and the society has but \$109 in its treasury, with apparent liabilities of \$1,407.

"Check stubs indicate," said Supt. Hotchkiss, "that more than half the money disbursed has been paid to N. Napoleon Hicks, who is 'chief justice' of the society."

Complaint having been made as to the failure of the society to meet an accident claim, the insurance department called for a statement.

Physicians became interested in the representation that lodges were to be formed in various cities and villages and that they were to be appointed medical examiners.

"No lodges have been formed," said Supt. Hotchkiss, "and the society is now nothing more than an assessment association whose members have parted with their money and become liable to assessments without having secured any benefits or being likely to secure any."

Medical History Society Formed.—The Society of Medical History of Chicago has been recently organized, with Dr. Isaac N. Danforth as president; Dr. N. S. Davis, vice-president, and Dr. George H. Weaver, secretary. Its council consists of Drs. Ludvig Hektoen, George H. Weaver, John Edwin Rhodes, N. S. Davis, Henry T. Byford and George Henry Cleveland. Dr. Howard A. Kelly of Baltimore will deliver the address at the first meeting, which will occur on the evening of Feb. 19, 1910. This society has been formed for the purpose of systematically collecting and permanently preserving in an accessible manner any matters which are or will become of interest in connection with the medical history of institutions, organizations and individuals, especially of Chicago and the surrounding states. THE JOURNAL discussed this subject Aug. 14, 1909, page 561. Some of the materials included in such a collection are: western medical books and articles, biographies and histories, local medical journals published prior to 1880, and especially prior to the Chicago fire, catalogues, announcements, diplomas, graduation programs, official reports, directories, photographs, manuscripts, instruments and anything which has a medico-historical value from any source. By meetings the society will endeavor to stimulate the writing of historical papers founded on research from original sources. It desires to aid the present generation in gaining inspiration from the study of what its predecessors accomplished. The society asks the support of the profession. It makes a special appeal to those outside of Chicago for anything antedating the Chicago fire. It will gladly cooperate with other organizations operating in similar lines. Everything collected will, as soon as possible, be so arranged as to be accessible to persons doing research in medical history. Gifts will be credited to the donors. All communications should be sent to Dr. George H. Weaver, secretary, 1743 West Harrison street, Chicago.

Jacobi Research Fund Available.—The Women's Medical Association of New York City offers the Mary Putnam Jacobi Fellowship of \$800 available for graduate study. It is open to any woman graduate in medicine. The fellowship will not be awarded by competitive examination, but on proof of ability and promise of success in the chosen line of work. Applications for the year 1910-11 must be in the hands of the committee on award by March 1, 1910, and must be accompanied by: 1. Testimonials as to thoroughly good health. 2. Letters as to ability and character. 3. A detailed account of educational qualifications. 4. A statement of the work. 5. Examples, if any, of her work, in the form of articles or accounts of investigations carried out. It is preferable that the applicant

present herself in person. All applications should be forwarded to the chairman of the committee on award, Dr. Emily Leewi, 35 Mt. Morris Park West, New York City.

Surgeons and Gynecologists Elect Officers.—At the annual meeting of the Western Surgical and Gynecological Association, which met in Omaha December 21, the following officers were elected: President, Dr. John P. Lord, Omaha; vice-presidents, Drs. Harry M. Sherman, San Francisco, and Lewis L. McArthur, Chicago; and secretary-treasurer, Dr. Arthur T. Mann, Minneapolis. The next meeting will be held in Chicago. —The twenty-second annual session of the Southern Surgical and Gynecological Association was held in Hot Springs, Va., December 14-16. Nashville was selected as the place for the next convention, and the following officers were elected: President, Dr. William O. Roberts, Louisville; vice-presidents, Drs. Joseph C. Bloodgood, Baltimore, and Lewis C. Morris, Birmingham, Ala.; secretary, Dr. William D. Haggard, Nashville, Tenn., and treasurer, Dr. William S. Goldsmith, Atlanta, Ga.

Journal of the Delaware Medical Society.—This very attractive publication makes its initial appearance with the December issue. So far as appearances go, it stands alone in medical journalism. It savors rather of the output of a society of art than of medicine—but that is favorable and not unfavorable criticism. Much credit is due the editorial staff for putting forth so commendable a piece of work. It is well arranged, well edited, and well printed on a full finished paper, from clear, clean type, which does not try vision. The contents deserve the highest praise, and promise a good future for this publication.

The Gibbs Fund.—The council of the New York Academy of Medicine announces that the income of the Edward N. Gibbs fund, amounting to \$500 a year, will be granted for a period of years to any qualified worker to be selected by the council from those who may apply for its use in research in the clinical, pathologic or chemical problems of diseases of the kidney. Applications stating the qualifications of the applicant and the topic which he proposes to pursue should be sent to the secretary of the council of the New York Academy of Medicine, 17 West Forty-third street, New York City.

Bust of Pasteur Presented.—The Pasteur Institute of Paris has presented to the Rockefeller Institute for Medical Research, New York City, a replica of the bronze bust of Louis Pasteur by Paul Dubois, in recognition of the assistance rendered during the recent epidemic of cerebrospinal meningitis which prevailed in France.

Journals Consolidate.—Dr. W. J. Robinson of the *Critic and Guide*, *American Journal of Urology* and *Therapeutic Medicine* has purchased *Practical Therapeutics* and consolidated it with *Therapeutic Medicine*.

LONDON LETTER.

(From Our Regular Correspondent)

LONDON, Dec. 18, 1909.

Vital Statistics in 1908

The seventy-first annual report of the registrar general of births, deaths and marriages in England and Wales has just been issued and contains several figures of interest. It is based on an estimated population in the middle of 1908 of 17,071,524 males and 18,277,256 females. The marriage rate during the year was 14.9 per 1,000 of the population of all ages, 0.9 below the rate for 1907, and the same figure below the average for the last ten years. In previous reports it has been pointed out that although it was possible many years ago to trace some correspondence between the fluctuations in the marriage rate and the fluctuations in the price of wheat, in more recent years the figures show no such parallelism, but the fluctuations in the marriage rate show some correspondence with the fluctuations of exports and of employment. The births numbered 940,383, of which 37,531 were illegitimate. The birth rate was 26.5 per 1,000 living, 0.2 per cent. above that recorded in 1907, but 1.6 below the low rates of the ten years 1896-1907. In the year 1876 the birth rate in this country attained the highest point on record, 36.3 per 1,000. Since that date, with a few insignificant exceptions, it has fallen year by year until in 1907 it was 26.3. Although the slight rise in 1908 is noteworthy, it is probably a reflection of the upward change in the marriage rate, which took place in the years 1905-'07. There is no present indication, says the report, of any real check in the decline of the birth rate. The provisional returns for 1909 show a decrease in each quarter as compared with the corresponding quarter of the previous year, while the heavy fall in the marriage rate of 1908 will probably depress the rate further in the following years. The death rate from all causes was 14.7 per 1,000, 0.3

per 1,000 below the rate of 1907, and lower than the rate of any year on record. Compared with the average of in the ten years 1898-1907, the death rate in 1908 showed a decrease of 1.7. Of infants under 1 year 120 died per 1,000 births. This rate was 2 per 1,000 above that of 1907, but 22 below the average of the previous ten years. In the report for 1907 a decline in mortality from cancer was reported. Unhappily there is now recorded a slight increase. Comparison with other European countries shows an unenviable position. The death rate from cancer is exceeded only by that of two other countries, Switzerland and the Netherlands. Scotland occupies a slightly better position than England, and Ireland, notwithstanding its higher age constitution, a much better position.

The Health of the Army

In his report for 1908, which has just been issued, Surg.-Gen. Sir Alfred Keogh states that for several successive years a decline in the incidence of sickness in the army has been shown. He now reports a further diminution in the figures for last year. During that period the admissions to hospital represented a ratio of 573.1 per 1,000 of strength, deaths 4.78, invalids sent home 15.91, finally discharged 10.32, and those constantly sick 32.28. A steady improvement in the health of the army has taken place since 1899, the diminution in sickness being most marked from 1904. Between 1899 and 1908 the admission to hospital figures have been reduced nearly one-half. As a result of this improvement the effective strength of the army within the last decade has been raised by 5,776 men and the wastage through deaths and invaliding has been reduced by 2,900 men per annum. Within four years these changes have allowed of the reduction of hospital beds at home stations by over 2,200 and similar reduction is being carried out for stations abroad. These results are attributed to improved sanitation, improved methods in treating disease, and greater care in recruiting. Formerly in all cases of illness the soldier was compelled to enter hospital. Now an out-patient system has been adopted by which the milder cases are treated in barracks. The personnel of the army surgeons has been greatly improved. Increased pay, the necessity of passing examinations for promotions, leave for periodical study at the hospitals, and the introduction of specialism has greatly increased their efficiency. Great developments have taken place in the military hospitals where operations are now performed which were never attempted before. Sanitary administration has reached a high level. Officers and men are instructed in elementary hygiene. There is a great decline in enteric fever, Malta fever, malarial fever, tuberculous diseases and heart affections. Both in this country and India there has been a marked decline in alcoholism largely due to temperance propaganda. In the United Kingdom the admissions for alcoholism numbered only 80, as compared with 119 in 1907. Comparison of the health of various armies shows that the British is the best but one, while the Army of the United States is by far the worst. The following table gives the incidence of disease per 1,000 strength: Russia, 415; United Kingdom, 428; Germany, 588; France, 681; Austria, 826, and the United States, 1,172. Comparison with the figures of the previous year show that the British army, the German army and the United States Army have improved, while the other armies have deteriorated. In regard to enteric fever, the British army shows a very favorable position; the incidence of the disease is only 0.7 per 1,000; the Russian army occupies the lowest place, with an incidence of 5.6 per 1,000, and is followed by the French with 4.5. The best place is occupied by the German army, with only .51. Tuberculosis shows a great improvement in the British army, but appears to be very prevalent in the French and American armies, in which the incidence is three times greater. Greater care is now taken of the soldier's teeth, and tooth-brushes are issued to the troops. The life of masticatory efficiency of the teeth has consequently been prolonged, but much still remains to be done in the education of the men.

PARIS LETTER

(From Our Regular Correspondent)

PARIS, Dec. 16, 1909.

The Insane in the Army

Drs. Antheaume and R. Mignot have just published a book on mental maladies in the French army. This is a timely subject, which attracts much attention, not only in the medical profession, but also among the public. It was, moreover, discussed at the last French Congress of Alienists and Neurologists, at which it was the subject of a report by Dr. Granjux (THE JOURNAL, Aug. 28, 1909, liii, 726). Insanity is of particularly frequent occurrence in the foreign legion, in

the African battalions and the *compagnies de discipline*. Volunteers furnish the largest number of the insane, and consequently the largest number of deserters and *disciplinaires*. Thus in a *compagnie de discipline*, Dr. Uzac has stated that half of the men were volunteers. In the eighteenth corps, out of 164 soldiers under sentence in the regiment, Professor Regis has found 64 conscripts and 100 volunteers, an enormous proportion considering that in a regiment the number of volunteers is very small in proportion to that of the conscripts. The fact is that some "volunteers" really do not enlist voluntarily, but are brought to the barracks by their parents like children being led to school. These are undisciplined, unbalanced young men of fantastic character, predisposed to insanity, in whom military life with its various demands at once causes hitherto latent insanity to become manifest. It is to remedy this state of affairs that the Congress of Alienists and Neurologists passed a resolution that no one should be allowed to enlist unless he produced from his family physician a certificate stating that he had not presented any morbid mental state. This certificate should be controlled by the recruiting physician, who should also examine the mental condition of the candidate before his admission. This has been done for a long time in Belgium. It would be advisable likewise that the prefects should give the military authorities the names of the conscripts who have been placed in an asylum, or whose lack of mental balance is well known, so that the attention of the military physician should be particularly drawn to such a recruit. Unfortunately, at the council of review, the conscripts are examined only physically, time being far too short for a mental examination; and even after enrolment many mental diseases remain unrecognized, their diagnosis demanding a special knowledge of psychiatry, which military physicians rarely possess. It is well recognized that the psychiatric instruction which is given to military physicians at present is insufficient and ought to be increased. Professor Regis even suggests that lectures should be organized to familiarize the officers with elementary ideas of psychiatry, so as to enable them to report to the physician the appearance of the first symptoms of psychoses in the soldiers.

Distribution of the Prizes of the Academy of Medicine

On December 14, the customary session for the distribution of prizes was held at the Academy of Medicine. The Audiffred prize, consisting of an annual income of \$4,800 (24,000 francs) intended for the discoverer of a remedy, curative or preventive, effective against tuberculosis, naturally has not been awarded. The Academy merely presented \$400 (2,000 francs) by way of encouragement to Dr. G. Moussu, professor in the veterinary school at Alfort, and C. Mantoux of Camet for their works on the "Intradermal Tuberculin Reaction in Animals," and \$100 (500 francs) to Dr. L. Rénon, professor agrégé at the Paris medical school, for his work, "Practical Treatment of Pulmonary Tuberculosis." The Chevallier prize of \$1,200 (6,000 francs) for the author of the best French work published on the origin, development and treatment of pulmonary tuberculosis or other forms, was awarded to Dr. H. Gougerot of Paris for his work, "Non-Follicular Bacillosis." The Laborie prize of \$1,000 (5,000 francs), offered for work marking a notable advance in the science of surgery, was awarded to Dr. P. Redard of Paris for his entire works on orthopedic surgery. The Herpin prize of \$600 (3,000 francs) for the best work on nervous diseases, was awarded to Drs. P. Lejonne and J. Lhermitte of Paris for their work on "The Myopathy of the Aged." The Tarnier prize of \$1,350 (6,750 francs) offered for the best work on gynecology, was awarded to Dr. J. L. Faure, professor agrégé at the Paris medical school, for his work on hysterectomy. The Meynot prize of \$520 (2,600 francs), for the best work on the diseases of the eye, was awarded to Dr. A. F. Terrien of Paris for his works "Précis of Ophthalmology" and "Syphilis of the Eye and Appendages." The Itard prize of \$480 (2,400 francs) for the best book on practical medicine or applied therapeutics, was awarded to Dr. L. Rénon, agrégé at the Paris medical school, for his "Practical Lectures on Diseases of the Heart and Lungs." The Barbier prize of \$400 (2,000 francs) offered for complete means of cure for diseases at present generally considered incurable, was divided among the following: (1) Drs. G. Levaditi and J. Roché, for their work, "Syphilis: Experimentation, Microbiology, Diagnosis;" (2) Drs. P. Coyne, professor at the Bordeaux medical school, and B. Auché, professor agrégé at the same school, for their memoir on "Polyvalent Serum in Bacillary Dysentery." The Buignet prize, \$300 (1,500 francs), for the best work on the application of physics or chemistry to medical science, was awarded to Dr. H. Guilleminot of

Paris for his entire works on the biologic action of the new radiations. The Bourceret prize, \$240 (1,200 francs), offered for the best work on the circulation of the blood, was awarded to Dr. Léon Frédéricq, professor at the Liège medical school, for his entire works on the activity of the heart. The academy awarded, as usual, a certain number of less important prizes. The Guzman prize, consisting in an annual income of \$265 (1,328 francs), offered for a really efficacious treatment for the more common organic diseases of the heart, was not awarded; neither was the Daudet prize, \$200 (1,000 francs), offered for work on serotherapy in the treatment of malignant neoplasms. No memoir was presented for the Chevillon prize (\$300, or 1,500 francs) offered for the best work on the treatment of cancer, for the Capuron prize (\$200, or 1,000 francs) offered for work on the radio-activity of mineral waters, or for the Nativelle prize (\$60, or 300 francs) for work on the extraction of the definite crystallized active principle of a medicinal substance.

Kneading of Bread by Machinery

The Council of Hygiene has had under consideration some interesting questions of the hygiene of bread, and in particular the advantages of the mechanical kneading of bread. The prefect of the Seine commissioned Professor Laveran to give the Council of Hygiene his opinion on the reality of the danger of infection through the consumption of bread made by tuberculous bakers, and on the measures which ought to be taken on the subject. Professor Laveran's experiments show that the temperature of 100 degrees, which, in bread properly baked, is always obtained even at the center of the loaf, is in the main sufficient to kill tubercle bacilli. The ordinary acidity of the dough is, moreover, favorable to the destruction of these bacilli. It does not follow, however, that tuberculous workmen are not a source of danger in bakeries. The tubercle bacilli killed by the baking of the bread become incapable of producing tuberculosis, but they are not therefore absolutely harmless. They may provoke local inflammation of the intestinal mucosa. Moreover, the bread may be infected after coming from the oven in the course of the manipulation it undergoes, or by the dust arising from the dry tuberculosis sputum on the floor. Accordingly, Professor Laveran believes there is ground for calling attention to the danger from the presence of tuberculous bakers and to the necessity of taking preventive measures. The adoption of mechanical kneading, as a means of preventing the contamination of the bread by tuberculous workmen, is certainly to be advised, but according to Laveran, other measures also are required. The hygiene of Parisian bakeries leaves much to be desired, the basement bakeries being especially open to criticism. They are badly ventilated, their floors are extremely dirty, and, since it is not possible to drain away the dirty water after being used, the workmen, in order to avoid carrying water upstairs, make use of very dirty water to wash in. To encourage the use of kneading machinery, Professor Laveran recommends that electric power should be installed in all parts of the city as soon as possible, and that the rates for the use of electricity should be lowered.

A Medical Orchestra

A group of physicians in Paris have just decided to form a symphony society, to be known as the Medical Orchestra, and composed solely of physicians and medical students. Similar artistic groups are already in existence in London, Stockholm and Vienna.

BERLIN LETTER

(From Our Regular Correspondent)

BERLIN, Dec. 9, 1909.

Deaths of Professor Saemisch and Duke Theodor

As stated in a previous letter the founder, and for many years the head of the Bonn eye clinic, Professor Saemisch, died Nov. 29, aged 76. After serving for many years as assistant to the well-known ophthalmologist Professor Pagenstecher at Wiesbaden, he connected himself with the faculty at Bonn and became in 1867, professor extraordinary, and in 1873 regular professor of ophthalmology. His literary work was chiefly devoted to the investigation of external diseases of the eye and its results are published in the fourth volume of the large handbook of ophthalmology.

A second much better-known ophthalmologist, Duke Carl Theodor of Bavaria, died at Bad Creuth, November 30, of pneumonia. Duke Carl Theodor, like most princes, at first espoused the military profession. It was not until his thirtieth year that he began his scientific and medical studies. Already in 1872 he had secured such distinction in science that at the quadricentennial jubilee of the University of

Munich he was given the title of Doctor of Medicine *honoris causa*. His first important work was done at the physiologic institute at Munich and treated of the influence of the temperature of the surrounding air on the excretion of carbon dioxide and the absorption of oxygen in a cat. The duke laid the foundation for his clinical studies of ophthalmology, which became his specialty, with the younger Rothmund. As a result of these studies there appeared several articles on the anatomy and pathology of the eye, especially the excellent monograph entitled, "A Contribution to the Pathologic Anatomy of the Eye in Kidney Disease." Carl Theodor pursued his further clinical studies with Prof. v. Arlt at Vienna, and Professor Horner at Zurich. About the middle of the eighties he began his practical work as ophthalmologist. He preferred the operative side of ophthalmology. The number of his cataract operations amounted to more than 3,000. As the result of his practical success as well as his winning personality, patients came to him at his clinics at Tegernsee and Munich from all classes. Our princely colleague also took part in the efforts of his professional brethren. He was one of the first to attach himself to the Leipzig league for securing the economic interests of the physicians of Germany. The duke found recognition on the part of physicians by his election to honorary membership in various societies.

Epidemic in the Friedrichsberg Insane Asylum at Hamburg

In the Friederichsberg insane asylum, November 29, 293 patients were attacked with diarrhea which resulted fatally in two debilitated subjects. All the other patients recovered after a few days. The attack was probably due to the use of food consisting of rice and bananas, and indeed it seems that the pathogenic substance was introduced during the filling of the portable dishes from the kettle in which it was cooked and only a portion of the contents was contaminated. A number of the other inmates of the institution who also ate of this food remained well. Bacteriologic examination of the food led to no result.

The Campaign Against Sleeping Sickness in Africa

The headquarters of the campaign against sleeping sickness in German East Africa has lately been transferred from Viktoria-See to Tanganyika on account of a number of cases which have broken out among Europeans. At Viktoria-See the sleeping sickness has ceased to make progress and no new cases have appeared among Europeans for some years. In the Schirati district the sanitary work is going on and the Muansa district has so far remained free.

The Imperial Insurance Bill

The efforts of the medical profession in Saxony with reference to the new insurance law have had a certain moral effect. Since the proposal was made by the *Deutsche medizinische Wochenschrift* that the medical faculties of Germany should declare themselves in unison with the resolutions of the Lübeck meeting of the medical association regarding the imperial insurance, two delegates of the medical faculty of Tübingen presented a memorial to the minister of the interior in which they described the "free choice of physicians" as it is carried out in Württemberg, emphasized its advantages and prayed the department to work for the retention of the present excellent arrangements and for their introduction in other parts of Germany. The minister gave the delegates of the faculty the assurance that he was a warm friend of "free choice of physicians" and considered the existing arrangements between physicians and the societies of Württemberg as very satisfactory. It is to be hoped that this open espousal of the desires of the medical profession by the minister will not be without influence on the present revision of the law in the federal council. At any rate the physicians have gained for their cause a valuable coadjutor in the Württemberg minister.

Celebration of the Establishment of Forest Convalescent Stations

A few days ago there occurred a celebration of the tenth anniversary of the establishment of the forest convalescent station, at the department of education. The Berlin forest convalescent station was moreover the first of its kind and owed its origin to a proposition made by the Berlin physicians, W. Becher and R. Lennhoff on the occasion of the first international tuberculosis congress which met in Berlin in May, 1899. The forest stations were founded for the care of sick but not bedridden laborers. The state was to furnish for the use of the patients a part of the forest, the Red Cross was to contribute some of the barracks which had been provided for time of war, but were not used in time of peace. The Woman's Patriotic Association was to establish in these barracks a diet kitchen, and the railroad management was to permit the patients to use the cheap weekly workingmen's

tickets for their passage to and from the convalescent stations, and the Krankenkassen were to undertake the small expense of nursing and care. In this way the patients would be able to pass the whole day in the open air and return evenings to their homes. According to this plan the first convalescent station for men was erected at Berlin in May, 1900. Now the Popular Sanatorium Association of the Red Cross has seven convalescent stations at Berlin, two for men, two for women and three for children; one institution for men and one for women is opened during the winter. In the four stations for adults there has been so far cared for a total of 22,591 persons for 772,270 days. In the three children stations 7,439 children have been treated for 37,082 days. As there is no family insurance in the Berlin Krankenkassen the children are not provided with treatment by the Kassen physicians and the convalescent stations must assume the entire medical care. In addition to the Popular Sanatorium Association of the Red Cross some suburbs of Berlin have two women's convalescent stations, one children's station, one forest school, and a convalescent station for infants so that from all greater Berlin more than 2,000 persons can be cared for in these institutions at the same time. In the institutions for adults the daily expense for care is from 13 to 16 cents (55 to 75 pf.); in those for children 12 cents. The net cost of a day's care for adults varied in the various years between 12½ and 17 cents; for children, between 12 and 15 cents. Altogether the Krankenkassen have paid so far about \$76,000 (315,000 marks), the poor authorities about \$26,000, and the patients \$16,000. Following the establishment of the Berlin institution about 100 similar stations have been established in Germany. Other countries have followed the example; in some of them the forest convalescent station forms the chief sort of institution for the care of tuberculosis.

VIENNA LETTER

(From Our Regular Correspondent)

VIENNA, Dec. 11, 1909.

The Transactions of the Union of Austrian Medical Councils

One of the most important papers read at this meeting of the medical councils (referred to last week) dealt with the question of insurance of medical men against accidents and against claims for alleged malpractice. The charges made by the general insurance companies are rather exorbitant in this country, so a movement has been initiated for an insurance system for medical men by medical men. The idea is to guarantee the admission of at least 1,000 doctors to the membership of a company on the understanding that they will be conceded special low rates. Another proposal is for a new company organized by doctors, the business to be extended to life-insurance also, without calculating or expecting any profit for the company. In this country the claims for damages on the basis of malpractice are increasing; although nearly all such cases were dismissed by the judges, still the expenses of the medical men were very substantial. This is also the reason why hospital doctors want to be insured by the hospital itself against claims arising out of their position as members of the staff.

A very animated discussion took place when the conflict between dental surgeons and dental technicians was arrived at. The conflict was explained in a previous letter (THE JOURNAL, Aug. 28, 1909, liii, 727). A resolution was adopted and addressed to the government, in which the "union" protests against the throwing open to lay persons of a part of medical science, either by law or by a compromise between dental surgeons and technical assistants. The union emphasizes the fact that only the universities are entitled to grant a medical diploma and implicate the right of practicing the whole or part of medicine.

Much interest is evoked by a paper dealing with the rates of taxes to be paid by the profession. Thus it was shown that a doctor has to pay at least two taxes from the same source. First, the *Erwerbesteuer* (tax for the permission to earn his living by practicing) amounts to about 1 per cent., but in some instances reaches 4 per cent. of the earned income. This depends on the value of the offices and outfit and income. The other tax is the *Einkommensteuer* or income tax, to be paid from the entire income, progressing from 1 per cent. gradually to 6 per cent. As a rule, the amount of the medical man's professional income is overestimated by the tax collectors; as the doctor has to "keep up appearances," he is rated at least 4 to 5 per cent. of his income. A suggestion to have the *Erwerbesteuer* abolished in compensation for the proposed obligation to render medical help whenever wanted, as stipulated by the new medical act under consideration, was forwarded to the parliamentary committee.

Jubilee of Professor Politzer

On December 9, Prof. Adam Politzer, whose name is familiar to all students of otology throughout the world, celebrated the fiftieth anniversary of the attainment of his doctor's degree. A festival was arranged by the Austrian Otologic Society, and the president, Professor Urbantschitsch, delivered the speech, and a wreath consisting of fifty golden laurel leaves, each bearing an important date of Politzer's career, was presented to the professor by the otologic department of the Poliklinik. The chief former assistant, Docent Alexander, came with all his assistants and numerous American, English, Japanese and other surgeons. Among the numerous marks of honor may be mentioned that the Otologic Section of the Royal Society of Medicine of England, of which Politzer is the only honorary member, had deputed Dr. Cheate to congratulate the former, while the American Medical Association of Vienna was represented by its president, Dr. Stoewer. Politzer has answered in a very suggestive manner. He presented his unique library, containing the otologic contributions of the last half century, besides many old volumes and manuscripts on this subject, to the Vienna University, and granted a sum of \$3,000 for research purposes. The University of Vienna, following an ancient custom, renewed the diploma of the scientist, and the act of handing over the new document to the venerable holder gave a welcome opportunity for the above-mentioned festivities. For forty-six years Politzer was lecturer on otology in the Vienna General Hospital. He has exerted an enormous influence on the course of modern otology owing to his fundamental anatomic and pathologic knowledge. Since retiring from active teaching, he has published the "History of Otology," and has been still working in private practice as vigorously as ever. His pupils are the chiefs of all ear departments in Austria and he keeps in constant touch with all of them, still controlling the progress of his specialty, and keeping abreast of all advances. He really deserves to be called a "grand old man."

Pharmacology

COCA-BOLA AND OXY-TONIC

Two Nostrums Exposed by the Chemists of the North Dakota Agricultural Experiment Station

[Exceedingly valuable work in the interests of public health is being done by some of the state agricultural experiment stations. One of the most virile of these institutions is that of North Dakota, whose commissioner, E. F. Ladd, has done yeoman service in the campaign against "patent medicine" and sophisticated foods. We reproduce below two articles by Mr. Ladd that have appeared in recent issues of the *Bulletin* of the Agricultural Experiment Station of North Dakota:]

COCA-BOLA

We have recently had occasion to examine a sample of Coca-Bola, a product labeled as having been produced by Charles L. Mitchell, M.D., Philadelphia, and the face label bears the following statement:

Each ounce contains 0.71 grams of cocain. A chewing paste of leaves of the cocoa plant, combined with other valuable tonics.

The directions for use say coca-bola is made in the form of flat cakes or plugs divided into squares and should be used by chewing one of the small squares marked on the plug and swallowing the saliva. They further say it should be used at occasional intervals as needed throughout the day. To get its full effect it will be necessary to use several squares. They further say:

Although a powerful muscular or nervous tonic, coca-bola has no evil after-effects, and hence is far superior to any other stimulant in the materia medica.

Now this information given out in the advertising which accompanies each package is, it would seem, intended to give the impression that this product is an entirely harmless one; in other words, that a preparation containing cocain as an active constituent, is to be generally recommended for use without any caution as to the harm that may come from forming a habit for cocain. They further say:

A small portion chewed occasionally acts as a powerful tonic to the muscular and nervous system, enabling the chewer to perform additional labor, and also relieves fatigue and exhaustion without evil after-effects. It contains no injurious ingredients and is perfectly harmless.

So we might quote from the circular which is sent out by a man who claims to be a physician, urging, as it were, on the people the use of a product of this kind, which, as has clearly been shown, must in the end result in the formation of the cocain habit, if not in the complete demoralization and degradation of the individual himself.

The laws of North Dakota prohibit the sale of any compound or product in the state which contains cocain in any form. It further prohibits the refilling of a physician's prescription that contains cocain, and yet a product of this kind, it would seem from information that has been gathered, is sold directly to the consumer, although it is true the proprietor of the product maintains that it is now sold only to physicians. In a letter under date of Aug. 19, 1909, signed by Charles L. Mitchell, M.D., he says:

What little we sell now conforms strictly with the requirements of the United States Pure Food and Drug Law, and is sold only on special order of physicians and their prescriptions.

Under date of September 7, I called the attention of the proprietor to the fact that the laws of this state would not permit of the sale of such a preparation in North Dakota. In reply, I received a letter which is self explanatory, as follows:

September 13, 1909.

E. F. Ladd, North Dakota Agricultural College, Agricultural College, N. D.

Dear Sir: Your favor of September 7th duly received for which please accept my thanks. Owing to the "crank" legislation of many states we have discontinued the manufacture of all coca and cocain preparations. Any "fool" druggist of your state who gets or sells an old package of our coca-bola does it at his own risk, as necessarily, having been put out some time ago, there is no guarantee, and we will not protect him. The people are getting a little sense into their heads, however, gradually, and they will sometime realize that preparations of both coca and cocain have an honest and legitimate use by the medical profession. Your state law is silly, and on a par with the 9-foot bed sheet laws of Texas and Oklahoma. Of course, your duty is to enforce the law, not to criticise it. I can do that. I am,

Yours very truly,

Dict. by C. L. M.

CHARLES L. MITCHELL, M.D.

A letter of this kind needs no comment, and a product of this kind, in the judgment of the writer, can only be sent out for malicious purposes and its sale is illegal in North Dakota. We warn the public against either handling the same or using the same, if they would avoid the formation of a serious drug habit and one that must result in positive injury to our people.

This product, put up in the form of a gum, would easily take the place—for one who had formed the habit for cocain—of tobacco; and it might be made to take the place of chewing gum with young people who would be entirely innocent of the intentional use of any such preparation, not knowing the evil effects that would come from its continued use.

In the judgment of the writer, no man who will allow his name to be connected with a scheme of this kind should be permitted to disgrace the profession of medicine by using the title M.D.

[In a later issue of the North Dakota bulletin a comparatively recent recruit to the nostrum ranks—Oxy-Tonic—is described. The family likeness of this "patent medicine" to the older and much exploited Liquozone lends an added interest to Mr. Ladd's article:]

OXY-TONIC—WHAT IS IT?

What is it? It looks like, smells like, tastes like, and analyzes much like Liquozone.¹ Oxy-Tonic is produced and sold by the Oxy-Tonic Company, 200 Illinois street, Chicago. It is advertised as a tonic germicide, free from spirits or drugs of any description whatsoever. A sample, Lab. No. 1837, examined by this department by Mr. Ziefele, was labeled: "Oxy-Tonic, or Antiseptic, 'Pick-me-up,' for Internal and External Use." They say in their literature:

"There are no drugs whatever in this remedy. Oxy-Tonic, preferably so named because of its oxygen properties and tonic in its wonderful invigorating effects, is an oxidizing fluid of concentrated gaseous elements of an ozonous nature. Whether used as a medicine internally or as an antiseptic externally, proves not only harmless to the system but absolutely revitalizes all weakened cells and tissues, and is the only method by which complete purification of the blood may be accomplished."

[1. Liquozone is one of the many fakes exposed by Mr. Adams in the "Great American Fraud" series. It was shown that the nostrum was boomed by means of faked testimonials and that on analysis it was found to be ninety-nine per cent. water with small quantities of sulphuric and sulphurous acids.—ED.]

An analysis of the sample gave the following results:

Reaction	Acid
Specific gravity	1.0436
Total solids .....	.351 per cent.
Volatile solids .....	.541 per cent.
Fixed solids (ash) .....	.0191 per cent.
Total acidity (calculated as H ₂ SO ₄) .....	.51007 per cent.
Sulphurous acid .....	.1377 per cent.
Sulphuric acid .....	.1633 per cent.

The sample also contained a trace of hydrochloric acid.

The blackening of the total solids was characteristic of the action of sulfuric acid on organic matter. When the solids were heated, copious fumes of sulphur trioxid were evolved. It is clearly evident, therefore, that Oxy-Tonic is not what its manufacturers would have the public believe; and that it is not possessed of oxygen properties, but rather of acid properties due to the presence of sulphurous acid and sulphuric acids; that sulphurous and sulphuric acid are recognized as drugs; and that it is not, as they say, of gaseous, oxidizing elements. They further say:

"This remedy is guaranteed as a positive specific in diphtheria cases."

Also:

"You may place your trust in Oxy-Tonic as a true kidney remedy; stimulates the nervous system, aids nutritive changes, reduces congestion, and is a sedative very soothing in its action, etc."

To quote further:

"All organic weaknesses, nervous debility, premature declining power, drains and kindred affections yield speedily to Oxy-Tonic. This is accomplished by the direct effects that Oxy-Tonic has on the blood through its vitalizing and oxygenating effects and the bringing about of a healthful, forceful, good, yet normal, circulation."

They also say:

"Oxy-Tonic of special interest to ladies. The benefits to be derived are marvelous. You can treat yourself at home, etc."

If we compare those statements and the analysis with the analysis and literature which was sent out by the Liquozone people, we shall recognize that the product is of the same class. They describe it as being produced from the same products and "the virtues of Oxy-Tonic are derived solely from oxygen and other gases." Then they say: "The process of blending these gases together under pressure, confined in water and gas-tight tanks, wherein the requisite amount of water has first been placed causing the same to absorb these gases, produces the germicidal qualities."

Our state [North Dakota] drug law says that a product is adulterated if it be an imitation of, or offered for sale under the name of, another article or if it be falsely labeled in any respect, with regard to its composition, properties, uses or place of manufacture, or if it bear any design which shall deceive or tend to deceive. And further: "It is adulterated if its strength, quality or purity falls below the professed standard under which it is sold."

They say:

"How can one medicine cure so many diseases? Only one conclusion can be drawn from this fact, viz., that there is one common cause for the different diseases, and that cause is the deadly MICROBE."

They further say:

"It matters not what may be the name of the disease, it has its origin in the microbe and can be cured by Oxy-Tonic which attacks and destroys not the name but the root of the cause."

They claim, therefore, repeatedly that their product is a cure, and that all diseases, whether blood poisoning, dyspepsia, heart trouble, liver complaint, neuralgia, lumbago, nervous prostration, insomnia, etc., all have one common cause, the microbe. It is ridiculous to consider such claims as these. They go farther and say with reference to their product that it contains "nothing but pure water impregnated with oxygen and other germicidal gases, and contains no alcohol, opiates, or drugs of any description."

Now, as a matter of fact, Oxy-Tonic contains no more oxygen than is natural to common water, and it contains no other germicidal gases, so far as we have been able to detect. It does contain sulphuric acid, and it is significant that at the close of their pamphlet they give a table of poisons and their antidotes. The first poison mentioned by them is the class of acids of which sulphuric is one of those named—the product which is present in Oxy-Tonic in larger proportion than any other ingredient besides water; and yet they say that the product is perfectly harmless.

In one place they name not less than forty-eight distinct diseases or ailments for which Oxy-Tonic is prescribed. In other words, it seems to be another "cure-all," good for consumption, scrofula, dyspepsia, liver and heart trouble, dysentery, Bright's disease, dropsy, neuralgias, sciatica and gout, hay fever and la grippe, salt rheum, tumors, sprains, bronchitis and tonsillitis, diphtheria, nerve weakness and insomnia, besides many others which are described throughout their pamphlet. Yet it is a drug, or at least contains drugs as defined by the U. S. P., but, nevertheless, it is described as being "as safe to drink as it is to drink pure water." Further on they add that in many cases patients appear to be worse after using the medicine. The cause is reaction: the medicine grappling the disease. Such is Oxy-Tonic the World's Greatest "Pick-Me-Up." Wondrous advertising; it leads one to feel that Barmm's claim that the American people like to be humbugged contains much of truth; at least they are not always able to discern the real truth in much cunningly worded advertising literature.

Fake Consumption Cures—The Bensonizer Treatment

[The following from the *Typographical Journal* indicates an important and encouraging fact, namely, that the public is slowly but surely waking up to the wiles of the quack and the nostrum vender. The attitude that the lay journal takes on the subject of cure-alls demonstrates the change that public opinion has undergone in the past few years. The "cure" here spoken of—the Bensonizer Treatment—is but one of the many "consumption cure" schemes.]

Alleged "cures" for almost all sorts of diseases are being continually placed before the public, and the more fearful the malady the greater the number of "cures." In this connection, we print the following item:

Washington, D. C., November 10.—It is stated here that the medical department of the United States navy is about to look into the merits of a cure for consumption discovered by C. P. Benson, of Texas, with a view to its adoption. The attention of high government officials was attracted to this cure through the remarkably favorable results shown at the tuberculosis colony at the Printers Home at Colorado Springs, where seemingly hopeless victims of consumption were restored to health.

The above is entirely misleading, so far as it mentions the Union Printers Home. The Benson method has been rejected by the trustees of the institution, and the statement made is erroneous throughout. The home superintendent asserts that there is only one known case where the Benson treatment has been used by a home resident, and then it was given a trial subsequent to his departure from the institution. The former resident died at a later date in Denver, Colo. So much for the "remarkably favorable results" derived from the Benson treatment by those domiciled at the home.

Several experiments have been made at the Union Printers Home with so-called "cures" for consumption, but they have never accomplished any favorable results. The officials of the institution are not experimenting with "heal-alls" of any description, and feel that the methods employed by fakirs in their efforts to delude tuberculosis sufferers should be denounced by all sensible persons.

Correspondence

Psychiatry in Munich

To the Editor:—The *Fortbildungs* or "extension" course in psychiatry given at the University of Munich, Bavaria, is unequalled in its advantages for men interested in this branch.

At the head of it is Professor Kraepelin, who was induced to come from Heidelberg to Munich by a *carte blanche* offer of an opportunity to have ideal conditions created. The "klinik" was built and equipped to meet his views and in construction and arrangement, both for treating insanity and teaching psychiatry, is without a rival.

Alzheimer, one of the foremost brain histologists, teaches his subject not only in a complete but in a fascinating manner. Liepman, of Berlin, gave this year a course on "Aphasia, Apraxia and Agnosia," illuminating this difficult subject by the clear presentation of principles and of the findings in a most remarkable series of cases, both ante-mortem and post-mortem. He seems to have gone a step farther than Marie in blazing a path through this as yet incompletely explored field.

I would be glad if I had time and you had space to enlarge further—to speak of the valuable work of Kattwinkel in clinical demonstrations; Plant in the "Wassermann" researches, which have elucidated a whole group of cases of juvenile "paresis;" of Brodman's embryologic studies of the layers of the cortex; of Isserlin's presentation of hypnotism, psychotherapy, etc.; Ruedin's studies in degeneracy and medical jurisprudence of insanity; and Weiler's work in elaboration of apparatus and appliances of all sorts for reaction experiments.

The whole is permeated by Kraepelin's masterful spirit, uniting as he does in himself, the scientist, the humanitarian and the sincere enthusiasm of the gifted educator.

This year 60 or 70 men and 2 or 3 women from all parts of the world daily attended the course, which involved four to eight hours of closest application (especially for non-Germans).

RICHARD DEWEY, Wauwatosa, Wis.

Credit to an Author

To the Editor:—I regret to notice in the new edition of my work on the appendix under title "Appendicitis and Other Diseases of the Vermiform Appendix," that in Chapter 12, on "The Leucocytes in Appendicitis," no credit is given to Dr. Charles E. Simon of this city, who in this chapter embodies his own experiences and wrote it for me as it stands. May I ask you to allow me to rectify an unintentional error through THE JOURNAL.

HOWARD A. KELLY, Baltimore.

Latin Humbug

To the Editor:—The *World's Work* for November published a letter telling of a case in which a physician's prescription, written in abbreviated Latin, was filled from a bottle of medicine (evidently proprietary), the price of which was \$1; but for a quarter of it the druggist charged 60 cents. The editor then asserted that the use of Latin in sciences, medicine and law fosters quackery, hampers the dissemination of knowledge, and that the use of English in medicine would result in a decrease of the drug habit. The editor declined to print a reply which I sent, saying that "It is an infernal shame that . . . we should still be in subjection to medieval priests and scholars in naming the simplest flower or the simplest medicine;" and that he knew that the English could be used with much greater precision than the Latin. If you think my reply to the editorial worth printing, I am enclosing it for that purpose.

HENRY B. HEMENWAY, Evanston, Ill.

The following is an abstract of Dr. Hemenway's letter to *The World's Work*:

The World's Work for November, 1909, contains a short article on "Latin Humbug," which is so pernicious and misleading in every line that it deserves a reply, particularly inasmuch as it apparently has the sanction of the editor, for he has not made a single adverse comment. To one who is informed it seems apparent that the letter in question was really written in the aid of the proprietary medicine business, which is to-day smarting under the renewal of scientific medication.

The Latin language has long been the medium for exchange of thought in the scientific world. It cannot be displaced without a loss of exactness. A growing language lacks exactness because the same word differs in meaning from time to time. Colloquialisms obscure the meaning.

The unscientific man does not realize the need for exactness. Names of insects, animals and plants differ widely in different parts of the same country, and the same common name in one section means one thing, and in another locality it is used to designate a very different form. Take for example the common wintergreen, known scientifically as *Gaultheria procumbens*. It is known in different sections of the United States as the teaberry, checkerberry, partridgeberry, and boxberry. The *Mitchella repens*, a plant belonging to a very different family, is also known as the partridgeberry. The common name, "wakerobin," is used in one section to designate the *Trillium grandiflorum*, and in another it means the *T. cernuum*. Numerous illustrations might be given. On the other hand, scientific names, that is, Latin names, indicate the same object, not only in this country, but also in all

parts of the world. Not only so, but the scientific name indicates to the educated man the nature of the plant. The *Mitchella repens* is a creeping plant, for example. Further, the Latin name helps the scientific man to place the specimen in its proper family, or group. Suppose, for example, that he is reading a German work in which a certain plant is mentioned by its common name, and some newly recognized property is mentioned. The common name means little, if he is not familiar with the plant in question. The Latin name is definite, and he may at once know that the plant is not found in America. The name, however, calls to his attention the fact that he has in a neighboring field found a plant closely related to the German species. He may then investigate, and find that the American plant has valuable properties which have previously been overlooked. The *Asclepias* genus is large, and widely distributed. Some of the plants have long been used in medicine; but who would naturally connect in thought the names commonly used to designate different species, such as "milkweed," "silkweed," and "pleurisy-root" or "butterfly-weed?" There are other kinds of "milkweed," but when I am told that some species of *Asclepias* may be profitably used for the production of rubber, I am prepared to find the plant with the least possible delay.

The same facts are applicable to medicine as to other sciences. A Latin prescription is definite, if properly written, in all lands. If a patient is told to get some "antiseptic solution," one druggist may give him a solution of the corrosive chlorid of mercury, another of formaldehyd, and another something else. If the prescription calls for Liquor antisepticus the druggist must give a solution of known, and definite, composition, and the patient should get the same in New York, Boston, Chicago, New Orleans or San Francisco.

There should be no secrecy in medicine, but uneducated persons should not attempt to prescribe poisons, for themselves or others. Any one who knows enough of the action of drugs and of normal and diseased conditions of the body to enable him to prescribe properly, will have no difficulty with Latin prescriptions.

Just as plants often have many common names, so drugs have various trade names. These trade names are generally catchy. "Hexamethylinamina" indicates the chemical composition of a certain official drug. For this article one firm has copyrighted "aminoform," others "urotropin," "formin," "cystogen," etc. If formin is called for, the druggist is expected to give that particular firm's product which bears that trade name. Manufacturers, or rather, the firms which put this drug up under their peculiar name, put on also a fictitious price. If the official name is used the pharmacist is simply expected to dispense a pure article. If trade names are used he must load his shelves with half a dozen firms' brands, and his stock will not be as fresh.

Proprietary mixtures, of uncertain purity and value, have been unduly lauded to the medical profession. It recently came to the attention of the profession that one of the large importing firms were paying exorbitantly for physicians' endorsements, without regard to the standing of the writer. Physicians were writing prescriptions for mixtures, and so specifying makers that the retail pharmacist was largely driven out of work. Next it was found that physicians were becoming less expert in the use of drugs for healing. There is now a strong propaganda for the return to definite scientific medicine. It is realized that there is no essential difference between the so-called "ethical proprietary" and the "patent" nostrum. The propaganda is hurting the proprietary manufacturers, and they are trying to check it. Realizing that they are using the physicians simply as advertising agents without pay, and that their chief profits come from the sales direct to the laity, these manufacturers urge that the prescription must always be written so that the patient may read it. That is not a disinterested argument. They want to sell in original packages, so that the label will act as a further advertisement.

The dropping of Latin from the law would not be of any advantage. The terms used have a definite meaning, which in many instances would take full sentences to express without the Latin. As used to-day they are practically Anglicised, as for instance, such words as "summons," "subpoena," "capias," etc.

Miscellany

Diseases Associated with Thyroid Changes.—A great variety of diseases are associated with or accompanied by noticeable thyroid changes. Thus rickets, lymphatism, chlorosis, cretinoid states and osteomalacia (?) are practically always associated with anatomical changes in the thyroid. Many of the prolonged infectious diseases, as lues, typhoid fever, influenza, acute articular rheumatism and tuberculosis, are frequently associated with or followed by thyroid hyperplasia. In individuals with adenoids and enlarged tonsils (lymphatism) (?), in abnormally fat children and in adiposis dolorosa, the association is not infrequent. In conditions in which mental and nervous fatigue have lasted for prolonged periods of time, as in neurasthenia, and in prolonged mental states produced by worry, shock, anxiety, overwork, etc., thyroid changes are frequently observed. Also there is a particular association of thyroid changes with the systemic changes taking place at puberty; with the menstrual function; with pregnancy and lactation, and with the menopause. Lastly, thyroid changes are perhaps most frequently seen in the poorly fed and poorly nourished young (puppies, lambs, calves and children).—D. Marine and C. H. Lenhart, in *Archives of Internal Medicine*.

Instructions Regarding Care of the Tuberculous.—When a tuberculous person vacates a room or a house, either because of removal to another locality or from death, the local health officer should at once disinfect the rooms occupied by the tuberculous person, before they are occupied by any other person. He should, moreover, ascertain the change of address of the tuberculous person in case of removal, and report the same to the State Board of Health, so that the case may be kept under the supervision of proper health authorities.—*Public Health*, Lansing, Mich.

The Public Service

Medical Corps of the Navy

Changes for the week ended Dec. 25, 1909:

Lynch, J. J., acting asst.-surgeon, ordered to duty at the Naval Hospital, Boston.

Huntington, E. O., surgeon, detached from the Naval Recruiting Station, Chattanooga, Tenn., and ordered to the *Lancaster*.

Fauntleroy, A. M., P. A. surgeon, detached from temporary duty on board the *Lancaster* and ordered to continue other duties.

Donelson, M., asst.-surgeon, detached from the Naval Recruiting Station, Nashville, Tenn., and ordered to the Naval Recruiting Station, Chattanooga, Tenn.

Berthelette, D. N., medical director, detached from duty as a member of the Naval Retiring Board, Washington, D. C., and ordered to continue other duties.

Orvis, R. T., surgeon, detached from the Naval Hospital, New York, and ordered to the *New Hampshire*.

Oman, C. M., P. A. surgeon, detached from the *New Hampshire* and ordered to the Naval Hospital, New York.

Medical Department of the Army

Changes for the week ended Dec. 25, 1909:

Woodson, Robert S., major, relieved from duty at Fort Hamilton, N. Y., and ordered to Fort Adams, R. I., for duty.

Fuller, Leigh A., major, relieved from duty at Fort Adams, R. I., and ordered to Fort Hamilton, N. Y., for duty.

Edie, Guy L., lieutenant, col., detailed member of examining board during examination of Major Ogden Rafferty and Major James D. Glennan, Medical Corps, vice Lieut. Col. Jefferson R. Kean, Medical Corps, who will continue as a member of board for all other purposes.

Bradley, John R., 1st lieutenant, M. R. C., recently appointed, is ordered to active duty, and will proceed on January 1, to Fort Leavenworth, Kan., for duty.

Murtagh, John A., capt., granted 10 days' leave of absence.

Dear, William R., 1st lieutenant, left Fort Sheridan, Ill. on 10 day's leave of absence.

Fauntleroy, P. C., major, granted 10 days' leave of absence.

McMillan, C. W., 1st lieutenant, M. R. C., granted 3 months' leave, to take effect about January 22, 1910.

Birmingham, Harry P., lieutenant, col.; Darnall, Carl I., major; Reynolds, Charles R., major, appointed members of a board for the examination of such candidates as may be authorized to appear before it to determine their physical fitness for appointment as 2nd Lieuts. in the Army.

Kierulff, H. Newton, 1st lieutenant, M. R. C., granted 20 days' leave of absence with permission to apply for 10 days extension.

Hansell, Haywood S., capt., ordered to proceed from Fort Snelling, Minn., to Fort Assiniboine, Mont., not later than Dec. 29, 1909, for temporary duty at that post.

Gregory, J. C., capt., left Jefferson Barracks, Mo., for 10 days' leave of absence.

Gandy, Chas. M., 1st Lieut. col., left West Point, N. Y., en route to Washington, D. C., for duty on examining board for promotion of medical officers.

Phillips, Harry F., 1st Lieut., M. R. C., left Fort Sam Houston, Tex., on 10 days' leave of absence.

Public Health and Marine-Hospital Service

Changes for the week ended Dec. 22, 1909:

Trask, J. W., asst. surgeon-general, granted 2 days' leave of absence from December 17, and 3½ days' leave from Dec. 21, 1909. Irwin, Fairfax, surgeon, granted 5 days' leave of absence from Dec. 26, 1909. On expiration of present leave of absence, directed to proceed to Yokohama, Japan, for duty in office of the Consul-General.

Wasdln, Eugene, surgeon. Granted 1 month's leave of absence from Dec. 22, 1909, on account of sickness.

Stoner, J. B., surgeon, granted 4 days' leave of absence en route to station.

Cummings, Hugh S., P. A. surgeon, on the arrival of Surgeon Fairfax Irwin, directed to proceed to San Francisco, and report arrival to bureau by wire for further orders.

Billings, W. C., P. A. surgeon, granted 14 days' leave of absence from Dec. 23, 1909.

Corput, G. M., P. A. surgeon, leave granted Dec. 10, 1909, for 16 days from Dec. 15, 1909, amended to read 16 days from Dec. 27, 1909.

Fox, Carroll, P. A. surgeon, granted 5 days' leave of absence from Dec. 27, 1909.

Earle, B. H., P. A. surgeon, granted 15 days' leave of absence from Dec. 24, 1909.

Wollenberg, R. A. C., asst.-surgeon, granted 1 month's leave of absence from Dec. 22, 1909.

Knight, C. P., acting asst.-surgeon, granted 60 days' leave of absence, without pay, from Dec. 18, 1909.

Safford, M. V., acting asst.-surgeon, granted 4 days' leave of absence from Dec. 14, 1909.

Schuster, B. L., acting asst.-surgeon, granted 10 days' leave of absence from Dec. 18, 1909.

Story, H. C., acting asst.-surgeon, granted 8 days' leave of absence, without pay, from Nov. 12, 1909.

Tappan, J. W., acting asst.-surgeon, granted 4 days' leave of absence from Dec. 23, 1909.

Walkley, W. S., acting asst.-surgeon, granted 21 days' leave of absence from Dec. 10, 1909.

Wallace, C. R., acting asst.-surgeon, granted 6½ days' leave of absence from Dec. 21, 1909.

Health Reports

The following have been reported to the Public Health Service, during the week ended Dec. 24, 1909:

SMALLPOX—UNITED STATES

Kansas: Coffeyville, Dec. 4-11, 1 case.
Maryland: Baltimore, Dec. 4-11, 1 case.
North Carolina (12 counties), Sept. 1-30, 60 cases; Charlotte, Dec. 4-11, 5 cases.
Ohio: Dayton, Dec. 4-11, 2 cases.
Tennessee: Chattanooga, Nov. 6-13, 3 cases; Dowelltown, Nov. 27-Dec. 4, 1 case.

SMALLPOX—INSULAR

Philippine Islands: Manila, Oct. 23-30, 1 case.

SMALLPOX—FOREIGN

Brazil: Bahia, Nov. 5-19, 48 cases, 38 deaths.
Egypt: Alexandria, Sept. 1-30, 33 cases, 2 deaths; Cairo, Nov. 4-11, 2 cases.
France: Paris, Nov. 13-27, 3 cases, 1 death.
Germany: Munich, Nov. 7-13, 1 case.
Greece: Athens, Oct. 30-Nov. 6, 3 deaths.
India: Bombay, Nov. 9-23, 8 deaths; Calcutta, Oct. 30-Nov. 6, 1 death.
Italy, general, Nov. 21-28, 35 cases; Naples, 15 cases, 2 deaths.
Java: Batavia, Oct. 30-Nov. 6, 2 cases.
Mexico: Aguascalientes, Nov. 27-Dec. 4, 1 death; Chihuahua, Nov. 22-29, 2 deaths.
Netherlands: Amsterdam, Nov. 29-Dec. 4, 1 case, on a vessel.
Portugal: Lisbon, Oct. 9-30, 17 cases; Nov. 20-27, 11 cases.
Russia: Moscow, Oct. 9-23, 8 cases, 1 death; Nov. 6-13, 7 cases, 1 death; Odessa, Oct. 9-16, 7 cases, 4 deaths; Nov. 13-20, 11 cases, 3 deaths; Riga, Oct. 16-23, 2 cases; Nov. 13-20, 8 cases; St. Petersburg, 52 cases, 16 deaths.
Spain: Almeria, Oct. 1-31, 3 deaths; Barcelona, Nov. 22-29, 1 death.

YELLOW FEVER

Brazil: Manaus, Nov. 13-20, 1 death; Para, Nov. 20-27, 6 cases, 4 deaths.
Venezuela: Caracas, Nov. 13-20, 1 case.

CHOLERA—INSULAR

Philippine Islands: Manila, Oct. 23-30, 24 cases, 20 deaths; Provinces, 157 cases, 116 deaths.

CHOLERA—FOREIGN

China: Amoy, Oct. 23-30, 30 deaths.
India: Bombay, Nov. 9-23, 13 deaths; Calcutta, Oct. 30-Nov. 13, 16 deaths; Rangoon, Oct. 30-Nov. 6, 7 deaths.
Japan: Kadono district, Oct. 11-18, 187 cases, 76 deaths; Moji, Nov. 17, 1 death.
Russia: Moscow, Oct. 9-23, 3 cases, 2 deaths; Riga, Oct. 16-23, 4 cases.
Siam: Bangkok, Oct. 1-31, 3 cases, 3 deaths.
Siberia: Vladivostok, Oct. 21-28, 7 cases, 4 deaths; Oct. 28-Nov. 4, 4 cases, 4 deaths.

PLAGUE

Brazil: Bahia, Nov. 5-19, 7 cases, 5 deaths.
China: Amoy, Oct. 23-30, 40 deaths.
India, general, Oct. 30-Nov. 6, 5,725 cases, 4,479 deaths; Bombay, Nov. 9-23, 9 deaths; Calcutta, Oct. 30-Nov. 13, 10 deaths; Rangoon, Oct. 30-Nov. 6, 3 deaths.
Siam: Bangkok, Oct. 1-31, 8 cases, 7 deaths.
Zanzibar: Zanzibar, Oct. 31-Nov. 7, 1 death.

Medical Education and State Boards of Registration

COMING EXAMINATIONS

ALABAMA: Montgomery, January 11. Chairman, Dr. W. H. Sanders.
ARIZONA: Phoenix, January 3-4. Sec., Dr. Ancil Martin.
COLORADO: State Capitol, Denver, January 4. Sec., Dr. S. D. Van Meter, 1723 Tremont Place.
DISTRICT OF COLUMBIA: Washington, January 10. Sec., Dr. George C. Ober, 210 B Street, S. E.
ILLINOIS: Coliseum Annex, Chicago, January 19-21. Sec., Dr. J. A. Egan, Springfield.
INDIANA: Room 120, State House, Indianapolis, January 11. Sec., Dr. W. T. Gott.
MINNESOTA: State University, Minneapolis, January 4. Sec., Dr. W. S. Fullerton, 214 American National Bank Bldg., St. Paul.
NEW HAMPSHIRE: State Library Bldg., Concord, January 4-5. Regent, Mr. H. C. Morrison.
NEW MEXICO: Santa Fe, January 10. Sec., Dr. J. A. Massie.
NORTH DAKOTA: Grand Forks, January 4-6. Sec., Dr. H. M. Wheeler.
OKLAHOMA: Ione Hotel, Guthrie, January 11. Sec., Dr. Frank P. Davis, Enid.
RHODE ISLAND: Room 313, State House, Providence, January 6-7. Sec., Dr. Gardner T. Swarts.
SOUTH DAKOTA: Sioux Falls, January 12-13. Sec., Dr. F. W. Freyberg, Mitchell.
UTAH: State Building, Salt Lake City, January 3. Sec., Dr. G. F. Harding, 310 Templeton Bldg.
VERMONT: Montpelier, January 11-13. Sec., Dr. W. Scott Nay, Underhill.
WASHINGTON: Spokane, January 4. Sec., Dr. J. Clinton McFadden, 503-5 People's Bank Bldg., Seattle.
WISCONSIN: Milwaukee, January 11. Sec., Dr. John M. Bessel, 3200 Clybourn Street.

Arizona October Report

Dr. Ancil Martin, secretary of the Board of Medical Examiners of Arizona, reports the written examination held at Phoenix, Oct. 4-5, 1909. The number of subjects examined in was 9; total number of questions asked, 90; percentage required to pass, 75. The total number of candidates examined was 9, all of whom passed. The following colleges were represented:

College	PASSED	Year ^a Grad.	Per Cent.
College of Physicians and Surgeons, Los Angeles...	(1909)		77.4
Atlanta College of Physicians and Surgeons.....	(1901)		78.6
Bennett Medical College.....	(1907)		76.9
State University of Iowa, Homeopathic College..	(1908)		76.6
University of Louisville.....	(1898)		76.8
Hospital College of Medicine, Louisville.....	(1903)		75
University of Michigan, College of Medicine.....	(1909)		79.8
Detroit Medical College.....	(1880)		82
Medical College of South Carolina.....	(1905)		87.9

Connecticut Eclectic August and November Reports

Dr. Thomas S. Hodge, secretary of the Connecticut Eclectic Medical Examining Board, reports that at a special meeting held at New Haven, Aug. 10, 1909, 1 candidate, a graduate of the New York Eclectic Medical College, 1909, was licensed through reciprocity with New York. He also reports a written examination held at New Haven, Nov. 9, 1909, including 10 subjects of 10 questions each, the percentage required to pass being 75. Only 1 candidate, a graduate of the New York Eclectic Medical College, 1909, was examined, who passed with a grade of 75 per cent.

New Jersey June and October Reports

Dr. H. G. Norton, secretary of the State Board of Medical Examiners of New Jersey, reports the written examinations held at Trenton, June 15-16, and Oct. 19-20, 1909. The total number of subjects examined in was 9; total number of questions asked, 135; percentage required to pass, 75.

At the examination held June 15-16, the total number of candidates examined was 56, of whom 47 passed and 9 failed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
University of Louisville.....	(1906)		78.7
College of Phys. and Surg., Baltimore (1908)	81.7;	(1909)	81.7
Johns Hopkins University.....	(1907)		85.1
Baltimore Medical College.....	(1907)	77.9; (1909)	87.4, 88.8
New York Homeopathic Medical College and Hosp. (1907)			82
University and Bellevue Hospital Medical College..	(1908)		82.5
Albany Medical College.....	(1902)		78.5
New York University Medical College.....	(1880)		80.8
Woman's Medical College of Pennsylvania.....	(1909)		81.5
Jefferson Medical College..	(1895)	80.5; (1908)	75.1, 81.5, 82.5.
	82.5; (1909)	83.5, 84.1, 84.7, 85	86.6, 87.5, 89.1
University of Pennsylvania..	(1892)	79.3; (1908)	84.6, 85.1, 86.2;
	(1909)	81.4, 84, 84.2, 85, 85.5, 91.2.	
Hahnemann Medical College, Philadelphia..	(1905)	75, 76.6; (1908)	79.6; (1909)
Medico-Chirurgical College, Philadelphia..	(1901)	82.1; (1907)	75.3; (1909)
		83.9, 85.8.	
University of Toronto.....	(1906)		84.2
McGill University, Quebec.....	(1909)		89.6

FAILED			
University of California	(1905)	73.2	
Howard University, Washington	(1908)	71.5	
Kentucky School of Medicine	(1906)	65.5	
Baltimore University	(1903)	67.8	
Johns Hopkins University	(1909)*		
University of Michigan, College of Medicine	(1880)	67.4	
New York University Medical College	(1880)	61.2	
University of Naples, Italy	(1906)	67.5, 69.9	

At the examination held October 19-20, the total number of candidates examined was 34, of whom 29 passed and 5 failed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Howard University, Washington	(1908)		77.2
College of Phys. and Surg., Baltimore	(1908) 75.2; (1909)		78.3
Johns Hopkins University	(1909)		84.2
College of Physicians and Surgeons, Boston	(1909)		79.6
Cornell University Medical College	(1908) 78.3; (1909)		87.6, 87.8
Columbia University, College of Physicians and Surgeons	(1907) 88.7; (1909)		88
University of Buffalo	(1884)		85.2
New York University, Medical College	(1881)		82.7
University of Pennsylvania	(1908)	82.1,	87
Hahnemann Medical College, Philadelphia	(1899)		75
Medico-Chirurgical College, Philadelphia	(1903) 75; (1908) 81.5, 86.4; (1909)		85.1
Jefferson Medical College	(1908) 77.3, 88.3; (1909)		81.9
Vanderbilt University	(1908)		88.5
University of Vermont	(1891) 75; (1909)		80.8
Western University, London, Ontario	(1909)		83.8
University of Naples, Italy	(1906)	75,	75
University of Geneva, Switzerland	(1902)		81.5

FAILED			
Kentucky School of Medicine	(1906)		67.6
University of Michigan, College of Med. and Surg.	(1880)		65.8
Jefferson Medical College	(1874)		65.4
Hahnemann Medical College, Philadelphia	(1908)		70.6
University of Naples, Italy	(1896)		69.3

* Percentage not given.

Maine November Report

Dr. Frank W. Searle, secretary of the Maine Board of Registration of Medicine, reports the written examination held at Portland, Nov. 9-10, 1909. The number of subjects examined in was 10; total number of questions asked, 90; percentage required to pass, 75. The total number of candidates examined was 27, of whom 22 passed and 5 failed. Three candidates were licensed through reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Atlantic Medical College, Baltimore	(1909)		78.6
Baltimore Medical College	(1907)		83.8
Maryland Med. College	(1905) 77.4; (1908) 82.7; (1909)		75.5
Medical School of Maine	(1908) 88; (1909)		78.2, 82.3
Harvard Medical School	(1892) 90.2; (1909)		84.3
Boston University	(1909)		84.5
Tufts College Medical School	(1907) 82.1; (1909)	82.2, 89,	90.3
College of Physicians and Surgeons, Boston	(1908)		77.2
University of Minnesota, Homeopathic College	(1908)		82.6
Dartmouth Medical School	(1909)		87.2
New York University Medical College	(1884)		75.2
Jefferson Medical College	(1909)		80.4
Laval University, Canada	(1908)		77.2
University of Toronto, Ontario	(1900)		79.7

FAILED			
Atlantic Medical College, Baltimore	(1909)		*68.4
College of Physicians and Surgeons, Boston	(1908)		**69
Laval University, Canada	(1903)		*69.9
Bishop College, Montreal	(1905)		*73.1
University of Palermo, Italy	(1884)		68.6

LICENSED THROUGH RECIPROCITY

College	Year Grad.	Reciprocity with.
University of Vermont	(2, 1904) (1909)	Vermont

* Second examination in 1909.
** Third examination in 1909.

Montana October Report

Dr. William C. Riddell, secretary of the Montana State Board of Medical Examiners, reports the written examination held at Helena, Oct. 5-7, 1909. The number of subjects examined in was 10; total number of questions asked, 50; percentage required to pass, 75. The total number of candidates examined was 51, of whom 34 passed and 17 failed. The following colleges were represented:

College	PASSED	Year Grad.	Total No. Examined.
Hahnemann Medical College of the Pacific	(1909)		1
University of California	(1896)		1
George Washington University	(1906)		1
Northwestern Univ. Med. School	(1903) (2, 1907) (1908)		4
Hahnemann Med. College and Hospital, Chicago	(1896)		1
Rush Medical College	(1905) (1907)		2
College of Phys. and Surg., Chicago	(1902) (1908)		2
American Medical Missionary College	(1906)		1
Drake University, College of Medicine	(1909)		1
Kentucky School of Medicine	(1906)		1
College of Phys and Surg., Baltimore	(1908) (1909)		2

University of Michigan, College of Medicine	(1909)	3
Hamline University	(1906)	1
Barnes Medical College	(1895)	1
Washington University, St. Louis	(1904)	1
Beaumont Hospital Medical College	(1892)	1
Geneva Medical College, New York	(1867)	1
Medical College of Ohio	(1903)	1
Willamette University	(1909)	1
Jefferson Medical College	(2, 1904) (2, 1909)	4
Milwaukee Medical College	(1908)	1
McGill University, Canada	(1901) (1909)	2

College	FAILED	Year Grad.	Per Cent.
Chicago Homeopathic Medical College	(1897)		73.3
American Medical Missionary College	(1904)		71.5
Chicago College of Medicine and Surgery	(1908)		71.7
Illinois Medical College	(1900)		72.4
Keokuk Med. College, College of Phys. and Surg.	(1908)		62.8
St. Louis University	(1909)		74.1
University Medical College, Kansas City	(1907)		71.7
Kansas City Hahnemann Medical College	(1909)		73.4
Barnes Medical College	(1899) 71.1; (1904)		71.6
University of Kansas City	(1882)		57.3
Kansas City Medical College	(1889)		64.2
Marion Sims Beaumont Medical College	(1903)		50
Columbia University, College of Phys. and Surg.	(1908)		70.8
Milwaukee Medical College	(1907)		70
University of Toronto, Ontario	(1909)		71.9
Imperial Royal University, Prague, Austria	(1890)		67.8

Nevada November Report

Dr. S. L. Lee, secretary of the Nevada State Board of Medical Examiners, reports the written examination held at Carson City, Nov. 1-2, 1909. The number of subjects examined in was 10; total number of questions asked, 100; percentage required to pass, 75. The total number of candidates examined was 2, both of whom passed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
College of Physicians and Surgeons, San Francisco	(1909)		87
University of California	(1909)		85.3

New Mexico October Report

Dr. J. A. Massie, secretary of the New Mexico Board of Health and Medical Examiners, reports the written examination held at Santa Fé, Oct. 11-12, 1909. The number of subjects examined in was 13; total number of questions asked, 100; percentage required to pass, 75. The total number of candidates examined was 4, of whom 1 passed and 3 failed. Twenty-eight candidates were licensed on presentation of satisfactory credentials. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Memphis Hospital Medical College	(1901)		76.8

FAILED			
Memphis Hospital Medical College	(1908)		63.7
Gate City Medical College	(1904) 62.2; (1907)		*40.2

LICENSED ON CREDENTIALS

College	Year of Grad.
Georgetown University	(1905)
Howard University	(1907)
Rush Medical College	(1870) (1901)
Bennett Medical College	(1906)
Kentucky School of Medicine	(1898) (1900) (1907)
University of Louisville	(1909)
Louisville Medical College	(1893) (1901) (1909)
Tulane University of Louisiana	(1903)
Maryland Medical College	(1903)
University of Maryland	(1895)
Grand Rapids Medical College	(1900)
Kansas City Medical College	(1900)
Washington University, St. Louis	(1892)
Barnes Medical College	(1894)
Beaumont Hospital Medical College, St. Louis	(1901)
Niagara University, Buffalo	(1896)
Cincinnati College of Medicine and Surgery	(1870)
Eclectic Medical Institute, Cincinnati	(1900)
Miami Medical College	(1897)
Starling Medical College	(1903)
Jefferson Medical College	(1906)
Hahnemann Medical College, Philadelphia	(1888)
Vanderbilt University	(1888)

Wyoming October Report

Dr. S. B. Miller, secretary of the Wyoming State Board of Medical Examiners, reports the written examination held at Laramie, Oct. 20-22, 1909. The number of subjects examined in, 10; total number of questions asked, 100; percentage required to pass, 75. The total number of candidates examined was 5, all of whom passed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Denver and Gross College of Medicine	(1906)		81.7
Northwestern Univ. Med. School	(1908) 78.6; (1909)		82.5
Geneva Medical College, New York	(1867)		75
Jefferson Medical College	(1906)		82.4

Book Notices

TUBERCULOSIS. A Treatise by American Authors on Its Etiology, Pathology, Frequency, Semiology, Diagnosis, Prognosis, Prevention and Treatment. Edited by Arnold C. Klebs, M.D. Cloth. Pp. 939, with 3 colored plates and 243 text illustrations. Price, \$6. New York: D. Appleton and Company, 1909.

So wide-spread is the present-day interest in tuberculosis, even among the laity, that a work such as this one, dealing with the subject from a practical point of view, with emphasis on the details of treatment and diagnosis, is certainly timely. That there has been an effort made to bring the book up to date is seen by the addenda to the articles of several of the writers, including summaries of some of the more important facts brought out at the recent International Congress on Tuberculosis at Washington. The various articles are contributed by men eminently qualified by experience and special training to speak with authority in their special subjects. From such men as Lawrason Brown, Baldwin, Hektoen and Ravenel, not to mention others we expect only the best and are not disappointed. Hektoen's brief but clean-cut discussion of tubercle and morbid anatomy, and Brown's detailed account of specific treatment are especially worthy of comment. To Dr. Charles L. Minor of Asheville has fallen the task of handling the important topic of symptomatology and diagnosis. His thorough familiarity with the practical aspects of pulmonary tuberculosis is clearly seen, and his contribution, covering nearly one-third of the text of the entire book, is valuable. In fact, he and two others, Knopf and Brown, have written one-half of the book and have done their work well. It goes without saying that few are better qualified to discuss public measures in the prophylaxis of tuberculosis than Dr. Knopf. While these few are mentioned by name, it is not to be inferred that the other articles are not praiseworthy; most of them are. Brief but good discussions of surgical tuberculosis are included in some seventy pages, the writers being McArthur of Chicago and Freeman of Denver. We wish we did not feel that the names of well-known men had been used for the purpose of adding prestige to the book and of increasing its sales to the unwary, who may imagine that they are buying a work containing valued contributions by these well-known men. Osler, Trudeau, Biggs and von Pirquet are attractive names on the publisher's advertisement, but he who buys because of the attractiveness of these names may be disappointed when he finds that Osler has written but eight pages of historical introduction, Trudeau two and a half pages introducing the subject of treatment, von Pirquet some seven hastily prepared pages on tuberculosis in children, and Biggs about five hundred words on prophylaxis. All that these men say is, of course, to the point, but we feel just a wee bit of resentment at what seems to smack a little of publishing trade sharpness.

A very commendable feature is the appendix containing an article by Dr. Mary Lincoln on the tuberculin opsonic index, and leaflets of instruction to teachers (Goodall) and mothers (Kress). Knopf's instructions to physicians and his illustrations of devices for the prevention of tuberculosis are of extreme value. A bibliography has been compiled containing some 3000 selected titles.

The book as a whole is reliable, written in a scientific spirit by well-qualified men, and is well adapted to the practitioner.

THE THIRTEENTH, GREATEST OF CENTURIES. By James J. Walsh, M.D., Ph.D., LL.D., Dean and Professor of the History of Medicine and of Nervous Diseases at Fordham University School of Medicine. Cloth. *Edition 2. Pp. 458, with illustrations. Price, \$2.50 net. Catholic Summer School Press, 110 W. 74th St., New York City.

This book represents a digest of summer school lectures. In the first edition, long citations from authorities and the multiplication of notes at the bottom of the pages were avoided. In this edition, however, two appendices have been added, the first giving a summary of the history of the period, the second consisting of "Criticisms, Comments and Documents," which add materially to the value of the work. The sociologic facts cited are of particular interest. It is stated that in the thirteenth century a workman could obtain a pair of hand-made shoes for his daily wage—four pence. The author considers the eighteenth the "lowest of centuries."

Marriages

ISADORE COHN, M.D., to Miss Millie Simon, both of New York City, November 24.

EDWARD A. GUYNES, M.D., to Miss Emma Meyerhoff, both of Knoxville, Tenn., December 29.

GUY CARSON KINNAMAN, M.D., Chicago, to Miss Ivy Irene Brown, of Morrison, Ill., December 29.

EDWIN F. STANNUS, M.D., to Miss Osa Eolia Miller, both of Quincy, Ill., at St. Louis, December 16.

ROBERT W. HORTON, M.D., Raleigh, N. C., to Miss Lillian Jordan, at Centre Hill, Va., December 16.

CHARLES EDWARD RYDER, M.D., U. S. Navy, to Miss Ellen Friend Balch Upton, of Boston, December 15.

JOHN SIDNEY EASON, M.D., Savage, Miss., to Miss Willie Glenn Evans, of Courtland, Miss., December 8.

WILLIAM H. POWELL, M.D., Kasota, Minn., to Miss Carrie McConkey, of LeSueur Center, Minn., December 9.

HENRY EDMUND TISCH, M.D., Wheatland, Wyo., to Miss Eva M. Hanna, of Delphi, Ind., at Denver, December 16.

ROMNEY EMERSON JOHNSTON, M.D., Bridgeport, Okla., to Miss Helen Sanburn, of Edinburg, Ind., December 14.

WILLIAM CLOVIS CUMMINGS, M.D., Oklahoma City, Okla., to Miss Anna Mabel Cater, of Guthrie, at El Reno, Okla., December 14.

MAZYCK PORCHER RAVENEL, M.D., Madison, Wis., to Miss Adele P. Vander Horst, of Charleston, S. C., December 28.

THURSTON WILLIAM WEUM, M.D., Duluth, Minn., to Miss Evelyn Zoe Schaffnit, of Denver, at Colorado Springs, December 15.

Deaths

Henry Martin Weeks, M.D. New York University, New York City, 1873; a member of the American Medical Association; at one time president of the American Association for the Care and Treatment of Epilepsy; assistant physician and pathologist at the State Hospital for the Insane, Trenton, N. J.; for ten years superintendent of the State Epileptic Village, Skillman, N. J.; and later superintendent of the Eastern Pennsylvania State Institution for the Feeble-Minded and Epileptic, Spring City; died at his home in Spring City, December 17, from heart disease, aged 59.

William Elliott Jeffries, M.D. Miami Medical College, Cincinnati, 1875; of Indianapolis; a member of the American Medical Association and an honorary member of the Indiana State Medical Association; president of the Indianapolis Medical Society in 1903; and secretary of the Board of Health of Indianapolis in 1879-1880; was struck by a street car in Indianapolis, December 4, and died a few minutes later, aged 68.

Robert Millar, M.D. University of Pennsylvania, Philadelphia, 1861; a member of the Rhode Island Medical Society; assistant surgeon of the Fourth Rhode Island Volunteer Infantry, and afterward division surgeon during the Civil War; for twenty-one years visiting surgeon and thereafter consulting surgeon to the Rhode Island Hospital; died at his home in Providence, December 17, from cerebral hemorrhage, aged 74.

William H. Gordon, M.D. Georgia College of Eclectic Medicine and Surgery, Atlanta, 1888; surgeon of the American Steel and Wire Company at Rankin, Pa.; secretary of the local board of health, and one of the directors of the medical staff of Braddock General Hospital; died at his home in Rankin, October 27, from meningitis, following a fall from a street car two weeks before, aged 45.

Charles Green, M.D. Columbus (Ohio) Medical College, 1879; College of Physicians and Surgeons, New York City, 1880; of Greenville, Del.; a member of the Delaware State Medical Society; died in the University Hospital, Philadelphia, December 13, from the effects of a fracture of the spine, received June 16, in a collision between his carriage and an automobile, aged 51.

John Frank Liken, M.D. Western Pennsylvania Medical College, Pittsburg, 1894; of Toledo; a member of the Ohio State Medical Association; a member of the staff of St. Vincent's Hospital; and one of the commissioners for a pure milk supply; died in St. Vincent's Hospital, December 11, two weeks after an operation for appendicitis, aged 45.

Sidney C. Lankford, M.D. University of Nashville, Tenn., 1876; a member of the State Medical Association of Texas; died at his home in Sherman, December 6, from cerebral hemorrhage, aged 58. At a meeting of the Grayson County Medical Society, held December 8, resolutions of respect and condolence were adopted.

James W. McGee, Sr., M.D. University of Pennsylvania, Philadelphia, 1860; a member of the Medical Society of the State of North Carolina; assistant surgeon in the Confederate Service during the Civil War; died recently at his home in Raleigh, from heart disease, aged 70, and was buried December 7.

Oscar K. Richardson, M.D. University of Minnesota College of Homeopathic Medicine and Surgery, Minneapolis, 1893; professor of medical economics in that institution; a member of the staff of the Minneapolis City Hospital; died at his home in Minneapolis, December 10, from cerebral hemorrhage, aged 41.

Eugene G. Wood, M.D. College of Physicians and Surgeons, San Francisco, 1900; a member of the American Medical Association; a veteran of the Spanish-American War with service in the Philippine Islands; was shot and instantly killed while stepping into his automobile in Oakland, Cal., December 9, aged 40.

George Lone Everall, M.D. State University of Iowa, Iowa City, 1896; of Clinton; a member of the Iowa State Medical Society; local oculist and aurist to the Chicago and Northwestern Railway; died at the home of his father in Farmersburg, Iowa, December 8, from cancer, aged 35.

Theodric Birchett Twitty, M.D. New York University, New York City, 1868; a member of the Medical Society of the State of North Carolina; a Confederate veteran; state senator for four terms; president of the Commercial Bank of Rutherfordton; died at his home, December 10, aged 67.

John Terry Poole, M.D. Medical College of the State of South Carolina, Charleston, 1857; a member of the South Carolina Medical Association; surgeon in the Confederate Service during the Civil War; died at his home in Laurens, December 14, from senile debility, aged 73.

E. G. Williams, M.D. Kansas City (Mo.) Hospital College of Medicine, 1885; for fifty-two years a practitioner; a member of the Kentucky State Medical Association; died at his home in Rocky Hill Station, December 12, from heart disease, aged 73.

George Dillwyn Cook, M.D. Medical School of Maine, Brunswick, 1866; of North Vassalboro, Maine; a member of the Waterville Clinical Society; died suddenly at the home of his son in Augusta, Maine, September 15, from heart disease, aged 68.

James Chester Knapp, M.D. New York Homeopathic Medical College and Hospital, New York City, 1884; for fifteen years superintendent of the Geneva (N. Y.) Hygienic Institute; died in that institution, December 11, from nephritis, aged 56.

Paul McM. Salley, M.D. Medical College of the State of South Carolina, Charleston, 1888; a member of the South Carolina Medical Association; and intendant of the town of Pinewood; died at his home, December 12, from hemorrhagic fever.

Charles Lindberg, M.D. Minneapolis College of Physicians and Surgeons, 1905; of Fairdale, N. D.; was injured while trying to board a moving passenger train at Adams, N. D., December 7, and died on the following day, aged 35.

John William Ringer, M.D. University of Michigan, Ann Arbor, 1885; a member of the Ohio State Medical Association; died at his home in Cambridge, Ohio, December 12, a year after a surgical operation, aged 55.

John Franklin Ford, M.D. Vanderbilt University, Nashville, 1905; a member of the State Medical Association of Texas; died at his home in Decatur, from septicemia, following the extraction of a tooth, aged 28.

Daniel Bailey Rees, M.D. King Eclectic Medical College, Des Moines, Iowa, 1884; of Des Moines, Iowa; died at the home of his daughter in Buena Vista, Colo., December 1, from disease of the kidney, aged 85.

Timothy F. Matheny, M.D. Medical College of Fort Wayne, Ind., 1878; a member of the Indiana State Medical Association; died at his home in Auburn, Ind., December 9, from asthma, aged 79.

John Bogardus Hull, M.D. Harvard Medical School, Boston, 1852; a member of the Massachusetts Medical Society; died at

his apartments in Boston, December 9, from cerebral hemorrhage, aged 82.

Joseph Blackwood Strachan, M.D. Jefferson Medical College, Philadelphia, 1858; of Princeton, N. C.; died suddenly on a train near Princeton, November 24, from heart disease, aged 76.

Anderson Wilmer Jones, M.D. Jefferson Medical College, Philadelphia, 1890; of Lexington, Ky.; died at the home of his father-in-law near that place, October 22, aged 43.

James Monroe Rigney, M.D. College of Physicians and Surgeons, Keokuk, Iowa, 1876; died at his home near Evona, Iowa, May 22, from chronic ileocolitis, aged 54.

George William Strong, M.D. Eclectic Medical College of the City of New York, 1882; of New York City; died at his home, November 7, from cerebral hemorrhage, aged 73.

Oscar Martin Duncan, M.D. University of Louisville (Ky.), 1907; formerly of Bridgeport, Ill.; died in Bay St. Louis, Miss., October 23, from bronchopneumonia, aged 34.

Rensselaer Platner, M.D. Albany (N. Y.) Medical College, 1846; health officer of Germantown, N. Y.; died at his home, November 19, from senile debility, aged 87.

Elisha M. Dunham, M.D. Physio-Medical Institute of Cincinnati, 1870; died suddenly at his home in Grand Rapids, Mich., December 10, aged 61.

Benedict Dallas Bucher, M.D. Jefferson Medical College, Philadelphia, 1871; died at his home in Lebanon, Pa., December 7, from dropsy, aged 76.

Josiah Raymond Kelly, M.D. University of Michigan, Ann Arbor, 1872; died at his home in Quincy, Ill., July 2, from dysentery, aged 62.

Amos A. N. Clark, M.D. St. Louis Eclectic Medical College, 1882; died at his home in Denver, December 10, from pneumonia, aged 81.

John L. Cooper, M.D. University of Pennsylvania, Philadelphia, 1877; died at his home in Albany, N. Y., December 12, aged 52.

George H. Cook, M.D. Jefferson Medical College, Philadelphia, 1851; died at his home in McDonald, Pa., December 12, aged 82.

William Coburn, M.D. Victoria College, Cobourg, Ont., 1864; died at his home in Oshawa, Ont., October 27, from paralysis, aged 72.

Neil McKinnon, M.D. McGill University, Montreal, 1895; died at his home in Alpena, Mich., December 12, from heart disease, aged 37.

Robert T. Barton, M.D. Medical College of Georgia, Augusta, 1856; died at his home in Wrens, Ga., December 1, aged 77.

Society Proceedings

COMING MEETINGS

Medical Society of State of New York, Albany, January 25.

SOUTHERN SURGICAL AND GYNECOLOGICAL ASSOCIATION

Twenty-second Annual Session, held at Hot Springs, Va., Dec. 14-16, 1909

The President, DR. STUART MCGUIRE, Richmond, Va., in the Chair

Surgical Junk, Demanding Surgical Interference

DR. JOSEPH PRICE, Philadelphia: A short time ago a patient asked me to reopen her abdomen, and to correct, if possible, a distressing condition that she could bear no longer. The abdomen had been opened three times—a pelvic operation followed by two gall-bladder operations. She complained bitterly of a griping sensation in the epigastric region, followed by nausea and starvation. In six days I have reopened four abdomens for post-operative, pathologic and operative sequelae. Numbers of these patients are objects of pity and mercy; all are objects of charity. One of the number had had the abdomen opened eight times. Fortunately the late operations were complete procedures, the reproductive organs and appendix were gone, leaving only a ventral hernia, omental and bowel adhesions to be freed. One of the late operators drained the gall-bladder, leaving a fistula and distressing

adhesions. I liberated the stomach, bowel and other adhesions, exposing the gall-bladder, disorganized and charged with pus; its clean removal will probably result in a cure.

Dealing with surgical junk requires more than the ordinary hospital apprenticeship. The operations done by pioneers in abdominal surgery were free of operative sequelæ. The percentage of recoveries was good in the country. I had the opportunity of seeing a large number of the patients operated on by members of the first school of abdominal surgeons. They constituted an interesting group of patients, none complaining of those common symptoms of modern operations. The high death-rate in the hands of some few operators explains surgically the distressing condition of the few who do recover, but command more surgery. A distinguished specialist in gall-bladder disease lost four patients in a series of five. I reopened the abdomen twice in the fifth patient. I thought I could relieve him by freeing the adhesions in the first attempt. In the second I removed the diseased gall-bladder and placed the viscera in normal relation. The man is now useful, healthy and comfortable. Junk surgery will shorten the lives of the old surgeons if they have the courage to do it. It will also injure their reputations; it gives a mortality that few operators can stand. The young, unschooled surgeon cannot do it. He cannot begin it or complete it. It results disastrously both to his reputation and to his patient, and again he is counseled not to attempt it. Recently I received a letter from a young surgeon, asking me to take a patient, or tell him how to deal with the case. The woman had had two or three gall-bladder operations, followed by fistulas, and is now septic, and asking for relief. I wrote him: "I don't want her; hands off." He came to me the following day for instruction. I said: "Go ahead, remove the gall-bladder if you can find it, and drain." He is a painstaking young surgeon, but I am satisfied that he will not find that gall-bladder. It is needless to detail the variety of pathologic complications from the pelvic basin to the pyloric orifice of the stomach in the great variety of surgical afflictions found between those two points; but if dealt with scientifically, according to our surgical lights, junk will not be the result. Again, in the suppurative forms of disease of the pelvic viscera above the head of the cecum, and on up to the suppurations about the liver, the advanced thinkers and workers have given us perfected procedures, and, if practiced completely and scientifically, but few uncomfortable sequelæ will follow. It is exceedingly rare to get junk from the operating tables of the expert. I rejoice that there is prolonged and painstaking effort on the part of the clinical schools to correct the common errors and calamities. We must have more prolonged hospital apprenticeships for our young men. All graduates should go through a hospital. All hospitals should be made clinical schools, and from this clinical schooling, on top of a thorough scientific education, we will get a new class of practitioners, better pathologists and better diagnosticians. The resulting thoroughness, scientific and clinical, will give us a stronger profession with better judgment, and a confidence in communities that we do not now possess. All junk surgery is uncertain; it may be simple or it may be too complicated for completion. Good numbers of masterful operators have been prompted by their good judgment to give up prolonged and painstaking efforts.

DISCUSSION

DR. LEWIS S. McMURTRY, Louisville: Dr. Price has called attention to one of the greatest evils prevalent at this time in relation to abdominal surgery. When this association was first organized it was far more difficult for men who were not qualified to do abdominal surgery than at the present time. To illustrate: Let us take any well-appointed hospital in any city in this country and it has a well-appointed operating-room. There is a nurse who is well-qualified to prepare patients for operation and who understands the technic of modern aseptic surgery and an operator who has no operative skill can put on a pair of rubber gloves that have been boiled and, if the preparation has been carried on by this competent nurse, the operator can open the abdomen of the patient, stir around in there a good deal, and the patient may not die. Fifteen or twenty years ago if an operator undertook to do this kind of work the patient would die of sepsis. The sur-

geon could not clean his hands, he did not have the facilities of the modern hospital and sepsis was the result and that soon finished his career. At present more men are doing tyro-surgery in the abdomen than before. Men without having served any apprenticeship undertake surgical operations which Dr. Price has characterized as junk, in that they are incomplete and done by men who are not qualified to do them. Hence, patients go to surgeons with adhesions of all kinds and ptosis of the viscera and other troubles. It is the duty of members of an association like this publicly and privately to condemn men entering on this work without having served an apprenticeship and without being properly qualified before they undertake it.

DR. A. VANDER VEER, Albany, N. Y.: I always feel that there is a certain amount of risk in encouraging abdominal surgery in small hospitals because much of the work is necessarily done by men who have not served a sufficiently long apprenticeship to do the work thoroughly and completely. Not infrequently a correct diagnosis is not made and incomplete operations are undertaken which do not reflect credit on American abdominal surgeons. Within ten or fifteen years there has been a desire on the part of younger surgeons to do as many operations as they can on a particular patient. I have seen many cases that have terminated in what Dr. Price has termed surgical junk. This paper is not only timely, but deals with a subject to which we should pay more attention than we do. It is the kind of paper for the younger surgeons to read carefully.

DR. WILLIAM M. POLK, New York City: The trouble with some of us is that perhaps we have been endeavoring to work out pathologic problems on live subjects and in so doing we may have left conditions within the abdomen in our endeavor to preserve structures, and so forth, that really had no business there. I find that the average person has been so well-educated that his or her mind is made up as to what they wish the physician to do long before they interview him and if he fails in any way to fall in with their preconceived notion they at once go elsewhere. We all know that a great many of the younger members of the profession have not that stiffness of spine that comes with age, that kind of ankylosis of the vertebral column which is beneficent in its influence and which comes with age and experience.

Adhesion of Sigmoid to the Tube and Broad Ligament as a Cause of Pain in Salpingitis

DR. HUBERT A. ROYSTER, Raleigh, N. C.: The Fallopian tube is the most frequent seat of inflammatory disease in the pelvis. It is the narrowest portion of the channel from the vulva to the ovary and is the least resistant to infection. Pain there is more concerned with salpingitis than with ovaritis, whether attended by a gross lesion or not. Too many times the ovary has been regarded as the offending organ, and needlessly removed. In some instances a diseased tube has been blamed as the sole cause of pain, while other factors produced by the salpingitis, or arising independently of it may be overlooked. A little less than three years ago I had a case which bears on this question.

Mrs. S., aged 30, married seven years, had given birth to one child about a year before. Previous to that she had had an abortion performed, on account of pernicious vomiting. Several weeks before I saw her the same thing had been done again, for the same reason. For two or three years she had suffered from typical tubal dysmenorrhea, the pain beginning a week before the flow and continuing throughout the period. Intermenstrual pain was constant, and referred chiefly to the left iliac region; there had been several slight attacks of pelvic peritonitis. Defecation was particularly distressful. Almost every day the patient was taking morphin or heroin. Examination revealed extreme tenderness in both sides of the pelvis, especially the left. A diagnosis of chronic salpingitis was made. At operation, March 28, 1907, both tubes were found tortuous and thickened, and were removed; their removal was considered justified in view of the history. The ovaries were cystic. I removed the left and excised two-thirds of the right one. In bringing up the left tube for inspection I found that the sigmoid flexure was adherent to its fimbriated end, and also to the upper surface of the broad ligament.

These adhesions were carefully divided, and the raw areas were closed by fine catgut sutures. The result was all that could have been expected. The patient immediately improved, but not until six months had passed was she really relieved. She is now entirely well, menstruating regularly without pain.

I have the records of eight similar cases in which the sigmoid adhesion was apparently the sole source of left-sided pelvic pain. I am convinced that the condition is one to be reckoned with. Its association with salpingitis or other disease of the pelvis cannot, as a rule, be determined beforehand, but it may be suspected in the absence of other lesions, to account for the suffering and more especially in the presence of painful defecation. This has been a constant symptom in the instances which I have observed. When discovered the adhesion must be dealt with as seems proper in the given case. After snipping the bands which fix the sigmoid to the broad ligament there are left two triangular raw surfaces, one on the bowel and the other on the ligament, with their bases together; these form a diamond-shaped area. The peritoneal edges are then closed over this space by continuous catgut, applied from below upward. The sigmoid is thus allowed to drop lower down into the pelvis, away from the tube and ligament, a maneuver which, in my opinion must be executed to secure permanent relief. Covering all denuded places is not less important. In one patient who had also a chronic cystitis, cured by a vaginal cystotomy, I failed to close the raw area as well as I should have done, and she is still, now and then, having pain on defecation, undoubtedly because of the reforming of adhesions. This is the only case of the nine that, so far as I know, has not been relieved.

DISCUSSION

DR. HENRY T. BYFORD, Chicago: When a patient presents herself with pelvic disease I always ask her whether she has pain or not on defecation. Then I ask if there is any mucus in the stools. I think that there is frequently mucus in the stools in such cases, but not the abundant mucus which comes from a general colitis, nor the tendency to tenesmus with mucus that comes from inflammation low down in the rectum. There is pain on defecation, particularly when these patients are at all constipated. In connection with the symptoms, if the pain is in the iliac region there will be found adhesions to the sigmoid flexure. In another class of patients there is pain in the back, and no pain in the iliac region. The cases are apt to occur in women who are constipated and who have a distended colon or sigmoid flexure, and the giving of laxatives and perhaps strychnin and other remedies to tone up the condition of the alimentary canal with proper diet would be sufficient rather than to think of any surgical procedure in the ordinary cases.

DR. ROBERT T. MORRIS, New York City: There is one place where the surgeon should allow adhesions to remain, namely, in his subliminal mind. There is no one thing more overlooked in my experience than peritoneal adhesions and their influence. Dr. Royster likes to close raw surfaces by continuous sutures. We save time by one of two methods. The commonest one which I have used is to sprinkle aristol (thymol iodid) over the raw surface and wait until lymph accumulates and engages the aristol in a mesh. This acts as an obstacle to further adhesion, and I have found it satisfactory in my experiments on animals. The other method is the use of the sterilized animal membrane. That takes a little longer, but in such a case as Dr. Royster has described, aristol powder would engage itself in the lymph coagulum and present an excellent mechanical obstacle to readhesion.

DR. THOMAS S. CULLEN, Baltimore: I have a patient at present who has complained for 5 or 6 years of severe constant pain in the left side. On opening the abdomen I found the uterus perfectly normal. The tubes and ovaries showed no alteration; there was no thickening of the ureter. In making a closer examination of the sigmoid I found it adherent to the entire left broad ligament, extending as far forward as the round ligament. A procedure was adopted similar to the one described by Dr. Royster, that is, freeing the adhesion as thoroughly as possible and closing the raw surface of the broad ligament by a continuous catgut suture and the raw

surfaces of the rectum by interrupted suture, on account of which slight tearing is not so likely to occur.

DR. I. S. STONE, Washington, D. C.: In opening the abdomen for tuberculous peritonitis and allied conditions we can never hope to separate all adhesions in such cases. It would be folly to try to do it. There are many women who have extensive adhesions, one organ being thoroughly adherent to its fellow, yet there may be no pain on defecation, or at any time. Where are we to stop in separating adhesions when we have such cases as that? Not long ago a woman came to me with a history of pain in the scar of a former operation. She had been operated on in Paris by an eminent surgeon; a consultation with three physicians was held. There was pain in the cicatrix and that was about all the woman could tell. The majority voted in favor of opening the abdomen to release the adhesion. When the abdomen was opened a slender adhesion of the omentum was found. The family was told that adhesions were found and separated. What else could they be told? The patient suffered precisely the same as before the operation. I find I am getting excellent results from operating on patients and placing the bowels in the very best condition I can for continuous passage of flatus and feces. I have separated adhesions of the sigmoid and in some cases have been astonished to find not only the greatest improvement, so far as pain and local distress are concerned, but in the general improvement of the patient, when the sigmoid has been sutured up out of the pelvis, where there should be continuous passage of the flatus and gas, instead of more or less obstruction, produced by a circular folding or duplication of the sigmoid in the pelvis. Such an operation as that has given me more satisfaction than the mere separation of adhesions.

DR. W. P. CARR, Washington, D. C.: We have all seen cases in which there were a great many adhesions and no pain, and in other cases in which there was a slight adhesion with a great deal of pain. It is the situation of the adhesion and not the extent of it that causes trouble. A patient experiences great pain when there is a slight strong adhesion attached to a small area of some movable organ; whereas in the case of an extensive adhesion to a large surface the weight is sustained without any pain whatever. The most painful adhesions have been those where there was a small band pulling on some point of a movable organ. I have seen a number of such cases and have relieved the patient by separating the adhesions not larger than a lead pencil. On the other hand, large adhesions, especially around the liver and the stomach, do not seem to produce any pain.

DR. H. ROYSTER, Raleigh: I am glad Dr. Byford mentioned the discharge of mucus, because that is very important. The question then arises in such a case: Is not the intestinal condition the cause of adhesion rather than the pelvic disease? When the adhesion is due to intestinal stasis the discharge of mucus is a prominent symptom, but when it is secondary to pelvic disease, mucus is not a prominent symptom.

(To be continued.)

AMERICAN ACADEMY OF MEDICINE

Third Mid-Year Meeting held at New Haven, Conn., Nov. 11-12, 1909

(Concluded from Vol. liii, page 2126)

THE PARENT THE STRATEGIC POINT OF THE PRESENT The Division of Child Hygiene and the Reduction of Infant Mortality in the City of New York

DR. THOMAS DARLINGTON, health commissioner of New York, emphasized the importance of preventive measures in the hygiene of infancy and childhood. Efforts for the reduction of infant mortality should be followed by those tending toward the preservation of the health of the child. Correlation of all activities relating to child health in New York City by the formation of a Division of Child Hygiene includes the supervision of midwives, control of the boarding out of foundling infants, inspection of day nurseries and institutions harboring children, instruction of mothers in the care of babies, medical inspection and examination of school children and issuance of employment certificates, thus maintaining

supervision of the health of children from birth to puberty. Educational measures are important in public health work. The most essential feature is personal instruction in the home. There was a marked decrease in the death-rate from diarrheal diseases, particularly during the past summer.

The Three Years' Experience of the Babies' Dispensary and Hospital of Cleveland in the Education of the Mother

DR. H. J. GERSTENBERGER, Cleveland, described the methods used by the Babies' Dispensary and Hospital designed to promote nursing and regular visits by the mother to the dispensary for prophylactic advice by the physician, and gave a critical study of the value of these methods by statistical determination of the results obtained in 201 cases referred to the dispensary soon after birth by obstetric dispensaries. He also took up the question of giving premiums, as carried out in Germany, to promote regular attendance and nursing. He emphasized the desirability of a system by which the relatively large loss of families through moving could be avoided.

An Outline for the Study and Prevention of Infant Mortality for Boards of Health of Small Cities

MR. SELSKAR M. GUNN, health officer, Orange, N. J., discussed the necessity for small cities taking more interest in the study and prevention of infant mortality, and laid stress on the value of a thorough study of the problem from the statistical point of view. He also took up the causes of death, so-called "unavoidable causes" and causes recognized as preventable. He then went on to consider: The necessity for the Board of Health having good relationships with the Bureau of Charity, Diet Kitchen, Visiting Nurses' Settlement, etc.; how to reach the mother as soon as possible after the birth of her child; difficulties of educating young women in the principles of sex hygiene, maternity and the care of infants before their marriage; the work of the visiting nurses; the importance of hospitals and dispensaries; other branches of public health work that must be carried on; a plea for an organized campaign in small cities as there has been in some of the larger communities.

Discussion on Papers of Drs. Darlington and Gerstenberger, and Mr. Gunn

DR. J. S. NEFF, Philadelphia: New York sets the rest of the country an example in the control of the subject by the municipality. The key to the solution of the whole problem lies in the home, and in the application of methods similar to those described by Dr. Darlington. The mortality in Philadelphia of children under 5 years is 30 per cent. of the total mortality, and if congenital malformation and accidents of birth are eliminated and deaths from disease only are considered, it is found that 83 per cent. of these deaths, or 64 per cent. of the total death-rate, come from preventable causes. The campaign of prevention and education should be conducted through the board of health, as in New York. No appropriation being available for such an undertaking in Philadelphia, a movement termed the Babies' Alliance was organized two years ago, under the control of the Department of Health, the Board of Public Education, the Congress of Mothers, the Home and School League and kindred societies. Under the direction of the alliance, committees and subcommittees have been formed. The city is districted and the entire city is under the supervision of the committee. The names of mothers are given to the committee immediately on the birth of a child and visits of instruction are paid. Two years' work has resulted in a decrease of 7 per cent. in the mortality rate among infants. The examination of and instruction of midwives by the board of health is included in a plan lately inaugurated in Philadelphia.

DR. JOHN M. CONNOLLY, Boston, said that emphasis is laid on breast feeding in the work of the Boston milk committee. He favored granting a pension temporarily to a wage-earning mother to enable her to stay at home and nurse her baby. Classes for the instruction of the fathers as well as of the mothers have been found to be productive of good results.

PROF. IRVING FISHER, New Haven, Conn., spoke from the standpoint of the statistician. Infant mortality is a problem to day, largely because of the decline of the birth-rate, and

the real problem of infant mortality is connected with the birth-rate quite as much as with the death-rate. The parent is the strategic point to-day, especially because the parent is exercising volition which was formerly not exercised in regulating the birth-rate, and this volition must be matched by a corresponding change in the death-rate. An interesting report of the Royal Commission in New South Wales was published about a year ago on the decline of the birth-rate in New South Wales, and the problem of infant mortality in their relation the one to the other. It was found that the birth-rate in New South Wales had declined something like 25 per cent., and that a corresponding decline, though to a lesser degree, has been going on in other parts of Australia, and in fact throughout the civilized world. There are two problems that come out of this, of world-wide importance. While we are fixing our attention on preventing infant mortality from the standard of the individual, we will forget that the important point is from the standard of the race, and the two problems which confront races are depopulation and degeneration. It would not be at all impossible that a country, and large classes of country, should gradually decline in numbers. In fact, college graduates have shown this tendency already, so that the birth-rate among college graduates, so far as statistics of the size of families enable us to judge, show that graduates of Yale, of Wellesley, of colleges for both men and women, so far as there have been any records throughout the country, are declining. They are not keeping up their end in the population. And if this should extend to the whole population there will be either depopulation or the necessity of improving the death-rate to keep the equilibrium. If it should ever happen that the better class, by which I mean the vitally better class, should refuse to keep up their end in the population, and the worst classes, the criminal and defective classes, should multiply, in the haphazard way in which animals and hitherto men have multiplied, there will be inevitable degeneration. These seem to me to be the great problems that come out of the birth-rate, and the problem of infant mortality is one of them. If we are to keep our population going and keep it from degenerating, we must prevent this needless waste of human life. There are so many factors that enter into the case it is impossible to say to-day whether a decrease is going on. The statistical record in Great Britain was inconclusive, and there is no corresponding record in this country, and we do not know whether we are decreasing in numbers except for the immigration, as that covers it up, or whether we are degenerating in quality.

In this connection I would like to emphasize a point that is very close to my heart, not the problem of infant mortality, but of health in general, and the problem of eugenics which is largely dependent on information to be obtained through the improvement of the federal organization of health at Washington. A great deal has been said in regard to the local work and in regard to the private institutions. But those agencies are relatively small as compared with the power of the federal government. Moreover, they are incomplete, because we never can get a broad view of the population, and the relation of birth-rate to death-rate in the population, until we get a large area. If we could have a federal organization of health at Washington to cooperate with the magnificent work that is being done in New York, Philadelphia and other cities, and the private work, such as has been illustrated in Cleveland, we might hope for the information on which any rational solution of the questions of population, depopulation and degeneration could be solved. It seems to me we need at Washington a bureau of child hygiene, a bureau of health to work in cooperation with the other agencies which have been spoken of this afternoon.

DR. H. I. BOWDITCH, Boston: The first essential toward a solution of the problem of the prevention of infant mortality is the enactment and enforcement of legislation requiring the accurate registration of births. And registration should be followed up by boards of health as suggested by Mr. Gunn.

MRS. W. L. PUTNAM, Boston, described the methods by which the infant social service department of the Woman's Municipal League of Boston cares for dependent mothers and children; giving especial attention to the instruction of the mothers in the care of the children.

DR. W. A. EVANS, Chicago: The problem is a large one and its full solution will require the solution of great questions of political economy. Until some health officer tackles the underlying questions of political economy, no satisfactory solution of the problem will be reached. What is needed now is cooperation between the boards of health and the people themselves, the mothers especially. How to get at the mother and through her to get at the child is the great problem. The success in New York has been largely due, he said, to the fact that the board of health had rid itself of the idea that the baby to be sought after was of necessity a sick baby; and realized that it is the baby that has just been born that needs attention, concentrating for the time being on that baby in which there is the greatest coefficient of sickness. The philosophy of the situation would mean that before the problem is settled we must come back to the people before the babies are born; and to the circumstances of society that are responsible for the conditions into which the baby is born.

DR. I. S. WILE, New York: A better foundation could not be laid for the hygienic education necessary for the prevention of infant mortality than by utilizing our educational institutions, by beginning with a rational series of well-devised courses in hygiene in our public schools.

DR. HELEN C. PUTNAM, Providence: For a quarter of a century there has been talk about teaching children hygiene; but the teachers should be taught first.

DR. HOLMES, Newark, N. J.: A plan has been tried in Newark in accordance with which lectures have been given on hygiene and on diseases common to school children by the school inspectors. This year the lectures are to be given by men outside the force of inspectors. There are also evening classes on nursing conducted by physicians for mothers or for any who wish to attend.

WHO SHOULD AND WHO SHOULD NOT BE PARENTS

Fit and Unfit Matings

PROF. C. B. DAVENPORT, director of the Station for Experimental Evolution, Long Island, N. Y.: Greater precision in predicting hereditary transmission has been acquired since the establishment of the principles that human characteristics are inherited separately of one another; that they do not blend in heredity; and that when an elementary characteristic is absent from both parents it will be absent from all children. Wherever an undesirable abnormality is due to an hereditary factor, as it is in short fingers, hereditary cataract, night-blindness, polydactylism, syndactylism or "lobster clawed" hand, and perhaps, diabetes, normal offspring of strains in which the defect is hereditary will never have abnormal children. But in cases in which the undesirable condition is due to the lack of some characteristic normally present, the children of two similar abnormals will be abnormal as in albinism, imbecility, and certain forms of weakness in the mucous membranes.

The Limits of Eugenics

PROF. ALBERT G. KELLER, professor of the science of society, Yale University: The ultimate limits of the application of any social innovation lie in the customs, conventions and habits of the society in question—lie, in a word, in the folkways. Galton, in his desire to introduce eugenics "into the national conscience like a new religion" really wishes to get eugenics in among these elemental conventions and habits. To understand, then, the limits set to his enterprise, it is needful to consider the nature of the latter and the mode of their origin. This has been worked out in masterly fashion by Prof. W. G. Sumner in his volume called "Folkways." The folkways are really uncoded societal conventions and habits, sanctioned by religion and including a judgment that they are conducive to societal welfare. They grow up naturally throughout human history; the origin of all the most elemental are lost in hoary antiquity; they are not products of study and reason, and are not amenable to rational criticism or alteration. Passing fashions are the less inveterate of the folkways. Attempted alterations of so elemental a body of conventions and prejudices as has grown up about a function so elemental as that of procreation are sure to meet the solid inertia of

human prejudice and blind conservatism. Hence these ultimate limits are likely to come into evidence and should be understood. What eugenists can do, in this "age of reason," is to combat the grosser manifestations of counter-selection or breeding from the unfit, through the means of legislation and education. Sympathy for the unfortunate unfit should not extend to the granting of the right of procreation, by which the parental unfitness is perpetuated at the expense of the fit who, at the very least, are taxed to afford the relief given. Here, too, any hurried or radical enterprise (*e. g.* the abrupt enforcement of premarital physical examination) is sure to run afoul of the folkways (*e. g.* the sense of modesty). But there is yet another way to work for eugenics; and that is to expand, so far as possible, the limits set for it by ignorance; to invoke an actual fear of consequences. This is the province of the medical man, who is in the position to know the dangers and to some extent to enforce what he knows on a number of people. Laws forbidding the most frequent cases of counter-selection (*e. g.* marriage of idiots) can be passed by the educated minority, and enforced by the machinery of the state on the ignorant or careless. There can be no grand overturning of what has existed time out of mind, but there can be a skillful elimination of certain gross extremes of man-breeding.

Discussion on Fit Parents

DR. W. H. CARMALT, New Haven: Referring to the statement made that criminality is increasing at a faster rate than population in America, said that criminality is but one branch, and the result of degeneracy. Children born of criminals become criminals by reason of their environment, and also by reason of the fact that they are born degenerates, and are unable to resist or appreciate the influences which bring about crime from their environment. It is for that reason that the number of degenerates should be limited; and the propagation of degenerates should be restricted.

DR. F. A. WOODS, Brookline, Mass., said that he considered the growth of interest in the study of heredity an encouraging sign. It is no longer necessary to be on the defensive in proving that there is anything in heredity. Ten years ago there was practically nothing on the subject except the writings of Francis Galton. To-day, we are in a position where we can say two things: first, that heredity is important; second, that it is important that alternative inheritance be considered in any study of the subject.

THE EDUCATION OF THE PARENTS OF THE FUTURE

The Responsibility of the Medical Profession for Public Education in Hygiene

DR. JOHN M. TYLER, professor of biology, Amherst College: The best means of decreasing infant mortality is to make sure of a race of healthy babies. Healthy children demand healthy parents. The next generation of parents is being made strong or weak in home and school to-day by an environment furnished by parents and teachers. These latter cannot be too well instructed in physiology, hygiene and biology. The possibilities, value, glory, and necessity of a vigorous and efficient life cannot be too strongly emphasized and clearly taught. Instruction of every kind has its place and value; but instruction through books and schools is inadequate. It can neither teach nor make allowance for individual differences in constitution and habit. It will probably fall on deaf ears or if heard and heeded will be misapplied. The most unfortunate child in the world is the one brought up according to theories framed from the study of books or from the lectures of the most learned and wise teachers. Parents and teachers need the sound advice of the practical and experienced physician far more than lectures, treatises or text-books. This we can safely follow. The physician should advise the parent as the lawyer advises his client or the banker the investor. No amount of study, however valuable, can replace such advice. Most of us will follow it for our children, if not for ourselves. Preventive medicine is the watchword of the day, and such instruction by our best physicians is one of the most important parts of the new work. It is being done to a certain extent already, it should be a far larger part of the work of the earnest and patriotic physician.

The Foundations of Prevention

DR. WILLIAM T. SEDGWICK, professor of biology, Massachusetts Institute of Technology: Discussion of infant mortality in the eighteenth century centered largely around infant damnation. In the nineteenth century it shifted to postmortem salvation, and in the twentieth is turning toward prevention. So long as one of the most powerful intellects of the eighteenth century—Jonathan Edwards—could affirm that infants, not of the elect, "are, in the sight of God, as young vipers," it was natural for more common folks to contemplate an excessive infant mortality not perhaps with satisfaction but with resignation. The watchword of a scientific age is prevention. The prevention of waste, the prevention of poverty, crime, pain, disease and premature death are now debated as never before. But scientific prevention requires for its foundations the completest possible knowledge of nature, including human nature, and of natural law; and above all more careful studies in biology, the science which lies at the basis of all knowledge of life and death. We must have also more and better training in all sorts of applied biology, such as hygiene and sanitation and eugenics, before we can expect to interfere wisely with natural processes or to control successfully the blind forces at work about and on and within us.

Discussion on Papers of Drs. Tyler and Sedgwick

PROF. C. F. HODGE, Worcester, Mass.: Adequate, definite vital instruction in practical biology should be given in the public schools, which should bring every boy and girl out of our grammar schools able to keep himself or herself healthy, and which should bring every young man and young woman out of our high schools active promoters of all good measures for civic health and enthusiastic members of the American Health League. It may seem a long way round, but the planting of a seed, and the rearing of the best possible plant from that seed by children in school would have an effect when those children became parents. So much for the training in the elementary schools. For the high schools, I advocate the establishment of strong courses in practical biology, taught in such a way that the influence of the teaching would react on the life in the homes, and on state and national morals. Finally, there should be such an education of public sentiment that it would no longer be practically impossible to persuade publishers to bring out a book in which the social diseases are discussed.

DR. WOODS HUTCHINSON, New York: The data collected by Professor Davenport are wonderfully illuminating, and the fact brought out most strongly in Professor Davenport's findings in the Mendelian law is that those unfavorable factors which are inherited are negative, or in the language of the Mendelian phrase, recessive; while those characters which make for health and vigor are positive and depend on a positive determinant, and not on the absence of a determinant. The whole tendency is in the direction of producing three-fourths vigorous, and one-fourth or less recessive, undesirable and inferior. This is carried out and supported by everything we know. There never were fewer insane or criminals than at present. There were never fewer criminals than at present. The apparent increase is due to the way in which crime is classified. There is no adequate foundation for the belief that crime or degeneracy are on the increase, and nothing to be afraid of in the decreasing birth-rate; there is an adequate balance between the death-rate and the birth-rate; as a matter of fact modern races are increasing more rapidly and with a better class of increment than ever before.

DR. T. G. WOOD, Columbia University, said that he began to teach the principles of eugenics to his classes about fifteen years ago and said that he frequently heard now from former pupils telling him of the practical benefit the instruction had proved to them and to their children.

DR. F. A. WOODS considered the application of the phrase "Mendelianism" to be fraught with danger at the present time in view of the fact that it was impossible to bring the most important characteristics within its range.

DR. WARD CRAMPTON, New York, said that emphasis was being placed on the teaching of hygiene, and that what was needed was the formation of hygienic habits.

Medical Economics

THIS DEPARTMENT EMBODIES THE SUBJECTS OF ORGANIZATION, POSTGRADUATE WORK, CONTRACT PRACTICE, INSURANCE FEES, LEGISLATION, ETC.

The Operation of Medical Legislation in the British Isles

Personal opinion on the subject of legislation regulating the practice of medicine is evidently as unsettled and conflicting in Great Britain as it is in the United States. A recent number of the *British Medical Journal* gives an account of a meeting held under the auspices of the Metropolitan Counties Branch in London for the purpose of hearing addresses from the three direct representatives for England and Wales on the General Medical Council.

THE GENERAL MEDICAL COUNCIL

This body consists of thirty-four members, twenty-four chosen by the royal colleges and universities (twelve from England, seven from Scotland, and five from Ireland), five members nominated by the king and five elected as direct representatives by the British Medical Association, three of whom must be registered medical practitioners residing in England and one each from Scotland and Ireland. The three direct representatives for England and Wales were present and addressed the meeting. Dr. Langley Browne reviewed the history of medical legislation in England.

Previous to 1858, each university, the royal colleges of physicians and surgeons, and the Apothecaries' Hall each laid down its own regulations for study and examination and granted a degree or license without any state supervision. In 1858 the General Council was created by act of parliament. At first it consisted of twenty-three members, seventeen appointed by different licensing bodies and universities and six by the crown. In the same year the Medical Register was established, in which no name could be entered except that of a person who holds a diploma or license from one of the licensing bodies. Various amendments were passed up to 1886, one of the most important being that of 1862, giving to the General Medical Council the sole right of publishing, printing and selling the *British Pharmacopoeia*. The amendment of 1876 removed any disqualification in respect to sex in regard to registration.

In 1886, the present act was adopted, in which for the first time direct representation was granted. The five direct representatives are elected every five years and each registered practitioner is entitled to a vote on the candidates nominated in his division. Thus, in England and Wales, each registered practitioner can vote for three candidates, but in Scotland and Ireland he can vote for only one. At the last election, there were in England and Wales 25,168 electors, and in Scotland, 3,845. Dr. Browne advocated the division of England into equal electoral districts. It is interesting to note that out of the total number of ballots (24,650) sent out in England, 11,752, or 47.66 per cent. were returned correctly made out and within the proper time, 11,831, or 47.98 per cent. were not returned at all, while 1,503, or 12.61 per cent. were returned, but were thrown out on account of failure to comply with the regulations in filling out the ballots, so that in an election held for the purpose of allowing the medical profession to choose its own representatives, nearly half of the physicians did not take enough interest in the matter to vote at all, while the votes of less than one-half were counted.

PREPARING FOR BETTER THINGS

Discussing the recent work of the council, Dr. Browne called attention to the committee on unqualified practice, appointed in accordance with a recommendation of the council to inquire into the laws in other countries regulating unqualified practitioners. Through the Privy Council, the Foreign Office, and the Colonial Office, the laws of all civilized countries regulating medical practice have been secured, showing that in almost every country except Great Britain, unqualified practice (that is, the practice of medicine by unlicensed individuals) is not permitted.

Dr. Latimer, another direct representative on the council, discussed the suppression of quackery. He said regarding the British medical practice act: "The law is so loose that, provided a man does not use medical titles, he can practice unhindered. He is simply restrained from giving evidence as a medical man in courts of law and from obtaining and holding certain public appointments." The medical practice acts in some of the British colonies and dependencies have gone much farther than the British act in the restriction of unqualified practice. For instance, the law in the British Central Africa Protectorate provides that "any person who shall wilfully and falsely pretend to be a duly qualified medical practitioner or who shall use any name or title implying or calculated to lead people to infer that he is duly registered, or any person who shall practice or do anything or perform any such acts as specially belong to the profession of the medical practitioner, without being registered, shall be fined £100 for each offense." Dr. Latimer quoted Sir Donald MacAlister, who stated in an address delivered at Manchester University in 1906, that the act of 1858 was passed, not for the protection of medical men but as a guide to the public to enable them to distinguish between qualified and unqualified practitioners.

He also pointed out that the British government had recognized the necessity of a restrictive rather than a definitive principle in medical legislation in the passage of the midwives' act, which not only required registration of midwives, but forbade the practice of midwifery by unregistered persons. He considered that it was the duty of the medical profession to collect a mass of evidence respecting the evils wrought by quacks and to present this to Parliament to show that as much evil was wrought by quacks as resulted from dirty and ignorant midwives.

OPTOMETRY IN GREAT BRITAIN

Evidently the British medical profession has had to contend against a movement similar to the so-called "optometry" movement in this country. Dr. Latimer states that in 1906 the British Optical Association, a body of tradesmen engaged in selling spectacles and testing sight, applied for a charter in which they endeavored to imitate the medical act by the creation of a central board, the restriction of glass-fitting and eye-testing to those registered, etc. The application for a charter having been made to the Privy Council, this body referred the petition to the General Medical Council, which adopted a resolution stating that in its opinion it was dangerous in the public interest to confer the powers and privileges contemplated therein on persons other than those duly qualified in medicine and surgery. Accordingly, the request for a charter was not granted.

Dr. Latimer also referred to the application for a charter by a body styling itself "The National Association of Medical Herbalists," the majority of which, he says, were engaged in carrying on quack businesses. This application for a charter was also refused.

A medical act, said Dr. Latimer, does not authorize any body to impose on any candidate offering himself for examination an obligation to adopt or refrain from adopting the practice of any particular theory of medicine or surgery as a condition of admitting him to examination or of granting him a certificate. Thus, a physician might be a homeopathist, but he must first of all have been properly educated and entered on the medical register. This being done, he is free to practice in accordance with any particular theory which he wishes to follow.

WEAK POINTS IN THE BRITISH MEDICAL ACT

The consensus of opinion seemed to be that the British medical act failed in dealing with quacks and incompetent persons. The agitation on this point now being carried on as well as the report of the committee on unqualified practice may lead to future amendments enlarging the powers of the committee so as to make it possible for it to deal with this dangerous class. The composition of the council itself, consisting of representatives of universities and medical organizations, representatives appointed by the crown and representatives elected by the registered physicians themselves, certainly offers many advantages that are worthy of careful consideration.

Dominion Registration in Canada

For many years a sentiment has been growing in favor of a system of regulating medical practice in Canada which would cover the entire Dominion rather than each province. At a meeting recently held in Banff at which representatives of the councils of four western provinces were present this question was discussed and, according to the *Canadian Practitioner and Review*, considerable progress was made. Resolutions were adopted by the representatives of the four provinces present in favor of a uniform law for the regulation of the practice of medicine.

Considerable discussion on this question has also taken place in Ontario although this province was not represented at the conference. The discussion centers around the so-called Roddick bill which provides for dominion regulation as soon as five or more provinces agree to accept it and pass the necessary legislation to make it effective. The problem before the Canadian profession is much the same as that confronting physicians in the United States, though on a smaller scale. Each province in Canada has its own examining and licensing body, which establishes its own standards and which may or may not recognize those of other provinces. The advantages of a single act of the dominion parliament establishing a uniform standard for the entire Dominion of Canada and substituting a central body for the numerous provincial boards is obvious. In view of the evident advantages of a uniform system of regulation, it is to be hoped that the medical profession of our neighboring dominion will be able to secure such legislation.

POSTGRADUATE COURSE FOR COUNTY SOCIETIES

DR. JOHN H. BLACKBURN, DIRECTOR
BOWLING GREEN, KENTUCKY

[The Director will be glad to furnish further information and literature to any county society desiring to take up the course.]

Fifth Month—Second Weekly Meeting

DISEASES OF THE STOMACH

ACUTE GASTRITIS: (a) Acute gastric catarrh; etiology and symptoms. (b) Acute suppurative gastritis; diagnosis. (c) Toxic gastritis; diagnosis and treatment.

CHRONIC GASTRITIS: Pathology, (a) simple, (b) sclerotic gastritis; changes in mucosa, glands, muscularis, blood vessels. Clinical forms (Ewald). (a) simple, (b) mucous, (c) atrophic gastritis; diagnosis of each. Medicinal treatment. Indications for use of hydrochloric acid, ferments, bitter tonics.

DILATATION OF STOMACH

Acute dilatation; etiology, symptoms. Chronic dilatation due to (a) pyloric obstruction, from ulcers, stenosis, adhesions, etc.; (b) gastric atony, from chronic catarrh, over-distention, chronic diseases, etc. Diagnosis, history, symptoms, physical examination.

GASTRIC AND DUODENAL ULCER: Etiology, incidence, age, sex, trauma, diet, associated diseases. Proportion of gastric and duodenal ulcers. Diagnosis, pain, vomiting, hemorrhage, tenderness, gastric contents. Differentiation of gastric and duodenal ulcers.

CANCER OF STOMACH

PATHOLOGY: Situation, forms, adenocarcinoma, medullary, scirrhus and colloid. Changes in stomach, metastases. Symptoms. Gastric symptoms, anorexia, nausea and vomiting, hemorrhage, pain, gastric contents. Loss of strength and flesh, anemia, constipation, edema, tumor.

NEUROSES OF THE STOMACH (RIEDEL)

MOTOR NEUROSES: 1. Hyperkinesis. 2. Peristaltic unrest. 3. Nervous vomiting. 4. Nervous eructations. 5. Rumination. 6. Spasm of the cardia. 7. Pyloric spasm. 8. Atony of stomach.

SECRETORY NEUROSES: 1. Hyperacidity. 2. Supersecretion, intermittent and continuous. 3. Subacidity or anacidity.

SENSORY NEUROSES: 1. Hyperesthesia. 2. Gastralgia. 3. Bulimia. 4. Akoria. 5. Anorexia nervosa.

Medicolegal

Requirements in Proceedings for the Adjudication of Insanity —Admissions of Insanity

The Supreme Court of Michigan says, in *re Phillips* (122 N. W. R. 554), that proceedings taken for an adjudication of insanity against an individual should require the strictest compliance with all the statutory requirements provided. The determination affects the rights of the individual to the enjoyment of life, liberty and property. Courts will ever protect the rights of the individual who is so unfortunate as to be called on to make a showing to maintain his or her mental integrity.

An admission of insanity can never fix the status of unsound mind in the person making the admission. The law prescribes the only way a determination of insanity may be declared. It is doubtful whether in any case, where no rights of innocent third parties intervene, any conduct of any person will prevent him from questioning in any proceeding the regularity and determination of his insanity.

All persons are presumed to be sane, and in every proceeding the burden of proving insanity rests on the one challenging the sanity of the individual. It is always a question to be tried out in the proceeding then pending where it is raised.

The proceeding leading to an adjudication of insanity is not an adversary proceeding. It is a proceeding in the interest of the public to protect deficient citizens. It is therefore not a proceeding where any act or admission of the party could prejudice an adverse party.

Practicing Medicine Without a License

The Supreme Court of Indiana says, on the appeal of *Melville vs. State* (89 N. E. R., 490), where it affirms a conviction of practicing medicine without a license, that the accused argued that a diploma held by him from a school of osteopathy at the time the law went into effect entitled him to a license to practice medicine, and having applied to the Board of Medical Examination for a certificate, and exhibited and filed with the board his diploma and paid the legal fees, and done, as he averred, all that he was required by the law to do, and his license being wrongfully withheld, he had a right to practice medicine. But in this contention he fell into error.

The mere delivery of the diploma to the board, and the payment to it of \$10 as a fee, of themselves amounted to nothing. Calling the money paid a license fee did not make it a license fee. The Indiana statute requires the payment of \$10 to the board as an examination fee, to determine whether the candidate for license is a fit person to receive it. The payment of the \$10 secures to the candidate no privilege or advantage beyond the right to an examination by the board as to fitness to exercise a license. And because the contrary was not alleged, the court infers that the accused never had an examination by the state board, or, if he had one, he failed to prove himself qualified and entitled to a certificate; and if he had in fact received a certificate, that he never presented it to the county clerk, and requested the issuance of a license on it. If either of these assumed facts existed, he was not entitled to a license.

Again: According to his plea, he had no qualification, or right, to a license to practice medicine beyond that conferred by his diploma from a Chicago school of osteopathy. If the court granted that the school that issued to him the diploma was a reputable and an approved school of osteopathy, that would not strengthen the answer. His failure to affirm that he was practicing osteopathy only was equivalent to an admission that he was practicing medicine generally, and the very most he could claim the right to do was to practice osteopathy.

Nor was there error in denying to the accused the right to read in evidence, as a license to practice medicine, the receipt, given by the secretary of the board for "ten dollars in payment of legal fee on diploma for certificate." The receipt was not a license, and furnished the accused no excuse for the violation of a specific requirement of the law. Even if he had shown that he was entitled, and that a license was arbitrarily

withheld, it would have afforded him no sufficient justification to practice medicine. If a license was wrongfully withheld, his remedy was to proceed by appeal, or some other appropriate action to obtain it.

What Constitutes Serious Illness and "Spitting or Coughing of Blood"

The Supreme Court of Oklahoma says, in *Eminent Household of Columbian Woodmen vs. Prater* (103 Pac. R. 558) that not every illness is serious. An illness may be alarming at the time, or thought to be serious by the one afflicted, and yet not be serious in the sense of that term as used in insurance contracts. An illness that is temporary in its duration, and entirely passes away, and is not attended, nor likely to be attended, by a permanent or material impairment of the health or constitution, is not a serious illness. It is not sufficient that the illness was thought serious at the time it occurred, or that it might have resulted in permanently impairing the health. A cold may be, and sometimes is, followed by pneumonia, pleurisy, abscess of the lungs and consumption, but to hold that because a cold may be attended or followed by such consequences it is a serious illness, and that a failure to mention such in response to an inquiry in an application for insurance as to the nature and character of any serious illness the applicant has suffered, would result in invalidating almost all contracts of insurance, the covenants of which are based on the statements in the application as warranties; for, if a careful investigation should be made in the lives of persons insured, in almost every life there would be found some incident of illness of such ordinary occurrence and insignificance in its effect, yet of possible seriousness, which the applicant, without careful scrutiny and accurate recollections of his past life, has overlooked to mention. As used in an application for a life-insurance policy, the term "serious illness" means such an illness as permanently or materially impairs, or is likely permanently or materially to impair, the health of the applicant.

The phrase "spitting or coughing of blood," as used in a question propounded by a medical examiner to an applicant for a life-insurance policy, as to whether she had ever had "spitting or coughing of blood," means the disorder so called, whether the blood comes from the lungs or from the stomach. Whether this language would include any spitting of blood, however small in quantity and unimportant, such as might come from a wound of the gums, or the removal of a tooth, or the biting of the tongue, it was unnecessary for the court to determine in this case, because that question was not involved under the facts of the case, but it would include the disorder by that name called, whether the blood came from the stomach or from the lungs, when it had assumed such proportions as to be a disease.

Validity of Contracts Restricting Practice of Medicine

The Supreme Court of Oklahoma holds, in *Threlkeld vs. Steward* (103 Pac. R. 630), that a contract restraining the practice of medicine and surgery in a particular locality, within a reasonable area, is valid. The practice of medicine and surgery within the prescribed limit, contrary to the provisions of such a contract, may be restrained by injunction. Courts will not, as a rule, inquire into the adequacy of the consideration of such a contract.

There is no discord in the authorities, the court says, that, where the restraint is no more extensive as to area than the protection of the party with whom the contract is made reasonably requires, the public not being likely to be injured by such an agreement, every other person being at liberty to practice within such limits, such contract is reasonable and valid, unless otherwise vitiated. While courts will scrutinize to determine whether or not the restraint be unreasonable, yet, as a rule, they will leave it to the parties themselves to make their terms in regard to the consideration thereof.

The rule is supported by both reason and authority that an agreement for a valuable consideration not to practice medicine within a reasonable distance of a designated place is not unreasonable, and the exercise of the profession within such prescribed limit may be restrained by injunction.

In the absence of fraud, accident or mistake, the terms of a written contract are not permitted to be varied by oral testimony; but evidence showing the relation of the parties and their profession or business, when not in conflict with the express terms or language of the contract, is admissible.

Identification of Subject of Autopsy by Photograph

The Supreme Court of Oregon says, in the homicide case of *State vs. Finch* (103 Pac. R. 505), that the physician who performed the autopsy was not personally acquainted with the deceased, and only knew that he had performed an autopsy on the body of some person unknown to him. A photograph of the deceased, proved to be a correct likeness, was shown to him, and he then testified that the person on whom he performed the autopsy was the same person represented in the photograph. For the same purpose of identification the photograph was also shown to other witnesses. It was a picture showing the deceased in health and strength, and was not in any way calculated to excite the passions or sympathy of the jury. In the case of *State vs. Miller*, 43 Or. 325, a photograph showing a number of gunshot wounds on the body of the deceased, and presenting what the court called "a grewsome spectacle," was introduced without any apparent necessity, and without proof of its correctness. The court held that under the circumstances its introduction tended unnecessarily to inflame the jury against the defendant, and that its admission was error. But in this case the purpose for which the picture was introduced was proper, and there was nothing in any way calculated to prejudice the defendant's case in exhibiting it to the jury. It was not error to allow the photograph to be introduced in evidence.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

New York Medical Journal

December 18

- 1 Cerebrospinal Meningitis; Clinical Observations and Serum Treatment. L. Fischer, New York.*
- 2 *The Wassermann Reaction (Noguchi Modification) in Pellagra. H. Fox, New York.
- 3 *Etiology of Pellagra. J. H. Taylor, Columbia, S. C.
- 4 Amebas in the Stools of Pellagrins. W. Allen, Charlotte, N. C.
- 5 What can we do to Prevent, Arrest, and Cure Generalized Fibrosis? F. S. Mason, New York.
- 6 Case of Malignant Precocious Syphilis. H. B. Epstein, Newark, N. J.
- 7 Two Cases of Modern "Point Tying." W. H. Luckett, New York.
- 8 Open Method of Treatment in Simple Fractures. M. F. Porter, Fort Wayne, Ind.
- 9 Palliative Treatment for External Hemorrhoids. G. E. Barnes, Herkimer, N. Y.

2, 3. Abstracted in THE JOURNAL, Nov. 13, 1909, p. 1659.

Boston Medical and Surgical Journal

December 16

- 10 Cases of Renal Suppurations in Typhoid. C. F. Withington, Boston.
- 11 *Bacillus of Acne. H. F. Hartwell, and E. C. Streeter, Boston.
- 12 *Treatment of *Bacillus Aërogenes Capsulatus* Infections by Proximal Injections of Hydrogen Peroxid. F. H. Lahey, Boston.
- 13 The Gaillonx Murder. A Case Solely of Circumstantial Evidence, with Conviction of the Murderer. W. F. Whitney, Boston.
- 14 Diagnosis of Ulcer of the Duodenum. E. A. Codman, Boston.

11. *Bacillus of Acne*.—In three cases of acne which Hartwell and Streeter studied, a bacillus identical with the bacillus of acne of Gilchrist and other observers was obtained. From the ease with which it could be obtained from these two cases when grown anaerobically, the authors think that it can probably be cultivated from all cases of acne.

12. *Proximal Injections of Hydrogen Peroxid*.—Experiments made by Lahey have convinced him that the injection of hydrogen peroxid into the human for the purpose of stopping the extension of a *Bacillus aerogenes capsulatus* lesion would never be justified, owing to the danger to life connected with this form of treatment.

Medical Record, New York

December 11

- 15 Present Status of the Tonsil Operation. G. L. Richards, Fall River, Mass.
- 16 The Last Epidemic of Yellow Fever in Cuba. P. C. Fanntleroy, U. S. Army.
- 17 Acute Gonorrheal Prostatitis. F. C. Valentine, and T. M. Townsend, New York.
- 18 Treatment of Diseases in Senility. I. L. Nascher, New York.
- 19 Evidence Controverting Rosenberger's Tuberculous Bacteriemia Hypothesis. B. Stow, New York.
- 20 *New Method of Applying Lactic Acid Bacilli in Treatment of Suppurating Wounds. W. B. McLaughlin, New York.
- 21 *Total Ophthalmoplegia. F. M. Fernandez, Havana, Cuba.

December 18

- 22 Treatment of Stammering, with Suggestions as to Modern Methods. G. Hudson-Makuen, Philadelphia.
- 23 *Technic of Amputations with Special Reference to Osteoplastic Methods. A. V. Moschcowitz, New York.
- 24 Physical Decay of Northern Europeans in our Northwest. C. E. Woodruff, Manila, P. I.
- 25 *Treatment of Pulmonary Tuberculosis Based on the Assumption that the Dietetic Cause of the Disease is Lime Starvation. J. F. Russell, New York.
- 26 *The Incandescent and the Arc Light in Medicine. A. D. Rockwell, New York.
- 27 General Death-Rate from Malignant Growths in the Principal American Cities. R. F. Edwards, Newark, N. J.
- 28 Diseases of the Eye in Pellagra. A. B. Clarke, Plantersville, S. C.

20. *Lactic Acid Bacilli in Treatment of Suppurative Wounds*.—McLaughlin makes use of a powder produced from sterilized and dried solids of skim milk, inoculated with a culture of Bulgarian bacilli. This powder is used as a dusting powder in carcinoma, chancre, purulent ulcers and septic wounds. He claims to have had good results.

21. *Total Ophthalmoplegia*.—Fernandez describes a case of total ophthalmoplegia due to syphilis and of nuclear origin. The eye could not be moved in any direction and there was ptosis and loss of sight, vision being limited to perception of light.

23. *Technic of Amputations*.—Moschcowitz thinks that the construction of a good stump is best accomplished by osteoplastic methods because the one important factor is that the end of the stump should be covered with normal bones and normal periosteum. This is accomplished by osteoplastic flaps.

25. A preliminary article on this subject appeared in *The Medical Record*, Nov. 27, 1909, and was abstracted in THE JOURNAL, Dec. 11, 1909, p. 2033.

26. *Incandescent and Arc Light in Medicine*.—Rockwell claims that the incandescent light of 500 candle power is very valuable for the relief of pain, especially of neuritis. In the incandescent light the glass globe intercepts the chemical rays, while the arc light gives all the effects of the solar rays. The incandescent light is of special value in the treatment of superficial skin lesions which is due to light and heat combined with chemical rays.

Lancet-Clinic, Cincinnati

December 4

- 29 Infant Feeding in Country Practice. C. W. Carter, Clinton, Ill.
- 30 Scarlet Fever—Pathology, Treatment and After-Care. P. T. Kilgour, College Hill, Ohio.
- 31 The Hypodermic Sea-Water Treatment of Disease. J. W. Carpenter, Cincinnati.

Medical Fortnightly, St. Louis

November 25

- 32 Touring the Lands where Medical Science Evolved. R. G. Eccles, St. Louis.
- 33 Prognostic Value of the Cutaneous Test in Tuberculosis. A. E. Tanssig, St. Louis.

Virginia Medical Semi-Monthly, Richmond

November 12

- 34 Diseases of the Ear Complicating Measles and Scarletina. W. A. Wells, Washington, D. C.
- 35 Two Cases of Pellagra. R. Parker, Williamsburg.
- 36 Bacteria in the Circulating Blood; Description of Technic for Demonstration by Staining Methods. M. P. Burnham, Harrisonburg.
- 37 Clubfoot. P. Green, Wytheville.

November 26

- 38 *Burn which Involved One-half the Body Area; Recovery. A. H. Barkley, Lexington, Ky.
- 39 Pellagra. J. S. deJarnette, Staunton.
- 40 The Heart in Acute Infectious Diseases. A. G. Brown, Richmond.
- 41 Successful Treatment of Parasyphilis. T. A. Williams, Washington, D. C.
- 42 Cursory Review of Pulmonary Tuberculosis. B. C. Keister, Roanoke.

38. Abstracted in THE JOURNAL, Nov. 20, 1909, p. 1769.

American Journal of Medical Sciences, Philadelphia

December

- 43 *The Emmanuel Movement. J. K. Mitchell, Philadelphia.
44 *Treatment of Chronic Bronchitis. B. Robinson, New York.
45 *Anatomic Study of Pericarditis. H. Brooks and L. Lippencott, New York.
46 *Normal Auscultatory Differences Between the Sides of the Chest. R. C. Cabot, Boston.
47 Practical Value of Spinal Percussion In Diseases of the Mediastinum. J. C. Da Costa, Philadelphia.
48 Resemblances Between the Clinical Effects of Pneumococcus and Meningococcus Infections. R. B. Preble, Chicago.
49 Diagnosis and Surgical Treatment of Acute Pancreatitis. J. B. Deaver, Philadelphia.
50 *Pathologic Relationships of Gastric Ulcer and Gastric Carcinoma. L. B. Wilson and W. C. MacCarty, Rochester, Minn.
51 Etiology and Pathology of Inguinal Hernia. W. L. Rodman, and C. W. Bonney, Philadelphia.
52 Action of Short Rotators on the Normal Abduction of the Arm: Their Action on Subacromial Bursitis and Allied Conditions. J. B. Stevens, Boston.
53 *Spastic Paraplegia Dating from Childhood (Little's Disease). Little or No Demonstrable Lesions in the Pyramidal Tracts. J. H. Rhein, Philadelphia.

43. **The Emmanuel Movement.**—In criticising the Emmanuel movement, Mitchell finds fault not with the use of proper mental means of cure, but with their improper, unwise, exaggerated and unscientific application by persons not fitted to judge the needs and limitations of the patients treated. Mental and moral therapy, he says, is as good and valuable a remedy as it always was, and although it will suffer discredit, as other good remedies have done, from ignorant enthusiasm, the new attention which the discussion has brought it will in the end do good. He says that the use of hypnotism in any form, manner, or degree is a matter which should be under legal control. It is a dangerous remedy in the hands of the best qualified medical man, and utterly to be condemned when used by any one not a qualified and responsible physician.

44. **Treatment of Chronic Bronchitis.**—In chronic bronchitis, hygienic measures are of primary importance; good ventilation, plenty of air and sunshine are essential; so are good food and rest. Clothing suitable to the season, and well selected, is necessary. *Apparel too heavy, which overheats in the house and causes perspiration, only brings on fresh colds and aggravates the chronic disease. Food should be simple, well prepared, and nutritious; but heavy meals, especially at dinner, must be interdicted. Strictest moderation in sweets and alcohol should be enjoined; and tobacco, as a rule, hurts notably, except in mild quality and very small quantity in the evening. As to medication: internally, the iodids are the most useful drugs when properly used. When there is dyspnea, even slight, or nervous irritability shown in any way, Robinson combines the iodid with Hoffman's anodyne. Hydriodic acid may be alternated advantageously with terpene hydrate in fairly large doses. Invariably counter irritation to the chest should be insisted on, and kept up for many days, or weeks, with occasional intermissions when the skin becomes tender. Nothing, says Robinson, equals the compound tincture of iodine for its resolute qualities, and the derivative effect toward the skin is all that is desirable.

Internally, Robinson is opposed to the use of sedatives or anodynes, unless imperatively required. The least objectionable are the combined bromids, henbane, or codein. A mercurial, followed by Rochelle or Epsom salts, is useful once a week or oftener, and diminishes cough and expectoration for a time in a pronounced degree. Vapor inhalations, especially of creosote, are very valuable when properly used, and if persisted in are more curative than any other one thing, unless it be change of climate and, at times, habits and occupation. The inhalations should be used with the perforated zinc inhaler. Internally, creosote may also be given with the happiest effects, in small repeated doses, and, combined with the best whisky and glycerin, will rarely disagree with the patient.

These patients cannot, should not, be housed. If so, they soon become worse, and their bronchial mucous membrane will not bear the slightest change without increased cough and expectoration. If a change of climate may be indulged in, one should go, preferably, to the sand hills of Georgia in winter, and in summer to the Adirondacks, at a moderate elevation. If permanent banishment seems desirable, California, not too near the coast, Robinson believes, is the one place of best resort.

45. **Pericarditis.**—According to Brooks and Lippencott, pericarditis is a lesion secondary in nature, rarely or never primary. The complication, for such it must be considered, is in most cases not in itself serious, except when of the suppurative variety, and in all instances it is more noteworthy as indicating the general condition in which it arises than on account of its own importance. It is, therefore, of little relative clinical importance, except as a diagnostic index, and in suppurative cases. True myocarditis is infrequently associated with pericarditis, but myocardial degeneration is commonly found and is not due to the pericarditis, although generally caused by the same condition as the pericardial inflammation. Death rarely results in pericarditis from this lesion. Independent myocardial degeneration leading to dilatation of the heart, and especially fatty degeneration of the myocardium, is a predisposing or determining factor toward pericarditis. Overaction of the heart may induce pericardial inflammation. Serofibrinous pericarditis is in most instances an evidence of generalized bacteremia. Chronic adhesive pericarditis is a lesion of great frequency, often impossible of diagnosis, and in itself of very little clinical significance or importance. Serious symptoms arise from adhesive pericarditis only when the myocardium itself is seriously diseased, either concomitantly or quite independently. The signs usually cited as characteristic of pericardial synechia develop only when mediastinal inflammation or adhesions of marked degree are present in addition to the pericarditis.

46. **Normal Auscultatory Differences.**—Attention is called by Cabot to what he believes to be a fairly common difference between the right and the left base posteriorly. In a series of 250 healthy persons recently examined with reference to this point, he found this difference present in 67 per cent. In these cases the breathing at the left base was notably louder and harsher than that at the right. In the majority of these it had also the quality described by the Germans as "rough." Cabot has nothing of importance to say as to the cause of this difference. Obviously, the only importance of the sign is that in case it is confirmed and established by the observations of other physicians it will slightly complicate our process of reasoning in regard to the soundness or unsoundness of the lungs as based on physical examination.

Cabot recently examined fifty normal chests with the subject in the lateral recumbent position. Briefly stated, the differences are as follows: (a) On palpation, increased tactile fremitus on the lower side; (b) on percussion, a combination of dullness with a tympanic quality on the lower side; (c) on auscultation, an increase in the intensity of the spoken and of the whispered voice, with a slight prolongation of expiration and a raising in its pitch. Summarily stated, these signs amount to the indications of a slight degree of condensation of the lung, such as we see in the upper part of a chest when a pleural effusion is present below.

50. **Gastric Ulcer and Gastric Carcinoma.**—As the pathologist examines stomach specimens from the surgical clinic he constantly observes the various steps in the following sequence: 1. Chronic ulcers from the centers of which the mucosa has disappeared leaving a scar tissue base. 2. In the overhanging borders of the ulcers the mucosa is proliferating. 3. Deep in the borders many groups of epithelial cells have been nipped off by scar tissue and are exhibiting all stages of aberrant proliferation with infiltration of the surrounding tissue. 4. Metastases are forming in the lymphatics of the stomach wall and adnexa. Wilson and MacCarty say that in a small percentage of patients operated on the condition is too far advanced to show these steps, and a very small percentage—probably not over 2 per cent.—give evidence of rapid aberrant epithelial proliferation and infiltration without any sign of previous ulcer. Adopting Adami's classification one may therefore correctly designate most gastric carcinomas as "blastomas originating from unipotential cells of postnatal displacement," although it is probable that a very small number are "blastomas originating from unipotential cells that assume neoplastic characters without displacement and rapidly assume malignancy."

53. **Spastic Paraplegia.**—A man, aged 71, presented spastic paraplegia dating from early childhood. A study of the brain

and spinal cord revealed nothing of importance, excepting a fineness of the fibers in the crossed pyramidal tracts. In Rhein's opinion this case antedated the age of five years (as the patient stated), as his intelligence was below normal, and it could not be expected that at the age of 64 (when he was admitted) an accurate history of his early infancy could be obtained. The result of the anatomic study makes it possible that this case was one of Little's disease, although without definite history of the onset, this claim cannot be made definitely. Rhein considers it extraordinary, that an individual could live to the age of 71 years, suffering for certainly the greater part of his life from spastic paraplegia, without its being possible to demonstrate more pathologic change in the nervous system than the slight and perhaps indefinite one mentioned. It seems to confirm the theory that the fine caliber of nerve cells offered resistance to the transmission of motor impulses, which, for their perfect conduction, require well-formed and large nerve fibers.

Montreal Medical Journal

November

- 54 Diagnosis of Surgical Diseases of the Kidneys. R. P. Campbell, Montreal.
- 55 Wassermann Reaction in Syphilis. W. Hutchinson, Montreal.
- 56 Anatomic Aspect of Fractures. J. A. Nutter, Montreal.
- 57 Museum Methods Observed in the Principal Pathologic Museums of London. J. Kaufmann, Montreal.
- 58 Case of Renal Calculus. J. M. Elder, Montreal.
- 59 Complicating Micro-organisms and their Relation to Hemoptysis in Pulmonary Tuberculosis. A. H. Caulfield, and J. C. Beatty, Gravenhurst, Canada.

Old Dominion Journal of Medicine and Surgery, Richmond

November

- 60 Use and Abuse of Rest in Therapeutics. R. C. Cabot, Boston.
- 61 Four Years in Tuberculosis Dispensary Work. B. M. Randolph, Washington, D. C.
- 62 Ocular Symptoms of Diseases of the Accessory Sinuses. W. C. Posey, Philadelphia.
- 63 Cases of Pellagra. H. R. Slack, and W. R. McCall, La Grange, Ga.
- 64 *Pellagra in Virginia. D. Vanderhoof, Richmond.

64. Abstracted in THE JOURNAL, Oct. 24, 1909, p. 1421.

St. Louis Medical Review

November

- 65 *Advantage of Combined Intraperitoneal and Extraperitoneal Ureterolithotomy for Stone in the Lower Ureter. E. Jonas, St. Louis.
- 66 Recollections of a Loudon Medical School Thirty Years Ago. A. B. Clarke, N. Devon, Eng.
- 67 Killing Our Own Business. P. C. Palmer, Kansas City, Mo.

65. Abstracted in THE JOURNAL, Oct. 2, 1909, p. 1121.

Journal Arkansas Medical Society, Little Rock

November

- 68 *Postoperative Ileus, Gastroduodenal in Type. A. Watkins, Little Rock.
- 69 Tetanus. G. A. Warren, Black Rock.
- 70 Office Treatment of the More Common Diseases of the Rectum. C. P. Meriweather, Little Rock.
- 71 Control Work in Bovine Tuberculosis. W. Lentou, Little Rock.

68. Postoperative Ileus.—Results, says Watkins, depend on an early diagnosis, with prompt treatment. All food and drink must be withdrawn from the stomach. The stomach tube is to be used early and often, the foot of the bed raised and the patient turned on the side, preferably the left, or on the abdomen; this maneuver should be preceded by gastric lavage. Gentle massage of the abdomen from below upward is beneficial, as are turpentine stupes. Rectal saline injections and nutrient enemata are strongly indicated. Eserin salicylate, gr. 1/50 to 1/100, hypodermically, offers the strongest medicinal stimulant to peristalsis. When a surgical patient continues to vomit beyond the usual postanesthetic period, inspect the abdomen immediately, removing whatever dressings are necessary. The motif of successful treatment is frequent antiseptic gavage, but the keynote is early diagnosis and prompt measures for relief.

Wisconsin Medical Journal, Milwaukee

November

- 72 Clinical Importance of the Sacroiliac Joint. E. Evans, La Crosse.
- 73 *Experimental Study of Cancer. C. H. Buuting, Madison.
- 74 *An Aspect of Cerebral Surgery, Based on the Therapeutic Significance of Acute and Chronic Intracranial Hypertension. J. L. Yates, Milwaukee.

75 *Recent Epidemic of Spinal Paralysis in Wisconsin. J. Manning, Eau Claire.

76 Pathology of Spinal Paralysis. D. Hopkinson, Milwaukee.

77 Treatment of Syphilis. O. H. Forster, Milwaukee.

73, 74, 75. Abstracted in THE JOURNAL, Aug. 21, 1909, pp. 647, 648.

American Journal of Urology, New York

November

78 *Advantage of the Combined Intraperitoneal and Extraperitoneal Ureterolithotomy for Stones in the Lower Ureter. E. Jonas, St. Louis.

80 Relative Advantages of Catheterization and Operation in Treatment of Prostatic Enlargement. H. T. Herring, London, Eng.

78. Abstracted in THE JOURNAL, Oct. 2, 1909, p. 1121; also published in *St. Louis Medical Review*, November, 1909.

The Laryngoscope, St. Louis

November

81 Oculo-Orbital, Intracranial and Cerebral Complications of Diseases of the Nasal Accessory Sinuses. A. Onodi, Budapest.

82 *Present Status of Surgical Treatment of Chronic Suppurative Disease of the Nasal and of the Aural Cellular Spaces. J. N. Reik, Baltimore.

83 Facial Paralysis Due to Aural Lesions. D. J. G. Wishart, Toronto.

84 *Complicated Case of Acute Mastoiditis, of Unusually Rapid Progress Resulting Fatally; Autopsy. A. S. Kaufman, Philadelphia.

85 An Instrument Which Facilitates the Removal of the External Nasal Wall. C. W. Bishop, Minneapolis, Minn.

86 Primary Tuberculosis of the Fauces, Posterior Pharynx and Palatal and Lingual Tonsils, Cured by Tuberculin Injection. J. R. Winslow, Baltimore.

87 The Pars Sigmoidalis Sinus Lateralis and Its Relation to Processus Mastoideus Ossis Temporalis. H. J. H. Hoove, Des Moines, Iowa.

88 Direct Laryngoscopy in Diagnosis and Treatment of Papillomata of the Larynx. R. H. Johnston, Baltimore.

89 Chronic Antral Suppuration. W. R. Butt, Philadelphia.

90 Treatment of Cicatricial Stenosis of the Larynx by the Methods of O'Dwyer and Rogers. D. B. Delavan, New York.

91 Present Status of Oral Surgery. H. G. Langworthy, Dubuque, Iowa.

82. Diseases of the Nasal Accessory Sinuses.—Onodi says that there can be no doubt of the causal relation between diseases of the posterior accessory cavities and disturbances of vision, yet we must emphasize the fact that both conditions may occur simultaneously, accidentally but independently. Ophthalmologists have cited numerous causes for neuritis and atrophy of the optic nerve. Neuritis retrobulbaris may also recover spontaneously after simple treatment or without therapeutic measures. There are cases in which the unfavorable progress of the optic neuritis was unchecked by operative measures. Finally there are cases of tumors of the nasal cavity, empyema of the posterior accessory cavities, and extensive bone destruction in which vision remains undisturbed. No disturbances of vision may occur with extensive pathologic processes, while, on the other hand, slight disturbances in the nasal cavity may cause disturbances of vision. Onodi emphasizes the fact that disturbances of vision or blindness arising from other causes may be independent of empyema of the posterior accessory sinuses. The simultaneous but accidental affection of these areas may lead to error, and may be detrimental to a clear understanding and development of this interesting question.

84. Acute Mastoiditis.—The case reported by Kaufman was of interest on account of the great rapidity with which not only the surrounding structures were involved, but also organs in other parts of the body, by metastasis. The points of particular interest in the postmortem examination are as follows: On the superior surface of the left ventricle of the heart there was a beginning milk spot. The left lung showed crepitus throughout; on the lower lobe, along the middle of the fissure, was a hard, indurated area surrounded by hemorrhagic infiltration. The center of this mass was necrotic. There was an area similar to this on the base of the upper lobe. The right lung showed scattered pyemic emboli and the peribronchial lymph nodes were enlarged. The spleen was enlarged, dark red in color, and showed hyperplasia. The cortices of the kidneys were bulging. The liver was large and mottled and the under surface showed a small abscess 5 cm. in diameter. On section, the liver showed fatty infiltration. Peyer's patches were swollen. The meninges were slightly edematous, and there was slight injection of the meningeal

vessels. The right temporosphenoidal lobe, posteriorly and inferiorly, contained a circumscribed ovoidal cavity which extended into the underlying brain substance for a distance of 2 cm. The bottom of the cavity was composed of grayish-pink, necrotic, granular substance. The margin of the cavity was composed of similar tissue. The remaining brain substance contained nothing unusual. The lateral sinus of the right side was obliterated at a point where it was exposed through the mastoid process. This opening perforated the petrous portion of the temporal bone, making an opening 8 cm. in diameter and connecting with the cavity described in the brain. The sinus as it passed through the base of the skull contained a purulent grayish-white substance.

Alabama Medical Journal, Birmingham

November

- 92 Ophthalmic Memoranda. S. L. Ledbetter, Birmingham.
- 93 Accessory Sinus Disease. E. W. Rucker, Birmingham.
- 94 The Anesthetic Index. J. R. Dawson, Birmingham.
- 95 One Hundred and Thirty-Two Deliveries at the Salvation Army Rescue Home. R. H. Coston, Birmingham.
- 96 Etiology and Pathology of Pancreatic Disease. H. E. Mitchell, Birmingham.
- 97 Indications for Operation in Gall-Stone Disease. E. M. Robinson, Birmingham.

Iowa Medical Journal, Des Moines

November

- 98 Therapeutics a *Sine Qua Non* in Surgery. E. E. Munger, Spencer.
- 99 *The Old and the New Medicine. G. E. Crawford, Cedar Rapids.
- 100 Observations Concerning Tuberculin. W. H. Bickley, Waterloo.
- 101 Vaccine Therapy in General Practice. H. M. Bruce, Cedar Falls.

99. Abstracted in THE JOURNAL, July 10, 1909, p. 139.

Southern Medical Journal, Nashville

November

- 102 *Medical Education—Past, Present, Future. J. A. Wither-
spoon, Nashville, Tenn.
- 103 The Training of the Gynecologist. H. A. Royster, Raleigh,
N. C.
- 104 Treatment of Puerperal Eclampsia by Cesarean Section. D. L.
Maguire, Charleston, S. C.
- 105 Hysterectomy. R. A. Barr, Nashville.
- 106 Treatment of Peritoneal Infections in the Light of the Pro-
tective Nature of Peritonitis. C. W. Barrett, Chicago.
- 107 Our Medical Interests. I. Dyer, New Orleans.
- 108 Extraction of Cataract in the Capsule. H. Wood, Nashville.
- 109 Tuberculin Treatment of Tuberculosis. O. N. Bryan, Nashville.
- 110 *Case of Typhoid. T. E. Fuller, Texarkana, Ark.
- 111 Indications for Treatment of Movable Kidney. J. A. Gaines,
Nashville.
- 112 The Impress of English Thought on Medicine. F. A. Jones,
Memphis, Tenn.
- 113 Pretabetic Laryngeal Spasm. H. H. Martin, Savannah, Ga.
- 114 *Prophylaxis of Pellagra. C. H. Lavinder, U. S. P. H. and M.-
H. S.
- 115 Hookworm Disease in its Relation to the Negro. C. W. Stiles,
U. S. P. H. and M.-H. S.

102. Abstracted in THE JOURNAL, Nov. 13, 1909, p. 1674, also published in *The Lancet-Clinic*, Oct. 29, 1909, and the *Louisville Monthly Journal of Medicine and Surgery*, November, 1909.

110. **Typhoid.**—Otitis media as a complication of typhoid has occurred in 2.5 per cent. of the collected cases. A male, aged 21, presented the picture of a typical case of typhoid of average severity, temperature ranging from 101 to 104 F. The case was progressing nicely, and the temperature gradually falling when on January 4, the patient complained of pain in his left ear, and on the same day a purulent discharge appeared. On January 13, the other ear became involved. The temperature up to this time had been but little influenced by the complication. On January 17, considerable tenderness over the mastoids was noticed. Pain became severe and continuous and the temperature rose to 105. On January 22, the condition continued to grow worse, so both mastoids were drained. The patient reacted nicely; the pain and tenderness subsided and good drainage was maintained. For several days the patient improved, and it seemed that he would recover. After this, however, the temperature rose and the patient sank into a typical typhoid state, with low muttering delirium, coma-vigil and all the severe nervous symptoms incident to a profound toxemia, from which he died February 2. At the autopsy, healthy granulations lined the mastoid; no pus was present.

114. Abstracted in THE JOURNAL, Nov. 20, 1909, p. 1770.

Journal of Medical Research, Boston

October

- 116 *Lesions of the Skin and the Tumor Formations in Xeroderma
Pigmentosum. W. T. Councilman and G. B. Magrath,
Boston.
- 117 Surgical Treatment of X-Ray Carcinoma and Other Severe
X-Ray Lesions. C. A. Porter, Boston.
- 118 *Pathologic Histology of Chronic X-Ray Dermatitis and Early
X-Ray Carcinoma. S. B. Wolbach, Albany, N. Y.
- 119 Chronic Pancreatitis with Tumor-like Nodules in the Cat.
T. Ordway, Boston.
- 120 *Tumors in the Common Fowl. E. E. Tyzzer, and T. Ordway,
Boston.
- 121 *Spontaneous Tumors in Mice with Observations on the
Influence of Heredity on the Frequency of their Occurrence.
E. E. Tyzzer, Boston.
- 122 Inheritance in Mice with Reference to Their Susceptibility to
Transplanted Tumors. E. E. Tyzzer, Boston.
- 123 *Nature of the Reaction of Tissues of Susceptible and Non-
Susceptible Mice to an Incurable Tumor. A. N. Burgess,
Boston.
- 124 *Effect of Trypsin on Cancer and on Germ Cells in Mice. S.
Rushmore, Boston.

116. **Lesions of the Skin.**—Two fatal cases were studied; in the skin there was atrophy of the corium and its appendages, and of cells of the epidermis combined with an excessive formation of the horny layer and focal pigmentation. There were horny excrescences and tumor-like masses of epithelium in places, but the tumors did not penetrate below the corium and there were no metastases either in lymph nodes or internally. The pigment was intracellular. Sunlight would most probably be the direct etiologic agent.

118. **Histology of Chronic X-Ray Carcinoma Lesions.**—The most important fact in Wolbach's study is that after sufficient injury has been done complete repair does not take place. This failure is ascribed chiefly to changes in the blood supply. The transition of this dermatitis into carcinoma is explainable, to some extent at least, on the basis of degenerative changes in the blood vessels. Epithelial proliferation is found constantly over degenerative foci in the corium and the evidence points strongly to the epidermis as the least susceptible of the tissues of the skin to direct injury by the x-ray. The latent period of months or years between the production of the lesion and its transition into carcinoma is marked by changes in the connective tissue, presumably also changes in the nutrition of the cells, and constant proliferative processes on the part of the epidermis. The growing of the epidermis into areas of dense collagenous material points to increased proliferative power, and the hypothesis is suggested that a slow increase in power of growth takes place, finally resulting in the epithelial cells obtaining their sustenance at the expense of other living tissues.

120. **Tumors in the Common Fowl.**—Inoculation of lymphoma tissue from two cases in the fowl into normal hens gave negative results, but inoculation of a bit of one of these tumors into the pectoral muscle of the hen in which the tumor arose resulted in the growth of a tumor at the site of the inoculation.

121. **Spontaneous Tumors in Mice.**—In mice primary tumors of the lung are by far the most frequent. There are two types, the papillary cystadenoma and the epidermoid carcinoma. The frequency of tumors in three families descended from three females with tumors indicates that the development of tumor is influenced by certain invisible inherited characters or qualities. Offspring of parents one of which had a primary tumor showed a greater frequency of tumor than offspring of parents neither of which had a tumor.

123. **Reaction of the Tissues of Mice.**—In the non-susceptible mice there is developed an active immunity, the mechanism of which is apparently an inflammatory reaction which interferes with the nutrition of the tumor.

124. **Trypsin in Cancer.**—Trypsin had no appreciable effect in causing cancer in mice to disappear or in inhibiting the growth and function of the germ cells.

Providence Medical Journal

November

- 125 Phobias, or the Fear of Disease. J. B. Huber, New York.
- 126 Interruption of Pregnancy. H. G. Partridge, Providence.
- 127 Value of the X-Ray in the Treatment of Psoriasis. D. L.
Richardson, Providence.

Journal of Biological Chemistry, Baltimore

November

- 128 *The Purins and Purin Metabolism of the Human Fetus and Placenta. H. G. Wells and H. J. Corper, Chicago.
 129 Soluble Chitin from *Limulus Polyphemus* and its Peculiar Osmotic Behavior. C. L. Alsberg and C. A. Hedblom, Boston.
 130 *Study of the Intestinal Bacteria. A. I. Kendall, New York.
 131 Chemistry of Bacterial Cellular Proteins. S. M. Wheeler, Ann Arbor.

128. **Purin Metabolism of Human Fetus and Placenta.**—The investigations of Mendel and Mitchell have shown that the enzymes involved in purin metabolism in the embryo pig, appear one at a time at various periods of antenatal or early postnatal life. Wells and Corper have studied the enzymes of the human fetus and find that several enzymes which accomplish purin metabolism in the human organism are developed independently as to time during the course of intrauterine life, the fetus at term being equipped with the same enzymes as the adult. The enzymes which form hypoxanthin and xanthin from guanine and adenine are formed first and later xantho-oxidase is formed which converts hypoxanthin and xanthin into uric acid. The uricolytic enzyme which is capable of destroying uric acid by oxidation is not found in human tissue, according to Wells. He concludes that the placenta does not aid in the purin metabolism of the fetus.

130. **Study of the Intestinal Bacteria.**—Kendall finds that a change from protein to carbohydrate diet is followed by a marked change in the character of the bacteria present in the feces. Carbohydrate diet favors the growth of acidophilic bacteria while a protein diet allows the proteolytic organisms to establish themselves and become predominant. The prevalence of the latter class of organisms in the intestines is accompanied by the appearance of phenolic bodies, especially indican, in the urine. He proposes to use a carbohydrate medium like an acid dextrose broth for the culture of the acidophilic bacteria, so that they may be recognized in a mixture in which proteolytic organisms predominate. The latter do not grow well on the carbohydrate medium and hence cannot overwhelm organisms of the acidophilic type. Conversely milk and gelatin can be used to favor the growth of proteolytic organisms and thus enable a separation of them when a large number of acidophilic organisms are present. By inoculating various media with the feces, it is possible to form a judgment as to the character of the predominating organisms in the intestinal tract. If proteolytic organisms are present, the milk fermentation tubes will become the seat of great bacterial activity, the gelatin is liquefied and milk is markedly peptonized. The use of these selective media makes it possible to judge as to the completeness of the bacterial response to the nature of the diet. For example, if the experimental animal is on a carbohydrate regimen, the presence or absence of growth in protein media will indicate the presence or absence of proteolytic bacteria, since the acidophilic organisms do not grow well in these media and cannot, therefore, inhibit the growth of these organisms. Conversely, with protein diet, the presence or absence of acidophiles may be determined by inoculating the mixed fecal flora into acid dextrose broth, which is unfavorable for the development of the proteolytic types. These determinations may be made roughly quantitative for the different types by inoculating definite amounts of the mixed fecal flora into appropriate media.

Journal of Advanced Therapeutics, New York

November

- 132 The Electric Conception of Matter. H. McIntosh, Boston.
 133 Treatment of Neurasthenia. W. L. Savage, New York.
 134 Standardization of High Potential Electric Currents (continued). E. C. Titus, New York.
 135 Report of Committee on Induction Coils and Alternators. F. A. Davis, Boston.

Journal South Carolina Medical Association, Florence

November

- 136 *Pellagra. S. M. Sandwith, London, Eng.
 137 *Complement Fixation with Lecithin as Antigen in Pellagra. C. C. Bass, New Orleans.
 138 *Pathology of Pellagra. H. F. Harris, Atlanta, Ga.
 139 Pellagra—Its Etiology, Pathology, Diagnosis and Treatment. C. W. G. Roher, Baltimore.
 140 *Transfusion in Pellagra. H. C. Cole and G. J. Winthrop, Mobile, Ala.
 141 Pellagra in Yucatan. G. F. Gaumer, Izamal, Yucatan, Mexico.
 142 Symptomatology of Pellagra. J. J. Watson, Columbia.
 143 *Is Pellagra Communicable or Hereditary? H. H. Griffin, Columbia.
 144 Theory of the Etiology of Pellagra and the Use of Junod's Blood Derivations. G. Weber, Washington, D. C.

136, 137, 138, 140, 142, 143. Abstracted in THE JOURNAL, Nov. 13, 1909, pp. 1659, 1663, 1665, 1666, 1668, 1669.

Journal of the Kansas Medical Society, Kansas City

November

- 145 Scar Tissue in the Upper Respiratory Tract. W. E. MeVey, Topeka.
 146 Mental Derangements after Infectious Disease. H. L. Chambers, Lawrence.
 147 Etiologic Factors Producing the Nonsuppurative or Dry Catarrh of Middle Ear. W. H. Graves, Pittsburg.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

The Lancet, London

December 4

- 1 Looking Back. Sir H. Morris.
 2 *Surgical Treatment of Puerperal Pyemia. E. Michels.
 3 *Treatment of Nevi and Other Cutaneous Lesions by Electrolysis, Caution and Refrigeration. E. R. Morton.
 4 *The Influenza Bacillus Cause of an Epidemic of Bronchopneumonia. T. S. Wilson and J. Miller.
 5 External Anthrax. R. Herley.
 6 *Local Sepsis as a Factor in Rheumatism and Gout. C. W. Wirgman and H. W. Turner.
 7 The Medical Profession and the Poor-Law Medical Service. Major Greenwood.

2. **Surgical Treatment of Puerperal Pyemia.**—In three cases of severe puerperal pyemia Michels tied the left ovarian vein, preventing in this way the further propagation of the septic process and obtained a rapid and complete recovery in two apparently hopeless cases. One patient died.

3. **Treatment of Nevi.**—Morton favors the carbon dioxide crayon in the treatment of nevus. He says that to say that solid carbon dioxide is merely a caustic, as some have asserted, is not quite correct. All caustics, strictly so-called, destroy tissue immediately—e. g., the actual cautery and various chemical substances, but carbon dioxide does not do so. After the part has thawed out, the whole of the treated area is still living, as evidenced by the intense reaction which sets in. Local death may occur later, owing to inflammatory stasis; but this is the result of a vital reaction, and not an immediate result of the application of the irritating substance.

4. **Influenza Bacillus Cause of Bronchopneumonia.**—Pathologically, the chief points of interest in the cases reported by Wilson and Miller are the epidemic nature of the disease, and the occurrence of the influenza bacillus as the only organism present in the lung in one of the cases. From the occurrence of the cases at one and the same time, and from the fact that cultures on ordinary media failed to show any growth in the other fatal case, one may fairly conclude that the causal germ in all the other cases was the influenza bacillus. The occurrence of this germ in bronchopneumonia has long been recognized, and the fact that it is not infrequently the only organism present in the lungs is emphasized by Fraenkel. The main point of interest in the present instance is, therefore, the occurrence of the influenza bacillus as a cause of a number of cases of bronchopneumonia arising so obviously in connection with one another as to warrant the term epidemic.

6. **Local Sepsis in Rheumatism and Gout.**—Wirgman and Turner report 42 cases of rheumatism and gout in the majority of which they believe pyorrhea to have been the direct cause because a cure of the local condition was promptly followed by a subsidence of the constitutional symptoms.

British Medical Journal, London

December 4

- 8 Modern University Ideals. G. A. Gibson.
 9 *Greek Medicine in Rome. Sir T. C. Allbutt.
 10 *Some Uses of Opium. E. Smith.
 11 The Pituitary Body. W. B. Bell.
 12 Kala-Azar in the Far East. P. W. Bassett-Smith.

9. Also published in *The Lancet*, Nov. 27, 1909.

10. **Some Uses of Opium.**—It is often forgotten, says Smith, that opium has stimulating as well as sedative properties, and that as a general stimulant to the nerves, the brain, and all the organs of life its value even for this quality alone entitles it to a high place in the esteem of the practical physician. Opium and morphine are not quite the same in this respect.

Of the two it is in the former that the quality is most active. The stimulating effect is best brought out by the use of small doses given at convenient intervals, for in a full dose the sedative influence of the drug is so decided that any primary stimulating effect passes off too quickly to be noticeable. This stimulating action is well seen in cases of indolent ulcers of the skin and mucous membrane. Such sores which had resisted previous treatment will be found to show a surprising improvement after only a few doses of the remedy. The pale, unhealthy looking surface becomes red and is soon covered with closely-set granulations, while its secretion changes from a thin serous fluid to healthy-looking pus. This invigorating influence can be turned to account in the case of obstinate sores occurring in cachectic children. The ulcerative stomatitis which is so common among the ill-fed and badly-nourished children of the very poor often shows little disposition to heal even when treatment is reinforced by a generous diet and healthy surroundings. When repair is thus at a standstill, a few drops (2 to 5) of laudanum, given twice a day, quickly induce a welcome change in the local conditions and start an improvement which goes on smoothly to a cure.

The nervous trepidation called "stage fright" may be forestalled and disarmed by a small dose, five or six drops, of laudanum taken half an hour or so before the trial is to begin. Again, the nervous trembling and depression which may be induced by shock and are apt to follow a surgical operation, are amenable to the same influence. The above dose, repeated, if necessary, several times, at intervals of half an hour, is usually followed by tranquility and sleep. The same treatment will go far to relieve the distress of dying persons. Under the influence of a few drops of the tincture the painful uneasiness abates, and is succeeded by a period of restful calm, which may be maintained by judicious repetitions of the remedy until the close. Again, the profound mental depression which sometimes afflicts elderly people, making their lives a burden to themselves and to their relatives, may be alleviated by the same means. In this, as in the preceding cases, the drug acts as a stimulant and something more; it quiets the nervous irritability and gives a welcome spur to jaded nerves.

Medical Press and Circular, London

November 10

- 13 Suppuration in the Accessory Nasal Sinuses. J. Donelan.
- 14 Darwinism and Medicine. J. A. Lindsay.
- 15 Natural History and Diagnosis of Cirrhosis of the Liver. W. B. Warrington.
- 16 Arteriosclerosis and Allied Conditions. S. H. Hall.

November 17

- 17 Vaccine Treatment in General Practice. R. J. Rowlette.
- 18 Darwinism and Medicine (continued). J. A. Lindsay.
- 19 Study and Treatment of Acute Peritonitis. Professor Federman.
- 20 The Influence of the Tissues on Disease. J. Ritchie.
- 21 *Fracture of the Axis Vertebra, Reduction; Recovery. A. Bruce and D. Wallace.

21. **Fracture of Axis Vertebra.**—The patient, a ship's engineer, was stooping oiling his engine when someone called his name, causing him to turn his head sharply. He was conscious of a sudden pain in his neck, and felt a lump just below the occiput. He found that he had lost the power of moving his head from side to side, or anteroposteriorly, with the exception of a slight amount of forward movement. Apart from this, he had comparatively few symptoms and was able to continue his voyage. He was seen by a medical man in Helsingfors, who diagnosed the condition as rheumatism, and on his return to Edinburgh, in four weeks' time, he was seen by his own physician, who found in addition to the fixation of the head and a projection at the back of the neck, some evidences of pressure on the cord in the shape of pains in the arms and legs, and occipital neuralgia. Skiagrams were taken which showed that the atlas vertebra was dislocated forward, and probably that the odontoid process was fractured. As no urgent symptoms were present, it was thought inadvisable to reduce the deformity.

Five months later as he was sitting on a chair, one of his children snatched a shawl which was around his neck and gave him a sudden jerk. He again had severe pain in the neck, which was quickly followed by signs of pressure on the cord, weakness of the arms, difficulty in walking, and reten-

tion of urine. As these symptoms increased in severity, he was sent to the hospital. On admission he was found to be completely paralyzed in all four extremities, with the exception of slight power of moving the fingers of the left hand. His diaphragm was also paralyzed, the abdomen falling in with inspiration, and his respirations, which were extremely shallow, were carried on almost entirely by the aid of the extraordinary muscle of respiration. His superficial reflexes (abdominal and cremasteric) were abolished; the tendon jerks of both arms and legs were exaggerated; there was a double Babinski, double ankle clonus, and a slight jaw-jerk.

As the patient's condition was extremely critical, it was decided to attempt reduction. A towel was passed under the neck over the projecting axis vertebra and was held by an assistant, while Wallace made gentle traction on the cranium. After a little manipulation the bones were felt to come into a more normal position with a slightly grating sound and immediately thereafter the diaphragm was noticed to move freely. Respiration was soon reestablished, and in half an hour or so the patient had regained the power of moving his limbs. His head was kept steady between sand-bags, one being also placed under the axis vertebra so as to allow the backward drag of the head to keep the bones in position. The man was then put up in a poro-plastic splint so as to immobilize the head absolutely. After reduction he had an attack of congestion of the lungs lasting for a few days, but except for that he improved steadily and is now almost perfectly well though he still wears a fixation apparatus.

Clinical Journal, London

November 17

- 22 The Period of Repose in Acute Appendicitis. C. B. Lockwood.
- 23 Diagnosis of Uterine Hemorrhage. H. MacNaughton-Jones.

Journal of Tropical Medicine and Hygiene, London

November 15

- 24 Ankylostomiasis in the Malay States. E. N. Graham.
- 25 Surgery of Injuries from Wild Beasts. R. Howard.
- 26 Use of Quinin Alkaloid. R. Howard.

Journal of Obstetrics and Gynecology of the British Empire, London

November

- 27 *Statics of the Pelvic Viscera: Their Relationship to the Operative Treatment of Uterovaginal Prolapse. G. A. Casalis.
- 28 *Anatomy of Tubal Convolutions and the Mechanism of Tubal Occlusion. J. Young.
- 29 Puerperal Septicemia with Double Septic Pneumonia, with Effusion—Death Thirty-four Days After Confinement. F. A. Simpson.

27. **Statics of Pelvic Viscera.**—Casalis summarizes his views as follows:

1. The pelvic viscera are both suspended and supported organs.
2. The pelvic floor forms one solid mass separating the pelvic cavity from the exterior, just as the anterior abdominal wall separates the abdominal cavity from the exterior.
3. It includes part of the viscera as well as the so-called ligaments of the uterus, of which they are an integral part.
4. Relaxation of part or the whole of this fibromuscular, cellular, vascular and peritoneal diaphragm results in the production of the different forms of pelvic displacements.
5. Relaxation of the upper pelvic segment leads to retrodeviations and partial uterine descent; that of the lower to cystocele, colpocele and rectocele; relaxation of the upper and lower segments to classical prolapse. The intensification of the combined conditions is productive of hernia of the pelvic contents or total prolapse.
6. Relaxation of the upper pelvic segment is curable by the so-called round ligament operations, of which Alexander's and Simpson's are the best types. Descensus uteri, especially in middle-aged women, demands ventrofixation combined with plastic operations on the vagina and perineum.
7. Prolapse should always be operated on. Classical prolapse should be operated on by a combined anterior and posterior colpo-perineorrhaphy, with union of the paravaginal tissues in the middle line, and a myorrhaphy of the levator ani and frequently also in addition a ventrofixation; cystocele and rectocele by the combined perineal and vaginal plastic operations.
8. Hernia of the pelvic contents justifies all these preceding operations, but may best be treated by vaginal or abdominal hysterectomy with suture in the middle line, and if possible to the abdominal incision of the over-stretched perivascular sheaths. In extreme cases, the interposition operation may be tried, or when everything else fails P. Müller's excision of the whole vaginal canal.

28. **Anatomy of Tubal Convolutions.**—It is deemed probable by Young that the recession of the fimbriae in cases of hydrosalpinx and tubal pregnancy is dependent on, and occurs during, distention of the ampullary portion of the tube. In tubal gestation the tube becomes distended to accommodate the growing ovum situated in its wall, or the products of abortion—ovum and blood—which escape into the tube when

as the result of internal rupture. In hydrosalpinx the distention is due to the gradual accumulation of the fluid contents of the tube. The formation of a hydrosalpinx and, in all probability, of a hematosalpinx in the outer portion of the tube can occur only after the establishment of an obstruction of the abdominal opening. There must be, also, in the case at any rate of the hydrosalpinx, an obstruction on the inner side. This, in view of the more viscid nature of the blood and the fact, moreover, that it clots soon after being poured out, is probably not a necessity for the production of a hematosalpinx. As the consequence of a salpingitis or the congestion associated with tubal pregnancy, the fimbriae become swollen and, as expansion in an outward direction is prevented by this ring, they become pressed together; this leads to a functional occlusion of the opening. The tension to which the tube is subjected by the increasing contents leads to a stretching and thinning out of the tubal walls. The rigidity of the peritoneal ring tends to prevent the ostium from becoming opened out. In some cases, however, the ring, also, gives way, and the relief of the obstruction at the outer end thus produced may result in an escape of contents. The tube, then, probably more or less regains its normal diameters and there may be present only a slight, if any, alteration in the fimbriae. If the ring holds out, a different sequence of events probably ensues.

The mucous membrane of the tube and the inner coat of muscle, are intimately adherent the one to the other, and together may be considered to form a well-supported tube lying within a loosely fitting and distensible sheath formed by the outer muscle coat and peritoneum. The inner "tube" is strengthened on its internal aspect by the longitudinal mucous ridges which enable it to withstand, probably with a considerable measure of success, any longitudinal strain. For this reason, the distending force acting from within will lead to a stretching of the inner portion of the tube wall more in the transverse than in the longitudinal direction. This disproportion between the degrees of expansion of the tube in the different diameters is, however, to a certain extent compensated for by the fact that, with a taut peritoneal ring, the loose fit between the two parts of the tube wall enables the mucosa and inner stratum of muscle to be drawn within the outer muscle layer and peritoneum to take part in the formation of the wall of the tube sac. The same process in all likelihood occurs to some extent even with a giving way of the peritoneal ring, but as this means a certain degree of inward movement of the outer portion of the tube wall the recession of the fimbriae is obscured. It would seem probable that after the disappearance of the fimbriae within the tube lumen, the occlusion of the ostium is completed either by a fusion of the fimbriae with one another or by a union of the margins of the "peritoneal ring."

British Journal of Children's Diseases, London

October

- 30 Congenital Heart Affections, Especially in Relation to the Diagnosis of the Various Malformations (continued). G. Carpenter.
 - 31 *Diagnosis of Chronic Pulmonary Tuberculosis in School Children. J. Allan.
 - 32 Genetous Type of Imbecility with Single Ptosis. J. B. Barrett.
 - 33 Epidemic Cerebrospinal Meningitis in Paris. J. D. Rolleston.
- November
- 34 Chronic Pemphigus: Notes of Bacteriologic Findings. A. J. Cleveland and G. P. C. Claridge.
 - 35 Etiology of Congenital Word Blindness; An Example. W. J. Rutherford.
 - 36 Delayed Chloroform Poisoning. J. B. Barrett.
 - 37 The Cremasteric Reflex. E. M. Corner.
 - 38 Spontaneous Intracystic hemorrhage into a Cystic Hygroma of the Neck in an Infant. C. H. Whiteford.
 - 39 Anterior Poliomyelitis Limited to Lower Dorsal Region, and Giving as Its Most Prominent Symptom Paralysis of the Abdominal Muscles on Both Sides. C. P. Lapage.

31. **Chronic Pulmonary Tuberculosis.**—During a term of fourteen months' residence at the Royal Alexander Hospital for Sick Children, Brighton, 954 children came under Allan's notice as in-patients, and of these about 600 were between the ages of 4 and 12. Of that number 2 cases were diagnosed as chronic phthisis, while 6 cases were considered doubtful. As regards the out-patients, of about 3,000 children between the ages of 4 and 14 treated during that period only 4 had

chronic phthisis, while about 20 were under observation as doubtful cases.

Australasian Medical Gazette, Sydney

October

- 40 Gastro-Staxis. G. L. O'Neill and R. S. Skirving.
- 41 Syphilis in the Ear, Nose and Throat. W. N. Robertson.
- 42 *Diabetes Insipidus. J. C. Verco.
- 43 Diagnosis of Diphtheria. A. J. H. Saw.
- 44 Primary Thrombosis of Pulmonary Arteries: Sudden Death in the Puerperium. H. G. Tymms.
- 45 Aspects of Radiotherapy in Relation to Bacterial Diseases of the Skin. A. A. Doyle.
- 46 Excision of the Scapula. R. H. Marten.
- 47 Penetrating Wound of the Orbit and Brain. C. MacLaurin.
- 48 Congenital Cystic Elephantiasis. W. W. Giblin.
- 49 Muckadilla for Obstinate Rheumatism. E. W. K. Scott.
- 50 Tuberculous Peritonitis. E. H. Binney.

42. **Diabetes Insipidus.**—Verco's case of diabetes insipidus was under observation for 12½ years. The two drugs used consecutively—tincture of valerian, increased to 2 drams four times a day, and codein, increased to a grain four times a day—in a lad 13 years of age, had no appreciable influence over his polyuria. The latter seemed to have a prejudicial effect on his general health, and reduced his weight. The disease would seem not to have been congenital, but to have arisen when he was only 3½ years old, and to have followed an attack of measles, complicated by laryngitis and otitis media, which left him delicate and with a suppurating middle ear. He remained diminutive in stature (his twin brother was nearly 6 feet high and he was only 5 feet 4 inches) and with a high pitched feminine voice, which may be attributed to his complaint possibly; but this did not keep him in a state of infantilism, for his axillary, pubic and facial hair were normally developed; nor did it interfere with his fat production, for when seen after it had lasted 21 years he weighed 136½ pounds, while five years before that, when about 21 years of age, he weighed 122 pounds, and when 13 years old he weighed 95½ pounds. His plumpness, therefore, kept pace with his age, and was not restricted. The necessity for holding large quantities of water gradually led to a greatly increased capacity of his bladder, and when first seen, at 13 years of age, it reached to his umbilicus and contained 45 ounces by measurement, and that was only incidental, and not an experiment to determine how much it could possibly contain.

48. **Congenital Cystic Elephantiasis.**—The condition of the fetus in Giblin's case was so unusual as to form a pathologic puzzle. Normal in all parts save right arm, thorax, left upper arm and neck, one found these so distorted by serous pouches that they were almost swollen beyond recognition. The right hand was the same size as the head, viz.: 11½ inches in circumference, and could only be recognized as such by being divided by sulci into five digitations. The thorax was 16 inches in circumference, and the mammary region hung in four pouches. The skin of the affected parts was so distended as to be almost translucent, and the epidermis easily peeled and allowed serum to flow.

Bulletin de l'Académie de Médecine, Paris

November 9, LXXIII, No. 36, pp. 259-282

- 51 *Conical Uterine Cervix. (Traitement chirurgical d'une cause très fréquente de dysménorrhée et de stérilité.) S. Pozzi.
- November 16, No. 37, pp. 283-318
- 52 *False Cancers and Inflammatory Tumors in the Abdomen. (Faux cancers et tumeurs inflammatoires du ventre.) Le Dentu.
 - 53 *Prophylaxis of Typhoid Fever. E. Delorme.
- November 23, pp. 319-334
- 54 *Diarrheic Gastroenteritis in Infants. (Recherches sur les diarrhées des nourrissons.) E. Metchnikoff.

51. **Conical Cervix as Cause of Dysmenorrhea and Sterility.**—Pozzi refers to an infantile type of the internal genitalia consisting essentially in the conical shape of the cervix with extremely small lumen and exaggerated anteflexion of the uterus, all of which may be encountered in women otherwise well developed, and without atrophy of the uterus, although it is more common with other signs of infantilism. Dysmenorrhea is the rule and also sterility. The kinking of the cervix causes stagnation of mucus with consequent inflammation, obstructing the lumen still more. He cuts into the lip of the cervix on each side and then excises a small triangular piece from the center of each of the four raw surfaces made by the

two incisions. He then sutures the mucosa of the lumen to the mucosa on the outer aspect of the cervix, thus suturing the four raw surfaces and leaving the lumen of the cervix widely gaping. In his experience with 54 cases in which he has applied this technic, 14 of the patients have conceived since, and he never has noticed any interference with delivery from the rigidity of the cervix. The operation even seems to promote the further development of the infantile uterus. The only contraindications are when the genitalia are of extreme infantile type and when there are concomitant infectious processes in the adnexa. He calls the operation *stomatoplastic par évidement commissural*.

52. False Cancers in the Intestine.—Le Dentu reports a case in which a tumor from inflammation alone presented the features of a cancer of the transverse colon, apparently spreading to the spine. The absence of continuous pain and of acute or chronic obstruction of the bowel suggested its true nature, confirmed by the subsidence of the tumor under absolute repose and a little potassium iodid or tincture of iodine and large cataplasms to the abdomen. A preceding mucomembranous enterocolitis explained the inflammatory process; it had not been accompanied by abdominal pain or fever but had induced pain in the lumbar region diagnosed for a long time as lumbago. The abdominal aorta displayed such marked pulsation at first that an aneurism was suspected, but this subsided as the inflammation died down, and the lumbago also vanished. Le Dentu compares this case with others on record and points out that four types of these pseudocancers may be recognized: 1, that due to a circumscribed interstitial colitis with hypertrophy entailing more or less pronounced stenosis; 2, that due to simple pericolicitis with adhesions, not sufficiently severe to form much of an inflammatory tumor; 3, that due to diffuse pericolicitis, causing the production of a long tumor, the shape and size recalling the features of the large intestine. In one such case in his experience the ascending colon and the cecum surrounded by inflammatory exudate, constituted a long round mass, the upper end of which was lost behind the liver. As this patient, a young woman, had previously had a pulmonary affection suspicious of tuberculosis, he assumed a tuberculous process in the intestine, but under absolute repose in bed and cataplasms the pseudoneoplasm subsided in a few weeks and has not returned since. 4. The fourth type is the exuberant form of pericolicitis. The inflammatory exudate glues into a solid mass the loops of the small intestine, the subperitoneal connective tissue and even the glands in front of the spine, forming a voluminous mass in the midst of which it is impossible to recognize the swollen intestine. The case reported in detail evidently belonged in this category. The products of the inflammation may be absorbed but suppuration is not unusual. The most puzzling cases are those in which the tumor is well defined, of a firm consistency and still movable, or when so many elements are soldered together in it that the whole simulates a malignant process. Tentative application of proper medical measures will save the patient a major operation in some cases. Acute and febrile phenomena may be absent from the history of the case. Before stating that the neoplasm palpated is a cancer, it is well to try a tentative course of absolute bed rest, moist warmth to the abdomen, with antisyphilitic treatment if there is a suspicion of syphilis. Signs of obstruction, pain, vomiting, demand the surgeon. He reviews the various operative measures that have been applied, including Robson's double short-circuiting technic.

53. Prophylaxis of Typhoid Fever.—Delorme cites statistics which show that the health of troops in a garrison reflects the conditions in regard to the public health in the towns where they are stationed. It is thus seen that the typhoid mortality is low or has become low recently in most of the cities of France except those in the south. Marseilles, Avignon, Brest and Lunéville have a typhoid mortality of 29.2, 48.8, 28 and 25 per thousand inhabitants, which he ascribes to the contamination of the drinking water. Nice is included in this group.

54. Proteus Responsible for Diarrhea in Infants.—Metchnikoff's research and conclusions were mentioned recently in the

Paris letter, December 11, page 2017. He found the *Bacillus proteus* answer all the bacteriologic and clinical tests as the causal agent of summer diarrhea in young infants and was able to reproduce the syndrome at will by inoculating suckling rabbits and monkeys with cultures of the proteus or with diarrhetic stool from sick infants. In prophylaxis measures must be taken to destroy the proteus which is found so constantly on the surface of articles of food exposed to the air, on the hands, etc. Adults are not made sick by the proteus but can communicate it to infants and Metchnikoff found it in large numbers in the stools of 36 out of 40 infants with gastroenteritis. The greater number of flies in the summer, carrying the proteus from the dejecta of domestic animals, explains the prevalence of summer diarrhea in the less resistant infants, including the breast-fed. The proteus is readily destroyed by desiccation or by dipping grapes, vegetables, etc., in boiling water for a few seconds or singeing the surface of cheese, etc., and by washing the hands with soap and water and also the breast before the infant is allowed to nurse. It is possible that some other microbe in the intestinal tract may favor the proliferation of the proteus.

Presse Médicale, Paris

November 3, XVII, No. 88, pp. 777-784

- 55 The Mercuric Chlorid and Acetic Acid Test for Bile Pigments in the Stools. (Exploration clinique des voies biliaires et de l'intestin par la réaction du sublimé acétique dans les selles.) H. Triboulet.
 - 56 Pathogenesis of Tabes and of Parasyphilitic Affections in General. A. Sézary.
 - 57 Gauge for Extent of Flexion of Joints. (Compas goniomètre pour la mensuration des angles en clinique.) H. Vennin.
- November 6, No. 89, pp. 785-800
- 58 Sporotrichosis. (Sporotrichose hypodermique gommeuse, ulcéreuse, disséminée: sporotrichose de de Beurmann.) L. Landouzy.
 - 59 Tincture of Iodin in Emergency Treatment of Burns. (La teinture d'iode dans le traitement d'urgence des brûlures.) P. Descomps.
 - 60 Serodiagnostics of Cerebrospinal Meningitis. (Réaction de fixation de Bordet-Gengou pour le diagnostic de la méningite cérébro-spinale.) M. Cohen.
 - 61 Intestinal Hemorrhage in Malta Fever. (L'entérorragie dans la fièvre de la Méditerranée.) P. Modinos.
 - 62 Quinin Tetanus. (Tétanos quinique.) M. Rigollet.

November 13, No. 91, pp. 809-816

- 63 *Gastroenterostomy and Gastric Hypersecretion. L. Meunier.
- 64 Clinical Dosage of Chlorids in the Urine. A. Martinet.

63. Gastric Hypersecretion and Gastroenterostomy.—Meunier has found that gastroenterostomy for painful hypersecretion induces some reduction in the gastric acidity, but no modification in the route of evacuation of the stomach which proceeds as before by way of the pylorus. The main difference in the conditions in the stomach is the presence of comparatively large amounts of intestinal juice. The reflux of intestinal juice through the new opening helps to neutralize the hydrochloric acidity of the stomach content, and by its direct action on the stomach mucosa exerts an inhibiting influence on the secretory glands in the stomach. The combination of these two actions, chemical and physiologic, relieves the patient permanently of his former disturbances. Even if the new opening becomes obstructed in time, the stomach has been given such a long rest that the continued hypersecretion no longer induces the hyperesthesia and spasm responsible for the sensory disturbances in the past.

Semaine Médicale, Paris

November 24, XXIX, No. 47, pp. 553-564

- 65 *Multiplicity of Symptoms and Lesions of So-called Acute Epidemic Anterior Poliomyelitis. J. Lhermitte.

65. So-called Anterior Poliomyelitis.—Lhermitte compares the reports on various epidemics of acute anterior poliomyelitis, calling attention to the fact that the syndromes described do not form a single well-defined morbid entity. As a fact, the reports include a number of various inflammatory affections of the nervous system and meninges, the list including simple or hemorrhagic polioencephalitis, diffuse encephalitis, diffuse myelitis, meningomyelitis, meningo-radicularitis and polynenritis, all of which have been reported as true anterior poliomyelitis. He is convinced that further study of the lesions of the cerebrospinal axis consecutive to acute meningitis will explain the close connection between the epidemics of acute spinal paralysis in children and adults and the epidemics of cerebrospinal meningitis. The prognosis varies

materially in the different affections listed as anterior poliomyelitis. A paralysis of meningeal origin can be differentiated from the paralysis of anterior poliomyelitis by the meningeal symptoms: lymphocytosis or polynucleosis in the cerebrospinal fluid, severe pain in the limbs, the slower retrogression of the paralysis and the absence of consecutive atrophy of the muscles involved. No one descriptive term can be applied to all these syndromes.

Deutsches Archiv für klinische Medizin, Leipsic

XCVII, Nos. 5-6, pp. 409-620. Last indexed Nov. 13, p. 1699

- 66 Tension of Muscles in Children and Contracture. (Infantile Muskelspannungen und ihre phylogenetische Bedeutung für die spastischen Kontrakturen.) K. Hasebroek.
- 67 *Tests of Liver Functioning. (Zur funktionellen Leberdiagnostik.) H. Hohlweg.
- 68 Empyema and Pyopneumothorax. (Luft-Flüssigkeitsansammlungen im Thorax.) C. Klieneberger.
- 69 *Diagnostic Importance of Peptid-splitting Ferment in Cancerous Stomach. (Vorkommen eines peptidsplittenden Fermentes im carcinomatösen Mageninhalte.) O. Neubauer and H. Fischer.
- 70 *Fever in Diabetes. (Beobachtungen am fiebernden Diabetiker.) W. Brasch.
- 71 *Relations Between Rachitis and Blood-producing Organs. (Die rachitische Megaloplenie: Anaemia pseudoleucaemica infantum.) E. Aschenheim and E. Benjamin.
- 72 Beat-volume and Work of the Heart. (Ueber Schlagvolumen und Herzarbeit des Menschen. II. Zur Kritik der Plesch'schen Methode.) A. Müller. (III. Ergebnisse der Untersuchungen an Normalen und in pathologischen Zuständen.) Id. and S. Bondi.
- 73 Liver Dulness with Abdominal Affections. (Verhalten der Leberdämpfung bei abdominalen Erkrankungen.) Kirchheim.

67. Tests of Liver Functioning.—Hohlweg remarks that the more we learn about the functioning of the liver, the greater our amazement at the manifold processes that take place in it. The products of the work of the liver cells are not accessible for direct examination but Glässner has found that with processes destroying the parenchyma of the liver (syphilis, fatty liver, cirrhosis and phosphorus), the amino-acids introduced are more or less modified when eliminated, while with other liver affections (cancer of the liver, catarrhal jaundice, congested liver) no disturbance of the amino-acid metabolism is manifest. He suggests that by this means the functioning capacity of the liver can be estimated, and Hohlweg has obtained corresponding findings, confirming Glässner's statements although by other means. He experimented with levulose and compares his clinical findings with those already reported by others: 100 gm. levulose, dissolved in 300 gm. water was ingested fasting in 41 cases of various liver affections. The tolerance for levulose was reduced most with cirrhosis of the liver, catarrhal jaundice and obstruction of the common bile duct with a stone. A stone in the cystic duct or liver tumor did not entail alimentary levulosuria. The difference in this respect was striking when the bile duct was obstructed by a tumor or a gall-stone. All affections that injure the parenchyma thus reveal the functional disturbance by alimentary levulosuria. On the other hand, the assimilation is scarcely interfered with in case of enlargement of the liver, leucemia and congestion or tumors. These clinical findings were confirmed by the results of experimental research, pathologic conditions in the liver being induced by injections of toluilendiamin, phosphorus or a mixture of chloroform, oil and paraffin.

69. Diagnostic Importance of Peptid-splitting Ferment in the Stomach Content in Cancer.—This article states that a ferment is present in the carcinomatous stomach content which splits glycyltryptophan. This ferment is destroyed if hydrochloric acid is present in the proportion of 0.36 per cent. and over. The discovery of this ferment is thus an important aid for differentiation of cancer. Neubauer never encountered this ferment in 26 cases of various non-malignant stomach affections nor in the normal stomach, while it was constantly present in 17 cases of cancer, and in 4 out of 6 cases in which cancer was suspected. The only drawback is that the presence of blood or pancreatic juice annuls the test. In the cancerous stomach digestion proceeds farther than in the normal stomach, probably as the result of the presence of some special autolytic ferment which is lacking in normal conditions. Hence, if the stomach content contains a substance capable of splitting peptids, the assumption is evident that some autolytic ferment must be present. Free trypto-

phan stains a reddish violet on addition of bromin water while there is no change in tint if the tryptophan is bound. The stomach content is examined for blood and bile, filtered and tested with bromin water for a color reaction. If all these tests are negative, then 10 c.c. of the filtrate is mixed with a little glycyl tryptophan, a layer of toluol poured on top and the glass set in the incubator for twenty-four hours. Then 2 or 3 c.c. taken with a pipette from under the layer of toluol is transferred to a test-tube and a few drops of a 3 per cent. solution of acetic acid are added, after which the fumes from a vial filled with bromin are allowed to flow into the tube until a slight brownish tint becomes evident in the upper part of the tube which is then shaken. The fluid then turns pink in the presence of free tryptophan.

70. Fever in Diabetics.—Brasch tabulates the metabolic findings in nine diabetics during a febrile affection. The latter may increase or reduce the glycosuria in diabetics, but the febrile affection itself is of less moment in this respect than the severity of the diabetes.

71. Relation of Rachitis to the Blood-Forming Organs.—This communication from Pfaundler's clinic at Munich ascribes to a rachitic primary injury of the bone marrow the condition known as infantile pseudoleucaemic anemia. It does not belong in the group of actual anemias but is merely a high degree of rachitic myelopathy entailing myeloid metaplasia. The disturbance should be called rachitic splenomegaly.

Deutsche medizinische Wochenschrift, Berlin

November 11, XXXV, No. 45, pp. 1953-1984

- 74 *Serotherapy in Ophthalmology. (Ueber die quantitativen Verhältnisse des Antikörper-Uebertritts in die Cornea bei der passiven Immunisierung; ein Beitrag zur Serumtherapie in der Augenheilkunde.) P. Römer.
- 75 Further Research on Tsetse Flies and Trypanosomes. Kleine.
- 76 *Decisive Importance of Reduced Oxygen Tension of the Tissues as a Stimulus to Blood Production. (Ausschlaggebende Bedeutung der verminderten Sauerstoffspannung der Gewebe für die Anregung der Blutbildung.) E. Kuhn and W. Aldenhoven.
- 77 Physiology and Pharmacology of Magnesium and Calcium. S. J. Meltzer.
- 78 Apparatus for Compressing Air. (Der Luftkompressor im Krankenhaus.) F. Kuhn.
- 79 *Intermittent Limping. (Kasuistisch-therapeutische Mitteilungen über intermittierendes Hinken.) H. Goldblatt.
- 80 *Decapsulation of Kidney in Eclampsia. (Nierendekapsulation bei Eklampsie.) Ziemendorff.
- 81 *Blindness from Adulteration of Medicine with Wood Alcohol. (Toxische Erblindung nach Genuss von verfälschtem Kinderbalsam—Holzgeistvergiftung.) A. Natanson.

74. Antipneumococcus Serotherapy with Serpiginous Ulcer of the Eye.—Römer appeals to general practitioners to apply serotherapy at once in cases of beginning *ulcus serpens* as the only means of saving a number of eyes otherwise irretrievably lost. In 16 out of 40 cases in his clinic at Greifswald in the last two years, from 12 to 16 days had elapsed after the injury of the cornea which is generally the cause of this lesion—a slight superficial injury allowing the entrance of the pneumococcus. Extensive clinical and experimental research has shown that pneumococcus serum if used soon after the injury of the cornea is liable to have a very favorable influence on its healing; even a few hours' delay may decide the fate of the eye. He urges the practitioner to make an immediate injection of antipneumococcus serum and send the patient at once to an ophthalmologist. When the ulcer is once developed, serotherapy has much less chance. He then appeals to ophthalmologists to use larger doses of the serum and apply it locally in the form of a powder as well as injecting the serum directly into the cornea and under the conjunctiva.

76. Deficiency of Oxygen as Stimulant for Blood Production.—Kuhn cites numerous authors who have shown that a lack of oxygen is a potent stimulus for the production of blood. He shows further that the action of arsenic and other tonics is the result of a deficiency in oxygen, entailed by the destruction of the blood corpuscles by these drugs. He describes a number of experiments on animals which confirm his assumption that the reduced oxygen tension of the tissues is of decisive importance for the production of new blood, and that this applies to all measures which are known to act by increasing the production of blood. Primary lack of oxygen is the simplest and most effectual means of increasing

the production of blood as evidenced in the influence of altitude and of the suction mask which restricts the amount of air inhaled while permitting free expiration.

79. Intermittent Claudication.—Goldblatt expresses surprise that this affection and local arteriosclerosis in general have received so little attention from the physico-therapeutic side. The same old routine of iodine internally, light massage and walking exercises is applied over and over again, but he urges the importance of active hyperemia with electric baths, hot air douches and the thermophore, which have given brilliant results in 4 cases in his experience. The application of heat promotes absorption and retrogression of the endarteritis, or parallel or collateral vascular routes may develop under its influence. The main factor in the benefit is the prompt hyperemia and slight perspiration.

80. Decapsulation of the Kidneys in Eclampsia.—Ziemendorff regards decapsulation as the promptest and surest method of evacuating the kidneys when they have become impermeable from any cause. They are unable to throw off the toxins that have gathered in them and diuretics have no effect in the severer cases of eclampsia but only aggravate the condition. Decapsulation opens a way for escape of the toxins; the wound should not be closed at once but left open with a drain. In a case reported the eclamptic seizures ceased with the decapsulation and in a few days the albumin in the urine had dropped from 15 to 0.5 per thousand; the patient did not rouse from coma until twenty-four hours after the decapsulation, but then rapidly recovered.

81. Blindness from Medicine Adulterated with Wood Alcohol.—Natanson states that 80 cases of blindness or death from wood alcohol are known in Russia and he reports another case of blindness. Senkowitsch has also encountered 5 cases of blindness and 4 fatalities from this cause. The combination of toxic blindness with severe gastrointestinal disturbances confirmed the assumed etiology. The blindness came on the second or fourth day, followed by some recovery of vision for a few days, after which secondary incurable atrophy of the optic nerve gradually developed. In 6 of the cases mentioned the wood alcohol had been used to adulterate aromatic spirit (*Kinderbalsam*), including Natanson's own case. [Since this article was published Natanson's death at Moscow has been reported.—Ed.]

Medizinische Klinik, Berlin

November 7, V, No. 45, pp. 1693-1726

- 82 Anatomic Changes in Salivary Glands with Acute Mercurial Poisoning. (Anatomische Veränderungen der Speicheldrüsen bei akuter Quecksilbervergiftung.) E. Eichhorst.
- 83 Traumatic Hysteria with Epilepsy. (Beitrag zur Differentialdiagnose der Hysteria und Epilepsie.) E. Schultze. Commenced in No. 44.
- 84 *Experimental Research on Thrombosis. (Thrombenbildung.) E. Zurbelle.
- 85 *Venous Thrombosis and Embolism of Pulmonary Artery. L. Aschoff, R. Kretz.
- 86 Epidemic of Acute Spinal Paralysis. (Die akute spinale Kinderlähmung im rheinisch-westfälischen Industriebezirk.) Reckzeh.
- 87 Surgery of Hip Joint. (Neue Methoden zur Eröffnung des Hüftgelenkes.) K. Lengfeller and F. Frohse.
- 88 Reflected Sunlight the Curative Factor in the Mountains and at the Seashore. (Identität der Heilfaktoren im Hochgebirge und an der See.) C. Widmer.
- 89 Veronal and Epilepsy. Liebl.
- 90 Bacteriologic Findings in Certain Cases of Dysentery. (Ueber eigenartige bakteriologische Befunde bei Ruhrkranken.) P. Kuhn and F. Woithe.

84 and 85. Thrombosis.—Zurbelle discusses the connection between postoperative thrombosis, infection and depositing of fibrin, his conclusions from much research being that a retarding of the blood stream is the main factor in the production of a thrombus and that the blood-plates pile up mechanically in the more sluggish blood stream. This conglutination of blood-plates is entirely different from coagulation of fibrin, and the latter is not necessary for the formation of a thrombus; when it occurs it is secondary. His experiments show the uselessness of striving to prevent thrombosis by reducing the coagulating property of the blood, as we are unable to act on the blood-plates; all we can do is to prevent the blood stream from becoming sluggish. Aschoff suggests that it may be possible to prevent thrombosis by changing the physical conditions in the circulation, combating any tendency to a slower pulse rate. He does not think that thrombosis is

always of infectious origin, but a superposed infection transforms a primary insignificant thrombus into a dangerous thrombophlebitis.

Mitteilungen aus den Grenzgebieten der Med. und Chir., Jena

XX, No. 5, pp. 727-918. Last indexed November 20, p. 1785

- 91 *Tetany in Rabbits. (Tetanie der Kaninchen.) W. Haberfeld and P. Schilder.
- 92 *Skiagrams of Chronic Joint Disease. (Die chronischen Gelenkerkrankungen im Röntgenbilde mit Ausnahme der Tuberkulose und der Lues.) E. Jacobsohn.
- 93 *Serum Treatment of Hemophilia. F. Trembur.
- 94 Primary Cardiospasm after Trauma, with Pear-shaped Enlargement of Esophagus and Suppurative Parotitis. A. Heisler.
- 95 *Bacteriology of the Blood in Surgical Affections. (Bakteriologische Blutuntersuchungen bei chirurgischen Infektionskrankheiten.) N. Spassokukotzky.
- 96 *Operative Treatment of Gastric Affections. (Die chirurgische Therapie bei Magenleiden.) T. Kocher.
- 97 Typhoid and Its Relations with the Biliary Passages. (Ueber Typhus abdominalis und seine Beziehungen zu den Gallenwegen.) E. Fraenkel.

91. Tetany in Rabbits.—The research reported apparently confirms beyond question that tetany in rabbits is the result of loss of parathyroid functioning. The older animals bear the loss of the parathyroids better than the younger. In some rabbits the tetany did not develop after removal of the four main parathyroid bodies, but this was due to the existence of accessory parathyroids in the thymus and tetany followed inevitably the removal of the thymus in these animals. The vicarious hypertrophy of the parathyroids is also further evidence of the importance of the parathyroids in the vital processes.

92. Roentgen Findings in Chronic Joint Affections.—Tuberculous and syphilitic joint processes are not included in this study but all other chronic joint affections are reviewed and the importance of Roentgen examination as an aid in differentiation and prognosis is emphasized. The findings are classified and examples are given of skiagrams of focal processes, softening of the bone, periostitis, proliferative and degenerative processes, atrophy and free bodies in the joints, the points of difference between chronic arthritis with hypertrophy and that with atrophy being noted and the lesions compared with the clinical picture. The chronic rheumatic joint affection affecting only one or a few joints is not progressive, while that affecting a number of joints has a markedly progressive course. Arthritis with atrophy includes the chronic infectious processes and secondary rheumatic, the gonorrheal, gout, certain forms of senile arthritis and the chronic scarlatinal, typhoid or influenzal arthritis. The arthritis with hypertrophy includes the neuropathic joint affections, the tabetic and syringomyelic. The article fills 57 pages and is accompanied by 21 illustrations in the text and 15 plate skiagrams.

93. Serotherapy in Hemophilia.—Trembur's patient was a girl of about 13 who was known to have been a "bleeder" since the age of 5, although otherwise in good health. There was no history of anything of the kind previously in the family. The child had been in the hospital two or three times on account of excessive hemorrhages which yielded after tamponing and injection of gelatin. In February, 1909, there was menacing hemorrhage from the mouth, left ear, throat and gums and the breath had a fetid odor; temperature and urine were normal; reds 3,280,000 and whites 8,437, with 50 per cent. hemoglobin. It was noticed that the fetid odor of the breath always preceded and accompanied a severe hemorrhage. Epistaxis a day or two later required tamponing anew, although the child was lying quietly in bed. About 5 c.c. of sheep's blood serum was then injected into the left upper arm and four hours afterward the epistaxis was arrested; it recurred again two days later, but ceased as the nostrils were tamponed with gauze dipped in sheep serum. The bleeding from the gums was also arrested in the same way with local serum applications but a severe hemorrhage from both ears occurred in the night. At once 10 c.c. of sheep serum was injected into each thigh, the injections repeated about two weeks later, as there was still a tendency to slight hemorrhages, and 19 c.c. were injected into the abdomen three weeks later. The child was thus injected with a total of 106 c.c. between Feb. 22 and May 1, 1909, when she left the hospital in the best of health, having gained about 20 pounds.

Trembur regards the effect of the serum in this case as quite brilliant. A marked leucocytosis followed the injections each time, and this, by increasing the number of ferment-bearing cells, may be the explanation of the benefit from this form of serum treatment of hemophilia. Joehmann has called attention to the coagulation-promoting action of the proteolytic leucocyte ferment. No precipitins for sheep or rabbit serum could be discovered in the child's blood during or after the serum injections. In conclusion Trembur suggests that druggists should keep standardized normal sheep serum on hand for treatment of hemorrhage. The literature on the subject of serum treatment of hemophilia is reviewed. Trembur is inclined to class the case reported as one of hereditary hemophilia although not inherited in this case—there must always be a first generation before it can be inherited, and his little patient evidently was the first to introduce the hemophilic tendency into the family.

95. Bacteriology of Surgical Affections.—This article from the St. Petersburg Obuchoff hospital reports the results of bacteriologic examination in 81 cases of osteomyelitis, erysipelas, septic lesions or surgical affections of various kinds commencing with a local process. Acute osteomyelitis was found to be a general infection with localization of the process in the bone marrow; it was always accompanied by bacteremia and frequently followed by signs of metastatic sepsis. The streptococcus was found in each of the 23 cases. Erysipelas is a general infection of the organism with localization in the skin and subcutaneous tissue, with bacteremia at first, soon subsiding. Streptococci were found in all but 2 of the 29 cases in this group, staphylococci in the others. The staphylococcus affections were distinguished by metastasis while the streptococcus were free from it, but the mortality of both was about the same.

96. Operative Treatment of Stomach Affections.—Kocher has resected the stomach for carcinoma in 140 cases and here discusses the outcome. Permanent recovery is known in 30 cases and he epitomizes these cases to show the points useful in prognosis. In all the tumor was at the pylorus and readily movable, although a permanent cure was realized also in a few cases in which there were extensive adhesions to neighboring organs. In 2 the tumor was at some distance from the pylorus; in none was it near the cardia. The cancer was of the cylinder-cell type in all but one case in which there was scirrhus. The most important lesson learned from these permanently cured cases, he says, is the superiority of the Kocher technic, closing the stomach, with posterior gastroduodenostomy. He reviews the indications for operative intervention, regarding retention and stagnation as calling for operative removal of the mechanical obstruction. It must be borne in mind that prolonged ulceration at the pylorus may lead to stenosis and adhesions requiring an operation even after an apparent medical cure. For cases in which it is not necessary to remove the ulcer, he advocates inferior longitudinal antrojejunostomy, isoperistaltic, with a large opening, applying Hacker's technic with a short loop. The Wölfler and Roux Y methods should be restricted to cases of anacidity and lesions forbidding union at the proper point, that is, at the greater curvature of the pyloric part. [Kocher was the recipient of the Nobel prize in medicine recently, as mentioned December 18, page 2110.—Ed.]

Monatsschrift für Geburtshilfe und Gynäkologie, Berlin

November, XXX, No. 5, pp. 543-674

- 98 Obstetric Operations to Aid Delivery with Undilated Os. (Die geburtshilflichen Hilfsoperationen bei uneröffnetem Muttermund.) J. Pfannenstiel.
- 99 *Thrombosis and Embolism in Connection with Allowing Patients to Get up early after a Gynecologic Operation or Childbirth. O. Hoehne.
- 100 Two Cases of Carcinoma of Fallopian Tube. S. Boxer.
- 101 *Vaginal Myomectomy. W. Thorn.
- 102 Indications for and Results of Martin's Salpingostomy. (Was leistet die Martinsche Salpingo-Stomatoplastik?) E. Kehr.
- 103 *Means of Facilitating Examination of the Abdomen. (Zwei Erleichterungsmittel der kombinierten Untersuchung.) H. Sellheim.

99. Postoperative Thrombosis.—Hoehne writes from the Kiel gynecologic clinic to emphasize the advantages of allowing women to get up early after operations and deliveries, but he presents evidence to show that this is not able to prevent

development of thrombosis. He refers to a number of published statistics which show that one parturient in every 200 develops thrombosis. Embolism occurs once in 2,000, and fatal embolism once in 4,000 lying-in cases. No thrombosis was observed in the first 100 parturients at his clinic allowed to get up early, but a fatal case of embolism of the lungs has been observed, although the number has not yet reached 1,000. He has also encountered 3 cases of thrombosis with embolism among 22 women with eclampsia during these eighteen months. Allowing the women to get up early seems to afford no definite protection against thrombosis; it only eliminates one factor, the retarding of the blood stream. The data indicate that the coagulation of the blood is a process due to the action of a ferment, and consequently the composition of the blood should be known. If the blood is seen to possess abnormal tendency to coagulation, rational prophylaxis of thrombosis must include measures to reduce the coagulating properties of the blood. The Wright method of determining the coagulating power seems simple and reliable; if abnormally high, a substance should be introduced into the circulation to check the tendency to coagulation (citric acid, leech extract, etc.). By this means we institute true, rational prophylaxis and allowing the patients to get up early would then prove an important aid. If coagulation has occurred, ligation of the thrombosed vessels should be considered and in case of embolism, the operative removal of the embolus should be attempted. He adds that as the aid of a surgeon cannot be waited for in these desperate cases, the practitioner must learn the technic and eventually undertake the operation which offers the only chance for rescue. It has been done once already with complete success.

101. Vaginal Myomectomy.—Thorn has enucleated the myoma by way of the vagina in 79 cases without a fatality, but he has had pulmonary embolism the sixteenth and twenty-first day in 2 out of 175 cases of vaginal hysterectomy. Another patient died of sepsis, the myoma suppurating. In this case there was also chronic nephritis. The mortality was 1.18 per cent. in 254 vaginal operations. In 9 cases complications rendered it necessary to conclude the operation with a laparotomy. In 12 other cases a second myoma was overlooked but this was remedied by a second operation. He is an advocate of hysterectomy of the myomatous uterus as this alone cures the patient with a single operation, and the myomatous uterus offers little prospects of a normal pregnancy.

103. Improved Technic for Examining the Abdomen.—Sellheim calls attention to the great advantage to be obtained by inducing complete relaxation of the abdominal wall, such as follows evacuation of the distended bladder. Artificial distention and spontaneous voiding of the contents of the bladder does not insure this effect. The woman must retain her urine as long as possible, and, just before the examination, it should be drawn with a catheter. This sudden termination of the tension of the walls permits a very useful relaxation. Another way to accomplish the same result is by having the woman lift the buttocks from the table on which she is lying; this effort is usually followed by relaxation of the abdominal muscles, the fatigue following the exertion relaxing the muscles.

Münchener medizinische Wochenschrift

November 9, LVI, No. 45, pp. 2297-2352

- 104 *Serodiagnosis of Syphilis. (Praktische Bedeutung der Wassermann-A. Neisser-Bruckerschen Reaktion.) A. Jesionek and Meirowsky.
- 105 Bacteriologic Study of the Blood in Mastoiditis. (Ergebnisse der vergleichenden bakteriologischen Blutuntersuchungen bei Warzenfortsatzentzündungen.) E. Leutert.
- 106 Post-mortem Pigment Production. (Ueber postmortale Pigmentbildung.) H. Königstein.
- 107 Systematic Enlargement of the Glands with Rubeola. (Systematische Lymphdrüsenanschwellungen bei Röteln.) F. Hamburger and O. Schey.
- 108 Serodiagnosis in Tuberculosis. (Zur Frage der Komplementbindungsreaktion bei Tuberkulose.) H. Koch.
- 109 Latent Occurrence of Granular Form of Tubercle Bacillus. (Latentes Vorkommen der Muehschen Form des Tuberkelbazillus.) P. Wolff.
- 110 *Deep Roentgen Treatment. (Zur Röntgentiefentherapie mit Massendosen.) A. Köhler.
- 111 Splenomegaly with Cirrhosis of the Liver: Banti's Disease. (Zur Kenntnis der Bantischen Krankheit.) A. Müller.
- 112 Syphilis in the Tropics. (Tropensyphilis.) M. Seiffert.
- 113 Quinin Fatality. (Chinin-Tod.) G. Baermann.

- 114 The Nasal Septum Best Point for Drawing Blood for Serologic Tests. (Die Schleimhaut der Nasenscheidewand, eine besonders geeignete Stelle für die Blutentnahme zu der Wassermanschen Reaktion und zu andern serologischen Untersuchungszwecken.) O. Muck.
- 115 Simulation of Hematemesis. (Erzeugung einer schweren Hämatemese durch Läsion der Nasenscheidewand.) Rücker.

104. **Serodiagnosis of Syphilis.**—Jesionek reports the application of the Wassermann test to 1,060 patients, including 110 in whom syphilis could be absolutely excluded. A positive reaction was obtained only once in this last group, and this was in a moribund child. The Wassermann test is a very delicate index of syphilis; negative findings in the later stages should be regarded as favorable signs and every effort should be made in case of a positive response to transform it into the negative. In the early stages of syphilis it is of very slight value for the prognosis. A positive reaction should be regarded as merely one symptom of the disease.

110. **Safe Roentgen Exposures with Large Dosage.**—Köhler has found that the interposition of wire netting is of great importance in preventing injury from Roentgen treatment. The netting is applied close to the skin, merely a thin filter interposed, and the Roentgen tube used should have a focus from four to eight times the usual size. The skin under the wires of the netting escapes the action of the rays, and the little circles or squares of the interstices alone feel their action. Applying 10 full erythem doses, each little square of dermatitis is separated by a narrow stripe of normal tissue from the similar squares on all sides and from this network of stripes of normal tissue healing proceeds rapidly so that the whole area soon heals over. He has found netting with meshes of 2.5 mm., made of iron wire 1 mm. in diameter, best adapted for the purpose; this netting does not yield and pressure can be exerted on the skin, which has a useful effect in checking the metabolic processes during the exposures. After the exposure the part is protected with adhesive plaster and kept sterile until it heals. By this netting method twenty times the usual dose of the rays can be applied with safety, he declares. The part can be exposed from three or four directions, if necessary. A sarcoma of the femur might be given forty times the present dosage in this way by exposures on four different sides. He urges the application of this technique in inoperable cancer as the advantages of enormous dosage, brief exposures, simple technique and combination with filtering and with compression of the skin are counterbalanced only by the danger of destruction of the protected parts between the meshes by infection. This possibility can be warded off by aseptic measures.

Therapeutische Monatshefte, Berlin

November, XXIII, No. 11, pp. 567-622

- 116 *Prolapse Operations. F. Schauta.
- 117 Limitations of Local Anesthesia in Dentistry. (Grenzen der Injektionsanästhesie in der zahnärztlichen Chirurgie.) D. Frohmann.
- 118 *Campaign Against Cretinism in Austria. (Bekämpfung des Kretinismus in Oesterreich.) L. Sofer.
- 119 *Tuberculin Treatment of Pulmonary Tuberculosis. (Behandlung der Lungentuberkulose nach Robert Koch.) E. Löwenstein.

116. **Operations for Prolapse.**—Schauta states that his technique for operative correction of prolapse has been applied in 110 cases; in 59 the later history has been known for several years. A complete cure was realized in 46, that is, in nearly 78 per cent., with no interference with menstruation. In the 13 other cases there is still some trouble but always from lack of proper restoration of the pelvic floor. He gives the details of his technique anew and writes this article to call attention to the importance of suturing the bladder peritoneum as low down on the cervix as possible and taking several stitches. The lack of this was responsible for the recurrence in one case in which the uterus had twisted half way around, bringing the bladder behind instead of on top of it. The uterus is interposed between the bladder and vagina and the vagina sutured to close the incision completely; the bladder then rests on top of the uterus. The tendency to prolapse is corrected much better by this technique than by hysterectomy as this leaves the genital hiatus still gaping.

118. **Campaign Against Endemic Cretinism in Austria.**—Sofer states that there are known to be 17,286 cretins in Austria, about 64 to each 100,000 inhabitants, and 1,011 have

been systematically kept under thyroid treatment, an official campaign having been instituted in 1907, as already mentioned in *THE JOURNAL*, after two years of preliminary study of the subject. The cretins are given the thyroid tablets to use at home, and 37 official inspecting and distributing stations have been organized for the purpose. Certain regions where there were many cretins fifty years ago seem to be free from the tendency now, while others formerly free from it now have many examples. Hochsinger regards congenital myxedema as observed in Vienna the analogue of cretinism in mountainous districts, and in both rapid improvement is liable to follow thyroid treatment. [Italy has also recently taken steps to organize a similar official campaign against cretinism.—Ed.]

119. **Tuberculin Treatment of Tuberculosis.**—Löwenstein reviews the results obtained at the Beelitz sanatorium with tuberculin treatment in 300 cases of open pulmonary tuberculosis. He comments on the discovery of the same tuberculin-neutralizing substances in the serum of patients spontaneously recovering and in those being treated with "old" tuberculin. He found them pronounced in 5 out of 35 patients examined, and the disease progressed rapidly to spontaneous recovery, in this group of 5. These findings confirm the specificity of the reaction and the radical basis for tuberculin treatment. He advocates it in every case in which the physician thinks improvement is possible. In an experience with 1,000 cases he has never observed a dangerous hemorrhage which could be ascribed to the influence of a preceding injection of tuberculin. The sole contraindications to tuberculin treatment are persisting headache, suspicious of localization of the infection in the central nervous system; nephritis, unless of tuberculous origin; diabetes; epilepsy, and pregnancy. He used to exclude also cases of mitral insufficiency but no longer regards this as necessary. In regard to dosage he prefers to commence with 0.0002 gm., being convinced that smaller doses are liable to induce anaphylaxis. The main point is to avoid introducing new toxins before the effect of the previous toxin has been thrown off. The tuberculin treatment is more qualitative than quantitative. In case of a strong general reaction with focal phenomena—increased expectoration and local reaction in the larynx—the organism must be given time for the phenomena of reaction to die down. Not until after the diseased parts of the tissue have been thrown off can the production of connective tissue proceed satisfactorily. Thus after a reaction of 102.2 F. he tranquilly waits for 14 or 18 days, and after a milder reaction for 7 or 10. During the second phase of immunization with doses over 0.1 gm. the intervals should be at least 10 days. He makes it a principle not to reduce the dose after the reaction, but increases it more or less according to the intensity of the reaction and terminates the course when the patient can stand 0.5 gm. without reaction. Koch's "bacillus emulsion" is given instead of "old" tuberculin when it is necessary to avoid much general or local reaction.

Wiener klinische Wochenschrift, Vienna

November 18, XXII, No. 46, pp. 1585-1622

- 120 *Roentgen Treatment of Goiter. (Zur Behandlung des Kropfes mit Röntgenstrahlen.) A. v. Eiselsberg.
- 121 Iodin-Adrenalin Reaction in the Urine. (Neue Reaktion im Harn.) H. Schur.
- 122 Respiratory Disturbances Originating in the Heart. (Zur Lehre von den kardialen Atemstörungen.) L. Hofbauer.
- 123 *Treatment of Paralysis by Plastic Operations on Nerves. (Fortschritte auf dem Gebiete der Chirurgie der peripheren Nerven.) H. Spitzzy.
- 124 Recurrence of Infectious Diseases. (Wiederholte Erkrankungen an Infektionskrankheiten.) J. Widowitz.
- 125 Apoplexy of the Spinal Cord. (Zur Kenntnis der Hämatomyelie.) C. Loebbecke.
- 126 Treatment of Certain Cardiac Nenroses. (Zur Erkenntnis gewisser Herzneurosen.) C. Kraus.

120. **Roentgen Treatment of Goiter.**—During the last year v. Eiselsberg has encountered 3 cases of goiter with extensive adhesions in front to the deep muscles, rendering operative measures extremely difficult. He has never observed anything of the kind in the 753 other goiters he has removed since 1901, and in these 3 cases a course of Roentgen exposures had been given before operative treatment was instituted. The goiter was of the exophthalmic type in 2 of the cases. He asserts that he has never witnessed any pronounced benefit from Roentgen treatment of goiter while he has observed

injury from it and consequently he does not recommend it to his patients. Surgical measures are giving such favorable results in exophthalmic goiter now, he says, that the decision to operate should be made earlier.

123. Progress in Nerve Surgery.—Spitzzy reports some cases in which a plastic operation restored comparatively normal functioning after spastic paralysis. The best results are obtained with spastic paralysis of the upper extremity. The main point in treatment of flaccid paralysis by a plastic operation on the nerves is early intervention. He gives some illustrations showing the fine functional result one year after partial central implantation of the tibial into the peroneal nerves and of the median into the radial. His experience with 35 cases has suggested the indications for the technic for conditions in which the usual methods fail to relieve.

Zentralblatt für Chirurgie, Leipsic

November 13, XXXVI, No. 46, pp. 1569-1600.

127 Aseptic Catgut. (Zur Catgutfrage.) F. Kuhn.

November 20, No. 47, pp. 1601-1640

128 *Differential Pressure Procedure for Inducing Local Anemia in Skull Surgery. (Versuche über künstliche Blutleere bei Schädeloperationen.) F. Sauerbruch.

128. Negative Pressure for Hemostasis in Operations on the Skull.—Sauerbruch reports the application of his pneumatic cabinet to aid in expelling the blood from the field of operation in brain and skull surgery. The head of the patient is outside the cabinet while negative pressure inside the cabinet, acting on the trunk, induces aspiration of the venous blood from the head which is under ordinary atmospheric pressure outside. His experiments on 62 animals showed the feasibility of the method and its prompt action. Under the reduced atmospheric pressure the thorax enlarges and the venous blood is aspirated into the right heart; the breathing proceeds regularly except that expiration is a little forced and the heart action continued apparently unmodified. The vessels throughout the body also become enlarged under the negative pressure, aspirating still more blood from the head; but simple pressure on the abdominal vessels suffices to send blood back into the head. No injurious by-effects were noted in any of the experiments. The aim is to aspirate the venous blood without modifying the arterial circulation in the head, and the amount of negative pressure is regulated to correspond; a reduction of 20 mm. mercury answered the purpose for the animals. With a reduction of 30 or 40 mm. it proved possible to aspirate the blood so as to blanch completely the central portion of the optic papilla. He warns that great caution is necessary in applying this method to man, but states that in the single clinical case in which it has been used a negative pressure of 16 or 18 mm. mercury emptied the veins for bloodless excision of a carcinoma in the orbit. He adds that a small box to fit over the trunk and chest and permit slight negative pressure would answer the desired purpose, dispensing with the complicated pneumatic cabinet.

Riforma Medica, Naples

November 8, XXV, No. 45, pp. 1233-1260

120 *Experimental Research on Retention, Localization and Fixation of Quinin in Various Organs. (Chinina nei diversi organi.) D. De Sandro.

130 *Anaphylaxis in Diagnosis of Human Tuberculosis. (L'anafilassi come mezzo diagnostico della tubercolosi umana.) V. Caraffa.

129. Localization of Quinin in the Organs.—De Sandro reports experimental research which shows that the quinin finally makes its way to the spleen where it remains and where it exerts the greatest pharmacologic action. When administered by the mouth, the quinin has to traverse the liver before it reaches the spleen, and consequently the action is more rapid and pronounced when the drug is injected subcutaneously or by other routes that bring it more directly to the spleen.

130. Anaphylaxis in Diagnosis of Tuberculosis.—Caraffa's clinical and experimental experiences have confirmed the diagnostic importance of the phenomena of anaphylaxis as determined by Rosenau and others. He induced the phenomena in sensitized rabbits both with tuberculous blood serum and effusion and with tuberculin. No reaction was obtained with serum from the non-tuberculous.

Books Received

All books received are acknowledged in this column and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender. A selection will be made for review in the interests of our readers and as space permits.

SOME SCIENTIFIC CONCLUSIONS CONCERNING THE ALCOHOLIC PROBLEM AND ITS PRACTICAL RELATIONS TO LIFE. Papers read at the Semiannual Meeting of The American Society for the Study of Alcohol and other Drug Narcotics, at Washington, D. C., March, 1909. Sixty-first Congress, 1st Session, Senate Document No. 48. Presented by Mr. Gallinger. Paper. Pp. 179. Washington: Government Printing Office, 1909.

VISITING NURSING IN THE UNITED STATES. Containing a Directory of the Organizations Employing Trained Visiting Nurses, with Chapters on the Principles, Organization and Methods of Administration of such Work. By Ysabella Waters, Henry Street (Nurses') Settlement. Cloth. Pp. 367. Price, \$1.25. New York: Charities Publication Committee, 105 East Twenty-second Street.

THE PREVENTION OF INDUSTRIAL ACCIDENTS. No. 1—General Pamphlet. Prepared by Frank E. Law, M.E., and W. Newell, A.B., M.E., of the Staff of the Fidelity and Casualty Company of New York. Paper. Pp. 194, with illustrations. Price, 25 cents. New York: Fidelity and Casualty Co., 97 Cedar St., 1909.

PULMONARY TUBERCULOSIS AND SANATORIUM TREATMENT. By C. Muthu, M.D., M.R.C.S., L.R.C.P. Associate of King's College, London. Cloth. Pp. 201, with illustrations. Price, 3 shillings 6 pence net. London: Baillière, Tindall and Cox, 8 Henrietta Street, Covent Garden, London, 1910.

THE PREVENTION AND TREATMENT OF ABORTION. By Frederick J. J. Taussig, A.B., M.D., Lecturer in Gynecology, Medical Department, Washington University. Cloth. Pp. 179, with 59 illustrations. Price, \$2. St. Louis: C. V. Mosby Co., 1910.

THE ORIGIN AND PREVALENCE OF TYPHOID FEVER IN THE DISTRICT OF COLUMBIA. Report No. 3, 1908. By M. J. Rosenau, L. L. Lumsden and Joseph H. Kastle. Paper. Pp. 160. Washington: Government Printing Office, 1909.

THE PHYSICIAN'S POCKET ACCOUNT BOOK. By J. J. Taylor, M.D. Flexible leather, 24 pages of practical instructions for physicians, 216 pages of accounts. Price, \$1. Philadelphia: The Medical Council, 4105 Walnut Street.

A PRACTICAL TREATISE ON OPHTHALMOLOGY. By L. Webster Fox, M.D., LL.D., Professor of Ophthalmology in the Medico-Chirurgical College. Cloth. Pp. 807, with illustrations. Price, \$4. New York: D. Appleton & Co., 1910.

MAZDAZNAN ENCYCLOPEDIA OF DIETETICS AND HOME COOK BOOK. Cooked and Uncooked Foods. What to Eat and How to Eat it. Fifth Edition. Price, \$1.25. Pp. 230. Chicago: Mazdaznan Associates of God, 1909.

ST. LUKE'S HOSPITAL MEDICAL AND SURGICAL REPORTS. Edited for the Medical Board by Austin W. Hollis, M.D. Volume I, for 1908 and 1909. Paper. Pp. 225. New York City.

REPORT OF THE SURGEON-GENERAL U. S. ARMY TO THE SECRETARY OF WAR. 1909. Washington Government Printing Office. Paper. Pp. 215.

New Patents

Patents of interest to physicians recently granted:

- 935094. Closure for atomizer-bottles or the like. A. and T. A. De Vilbiss, Toledo, Ohio.
- 935124. Spray-nozzle. P. A. Myers, Ashland, Ohio.
- 935542. Treating sodium peroxid. D. E. Parker, Niagara Falls, N. Y.
- 935227. Medical irrigator. H. H. Pfeifer and F. M. Towles, Indianapolis.
- 935056. Stretcher. F. C. Rheubottom and R. B. Rayner, Union City, Mich.
- 935272. Anatomical developing and adjusting machine. D. W. Riesland, Duluth, Minn.
- 935418. Producing magnesium carbonate. G. Sisson, Newcastle-on-Tyne, England.
- 935832. Ventilator and medicament or perfume container for hats. H. D. Barnes, Uniontown, Pa.
- 935777. Truss. W. W. Clindinin, Chicago.
- 935746. Massage vibrator. E. Fahsbender, Chicago.
- 936107. Mechanism for elevating invalids. R. L. Floyd, Staunton, Va.
- 936131. Dental or surgical chair. G. Holtz, Gouldsboro, Pa.
- 935796. Production of magnesium. F. von Kugelgen, Holcomb Rock, Va., and G. O. Seward, East Orange, N. J.
- 935858. Apparatus for carbonating and dispensing beverages. L. C. Paris and T. Millward, San Francisco.
- 935815. Preparing zinc formaldehyde sulfoxylate. F. Rademacher, Prague-Karolinenthal, Austria-Hungary.
- 936062. Closure for bottles. W. R. Warner, Vergennes, Vt.
- 936205. Hypodermic syringe. P. B. Woodruff, Springfield, Tenn.
- 936846. Window tent. J. G. Allen, Peoria, Ill.
- 936752. Abdominal support. J. S. Allred, Troy, Ala.
- 936434. Bust-developer. J. G. Eganhouse, Houston, Tex.
- 936537. Spraying nozzle. A. B. Hull, Gasport, N. Y.
- 937029. Means for hypodermic medication. B. G. Strong, Reading, Mich.
- 936499. Aseptic deflector lamp. G. C. Werner, Brooklyn.
- 937354. Apparatus for setting the fractured bones of the leg. W. Amos, Providence, R. I.
- 937292. Vaginal syringe. C. S. Eichholtz, Los Angeles, Cal.
- 937596. Headache appliance. C. Gray and O. B. Hitchcock, Horton, Kan.
- 937210. Preparing potable waters. J. T. Harris, New York.
- 937311. Vaginal syringe. C. P. Leyner, Boston.
- 937327. Pasteurizer. L. S. Pfouts, Canton, Ohio.
- 937478. Material for surgical splints. S. C. Sims, Sterling, Ill.
- 937480. Invalid's table. F. A. Smith and D. L. O'Brien, San Francisco.

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Original Articles

MELANOMAS AND SOME TYPES OF SARCOMA OF THE SKIN*

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The sarcoma group of skin diseases is of exceeding interest to the dermatologist on account of the frequency in which the skin is involved even where the tumors are primary in some other organ, and also from the fact that the type best known to dermatologists, the idiopathic hemorrhagic sarcoma of Kaposi, seems to be independent of any primary growth and apparently originates from the vascular tissue of the extremities. Perhaps the one which carries the greatest interest of all, and certainly the one which has given rise to the most active controversy regarding its nature, is the so-called melanoma—a name which does not commit one to any positive view regarding its genesis. Although it sometimes originates from pigmented moles and even those which are non-pigmented, it also occurs independently of any visible change in the skin, so that perhaps the importance of these pigmented moles as potential melanomas has been somewhat exaggerated. The majority of people possess one or more of these congenital defects, but only few of them become malignant.

Before entering into the discussion of the various views on this fascinating subject I shall cite briefly two melanomas of the foot which have recently come under my observation. In both there was an absence of any history of a mole, the tumor having been preceded by a pigment spot which persisted a variable time before actual growth was noticed.

CASE 1.—A woman aged 54, a native of Germany, stated that for several years she had had a pigment spot on the inner border of her left foot near the heel. It had occasioned her no inconvenience until two years before examination, when she noticed a gradual increase in size and volume. This was slow for about a year and a half, but during the past six months the growth had been augmenting more rapidly.

Macroscopic Examination.—At the time she presented herself the lesion was about 2 inches by 1 in diameter and consisted of an irregular tumor encroaching partly on the sole of the foot. It was unevenly elevated in the center and at the periphery was level with or rose slightly above the surrounding skin. In color it shaded from dark brown to deep black, and it was covered by thick adherent scales except in one area where a dry depression furrowed the surface. This was also the blackest part of the tumor and may have been the starting point. There were no satellite metastases, no lymph node enlargement and no local pain. The patient was well-

nourished and said that her general health had suffered no change.

Microscopic Examination.—The tissue (Fig. 1) presented an enormously hypertrophied horny layer containing lakes of free pigment and chromatophores in groups and isolated. The rete was irregularly thickened and undulating; the basal layer in places was preserved and in others obliterated by the encroachment of the growth. In the interspersal spaces and in lacunae hollowed out by them were to be seen one or more chromatophores. The tumor itself occupied the upper two-thirds of the corium, giving the appearance of a growth of the papillary bodies. The outlines of the latter in some areas were well preserved; they were enlarged and club-shaped and here and there the epidermis was lifted up from them. The growth in these places had a columnar arrangement at right angles to the epidermis. In portions it was so deeply pigmented that neither cells nor intercellular substance could be made out. In areas less dense, the cells had a pale vesicular nucleus, some two, and rather small cell bodies with moderately long processes at either end. Between them was a delicate fibrillary substance. The surrounding connective tissue was markedly sclerosed and divided the growth by band-like partitions. In the tumor area the vascular development was poor, but around it were found a number of dilated vessels with an infiltration of round and pigment cells and free pigment.

CASE 2.—The other case also occurred in a woman, who gave a very indefinite history. She was about 45 years old and when first seen had a large lobulated mass on the inner side of the foot which ulcerated and discharged a bluish-black fluid. Numerous bluish-black metastases were present on the leg and thigh and the inguinal lymph nodes were enlarged. The patient died from cachexia and internal metastases. The initial tumor was from a pigment spot which had appeared several years before. Examination of a very small metastasis from the thigh showed the lesion to be made up of a collection of deeply pigmented branched and round cells. They were filled with coarse granules and clumps of pigment (Fig. 2). The cells were especially numerous about the vessels, the endothelium of which was also pigmented. In a larger secondary growth the pigmented cells formed a network which occupied the middle and lower thirds of the corium. In neither specimen was there any inflammatory reaction.

It is not always possible after growth has taken place to determine whether the melanoma originated from a congenital malformation or not. In the above cases no connection with a nevus could be established, and with the history of a pigment spot developing in middle age the antecedent condition was probably the malignant lentigo of Hutchinson. This begins as a pigment spot late in life on the face, more frequently the eyelid, and the extremities, and after some years takes on growth.

Owing to the assumption of an etiologic connection between pigmented growths and nevi the nature of melanomas is still one of the disputed questions in tumor pathology, and until the histogenesis of nevi is settled the controversy will probably be left open. Following the work of von Demiéville¹ in 1880 and von

* Read in the Section on Dermatology of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

1. Von Demiéville: Virchow's Arch. f. path. Anat., 1880, lxxxi, 333.



Fig. 1.—Melanoma of the foot. Zeiss Planar 20 mm. Showing extensive pigmentation of the tumor and epidermis. The growth is situated in the upper two-thirds of the corium and is made up of spindle cells, the majority of which are densely pigmented, and a fibrous stroma.

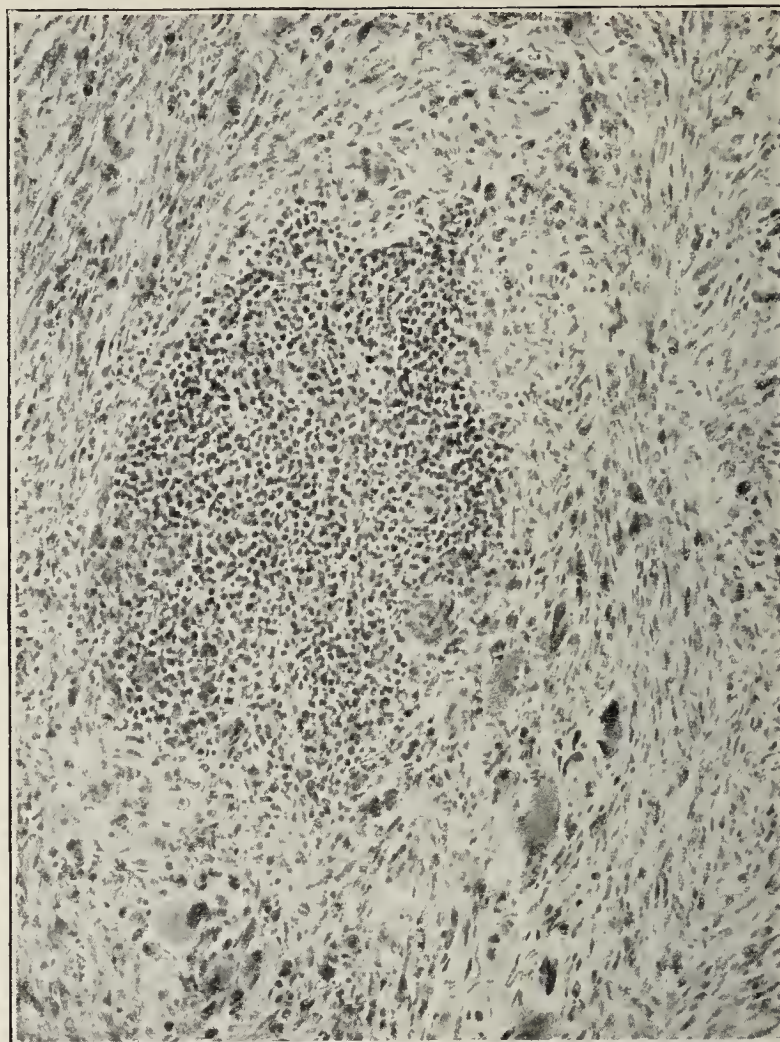


Fig. 3.—Melanotic whitlow. Zeiss 8 mm., C. O. 4. Showing bundles of spindle cells cut in various planes, large chromatophores and a central focus of lymphocytes. Pigment is present in the large cells and in variable amount in the smaller ones.

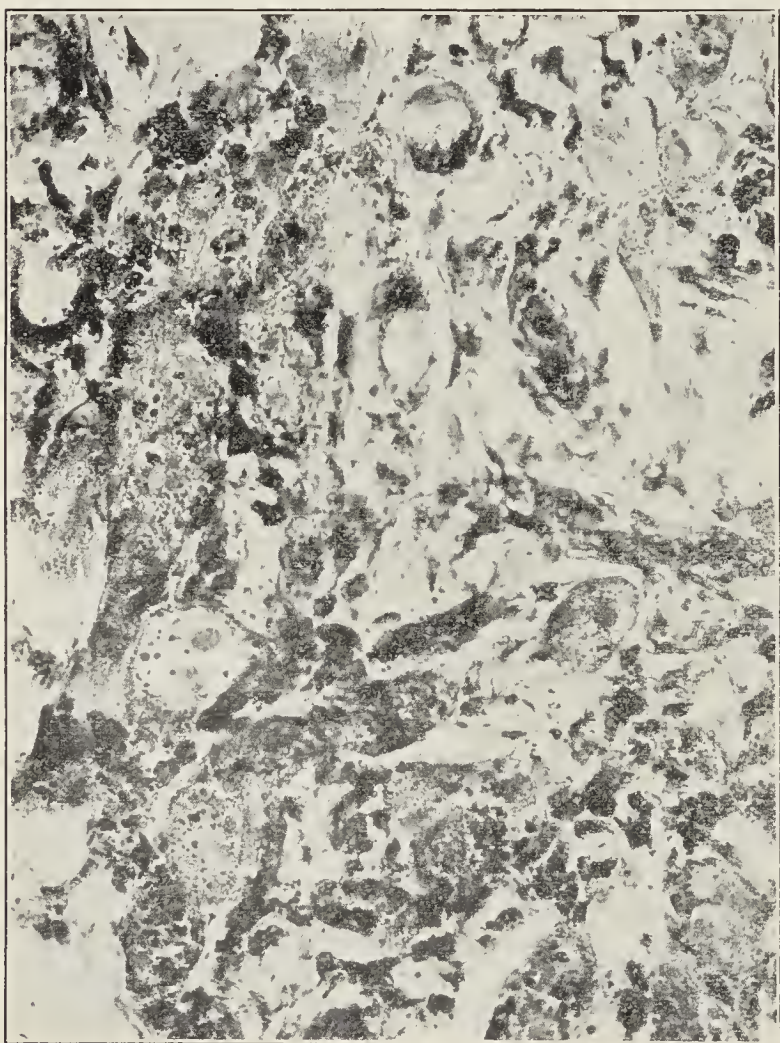


Fig. 2.—Melanoma metastasis. Zeiss 8 mm., C. O. 4. Showing chromatophores in a secondary nodule of the thigh; large irregular, round and spindle cells with fine and coarse granules of melanin.

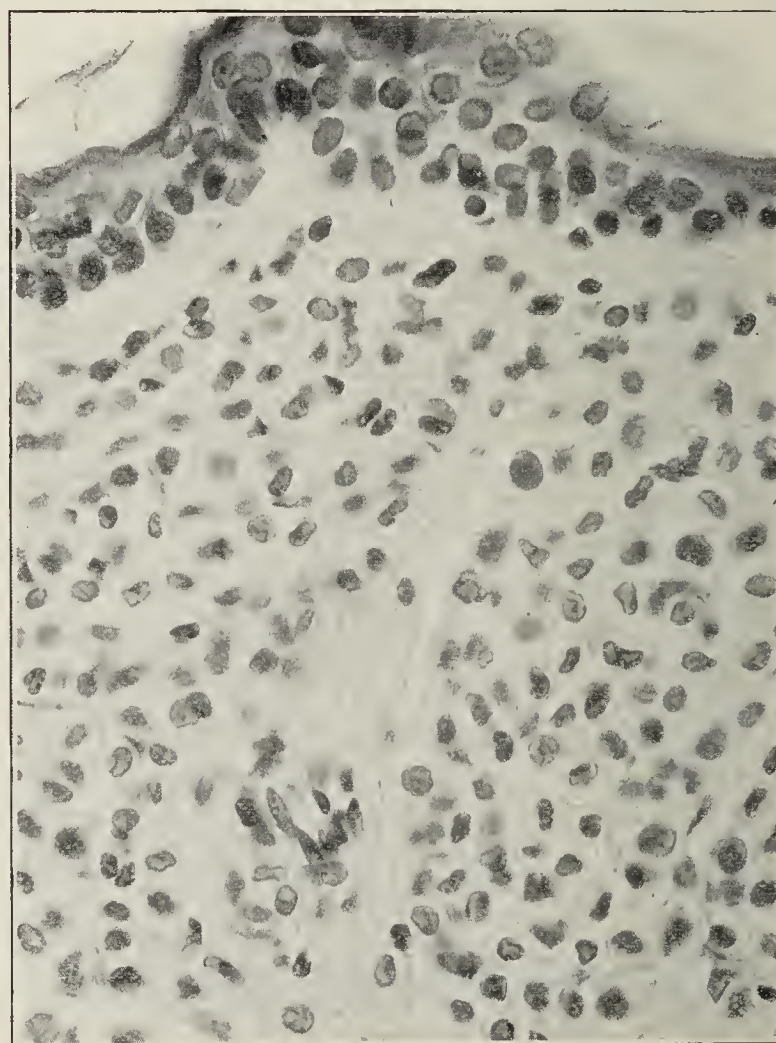


Fig. 4.—Papillary nevus. Zeiss 3 mm., N.A. 1.40, C. O. 4. Showing the "nevus cells" with vesicular nucleus, some having two. The cell bodies are clear, more or less rounded and have a sharp outline. In places they are closely apposed and form a mosaic; in others they are separated by fibers from the connective tissue stroma.

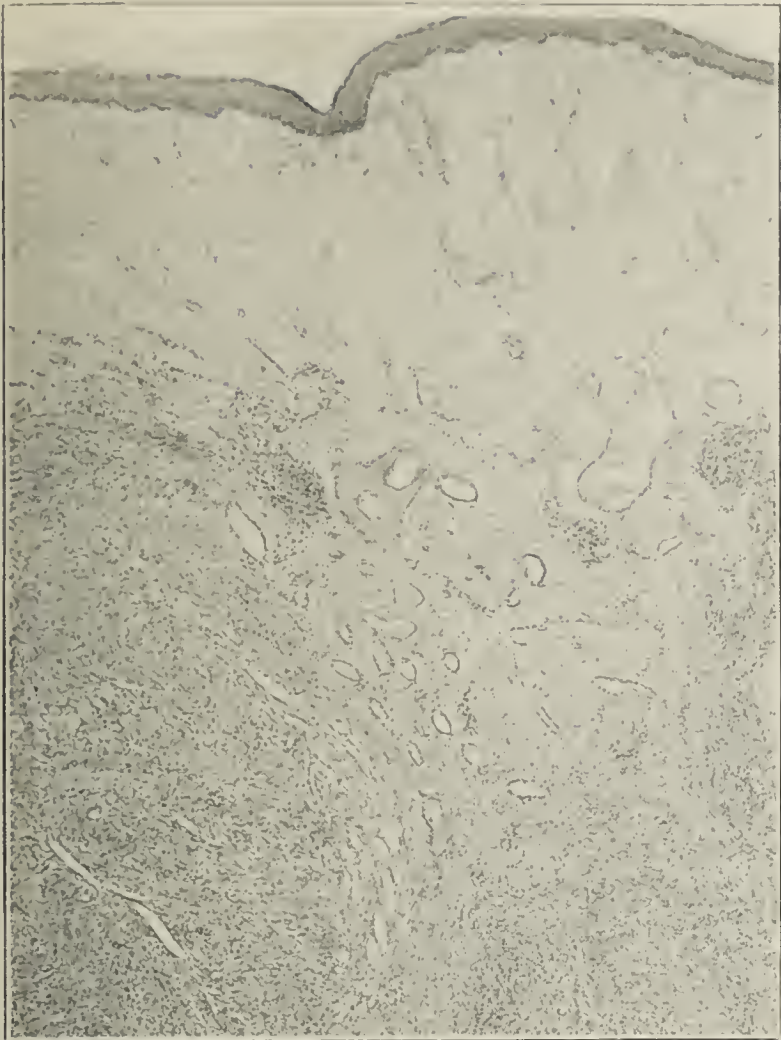


Fig. 5.—Idiopathic multiple hemorrhagic sarcoma. Zeiss Planar 20 mm. Showing the growth in the corium made up of spindle cells and numerous capillaries and spaces filled with blood.

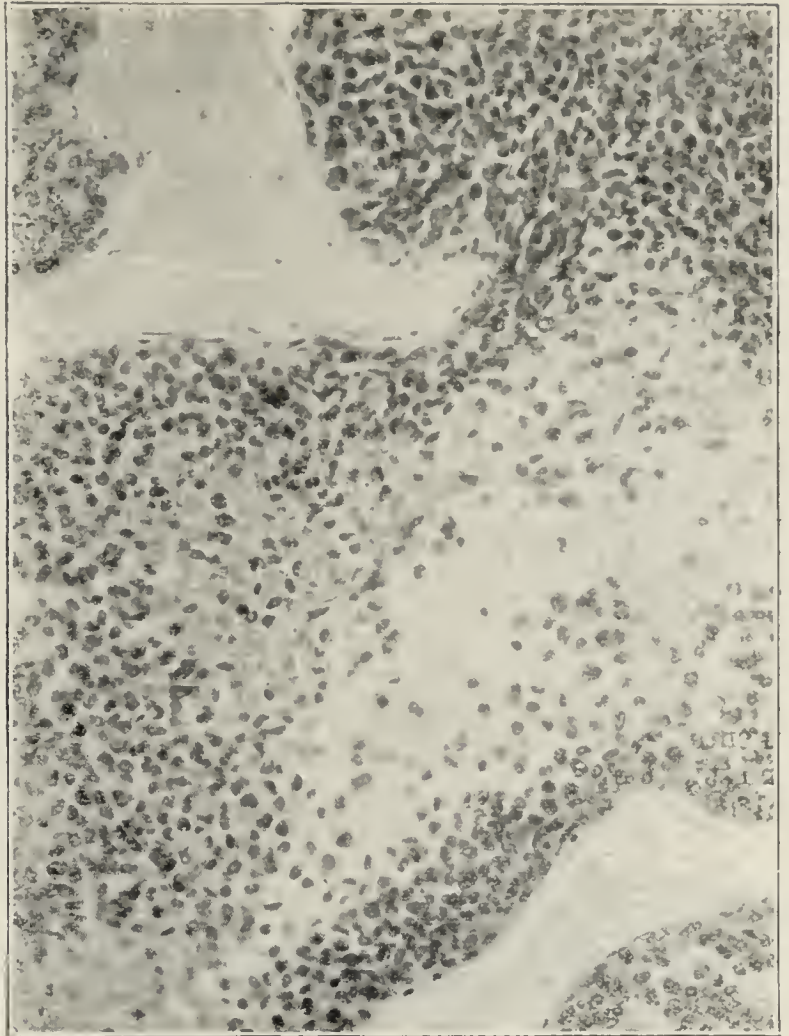


Fig. 7.—Angiosarcoma. Zeiss 8 mm., C. O. 4. Showing large cavernous blood channels lined by endothelium or sarcoma cells and the intervening tumor tissue of round and polygonal cells, and a supporting reticulum.

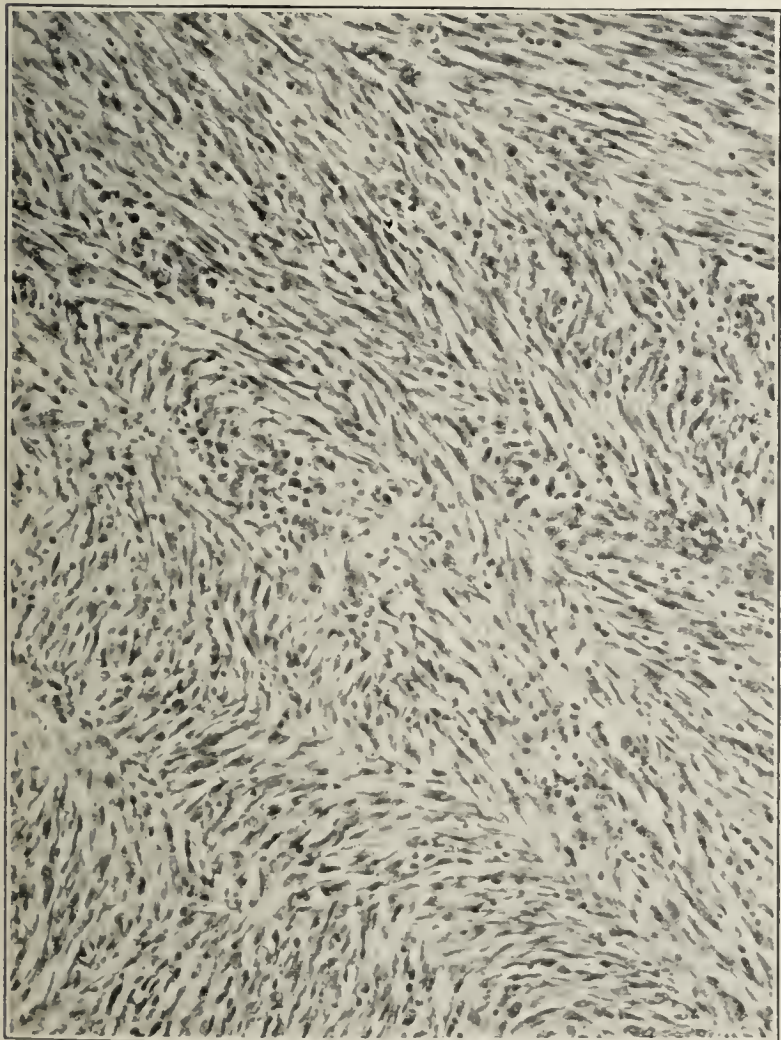


Fig. 6.—Idiopathic multiple hemorrhagic sarcoma. Zeiss 8 mm., C. O. 4. Showing the bundles of spindle cells cut in various planes and an intercellular substance.

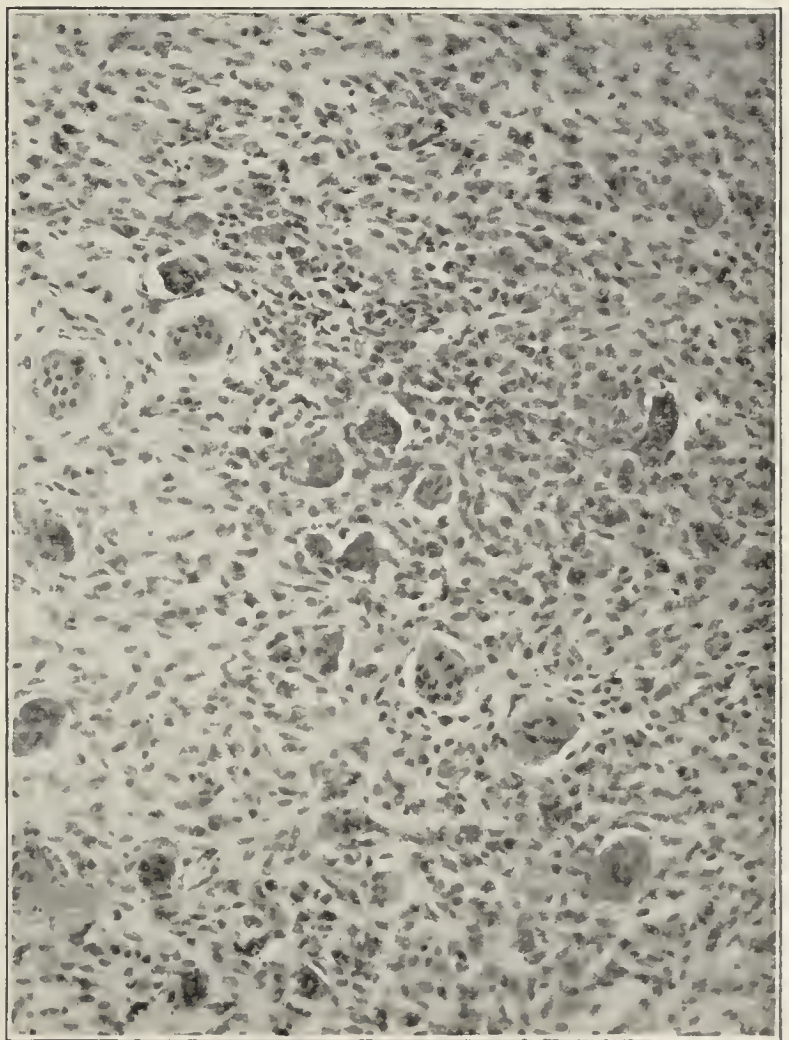


Fig. 8.—Myeloma of the finger. Zeiss 8 mm., C. O. 4. Showing the giant cells, surrounding round and small spindle cells and the delicate reticulum.

Recklinghausen² in 1882 these malformations were regarded as endothelial in origin; and to harmonize, all melanomas were placed in the sarcoma group. In 1893, however, Unna³ promulgated his views on the epithelial nature of moles, and for the sake of consistency melanomas were then placed in the carcinoma group by the adherents of Unna's school. He maintained that nevus cells were true epithelial cells which had been snared off and had undergone a metaplasia from prickles or fibrillation." Hodara⁴ claimed to have demonstrated in snared-off cells the degeneration which led to the disappearance of the epithelial prickles, and, more recently, Zieler, in his experimental work at the Breslau Clinic, produced changes in the skin which he considered as further proof of the epithelial origin of nevi. He treated a healthy portion of skin in a patient with xeroderma pigmentosum for twenty minutes with Kromayer's quartz lamp and produced a marked reaction with necrosis of the papillary bodies. After several weeks a pigmented scar ensued, on examination of which he found pigment in the cutis and epidermis and in the basal layer pale cells of epithelial character and groups of the same at the periphery of and in the scar tissue.

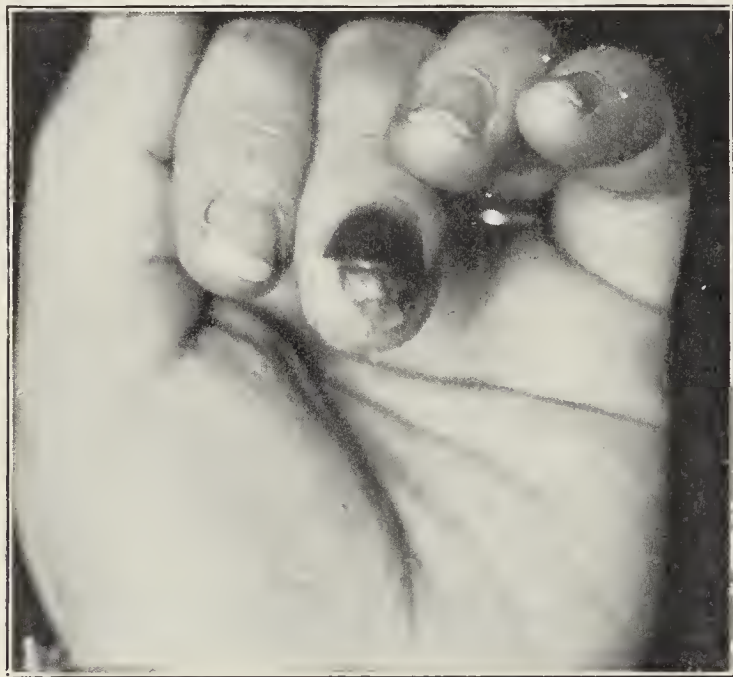


Fig. 9.—Myeloma of the finger. Showing tumefaction of the terminal phalanx, discoloration of the nail and fungating growth beneath.

These had the arrangement and form of typical nevus cells. The question which arises is if this was not in reality an experimental epithelioma. This would not be an unnatural supposition with a predisposed skin like that in xeroderma pigmentosum.

On the side of the mesodermal origin of moles are ranged the investigators who favor the proliferation of lymphatic endothelium or vascular endothelium and perithelium or both. Virchow and others believed them to be derived from young connective-tissue cells; and, according to Soldan,⁶ they had their origin in the vessels following the sheaths of nerve fibers. Borst⁷ and Kreibich regard nevi as melanofibromata and Ribbert⁸ invokes a distinct cell type of connective tissue origin, the chromatophore. He holds that nevi consist of two

kinds of cells—alveoli of polymorphous cells and fully developed chromatophores—both genetically identical, the round ones being sharply less differentiated. Others incline toward a dual genesis. Thus Wilfred Fox⁹ believes that the majority of nevi with regular columns of cells are derived from the epidermis, while a rare variety with a less uniform distribution arises from the mesoderm. Adami,¹⁰ while favoring the connective-tissue origin of chromatophores, admits that they may also be derived from the epidermis, but argues against a purely epithelial genesis that "pigmented tumors of pure epitheliomatous type are unknown." While I agree in the main with Adami, it must not be overlooked that pigmented rodent ulcers described by Johnston¹¹ and the pigmented carcinoma reported by Gilchrist¹² were epithelial.

From my own studies of this perplexing subject I am in accord with the view that attributes a twofold origin to nevi. In some, the characters of the cells conform more closely with those of the epidermis and can hardly be distinguished from prolongations of the latter which enter the mole. In others, there appears to be another variety, consisting of cells with vesicular nuclei, with faint or no tinctorial properties and a well-defined border (Fig. 3). Their shape in general is round, but this may be modified by mutual pressure. Fibers from the connective tissue may be seen between individual cells and groups of them.

The sites of predilection for melanomas are the eye and the skin of the face and extremities, especially the foot. While nevi and pigment spots form a predisposing base for the development of melanomas, the latter also occur independently of them in the normal skin or other organs. Regions normally rich in chromatophores show a certain proneness, as the anus and genitalia.

Ribbert and Borst look on the primary occurrence of melanomas elsewhere than in the skin, mucous membranes or choroid with skepticism. This seems hardly justifiable in view of the number of authentic reports. Duval¹³ reported a melanoma of the gall bladder, Rösle of the ovary and Frankel of the thyroid. Orth¹⁴ published a report of a primary melanosarcoma of the adrenal and Martini¹⁵ three cases from the axillary and cervical lymph nodes. In his report he incorporates accounts of similar primary lymph node tumors recorded by Cena, Birch-Hirschfeld, Putiate, Berger and Marchand, and seeks the explanation for this location in the common mesodermal origin of the lymph ganglia and corium and the aberration of chromatophores during fetal life into the stroma of certain nodes, which cells after a time give rise to tumor formation. In connection with the central nervous system there are also a number of instances. Virchow,¹⁶ in 1859, reported a case of the arachnoid, all the other organs being free. Stoerck's case showed involvement of the pia and spinal cord, without other findings. Sternberg's case was a primary growth of the brain, as was also Minelli's. Hirschberg¹⁷ reported one of the lower dorsal and upper lumbar segments of the spinal cord with metastases into the neighboring soft tissues; nowhere else was

2. Von Recklinghausen: Ueber die multiplen Fibrome der Haut, Berlin, 1882.

3. Unna: Berl. klin. Wehnschr., 1893, xxx, 13.

4. Hodara: Monatsh. f. prakt. Dermat., 1897, xxv, 205.

6. Soldan: Arch. f. klin. Chir., 1899, lix, 261.

7. Borst: Die Lehre von den Geschwülsten, 1902, p. 117.

8. Ribbert: Beitr. z. path. Anat. u. z. allg. Path. (Ziegler's), 1897, xxi, 471; Geschwulstlehre, 1904, p. 277.

9. Fox: Brit. Jour. Dermat., 1906, xviii, 15.

10. Adami: Principles of Pathology, i, 764.

11. Johnston: Jour. Cutan. Dis., 1905, xxiii, 1.

12. Gilchrist: Jour. Cutan. Dis., 1899, xvii, 117.

13. Duval: Montreal Med. Jour., 1908, xxxvii, 270.

14. Orth: Berl. klin. Wehnschr., 1906, xxvi.

15. Martini: Ztschr. f. Krebsforsch., 1907-8, vi, 200.

16. Virchow: Virchow's Arch. f. path. Anat., xvi, 180.

17. Hirschberg: Virchow's Arch. f. path. Anat., clxxxvi, 229.

there a trace of melanotic pigmentation. As Hirschberg points out, physiologic chromatophores with iron-free pigment are present in the central nervous system, and there is also an embryologic relationship between those of the skin, choroid and leptomeninges in that they have a common matrix in their development. Furthermore, from the observations of Ribbert,¹⁸ Kölliker, and others, chromatophores are present in the adventitia, especially of the pial arteries which pass into the central nervous system, and these may undergo primary proliferation.

Melanomas developing on moles may give rise to marked local changes, or, more rarely, to none at all, the first indication of malignancy being metastasis. Or, the mole may ulcerate and partially heal or take on slow growth; meanwhile, the neighboring lymph nodes enlarge and, if ulceration over them takes place, discharge an inky black fluid, the patient dying from recurrent hemorrhages or from ulceration of some large vessel in the neighborhood. Again, the mole may increase in size and color and produce lymph node and visceral metastases, death ensuing from cachexia or interference with some vital organ. In the benign type, the so-called melanotic "rodent ulcer," the node becomes locally malignant, but no metastasis takes place. In Galloway's¹⁹ and Crocker's²⁰ cases of melanoma of the foot the tumor began as a "blister" which ruptured and healed several times and then developed into a growth.

Melanotic whitlow, which, according to Hutchinson, is due to injury, is seen at the base of one of the finger- or toe-nails, has the features of an onychia with pigmentation, and soon develops into a fungating tumor which is as malignant as the other forms. Figure 4 shows a section of such a growth, in which the sarcoma element was very evident. It was made up of fasciculi of connective-tissue cells with intercellular fibrillae. The cells varied in size, were spindle or oval in shape and had pale-staining nuclei. Some were pigmented, others not. In outlying areas there was also an alveolar arrangement of round and polymorphous cells of large size with a sparing amount of intercellular substance. Pigment in this portion was lacking. The tumor was very vascular and in the lumina of a number of vessels a growth was noted. A number of multinucleated cells were also seen. A round-celled infiltration was quite marked, a focus being present in the center of the illustration.

The rule is for melanomas to form more metastases than do any other tumors, dissemination taking place both by the lymph and the blood stream, so that the regional lymphatics and all the viscera, intestines and serous membranes may show secondary involvement. This tendency to metastasize is due to growth near the vessels and into them, so that the cells are carried through the entire vascular system. In advanced cases the leucocytes and the endothelial cells lining the vessels take up pigment so that the tissues in general may be tinged and there may be in addition melanemia and melanuria. Not all tumors are equally malignant and dissemination may be delayed for a long period. Just gives the average duration as three years, but death within a year has followed, and as an outside limit may be mentioned Dobberty's case of brain tumor which appeared ten years after a primary tumor of the eye. Whitfield²¹ divides melanomas into two classes, the com-

mon highly malignant type with early and general dissemination and the slow-growing variety with little tendency to metastasis. Rarely the regional lymph nodes escape even in the malignant type, as in Gilchrist's²² case in which dissemination took place by the blood stream only, and hundreds of metastases were present without involvement of the lymphatics.

The color of the metastases bears no relation to that of the original tumor, as the latter may be deeply pigmented and the daughter cells colorless, and conversely, with a slightly pigmented growth the metastases may show all the shades from a light brown to an intense blue-black.

Microscopically, melanomas show a varying picture, not only in different growths but in different portions of the same tumor. There may be an alveolar arrangement of large or small cells in one part and bundles of spindle or branched and stellate cells in another. The amount of pigment is also a varying factor; in some areas it may be so dense as to obscure the nucleus and cell body and in others it may be entirely lacking. In spite of this polymorphism, Ribbert²³ believes that all of the cells originate from one and the same type—namely, the chromatophore—by reason of which he designated these tumors "chromatophoromata." The round unpigmented, indifferent elements represent an embryonal stage of the chromatophore and are found in the most active infiltrating parts of the tumor, while the fully developed chromatophores represent the adult and less active stage. The large, round, densely pigmented cells he regards as degenerated forms, which, like dead amebas, have become rounded, the diffuse pigmentation being the final stage in the life history of the cell. The small, round polymorphous cells are collected into alveoli, many of which have arisen by the growth of the cells into the lymph and blood vessels and filling and distending them. The spindle cells are collected into bundles, which in the main run parallel to the blood vessels. Ribbert found that in nevi the pigmented cells were usually of spindle shape and had a tendency to arrange themselves about the vessels. They may, however, also be pigment-free, although the pigmented ones are the characteristic element, and it is most likely that melanomas arising from nevi do so from the fully developed chromatophore rather than from the cell clusters, though these can not be ruled out. When they do arise from pre-existing developmental anomalies, he adds, it is probable that in them the chromatophores were more numerous from the beginning and were undergoing a slow but continuous increase.

Borst and others also pointed out that the most pigmented portions of melanosarcomas were those closely related to the vessels. Lubarsch and Rössle explain this by the fact that the cells lying nearest the vessels receive more nourishment; hence develop and pass through their evolution more rapidly. The intensity of pigmentation then does not point to its hematogenous origin, but to more favorable conditions for development.

Melanin consists of fine amorphous granules varying from golden brown to inky black. It is soluble in ether, alkalies and strong acids and is bleached by chlorin, peroxid of hydrogen and potassium permanganate. Being the final stage of the cell, its increased production leads to death of the cell, and nucleus and protoplasm may disappear, leaving only heaps of pigment. Von Rindfleisch is of the opinion that pigment

18. Ribbert: Cited by Hirschberg, Virchow's Arch. f. path. Anat., 1906, clxxxvi, 229.

19. Galloway: Brit. Med. Jour., 1897, p. 873.

20. Crocker: Diseases of the Skin, Edition 3, p. 1020

21. Whitfield: Brit. Jour. Dermat., 1900, xii, 274.

22. Gilchrist: Jour. Cutan. Dis., 1899, xvii, 122.

23. Ribbert: Geschwulstlehre, p. 255.

accumulation leads to an irritative condition of the cell and proliferation, resulting in daughter cells with the inherent property in a certain stage of development to form pigment again.

In the discussion of the origin of melanin the points at issue are whether it originates in the cutis or epidermis or in both, and whether or not it is derived from the blood. Kölliker²⁴ believed that it was formed in the cutis and through the leucocytes or connective tissue cells was transported to the epidermis; Jarisch and Post,²⁵ that it was of epidermic origin and streamed into the cutis direct or was carried there by wandering cells. Ehrmann,²⁶ Borst, and Neumann were of the opinion that it was derived from the hemoglobin of the blood. Ehrmann²⁶ attributed to a specific cell in the cutis, the melanoblast, the function of pigment formation, and believed that this cell extended into the epidermis and deposited pigment there. This cell is identical with the chromatophore of Ribbert. The hematogenous origin of melanin, however, is not supported by chemical examination, as it contains sulphur and not iron. Various investigators, among them Martini, found iron only in those portions where hemorrhage had taken place, so that the presence of iron in melanotic areas is generally looked on as a contamination with blood.

Rössle,²⁷ in studying protozoa under pathologic conditions, found that certain nuclear changes took place—namely, hypertrophy and hyperchromatosis—with discharge of a portion of the nuclear substance into the plasma and its conversion into brown or black pigment. Turning his attention to melanomas, he came to the conclusion that similar changes took place in young cells—namely, an overproduction of nuclear substance with passage into the protoplasm and metamorphosis into pigment. He demonstrated that the chemical reaction in both was the same—namely, iron-free.

Staffel²⁸ confirmed the studies of Rössle and applied them to various pigmented conditions in the skin. He concludes that in human skin pigmentation is the result of cellular activity, is formed by the epidermic as well as plasma and mast cells, and that the mode of formation is the same in all—i. e., an accumulation of nuclear substance and its conversion into pigment.

In further support of the nucleolar theory are the experiments of Meirowsky.²⁹ He produced pigmentation with the Finsen light and found that pigment was produced only in the epidermis and not in the cutis. He was able here to follow the same cycle of development as his predecessors had reported—viz., accumulation, discharge and metamorphosis of nucleolar matter. Pigment being a portion of the nucleus, he suggests that this point may help to clear up the question of the inheritance of pigmentation, the nuclei transmitting inherent properties and tendencies to the offspring.

Adami³⁰ argues that identical nuclear changes having been described in connection with so many cell deposits, each individual cell deposit instead of being a direct development from the plasmasomes or chromidia is due to the interaction between the discharged nuclear matter and certain cytoplasmic substances. He also suggests that instead of being a progressive acquire-

ment, marked pigmentation indicates a deficiency in the disintegrative mechanism of the cell, the normal final stage of colorless chromogen formation not being reached. From the investigations of von Fürth³¹ it seems that melanin is developed by the action of intracellular oxidases or enzymes on the aromatic or chromogen group of the protein molecule.

The true factor in the causation of melanomas, as in all tumors, is still unknown, and the extent to which increased vascularity due to irritation or inflammatory changes plays a rôle still undecided. The majority of cases begin after the third decade, chiefly in the fourth and fifth. Bland-Sutton mentions one in a girl of 13. It would seem that melanomas of the foot occur more frequently in women than in men. These tumors appear to have a wider distribution in the lower animal kingdom, where they are not so malignant as in man. They are frequent in horses, and also occur in cows, having the same tendency to metastasis, but with a more benign course.

Among the other pigmented growths of the skin is Kaposi's idiopathic multiple hemorrhagic sarcoma, differing from the melanoma in having a multiple and usually symmetrical origin, a slower course and little tendency to metastasize. Its color is due to blood pigment and not to melanin. As shown in Figure 5, the tumors are situated in the corium, are very vascular, and consist of capillaries and blood spaces lined by endothelium or tumor cells and a connective tissue growth. The blood spaces are very delicate and rupture easily, the hemorrhagic extravasation giving rise to the pigment present in these tumors. Under higher magnification (Fig. 6) the growth is seen to be made up of spindle cells and an intercellular stroma collected into bundles which on section appear in various planes and give rise to an appearance of streaming or radiation from different centers.

I have previously called attention to the fact that single brownish-red tumors are met which present all the histologic features of Kaposi's angiosarcoma, remain localized and show no recurrence after removal. On the other hand, we find tumors originating from the endothelium or perithelium of blood vessels in which the cells are not spindle-shaped as in the Kaposi type, but round or polygonal (Fig. 7), with deep-staining nuclei and a slight intercellular substance between. The large cavernous blood channels are lined by endothelium or tumor cells and, owing to the delicacy of the walls, hemorrhage readily occurs into the tissue.

With the melanoma at one pole of the sarcoma group representing the highest type of malignancy, we have the giant-celled sarcoma or myeloma at the opposite end as the least malignant. It is still a question whether it properly belongs to this group, many pathologists being inclined to place it in a class by itself, for this reason denominating it "giant-celled myeloma" instead of a giant-celled sarcoma. It is made up of tissue similar to the red marrow of young bones and occurs in the medulla and in the periosteum, as in the lower jaw, where it is known as epulis. In the long bones the site of predilection is near the epiphyses, almost always beginning in the medulla and growing out to the periosteum. These tumors may attain the size of a head and undergo cystic softening. The vascular development is very marked, and the hemorrhage may be so great that the tumor regresses and is no longer thought a growth. Such cases have been called "bone aneurisms." These

24. Kölliker: *Ztschr. f. wissensch. Zoöl.*, 1887, xlv.

25. Post: *Virchow's Arch. f. path. Anat.*, 1894, cxxxv, 479.

26. Ehrmann: *Monatsh. f. prakt. Dermat.*, 1907, xlv, 166.

27. Rössle: *Ztschr. f. Krebsforsch.*, 1904, ii, 291.

28. Staffel: *Verhandl. d. deutsch. path. Gesellsch.*, 1908, xi, 136.

29. Meirowsky: *Monatsh. f. prakt. Dermat.*, 1906, xlii, 541; xliii, 155; 1907, xlv, 166.

30. Adami: *Principles of Pathology*, i, 765.

31. Von Fürth: *Centralbl. f. Path.*, 1904, xv, 617.

tumors are not very malignant; they grow slowly, recur sometimes, but do not as a rule metastasize.

CASE 3.—The case under consideration, kindly referred to me by Dr. Dongal Bissell of this city, had a more unusual location, viz., in the terminal phalanx of the left middle finger. The patient was a woman of 33.

History.—Ten years before examination, the patient had had a chancre of the lip for which she was treated over a period of two and a half years. She was married the first time at twenty, and the second time six years before she came under observation. She had never been pregnant. Eight years before examination she was operated on for tubal disease, a portion of one ovary being left. She had menstruated normally since. Three years before she came under observation she had a "sore" on her elbow. Eight months before she presented herself to me she noticed a swelling of the terminal phalanx of the left middle finger. Later the nail became discolored and tender on pressure. After this a dark red infiltration appeared beneath the nail and projected some distance beyond the tip of the finger. It subsequently ulcerated and was followed by a fungating condition (Fig. 9). On palpation of the terminal phalanx, marked crepitation was evident, probably due to the disintegration of the bone.

On account of the history of syphilis, the patient was treated energetically with antisyphilitic remedies without avail. A biopsy was then made to confirm the clinical diagnosis of myeloma. She was given numerous x-ray exposures, but as they were unproductive of result, she finally yielded to operation. Amputation of the terminal phalanx was made by Dr. Bissell and the tissue sent to me for further examination.

Examination of Specimen.—On section, the entire phalanx showed soft cancellous tissue with a few spicules of bone and a central cavity. Microscopically, (Fig. 8), the typical feature was the giant cell, which has the characteristic structure of myeloplasm. The rest of the tumor was made up of spindle and round cells arranged about the giant cells or blood vessels, which were very numerous in some areas. They varied from small capillaries to large blood spaces and hemorrhage was marked in places. The supporting stroma consisted of an intercellular reticulum of variable amount. The giant cells were more or less grouped, had a finely granular protoplasm and many nuclei, oval or round, situated throughout the cell body. Their number was so great sometimes that they filled the entire cell. Occasionally tumors were found in which the nuclei had a peripheral arrangement as in the Langhans cell.

Owing to the history of lues which this patient gave, it is interesting in this connection to cite the case of syphilitic dactylitis with recurrence after operation reported by Nicolas, Durand and Moutot.³² The patient was a man with a fusiform tumefaction of the left index finger, which was diagnosed on clinical and histologic examination as a myeloma of the synovial sheath. An operation was performed, but a month afterward the patient returned with a tumor the size of a pigeon's egg, which was then diagnosed as a rapidly infiltrating sarcomatous recurrence. An antecedent history of syphilis, however, and a closer study of the microscopic features of the case, suggested to one of the authors its possible luetic nature. The patient was accordingly most energetically treated on this supposition with injections and iodids and in four weeks was well.

Tertiary lesions of syphilis present under the microscope such a variety of phases that they may simulate a vast number of pathologic conditions. Giant cells conforming more or less to the myeloid type are often present in great numbers, but they do not possess so many nuclei, and on closer examination their vascular relationship can usually be established. I believe that the majority, if not all, giant cells in syphilis are the

result of endothelial proliferation and vascular occlusion. As other differential points may be mentioned the endarteritis and periarteritis of the vessels in lues, and also that the spindle cells with the reticulum met with in myeloma are not a feature of syphilis.

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ABSTRACT OF DISCUSSION

DR. D. W. MONTGOMERY, San Francisco: In my opinion Dr. Fordyce has acted wisely in speaking of the melanomas as sarcomas, without further comment; for although some of the melanomata look like epitheliomata because of their highly developed alveolar structure, yet they are, almost without exception, sarcomas. A pigmented epithelioma is a very rare form of tumor.

DR. JAY F. SCHAMBERG, Philadelphia: One of the photomicrographs shown by Dr. Fordyce recalls to me a picture in my possession which appeared some time ago in the *Journal of Cutaneous Diseases*, and which represented an epithelioma developing on a papillary nevus on the forehead of a young man which had been injured by an umbrella ferule. The nevus had been present since birth and only underwent malignant change subsequent to the injury. The growth appeared to have its origin from an off-shoot of the hair follicle so that it probably belongs to the type of epithelioma designated trichoepithelioma. Large masses of epithelial cells were seen proliferating in the lymph spaces.

DR. M. B. HARTZELL, Philadelphia: We have learned in recent years that many of the cases of malignant neoplasms formerly called alveolar pigmented sarcoma are not sarcomata at all, but pigmented epitheliomata; and it seems to me that we ought to be somewhat cautious about accepting as sarcoma some of these lesions of the skin showing a pigmented alveolar structure. Most of these are epitheliomata.

DR. WILLIAM S. GOTTHEIL, New York City: I have had two of these cases of pigmented sarcoma and in both of them, in spite of early and repeated operations, general sarcomatosis of the skin and internal organs led to a fatal issue, in one case within six months; in the other within nine months.

DR. J. A. FORDYCE, New York: I intended to use the term melanoma as a non-committal one, including melanosarcoma and melanoepithelioma. I think it is yet undecided where these tumors originate. I do not believe that the view expressed by Dr. Hartzell that many of them are melanoepitheliomata is accepted by leading pathologists. The view is commonly held that these growths originate from the chromatophores, presumably connective tissue cells, and not from the epithelial cells. Unna's contention that they are melanoepitheliomata is now losing ground, and the view is being held that they originate in this special tissue. In one case, a tumor of this kind existed on the foot for a number of years without giving rise to metastases, although as a rule these growths metastasize early and are rapidly fatal.

THE ROLE OF ANIMAL EXPERIMENTATION IN THE DIAGNOSIS OF DISEASE*

"The humanity which would prevent human suffering is a deeper and truer humanity than the humanity which would save pain or death to animals."—Charles W. Eliot.

M. J. ROSENAU, M.D.

Director Hygienic Laboratory, U. S. Public Health and Marine-Hospital Service

WASHINGTON, D. C.

We must recognize a disease before we can hope to prevent or cure it. The diagnosis is, therefore, of fundamental importance; indeed, on correct diagnosis rests the entire structure of preventive and curative medicine. The power of recognizing a large number of diseases with unerring certainty has raised medicine from a de-

32. Nicolas, Durand and Moutot: Ann. de dermat. et de syph., 1908, Series 4, 1x, 208.

* This is Pamphlet 111 in a series issued for public information by the Council on Defense of Medical Research, referred to editorially last week. See advertisement in this issue.

spised empiric art to an exact science, the leaders of which rank with the most distinguished men of any calling in the esteem and gratitude of mankind.

The importance of diagnosis holds true for every branch of human endeavor. The judge and jury must have a correct diagnosis of a case at law to judge correctly the facts. The reformer must diagnose evils before he can hope to correct them. The bridge-builder must recognize the cause of weakness in order to correct or prevent faulty construction. Deprived of the power of correct diagnosis, the physician of to-day would have no more mastery over disease than the primitive medicine-man, and his patients would suffer accordingly. Without the means of correct diagnosis, the sanitary sciences would revert to guesswork and chaos. The prevention or suppression of tuberculosis, malaria, plague, typhoid fever, diphtheria and other communicable diseases would be a hopeless task without modern methods of diagnosis. These methods play an equally important part in the exclusion of exotic plagues at our maritime quarantines.

It is perhaps not generally understood that we depend largely on animal experimentation in order to make a positive diagnosis of many of the important diseases of both man and the lower animals. To illustrate the extent to which modern medicine is dependent on animal experimentation for diagnosis, the following instances are cited:

TUBERCULOSIS

The final recognition of the tubercle bacillus, which is our main reliance in diagnosing this disease, depends entirely on animal experimentation. In fact, Trudeau well states that "everything that has a direct bearing on the prevention of tuberculosis, everything that has changed mankind's attitude toward it from one of apathy and hopelessness when the infectious agent which produces tuberculosis was unknown, and the disease was thought to be inherited and always fatal, to the growing hope of its ultimate conquest . . . we owe to animal experimentation."

The essential difference between the bovine and the human tubercle bacillus is one of experimental virulence as tested on the lower animals. Further, there are many bacteria that cannot be distinguished from the tubercle bacillus when examined under the microscope or in artificial cultures, and we must resort to animal experimentation to gain the knowledge we seek. In many cases we are unable to find tubercle bacilli in the sputum on account of their scarcity, while the same material inoculated into a guinea-pig demonstrates their presence with absolute certainty. The sacrifice of this one guinea-pig will often save a human life by giving early recognition of the disease. Successful treatment is often hopeless without early diagnosis. What reasonable being would not thus sacrifice a guinea-pig to save the life of a loved one? Experimental tuberculosis in the guinea-pig is apparently a painless malady and the animal is usually killed with chloroform before the disease has progressed very far, both to gain an early knowledge of the desired facts and to prevent needless suffering on the part of the animal.

We must depend on animal inoculations in order to distinguish between a live and a dead tubercle bacillus. This is a matter of the greatest practical importance, for all our exact knowledge of the efficiency of heat and other germicidal agents used in the warfare against tuberculosis depends on this distinction. These facts are obviously useful in protecting mankind from whatever

danger there may be from tuberculous infection in milk, meat and other foodstuffs. Further, this knowledge is also of prime importance in order that we may know when and how to destroy tubercle bacilli in sputum and other discharges so as to prevent the spread of the infection. In the present state of our knowledge, this information can be gained through animal experimentation only.

TYPHOID FEVER

The ultimate recognition of the typhoid bacillus depends on the use of the specific agglutinins. The specific agglutinins may be produced in the blood-serum of certain animals. These specific agglutinins are usually obtained from the horse or the rabbit. The animals are inoculated with small quantities of cultures of the typhoid bacillus, to which they are not very susceptible and which do not seem to discommode them. After a few injections, at intervals of four to eight days, the blood-serum of the horse or rabbit exhibits the desired property of clumping or agglutinating the typhoid bacillus. This property is specific and definite, and is depended on in all careful work in the diagnosis of typhoid fever. Laboratories now use large quantities of such serum to detect the presence of the typhoid bacillus in the feces, urine or blood of persons sick with typhoid fever or suspected of having it in a clinically unrecognizable form. This serum is also indispensable in the detection of bacillus-carriers, who are such a menace to the public health.

Other laboratory tests or clinical methods not depending on animal inoculations are useful in the diagnosis of typhoid fever, but they are not satisfactory, accurate or final. The only positive method of recognizing typhoid fever depends on the isolation of the typhoid bacillus in pure culture; and this determination rests on animal experimentation.

CHOLERA

The cholera story is a repetition of that of typhoid. A cholera "vibrio" may be curved, straight, spiral or round; it may liquefy gelatin or not, may produce cholera red (indol) or not, etc.; but a micro-organism is cholera only in the event that it responds to the specific agglutinin obtained through animal experimentation. Bacillus-carrying is common in cholera. Mild cases are impossible to recognize clinically. A single bacillus-carrier or a single mild case may be sufficient to infect the water-supply of an entire community. At Hamburg, in 1892, the river Elbe was infected from a few unrecognizable cases (perhaps one case) of cholera. Nearly 17,000 persons who drank this infected water contracted the disease and slightly more than half died in the short period from August 17 to October 3.

Cholera introduced from abroad has devastated our own country more than once. That it has been kept out successfully of late years is due entirely to modern preventive measures, in which diagnosis through animal experimentation is an important feature.

The quarantine officer at a seaport must have the specific serum in order to recognize a mild case or a bacillus-carrier. For the want of a few drops of such agglutinating serum a serious epidemic may result, and the commerce and industry of an entire nation be disturbed.

RABIES OR HYDROPHOBIA

This is an acute, fatal and communicable disease. The diagnosis of rabies may be made tentatively by the finding of Negri bodies in the central nervous tissue and other pathologic changes; but the more experienced one becomes in the diagnosis of this disease the more reliance

one places on animal experimentation. All advances that have been made in the subject of rabies have depended on animal experimentation. It may interest the zoophilists to know that the sacrifice of a few dogs and rabbits in the study and prevention of rabies has been the means of saving the lives of many times their number of dogs, horses, cattle and other animals from this disease.

PLAGUE

The plague bacillus has certain cultural morphologic characteristics, such as a stalactite growth on bouillon, bipolar staining, and involution forms on salt agar; but this organism, which is the cause of the great black death, cannot be recognized with certainty except through animal experimentation. Kolle's method consists in rubbing a little of the suspected material on a shaved patch of skin (about the size of a dime) of a guinea-pig. If plague bacilli are present and virulent the animal contracts the disease in a few days. This method of diagnosing the disease is the foundation on which the preventive measures were carried out in California in the recent successful plague campaign. Animal experimentation is indispensable in the recognition of this disease as it occurs in man, the rats, the squirrel and other animals.

It was entirely through animal experimentation that sanitarians were given the useful knowledge that plague is transmitted from rat to rat and from rat to man through the agency of the flea. With the ability to diagnose the disease with certainty and with a correct knowledge of the channels of infection, suppressive and preventive measures may now be carried out with every assurance of success.

DIPHTHERIA AND TETANUS

The diagnosis of these two diseases may be made tentatively without the use of animal experimentation, but in this, as in many other such instances, appearances are deceiving and we must resort to tests on the lower animals in order to be sure of our diagnosis. The diphtheria and tetanus toxins cannot be recognized except by their effects on animals, and the same is true of the antitoxins. There is a whole group of organisms that look like and grow like the diphtheria bacillus, and are known as "pseudodiphtheria" bacilli. The shape and growth of the tetanus bacillus also is not distinctive enough to be final. We must, therefore, resort to animal experimentation in order to establish the identity of these organisms and the diseases which they produce.

SEPTICEMIA AND PYEMIA

The diagnosis of these conditions, which are commonly known as blood-poisoning, frequently requires animal experimentation. Our knowledge of these conditions, on which is based aseptic surgery and the modern treatment of wound infections, has resulted in large measure from experiments made on animals.

It is not possible in a few pages to specify all the instances in which animal experimentation serves a useful purpose in the recognition of disease; but in addition to the foregoing it plays a more or less important part in the diagnosis and prevention of pneumonia, dysentery, Malta fever, anthrax, glanders, actinomycosis, and a large class of maladies due to microparasites.

Further, it must be plain to anyone who gives the matter careful consideration that animal experimentation has not only been potent in preventing much suffering and saving many a human life, but it has been even more active in the realm of the lower animals. A more

exact knowledge of the causes and channels of infection and the methods of diagnosis of the communicable diseases of the lower animals has resulted in intelligent and humane efforts to conserve the health and comfort of our live stock. A full exposition of this subject is presented elsewhere, and mention is here made of only such epizootics as glanders or farcy, symptomatic anthrax or black leg, actinomycosis or lumpy jaw, anthrax or splenic fever, tetanus, swine plague, chicken cholera, hog cholera, Texas fever and foot-and-mouth disease.

Kipling says:

The doctor is exposed to the criticism of persons who consider their own undisciplined emotions more important than mankind's most bitter agonies: who would cripple and limit research for fear research might be accompanied by a little pain or suffering. But if the doctor has the time to study the history of his own profession he will find that such persons have always been against him—ever since the Egyptians erected statues to cats and dogs on the banks of the Nile.

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THE SIGNIFICANCE OF EHRlich's ALDEHYD REACTION IN THE URINE*

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About eight years ago Ehrlich first noticed that normal urine gave a faintly reddish coloration when treated with a muriatic acid solution of paradimethyl amino benzaldehyd; and that this coloration was remarkably intensified in certain pathologic conditions. To Otto Neubauer¹ is due the credit of having isolated the particular chemical substances causing the reaction, proving that it was caused by pyrrol derivatives present as urobilinogen substances, the product of the metabolism of blood pigments; and, reasoning inversely, he came to the conclusion that the blood pigments themselves were derived from pyrrol derivatives rather than indol substances, as upheld by Nenki. He, furthermore, contended that these urobilinogen substances, mother substances from which the urobilin was formed, were present in increased amounts when there was an increased breaking down of blood pigments, especially in malaria, lead colic, lobar pneumonia, lung infarct, venous thrombosis, liver diseases and some infectious conditions.

The object of the present investigation was to determine the clinical value of the reaction, since it is so readily and easily carried out. Undoubtedly the determination of the urobilin in the urine would be more satisfactory, as recently contended by Hildebrandt,² since by his method of treating the urine with zinc acetate all urobilinogen substances are converted into urobilin, so that both substances are determined at once, whereas the aldehyd reagent shows only the presence of urobilinogen, its action on urobilin causing no change in color. The present investigation was begun some nine months ago, since which time the work of Conner and Roper³ and Hildebrandt² has appeared. My

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* Read in the Section on Pathology and Physiology of the American Medical Association, at the Sixtieth Annual Session, at Atlantic City, June, 1909.

1. Neubauer, Otto: Sitzungsber. d. Gesellsch. f. Morphol. u. Physiol. in München., 1903, No. 2, xix, 32.

2. Hildebrandt: München. med. Wochenschr., April 6, 1909, p. 710.

3. Conner, L. A., and Roper, J. C.: Arch. Int. Med., Jan. 15, 1909, II, 532.

observations so clearly verify many of the observations and predictions of the former writers that their publication seems necessary.

The question of the origin of the urobilinogen and urobilin naturally is brought up, and the various theories for the production of the same called to mind, namely, the enterogenous, hepatogenous, hematogenous, histogenous and renal theories, recently so well summed up by the writers referred to. At the outset it may be stated that my observations would tend to support the enterohepatogenous theory, namely, that under normal conditions the reduction of the biliary pigments into urobilinogen and urobilin takes place in the intestines, in accordance with the views long since expressed by F. Müller and Otto Neubauer, and that a pathologic urobilinuria or urobilinogenuria results when the liver is insufficient; that is, when it is unable to excrete an increased amount of urobilinogen or urobilin when absorbed from the intestines, or when, through disturbances in the liver itself, it is unable to excrete a normal or even deficient amount of these substances. In infections of the liver evidence would point to the fact that these substances may be locally formed in the liver itself. Although the histogenous theory can not be discarded, it would seem that the chief organs concerned ordinarily are the intestines and the liver.

CLINICAL APPLICATION

The reagent used was prepared as follows:

Twenty grams of paradimethyl-amino-benzaldehyde were dissolved in 1,000 c.c. of dilute muriatic acid, made by diluting 150 c.c. of the chemically pure acid to 1 liter with distilled water. To about 5 c.c. of cold urine taken soon after being voided, because long standing causes a conversion of the urobilinogen into urobilin through the action of air and sunlight, 5 to 10 drops of the reagent were added. The mixture was shaken and allowed to stand a minute or two. Normal urine gave a varying coloration, which was intensified to a distinct cherry-red color on heating, usually associated with a peculiar pungent odor. Neubauer asserts that the urobilinogen represents various substances, ranging in structure from $C_8H_{13}N$ (hemopyrrol) to $C_{32}H_{40}N_4O_7$ (urobilin itself) and that the more sensitive give the reaction in the cold, the less sensitive only on heating. When the reaction is distinctly scarlet in the cold, a pathologic condition of the urine is present. Experiment soon showed that the intensity of the reaction varied, even in the normal urine, and the following scheme of recording results was adopted:

A negative result, i. e., maintenance of the original color of the urine, or a yellowish coloration after adding the reagent was reported as —0; a faint reddish color only obtained on looking through the whole column of urine in the test-tube from above, as +1; when the mixture presented a pinkish or faintly reddish hue, on looking at it from in front, as +2; when a distinctly scarlet coloration was obtained, it was recorded as +3; which intensity of reaction alone is of any pathologic significance.

Examination of my own urine through a period of twenty-five days showed that the reaction varied from one day to the other, but that it never assumed a +3 reaction in the cold, but always on heating. From this it was assumed that an apparently normal individual with a properly functioning liver was able to preserve a urobilinogen balance; that is, the liver was able to excrete these substances derived from the intestines, only allowing a trace to appear in the urine. It may

be possible that in cases of severe constipation, or so-called torpid liver, even in an apparently normal individual, the reaction might approach +3 in intensity, but if this condition persists following free purgation, undoubtedly a pathologic condition is at hand.

The reaction was next applied to the urine of a series of nearly 200 cases taken from all wards of the City Hospital; the tables show the distinct degree of reaction obtained in many of these cases. First, as to the color of the urine: This was recorded in a total number of 107 cases. Of the 74 light-colored urines examined:

13 (17.5 per cent.)	reacted + 3
9 (12.4 per cent.)	reacted + 2
10 (13.5 per cent.)	reacted + 1
42 (56.6 per cent.)	reacted — 0

Of the 33 cases of dark-colored urine examined:

13 (39.4 per cent.)	reacted + 3
5 (15.1 per cent.)	reacted + 2
2 (6.1 per cent.)	reacted + 1
13 (39.4 per cent.)	reacted — 0

This shows conclusively that the positive reaction was more commonly found in dark-colored urines, 21.9 per cent. more than in light-colored urines, but that it also occurred quite frequently in the latter. In the dark-colored urines a negative reaction was correspondingly less frequent—17.2 per cent. less. On the whole, then, the reaction is independent of the color of the urine, being more common, however, in dark-colored urines.

TABLE SHOWING DEGREE OF REACTION IN ABOUT ONE HUNDRED AND FIFTY HOSPITAL CASES

Clinical Diagnosis.	No. Cases.	Reaction			
		+3	+2	+1	—0
Acute lobar pneumonia.....	17	7	2	1	6
Malaria	2	2	.	.	.
Scarlet fever	5	.	.	.	5
Acute articular rheumatism.....	12	5	.	2	5
Typhoid fever.....	10	1	3	1	5
Influenza	5	2	.	1	2
Erysipelas	2	.	.	.	2
Simple pulmonary tuberculosis.....	5	.	1	1	3
Complicated pulmonary tuberculosis.....	2	2	.	.	.
Appendicitis	3	.	2	2	1
Pelvic cellulitis	2	.	2	.	.
Tonsillitis	2	.	1	.	1
Pus tubes.....	4	.	.	1	3
Endometritis	1	.	.	.	1
Cystitis	2	.	.	1	1
Cirrhosis of liver.....	2	1	.	.	1
Carcinoma of liver.....	1	1	.	.	.
Miliary abscess of liver.....	1	1	.	.	.
Catarrhal jaundice.....	4	2	.	.	2
Myocardial insufficiency + edema..	8	5	2	.	1
Pleurisy with effusion.....	5	4	.	.	1
Pericarditis + diaph. pleurisy.....	2	.	2	.	2
Pleurisy dry adhesive.....	3	.	2	.	1
Acute nephritis.....	5	1	.	2	2
Uremia	1	1	.	.	.
Chronic nephritis.....	5	.	.	.	5
Abortion	3	.	.	.	3
Shot wound of chest.....	1	.	.	1	.
Shot wound of abdomen.....	1	.	.	.	1
Shot wound of kidney.....	1	.	.	1	.
Ruptured abdominal aneurism.....	1	.	.	.	1
Fracture femur.....	1	.	.	1	.
Hemorrhoids	2	.	.	.	2
Venous thrombosis.....	1	.	.	.	1
Syphilis	2	.	.	.	2
Lead colic.....	1	.	.	1	.
Trichiniasis	2	.	.	1	1
Diabetes mellitus.....	5	.	1	.	4
Chronic alcoholism	2	.	.	.	2
Carbolic acid poisoning.....	1	.	.	1	.
Diabetes insipidus.....	2	.	.	.	2
Burn cases.....	4	.	.	.	4
Morphinism	3	1	.	.	2
Senile dementia.....	1	.	.	.	1
Dementia paralytica.....	1	.	1	.	.
Neurasthenia	2	.	.	.	2
Melancholia	1	.	.	1	.
Acute gastritis.....	1	.	1	.	.
Acute bronchitis.....	4	1	.	.	3

To sum up: The reaction is most commonly obtained in diseases of the liver, myocardial insufficiency with edema, pleurisy with effusion, and acute catarrhal jaundice, all conditions in which the proper elimination of the urobilinogen through the liver after absorp-

tion from the intestines is interfered with; furthermore, in some infectious conditions, as lobar pneumonia, malaria and articular rheumatism. An absence of a pathologic reaction has been conspicuous in more or less localized septic states, as pelvic abscess, pus tubes, tonsillitis, simple pulmonary tuberculosis, acute bronchitis, erysipelas, dry pleurisy and pericarditis, despite the increased temperature.

In this series of cases the absence of the reaction in typhoid fever and scarlet fever is to be noticed. In localized extravasations of blood following shot wounds, or rupture of aneurism, no increase in the intensity of the reaction is to be noticed. Convalescence from a condition in which the reaction was marked was followed by a return to the normal; thus, in both cases of malaria, the quick response to quinin treatment was followed by a disappearance of the reaction. In incipient cases of disturbed myocardial insufficiency, and in suspected cases of gallstone trouble with a clear history and response to treatment, the reaction was not present. Undoubtedly a positive reaction which persists, in these cases, would indicate a marked disturbance, either in the production of the urobilinogen in the small intestines plus increased absorption or a disturbance in the eliminating power of the liver. It must be borne in mind that one section of the liver may be involved and yet the remainder may be efficient, as was demonstrated in one severe case of syphilitic cirrhosis of the liver in which the reaction was negative, though a diminished formation in the intestines may have been present. The reaction is not a constant one, even in those conditions most commonly the cause. That a positive reaction may be of some assistance in suspecting liver involvement was shown in a case of miliary abscess of the liver following infectious thrombophlebitis.

CASE 1.—The patient, a young man, first showed symptoms of appendicitis; later localized peritonitis developed, at which time the reaction was + 2 in intensity. These symptoms subsided, but later increased temperature plus tenderness over the gall bladder made the attending physicians suspect gall bladder or liver involvement. The urine showed a positive aldehyd reaction in cold, and the presence of leucin and tyrosin in the urine. Operation was resorted to for suspected cholecystitis. At operation the gall bladder was apparently normal and cultures taken proved negative. The patient collapsed suddenly on the table.

Autopsy.—This revealed an enlarged liver, studded throughout with miliary abscesses along the portal tract evidently, and an infectious thrombophlebitis. Cultures from the portal vein and abscess areas both showed the presence of diplococci and a colon-like organism, evidently the result of infection following absorption from the originally involved appendix.

Clinically this case beautifully demonstrates what Fischler⁴ showed experimentally on animals, namely, that under certain conditions urobilin can be formed in the liver itself. He made biliary fistulae in dogs draining the bile to the outside, and then injected amyl alcohol and phosphorus into the gall bladder. The liver became involved, and urobilin again appeared in the urine; with the subsidence of the condition, it again disappeared. In my case the liver itself became involved through infection along the portal tract.

EXPERIMENTAL DATA

Since Muller reported the interesting fact that when the common bile duct becomes occluded the urobilin disappears from the urine, the German school has adhered to the enterogenons theory as to the origin of

the urobilin, namely, that when the bile is poured into the intestines and is subjected to the action of the reducing bacteria, urobilin is formed and absorbed from the intestines; it is again excreted through the bile and, to some extent, through the urine. Bile usually contains some urobilin. Neubauer¹ later asserted that occlusion of the common duct would also be followed by absence of the urobilinogen in the urine, bile and intestines, and that this might be shown by a negative aldehyd reaction in the urine, both in the heat and cold. Kimura⁵ showed that normal bile always contained urobilinogen, using the aldehyd reaction and the spectroscope to detect the absorption band.

With the object of verifying this fact through animal experiment the following investigations were made: It was found that normal rabbit urine reacted toward the aldehyd reagent exactly as does the normal human urine. Rabbits were therefore used, and each experiment conducted under ether anesthesia. Ether was given in minimal amounts, and never exceeded 30 minutes. In two instances the animals died within a few hours following the operation, but no changes beyond the normal were found in the urine.

EXPERIMENT 1.—Male rabbit. The common bile duct was ligated with silk and the operation wound closed. The animal died eighteen hours after operation.

Urinalysis.—Urine before operation, negative in the cold, + 3 on heating. After operating the urine taken from the bladder soon after death was reddish. Aldehyd reagent caused a negative reaction in the cold, the reddish color of the original urine soon disappearing on adding the reagent. On heating a brownish precipitate formed, but no scarlet color developed. The cold urine was then heated, filtered, and the reagent added after cooling. Reaction was + 1, on heating no increase in the intensity of the reaction. The urine, drawn before operation and preserved on ice in the dark, when added to the catheterized specimen immediately caused a scarlet coloration on heating with the reagent.

Autopsy.—This, made about twelve hours after death, showed abdominal wound perfect, no escape of bile, liver enlarged, congested, apparently bile-stained. Common duct ligated, severe congestion from this point upward. The aldehyd reaction negative in the heat and cold, but not confirmed by spectroscope examination. Kidneys both showed an acutely congested appearance.

EXPERIMENT 2.—Male rabbit; common duct ligated and operation wound closed. The animal died thirty-six hours after operation.

Urinalysis.—Urine after operation showed a negative reaction in the cold, and + 1 on heating. Addition of the urine obtained on the previous day before operation caused intense reddish coloration on heating with the reagent.

Autopsy.—Thoracic organs normal. Abdomen showed an early localized peritonitis, immediately below the operating wound. Liver was bile-colored, gall-bladder dilated.

These experiments both show that occlusion of the common duct is early manifested by a decided alteration in the normal reaction. On heating with the reagent only the faintest trace of a reddish color was noticed. On adding the normal urine, however, the color immediately became scarlet, showing conclusively that the urobilinogen had practically been eliminated; in reality none had been formed, because the action of the reducing bacteria in the intestines had been excluded. The fact that the reaction on heating was still recorded as + 1 would show that, as late as thirty-six hours after the second experiment, there was still a slight trace of urobilinogen present, which no doubt was due to residual urobilinogen in the tissues, this time interval not being sufficient to cause complete elimination from

4. Fischler: Das Urobilin u. seine klinische Bedeutung, Thesis, Heidelberg, 1906.

5. Kimura, T.: Deutsch. Arch. f. klin. Med., 1904, lxxix, 274.

the system. Several experiments were made of infecting the gall bladder above the point of constriction, in order to observe, if possible, the reoccurrence of the scarlet color, due to changes in the liver through bacterial action. No results were obtained, however.

Complete occlusion of the common bile duct is therefore followed by a negative reaction, both in the cold and in the heat, after adding the aldehyd reagent to the urine. There immediately occurs to one the possibility of using this fact as a means of diagnosis in cases of total obstruction of the duct through a stone, through inflammatory changes in the mucosa, or by compression from without through any source. Are these the only conditions which can cause this change in the reaction? Kimura⁵ has shown that in severe diarrheas a similar condition is obtained, owing to the fact probably that no bile can be reduced in the intestines under such a condition, or absorption becomes impossible. We must further conceive of the possibility of a patent ductus venosus, allowing of the discharge of bilirubin into the intestines, although occlusion of the duct be present. In the newly born the same condition is obtained, because bacterial reduction has not as yet begun.

In my list of clinical cases two other conditions were encountered, which gave a similar result.

CASE 2.—Infant, female, aged 17 months, died eight days after acute phosphorus poisoning caused by eating matches. The urine examined before death had unfortunately been standing from thirty to thirty-six hours before the aldehyd reaction was tried. It was, however, found negative both in the heat and the cold. Tyrosin was also found in the urine.

Autopsy.—Made about four hours after death; showed a somewhat enlarged liver, distinctly fatty. Heart showed beginning endocarditis. Intestines were somewhat congested. Microscopic examination of the liver showed distinct fatty changes and round-celled infiltration about the vessels; the liver cells were poorly stained and fat globules numerous. The urine obtained at autopsy showed a negative aldehyd reaction both in the heat and the cold.

CASE 3.—Clinical diagnosis, transverse myelitis. An operation had been performed to relieve any supposed compression of the cord about at a level with the fifth dorsal vertebra, since a distinct traumatic history was given. No relief followed. Immediate operation, however, was successful from a technical standpoint. The patient sank rapidly from incontinence of both urine and feces, and at last refused to eat, so that exhaustion ultimately resulted in death. For several days previous to death profuse hemorrhages occurred from the lower bowel.

Autopsy.—There was found an extremely fatty liver, chronic interstitial nephritis, and hemorrhagic condition of the lower colon. The urine obtained at this time likewise showed a negative reaction in the heat and cold.

In both these cases it may be argued that postmortem changes in the urine caused these variations in the aldehyd reaction from the normal. Among numerous cases examined after death, however, these two cases were the only ones which presented such a condition. Hildebrandt believes that in severe phosphorus poisoning the general destruction of the liver would lead to such findings. He has no direct evidence to support his views, however. Case 2 was undoubtedly one of acute phosphorus poisoning, and tyrosin was found in the urine: bile could not be detected by the nitric acid or iodine tests. Before death, however, the stools were very frequent, quite pale, and grayish in color. To what extent the profuse diarrhea was instrumental in causing the negative urobilinogen reaction can not be definitely told. Likewise, in Case 3, frequent diarrhetic stools were present before death, and in addition a severe hemorrhage from the bowel on repeated occasions. In both cases, however, the liver showed marked fatty de-

generation, which would tend to support the views of Hildebrandt. In the future severe anemias may be shown to react in a similar way, because of the lessened destruction of blood pigment in late stages.

In phosphorus poisoning the variety, whether acute or chronic, must also be taken into consideration. Harnack⁶ has recently shown experimentally that in acute cases following injection of phosphorus into the stomach rapid degeneration and fatty changes are produced in the liver. In more chronic cases, as when subcutaneous injections of phosphorus in oil are given, the degenerative changes in the liver are still present, but not so intense as in the more acute cases, inflammatory reactions on the part of the liver being more common. Therefore, it may be possible that in chronic phosphorus poisoning the destruction to the liver substance may not be so intense as to lead to a total absence of urobilinogen in the urine, as indicated by a negative aldehyd reaction in the heat and cold.

The animal experiment was again called into play, to shed, if possible, some light on this subject.

EXPERIMENT 3.—A male rabbit was given phosphorus in oil mixed with the food. About six hours later it began to show signs of being ill, and died some time during the night.

Urinalysis.—Before operation, at which time the bladder was emptied, the urine showed a negative reaction in the cold, and a positive reaction on heating. The urine, withdrawn from the bladder some time after death, showed a similar reaction.

Autopsy.—Stomach full of food, phosphorus fumes still escaping. The most dependent part of the organ showed an escharotic-like condition of the mucosa. The liver was not particularly enlarged, was distinctly mottled on section, but did not present a fatty appearance. Microscopically the liver showed distinct cloudy swelling of the cells, round-celled infiltration about the vessels, and engorgement of the capillaries. No fatty globules could be detected. The kidneys were enlarged and had a congested appearance.

The above experiment did not result in such marked fatty changes as to lead to a complete obliteration of the urobilinogen in the urine. It is possible that the death occurred too rapidly for such changes to be caused, and that a more gradually induced toxemia would have produced the desired result. To establish this point a second animal was used for experiment.

EXPERIMENT 4.—A male rabbit was given phosphorus in oil per mouth. On the three succeeding days the urine was normal in reaction, i. e., negative in the cold and positive on heating. On the fourth day more phosphorus was fed. On the day following the reaction was + 3 in the cold, distinctly positive. This persisted for five days, when more phosphorus was given per mouth. On the following day the reaction was negative in the cold, and a brownish coloration only developed on heating. Twenty-four hours later the reaction was negative in the heat and cold. The animal now showed signs of considerable weakness and suffering, and was killed by chloroform anesthesia.

Autopsy.—The liver was somewhat contracted, pale yellow, with a mottled appearance on section. The liver was still firm. Microscopically there was almost total obliteration of the liver cells; those remaining were pale with poorly stained nuclei. Numerous fat molecules were distributed throughout. There was round-celled infiltration about the vessels, and seemingly a beginning formation of connective tissue. The stomach was full of undigested food. The small intestines were nearly empty, the large intestines packed with ordinarily formed stools. The bile was thin, light greenish in color, and showed a negative aldehyd reaction in the cold and in the heat.

In this instance the destruction of the liver substance had been so great that no bilirubin was offered to the intestines for reduction. All stages of the reaction were also beautifully demonstrated, varying from

6. Harnack, E.: München. med. Wehnschr., March 2, 1909, p. 436.

the normal to a relatively and at last an absolutely deficient liver as indicated on successive days by the changes in the aldehyd reaction.

CONCLUSIONS

The clinical value of the aldehyd reaction obtained by adding the reagent to cold, freshly passed urine, and then noticing the changes in the color, at first in the cold and then on heating, is manifest, though limited at times.

The color reaction in the cold is of pathologic significance only when a distinct scarlet color is obtained.

When the reaction persists following free purgation a pathologic condition is at hand.

The reaction is most commonly present in diseases of the liver and bile passages, severe grades of myocardial insufficiency, and certain infectious conditions, as lobar pneumonia and malaria.

The reaction is not a constant one, even in apparently severe grades of the above conditions, presumably because the liver is still efficient in excreting any normal or increased amount of urobilinogen offered it.

Localized infections are more seldom accompanied by this reaction, and when it does persist in such conditions the condition of the intestines and liver should be taken into consideration.

In early grades of myocardial insufficiency of gall-stone trouble, and of liver disturbances the reaction is often a negative one. The appearance of the reaction in such cases previously negative would arouse suspicions of disturbances in the hepatic function; inversely, the disappearance of a reaction previously positive would indicate improvement.

The positive reaction is not constant in localized extravasations of blood into the tissues.

When the reaction is positive some care must be exercised in the selection of an anesthetic for operations, since it is well known that chloroform, for instance, can be a direct liver poison.

The absence of the reaction, both in the heat and in the cold, would indicate obstruction in the flow of bile into the intestines.

This condition is also obtained in cases of severe diarrhea, in the newly born, and in severe grades of destruction of the liver substance.

In conclusion I wish to express my indebtedness to the medical and surgical staff officers of the city hospital for their kind permission in allowing me to use the material at hand, to the internes—more particularly Drs. Light, Schlanser, Monroe and Mussey—also to Dr. A. E. Osmond, without whose kind assistance and skill much of the experimental work would have been impossible.

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CRATÆGUS OXYACANTHA *

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Two years ago my attention was called to this agent and since then I have used it rather extensively in order that I might satisfy myself if it had the therapeutic value claimed for it by the sectarian schools. It has been in use by the homeopathic and eclectic schools for some years, but the mass of therapeutic legends sur-

rounding it has deterred physicians of a scientific turn of mind from believing that it was likely to have any efficacy. Originally it was the secret of a quack in the south of Ireland, who by its use is said to have achieved an extensive reputation for the treatment of heart disorders throughout the British Isles. On his death he bequeathed the secret of his successful practice to his niece (if we can believe the romantic story told). She, in a true womanly spirit, could not or possibly would not keep a secret and thus made it known to medical science.

There are only two articles concerning this agent in the regular medical literature. One, Dr. Jennings¹ of Chicago, in 1896 found it such a cure-all for all cardiac complaints that the profession must have judged it to be good for none. Two years later Dr. Joseph Clement² extolled *Cratægus oxyacantha* as a sovereign remedy for angina pectoris; the article attracted no comment. In the homeopathic literature there are a number of small articles in the main grossly exaggerating its virtues and consequently of little scientific value. The homeopathic physicians use it for its drug (physiologic) effect just as they would use digitalis or quinin and not according to their so-called provings, in homeopathic doses.

For that reason the dosage in their literature is somewhat like ours. The eclectic physicians employ it quite extensively and it has been kept prominent largely through their efforts and through the work of the pharmaceutical houses of that school.

It is derived from the ripe fruit of the hawthorn (*Cratægus oxyacantha*). These berries are eaten by some people as a fruit. They must be gathered after the first frost. By some pharmaceutical houses the American species (*Cratægus coccinea*) is used and is thought by some observers to be quite as efficient as the *oxyacantha*. Concerning this the eclectics disagree. A reliable fluidextract or tincture is the best preparation. It has a fruity odor with a rather pleasant taste, is seldom rejected by the stomach, and so far as observed has no emulative effect. Thus far the active principle has not been isolated, nor have its physiologic properties been determined by animal experimentation.

Some work of this kind is now under way at the physiologic laboratory of Fordham University and will be reported on at a later period. Thus far my own experience with it has been entirely clinical in character and has seemed to warrant its use in some of the cardiac neuroses.

The following cases are illustrative of a type sometimes benefited by this agent:

CASE 1.—*Patient*.—Mrs. M., aged 33, quintipara, negative family history, for the past eight years has had hay asthma. During the last four years she has been having frequent attacks of pain and distress in the cardiac region. In these attacks the patient thinks that she is going to die. At times they are associated with syncope; sometimes they are continuous for weeks. Physical examination during the attack is negative except for a slight lateral enlargement of cardiac dullness and a pulse of 90. There are no evidences of exophthalmic goiter. These attacks bear no relation to disorders of the gastrointestinal tract.

Treatment.—All sorts of cardiac tonics and stimulants seem to increase the trouble. Bromids quiet the nervous system and lessen the apprehension but do not affect the cardiac disturbance. The addition of cratægus in 20-minim doses gave the first complete relief in four years. The relief has been permanent as far as the attack was concerned, and whenever the

* Read in the Section on Pharmacology and Therapeutics of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

1. Jennings: New York Med. Jour., Jan. 14, 1906.

2. Clement, J.: Kansas City Med. Recorder, April 7, 1898.

patient feels the oncoming attack she resorts to its use again, and always with success.

CASE 2.—*Patient*.—Mrs. H., aged 28, has been having attacks of pain over the precordia for the past year. These attacks are not connected with any gastric manifestations. The pain is of a squeezing character, is continuous and is made worse by any form of excitement. Examinations show a moderate blood-pressure and a mitral systolic murmur at apex.

Treatment.—The patient received some benefit from digitalis but the pain continued. Twenty minims of the cratægus given every four hours for two weeks caused the pain to disappear entirely and thus far, after three months, it has not returned.

In a few cases of non-compensating valvular disease, with symptoms in which there was an idiosyncrasy to the use of digitalis, it has afforded decided relief.

Notwithstanding the claims of the sectarians, I cannot satisfy myself that it has any decided diuretic action. In healthy individuals there is no appreciable rise in blood-pressure following its use. In disease I am not yet satisfied as to its blood-pressure-raising qualities. In a few cases there was an elevation of 10 mm., but it is a question whether it was due to the drug or to the rest and quiet.

In using this agent we must always keep in mind that it will not cover the whole field of cardiac therapeutics. In cases that resist the action of the digitalis group, there is but a faint chance that it will do good. In such cases it should be tried rather in combination than alone, as it seems to act better as a synergist. Most of us have had the experience of occasionally finding digitalis useless at first, but satisfactorily effective when combined with some other agent. Cratægus is essentially a mild cardiac tonic. When the heart is in a weak and irritable condition, following grip or in neurasthenia with a marked arrhythmia of the respiratory type, agents of the digitalis group are almost invariably badly borne. This is often a result of the digestive disturbance they so frequently entail. Here the cratægus often acts surprisingly well.

It is a perfectly safe agent with no poisonous effect. It can do no harm in aortic disease, and it is worthy of trial in these troublesome cases. In fatty degenerations and in heart lesions associated with high arterial pressure it should be a useful agent. It is better given during or after meals in doses of from 10 to 30 minims of a good fluidextract or a dram of the tincture. (The sectarian preparations of this agent are generally reliable.)

I frequently combine it with 20 grains of bromid and find that the effect is much intensified in the irritative conditions spoken of above.

As we all know, digitalis, the king of the heart, has many imperfections and shortcomings, and there is a constant search for agents to fill in the lacunæ left by these deficiencies. Sometimes these substitutes have for a time a vogue almost equal to that of the original.

More sober judgment always has shown the falsity of such claims. This agent fills one of these lacunæ and in no sense can it take the place of digitalis as a universal cardiac tonic.

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Hookworm Disease.—Stiles (*Public Health Reports*) finds no hookworm disease among the employees of the New England cotton mills, and believes the subject of child labor in the South, on account of that disease, presents a different aspect from that of child labor in the North. He would, however, place a 10-year-old daughter in the spinning room of a cotton mill rather than on the average small tenant farm in the South, as the disease is entirely due to soil pollution.

THE THERAPEUTIC MANAGEMENT OF ARTERIOSCLEROSIS BASED ON THE PRESENT VIEW OF ITS PATHOLOGY *

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Functional and structural derangement in the walls of arteries are the fundamental cause of many syndromes seemingly attributable to other pathologic conditions. The functional and structural states of arteriosclerosis are undoubtedly the prime cause in certain syndromes of the gastrointestinal system, of the nervous system and cardiovascular system not formerly so accredited. Recent studies in the clinical evolution of arteriosclerosis, especially in connection with that chief symptom, hypertension, have shown the early recognition and effectual treatment of this disease process to be of far-reaching importance.

With the purpose in view of setting forth this side of the subject this paper is presented. No new facts are to be added to our knowledge, but in the paper an effort will be made to call attention to the clinical aspect of arteriosclerosis in its broad sense and to indicate the remedial measures for its therapeutic management. It is unfortunate that the average medical mind should content itself with considering arteriosclerosis simply as an affection of the palpable arteries of the body. Arteriosclerosis, as now considered, embraces the whole arterial tree from heart to capillaries, whether they be in the brain, myocardium, kidney, liver, mesentery, intestines or extremities. As this broad view is presented it should not be thought to mean that arteriosclerosis shows itself only as a general disease. It is frequently symptomatically recognized as a local condition without the involvement of other parts.

THE STAGES OF ARTERIOSCLEROSIS

To approach this subject in a limited paper it would seem wise to treat the subject from a clinical standpoint and to apply the therapy to its clinical stages. A French¹ clinician has divided arteriosclerosis into four stages, which seems to place the several aspects of the disease in convenient form for our consideration.

1. *The Arterial Stage*.—By some this is called the stage of presclerosis, latent sclerosis or functional sclerosis. It is characterized by contraction of the arteries and by more or less spasm in the arterial wall, due to the toxins in the blood. It is held² that successive repetition of such accumulation of toxins in the bloodstream circulating for a long time in direct contact with the intima of the arterial wall excites that structure, and, later, the medial coat, to functional contraction. This abnormal contraction of the arterial wall is followed, in due course of time, by a super-elevation of tension: at first more or less temporary, or transitory; later, more constant. Hypertension thus begun, with the intoxication, is productive of fixed arterial changes in the vessel wall. Some observers³ consider hypertension a result and not a cause of arteriosclerosis.

* Read in the Section on Pharmacology and Therapeutics of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

1. Huchard, H.: *Formes cliniques de l'artério-sclérose*, Paris, 1909.

2. Clombe, C.: *L'artério-sclérose: sa pathogénie et son traitement*, Lyon méd., 1907, cix, 433.

3. Huchard, Rosenbach, Broadbent, Allbutt et al. contend that hypertension is a cause of arteriosclerosis, while Chantemesse, Hayem and Lancereaux combat this theory.

but others maintain that hypertension is a precedent factor, not denying that it is also a concomitant factor of arteriosclerosis. That interesting series of experiments of Lustig,⁴ who, after having excluded all other possible factors, found that the blood-pressure was increased by beef broth from 5 to 10 mm. Hg in persons with healthy arteries and hearts, seems to confirm this view. Now this hypertension, in many cases, may be of pure kidney origin in its incipency. It may be of splanchnic origin in other cases. This toxic substance may cause contraction of the arteries up to the size of the brachial; the effect of the hypertension on the arterial tree leads to excessive tension, especially tension in the aorta, and consequently the systolic action of the heart is accentuated. Increased cardiac activity, restricted visceral circulation and contraction in the arterial mains can mean only structural hypertrophy to heart and vessels to compensate for these abnormal states. To epitomize the symptomatology of the stage of presclerosis four groups of symptoms may be mentioned—intoxication, arterial hypertension, miopragia and intermittent claudication.

2. *The Stage of Cardioarteriosclerosis.*—This is characterized by the ingrafting of the organic changes in the arterial walls, by the functional spasm, with resultant arterial stenosis. The concomitant effect of renal insufficiency and myocardial degeneration, due to endarteritis in the vascular walls of these organs, is to cause increased intoxication on the one hand and degeneration of the coronary field on the other. In this form arteriosclerosis shows groups of symptoms centering about one of several regions. With the permanent hypertension, with or without palpable hardening in external arteries, with or without marked symptoms of nephritic degeneration, with or without evidences of marked intoxication, the syndromes which may characterize this state of the evolution of arteriosclerosis are as interesting as they are varied, be they cerebral, cardiac, renal or splanchnic. In this stage, toward its close, the grave terminations of this disease may occur as asystole, cerebral hemorrhage, uremia, etc.

3. *The Mitroarterial Stage.*—This stage in the clinical evolution of arteriosclerosis is characterized by dilatation of the cardiac cavities, frequently of the orifices, by a lowering of the arterial tension, by a tendency to edema, by hydrops, by congestion of the organs. It is what the French call the mitralization of the disease.

4. *The Cardiectatic Stage.*—This is characterized by marked dilatation of the heart, edema, more or less general, firm, irreducible dropsy of extremities, dropsy of abdomen and dorsolumbar region, right hydrothorax, edematous congestion of lungs, and passive congestion of the liver, etc.

PROPHYLAXIS

There is probably no pathologic condition in which the preventive method of treatment is of more value than in this wide-spread disease. Arteriosclerosis, in one or another of its forms, whether general or local, incipient or established, suddenly or gradually undermining the vascular structure of the body to the point of failing compensation, impending apoplexy, cerebral softening, or what not, should receive the most thorough consideration from the standpoint of prophylaxis. When we reflect on the facts that in adults, sometimes in the young, this disease is very common after the fourth decade; that it is the underlying factor in many

secondary degenerations in the body; that it is the basic cause of various syndromes commonly attributable more directly to certain organs, as the heart, kidneys, nervous system, gastrointestinal system and the lungs, it is not unreasonable to call attention to its prophylaxis in more or less detail.

This disease is very likely to occur in all persons (especially after the fifth decade) who are the victims of, for a length of time, gout, uricemia, saturnism, syphilis, excesses or irregularities in alimentation or tobacco, these being, according to experience, the principal causes of the process. While mature age is a factor in the cause, this disease has been noted in the young. One observer has recorded a case in a subject aged 28. Montard-Martin has reported a case in a child, without kidney disease or syphilis, dying of smallpox; Andrel has confirmed a similar observation by a postmortem on a girl aged 8; Brooks has observed coronary sclerosis in a boy 15 years old. Thus it may be seen that the prophylaxis may be wisely instituted in all cases in which any of the principal causes are known to exist for any long period of time. This fact, taken in connection with the varied symptoms referable to the circulatory system occurring during that stage known as the functional or presclerotic stage, should enable the physician to foresee and forewarn of coming changes. Those symptoms of the cerebral, cardiac, nervous or gastrointestinal system, symptoms of intoxication, with hypertension, accentuation of aortic second sound, impermeability of the kidneys, speak of the impending arteriosclerosis, and persons showing these symptoms should be impressed with the danger threatening and directed along lines that would offer protection from the grave pathologic consequences.

It is true often that cases of arteriosclerosis are not seen until the disease is well established, not infrequently irremediably so, but it is also true that we see cases presenting the history of gout, or prolonged intestinal intoxication, or excesses in alcoholism or tobacco indulgence with these symptoms of miopragia. These are the cases in which the prophylaxis will accomplish much. These are the cases in which prohibition of excesses, elimination of intoxications and subsequent regulation of the food intake and habits of the individual, removal of vocational causes, and early and thorough treatment of specific disease will effect good prophylaxis. The excessive functional activity of the circulation should be curbed. The patient, having reached the fifth decade, with a history and an environment favoring the disease of the arteries, should in every case be plainly and emphatically instructed in the rules of more restrained life in which the eradication of the causal factors of arteriosclerosis should be attempted.

In cases of confirmed arteriosclerosis with secondary cardiac and renal involvement, or in cases with distinct tendencies toward mitral involvement and failing compensation of the heart, marked nephritis, cerebral disturbances or coronary symptoms, little can be accomplished in the line of prophylaxis so far as the disease itself is concerned, but it is nevertheless true, even in such cases, that much can be done to ward off and to defer the grave terminations. In some cases within my experience this line of procedure has been signally successful. The prevention of apoplexy for a few years, the control of coronary spasm, the supporting of the myocardium, the amelioration of the effects of kidney sclerosis may for a time enable patients with confirmed arteriosclerosis to do years of effective work.

4. Lustig, A.: Die Arteriosklerose und Gefässverkalkung und deren erfolgreiche Behandlung. Verhandl. d. Gesellsch. deutsch. Naturforsch. u. Aerzte, 1905.

For five years I have been able to prevent such a termination, which seemed almost certain in each case, of a school teacher, a preacher, a retired merchant (these I cite for illustration, among a number of others); and they are living comfortable lives, pursuing in modified regimen their several walks in life.

I dare to affirm that this subject is one which should engage the attention of the profession. It merits more consideration than has been accorded it. There is no disease problem, except that of the infectious diseases, more worthy of careful consideration than these diseases of the cardiovascular type. The teaching of the public mind is the secret in prevention of disease. When once the public mind is thoroughly aroused to the danger and to the means of prophylaxis, then the moral support and this knowledge upholds the hands of the physician, re-enforces his teachings, and carries conviction with his words. No structures of the body stand more abuse than the cardiovascular. No structures of the body, if protected and supported in time, will show more surprising recuperation. Therefore, I urge that the prevention of the oncoming arteriosclerotic changes be prevented by the removal of the known causes and that in established cases treatment be early instituted so as to forestall the inevitable evils sure to come in neglected cases.

MEDICINAL TREATMENT

Iodids.—For permanent results in the early cases of arteriosclerosis this group of drugs offers the best possibilities. The iodine qualities show in the double capacity of aiding in the destruction of the degenerated cells and in the restoration of the live but temporarily incapacitated cells. Such a therapeutic action tends to arrest the sclerotic process and to stimulate the normal structures to normal function. The continued good effects of this medication must be courted by gradually increasing the dosage until the organism secures enough stimulation to restore to activity the sluggish live cells and destroy enough degenerated cells to continue the restitution of function in the tissues. Small doses of the iodids, administered over a long period of time, fail to accomplish permanent results of a favorable kind. But large and progressively increasing doses produce strikingly good results, in early cases particularly. In the use of potassium iodid the patient should be started with a 10-grain dose three times daily; this should be daily increased until 60 to 70 grains are given each day. Iodism can be prevented in the administration of these large doses by the careful exclusion of acids from the diet and by the neutralization of the acid contents of the stomach.⁵ This can be done by the use of any agreeable alkali, as the alkaline mineral waters. With potassium iodid it is wise to combine potassium bicarbonate in the proportion of one to two. The combination of sodium and potassium iodid, in connection with the alkaline medium, proves more satisfactory than the separate use of either and, therefore, when the use of these preparations is continued for a long period of time the combination of them is practiced. In this connection it should be stated that Romberg believes that potassium iodid possesses the virtue of reducing the viscosity of the blood and in that way assists in the relief of blood-pressure and in invigoration of circulatory tissues.⁶ In cases in which the use of iodids by the stomach is impossible or unwise iodipin (iodized sesame oil, 25 per

cent. iodine) can be administered by injection subcutaneously or intramuscularly in doses from 15 minims to 2½ fluidrams every second or third day. The absorption of the iodine is slow and the fear of iodism need not be entertained.

Thyroid Extract.—This is very useful in arteriosclerosis.⁷ Its chief virtue is its power to control high arterial pressure. Iodothyron is also efficacious in this connection.⁸ I have used this remedy for a number of years, especially in women in whom the signs of arteriosclerosis are associated with possible thyroid disease; marked benefit has attended this line of medication in these cases. Lancereaux⁹ states that he and Paulesco have employed iodothyron in arteriosclerosis with excellent results. They administered 2 to 5 tablets of 25 centigrams each during twenty-four hours and found their patients benefited.

A So-called Serum.—Trunczek¹⁰ has described a so-called serum for use in arteriosclerosis. It is composed of such ingredients as sodium chlorid, sodium sulphate, sodium carbonate, calcium phosphate, magnesium sulphate; and its originator claims for it good effects in arteriosclerosis, but other observers fail to note such favorable results, while still others state that pronounced harmful effects have been observed during its administration.

Nitrites.—The members of this group of drugs possess peculiar efficacy in arteriosclerosis. Their value rests on their ability to reduce high blood-pressure. They act promptly by vasodilatation. The official members of this group are amylis nitris, spiritus glycerylis nitratis (glonoin or trinitrin) and sodii nitris. If instantaneous effect is imperative, as in cases of angina pectoris, the use of amyl nitrite is called for. But its transitory effect renders it of very little use in cases demanding prolonged medication. It is an emergency remedy in this connection. Nitroglycerin, while somewhat slower than amyl nitrite in its vasodilator effect (although very rapid when administered hypodermatically), is more lasting in its effect on hypertension. In cases in which the use of this nitrite is continued the use of the spirits of glyceryl nitrate in one or two drop doses is more desirable for the reason that its control of the high blood-pressure is more permanent. Sodium nitrite is more lasting in its effect than the other members of this group. It is slower in effecting its therapeutic action. In cases of arteriosclerosis demanding prolonged use of the nitrites this preparation is the most useful. Erythrol tetranitrate, introduced as a useful remedy in arteriosclerosis by Turney of Flintshire, England, lowers blood-pressure and maintains its vasodilator effect for a longer period of time than others of this class. Its effect is begun in fifteen to twenty minutes after its administration and persists for three to four hours thereafter. The dose is from ⅓ to 1 gr. The variation in the amount and frequency of the dose is regulated by the demands of the case and the effect on the patient. I recall that in one case of pronounced arteriosclerosis a small dose acted very badly, producing throbbing in the head, giddiness and great nervous excitement.

Theobromin.—The members of this group of drugs possess desirable vasodilator qualities, especially, one

5. Erlenmeyer and Stein, H.: Iodin in Arteriosclerosis, Therap. Monatsh., Berlin, 1909.

6. Minkowski, O.: Die Diagnose und Therapie der Arteriosklerose, Therap. Monatsh., 1907, xxi, 449.

7. Osborne, O. T.: Yale Med. Jour., 1907, xiii, 115; Ferguson, John: Arteriosclerosis, Canada Lancet, 1908, xli, 423.

8. Hunt, R., and Seidel, A.: Studies on Thyroid. 1. The Relation of Iodin to the Physiologic Activity of Thyroid Preparations, Hyg. Lab. Bull. 47, U. S. P. H. and M.-H. S., October, 1908.

9. Lancereaux: L'artério-sclérose; sa pathogénie et son traitement, Bull. de l'Acad. de méd., Paris, 1908, series 3, lix, 597.

10. Trunczek: Med. Press. and Circ., 1902, new series, cxxiv, 567.

author states, in connection with the coronary circulation. They are known to have decided diuretic effect and thus help in the reduction of arterial hypertension and in the reduction of intoxication. Theobromin sodium salicylate, or diuretin, and theophyllin, or theocin, are favorably mentioned by several clinicians in this connection for their cardiac and renal effects. One observer particularly emphasizes the usefulness of this group in those cases of arteriosclerosis giving retrosternal pain and angina pectoris. Huchard advises the use of theobromin, as it directly stimulates the renal secretion, dilates the peripheral vessels, including the coronary and renal arteries, and at the same time stimulates the heart. Its derivatives may be used in place of the alkaloid and with more effect, since they are more soluble. In this connection diuretin and theocin are recommended.

Calcium Monoiodobehenate.—Sajodin or monoiodobehenate of calcium, a colorless, odorless and tasteless powder, reputed to contain 26 per cent. of iodine and 4.1 per cent. of calcium, is said to be as efficient as potassium iodid without the unpleasant and harmful by-effects of iodism. It is given in doses ranging from 15 to 45 grains daily. I have no experience with this preparation.

DIETETIC AND HYGIENIC TREATMENT

Alcohol, tobacco, tea, coffee, should be interdicted in arteriosclerosis. This statement is subject to modification in special cases. But as a general proposition these substances, when used habitually, produce deleterious effects in the arteries and should be restricted to a minimum if not absolutely stopped. This is imperative in the late stages; it is wise in the early ones. All food should be taken in moderation. Excess of diet should be plainly and emphatically stopped. This applies in the early stage, but in the late it is imperative. Moderation in eating and drinking is essential to the arrest of the pathologic processes under consideration. As a general rule, the animal foods should be restricted, for in these foods there are formed during digestion substances that but add to the conditions already prevailing in the body. The evidences of fermentation and putrefaction of food in the intestinal tract must be looked for and the diet must be controlled with the idea of reducing this condition to a minimum if not of eliminating it entirely. The vegetable diet may be recommended to the exclusion of the meat diet. In some cases, late in the disease, a milk diet is required.

The habits of the patients must be carefully controlled. Excessive physical exercise should be forbidden. In the late forms unusual strain on the circulation must be avoided. Intense excitement, in business or in pleasure, should be shunned. Moderation in the degree and intensity of all physical and mental exercises should be invariably practiced. Many patients as they enter the stage of myocardial incapacity require absolute mental and physical rest. These patients must be kept in a recumbent position until blood-pressure can be reduced and myocardial, arrhythmic and tachycardiac symptoms are controlled. It is, indeed, very gratifying to note the good effects of such a line of treatment in cases that point to early termination in broken compensation. The peripheral circulation should be carefully protected from sudden changes of the weather. This is done by use of proper clothing.

PHYSICAL METHODS

The discussion of physical agents for the relief of arteriosclerosis, such as baths, electricity, massage, is not

within the scope of this paper. The value of any one of these agencies depends on the case and the nature of the therapeutic application, the mode, frequency and degree of its administration. There are patients who have received some benefit in the matter of lowering high tension from the D'Arsonval current (high frequency) while in the hands of other therapists the benefit has been wanting. Likewise it is my experience that the use of baths, under proper limitations and skilful and prudent administration, is most helpful to the peripheral circulation and aids in the elimination of toxins from the skin, thus in both ways favoring the lowering of high tension and the arrest of arteriosclerotic changes. Rubs and massage, when properly used, may be found useful adjuncts in the general plan of treatment.

SUMMARY OF THE THERAPY OF THE CLINICAL STAGES

Incipient Stage.—Patients showing incipient arteriosclerosis should be placed on a strict diet, instructed in the nature of the disease threatening, and ordered to follow careful regimen of habit. These patients should be given antitoxic treatment, consisting in elimination, intestinal disinfection, diaphoresis, and diuresis; they should receive, when hypertension persists, the nitrites and iodids, and keep on this line for a given length of time.

After a certain period of time during which the blood-pressure is lowered, the intoxication is relieved, the kidney activity becomes normal in quantity and quality, and the symptoms of arterial spasm removed, such patients can be considered cured with assurance of permanency so long as the rules laid down for guidance are adhered to.

Cardioarterial Stage.—This is the incurable phase of this disease, but it is a stage in which therapy, properly applied and maintained, accomplishes much in the way of preventing the grave terminations and in removing many of the distressing symptoms. This point is well illustrated by a patient whom I have had under my care for six years. During this time he has had many attacks of angina pectoris. When first seen the condition was more or less intractable, but during the last year the patient has been without discomfort. These cases, often showing tachycardia, arrhythmia and gastrointestinal intoxication, should be handled with extreme caution and care. The myocardiac morbid phenomena are to be taken to be danger symptoms. Relief of the miopragic symptoms, the elimination of the intoxicants, the stimulation of kidney activity, are the chief indications. This is accomplished by catharsis, followed by nitrites and spartein sulphate, etc. With the tension lower and the skin, bowels, kidneys active, and under the restrictions of diet, the use of nitroglycerin, erythrol tetranitrate, potassium or sodium iodid, thyroid extract, regulation of habit, and general medical supervision of patient, the disease is arrested and the terminal calamities prevented.

Mitroarterial and Cardiectatic Stages.—In these stages, which merge into each other so closely as to form one continued progress to broken compensation, with dilatation of cardiac cavities and frequently orifices, lowered arterial tension, more or less visceral congestion, edema, and dropsy, are to be treated with the digitalis group, theobromin, interdiction of salt intake, restriction of diet to milk, and careful elimination of fluids. In these cases, which often appear hopeless, much can be done, nevertheless, to restore the patient to modified activity.

NOTE.—In addition to the references already cited, the following may be consulted:

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ABSTRACT OF DISCUSSION

DR. GEORGE F. BUTLER, Wilmette, Ill.: I believe that much can be done to prevent arteriosclerosis. Eliminating syphilis as a factor, I believe that autotoxemia, or acidemia, is the principal cause of arteriosclerosis. If we test the urine early in these cases we will find that almost invariably there is evidence of intestinal fermentation or decomposition. There will be shown also, by an examination of the urine, that there is, in the majority of cases, a high degree of urinary acidity, indicating acidemia. These conditions favor degeneration of the blood vessels. Whenever the urinary acidity of any man exceeds 40, that man is on the borderline of danger. If the acidemia and intestinal decomposition can be overcome, much can be done to retard the degeneration of the blood-vessels. I think that the good success we have had with potassium iodid and sodium bicarbonate in the treatment of arteriosclerosis is due to the rapid elimination of waste products occasioned by the potassium iodid and the changing of the acid condition—not the acid condition exactly, but the acidemia—by the sodium bicarbonate. The daily use of sodium bicarbonate will lessen the urinary acidity and overcome the acidemia, while the daily use of potassium iodid serves as a powerful eliminant of toxic products. As a purely symptomatic remedy the nitrites are very valuable. I think sodium nitrite is better than any of the others; that is, I like it better, but the trouble with all of them is that their effects subside too quickly and unless the administration is kept up at frequent intervals so as to maintain a uniform dilatation of the arterioles, there is not much use in giving them. If we could get a drug which would produce dilatation of the blood vessels and if that dilatation could be maintained for five or six hours before we should need to give another dose, I think we would have the ideal vasodilator. Now it may be that some remedy like aconite or veratrum would do this, but I cannot say, as I have never used these drugs. I wish to endorse especially the dietetic treatment. Eliminate the proteids, give plenty of water. Psychic treatment should be employed for it is necessary to relieve all anxiety and worry which have a deleterious influence on the blood-vessels and heart. And, by all means, correct the acidemia and favor elimination by alkalies and potassium iodid, and overcome, if possible, gastric and intestinal indigestion and fermentation.

DR. JOHN N. UPSHUR, Richmond, Va.: After an experience of many years, I am not very hopeful along the line of cure. The difficulty is to convince a man that he is in need of treatment, the trouble is so insidious. The cause is along nutritive lines. The blood-vessels suffer from this cause—impairment of nutrition from gastrointestinal digestive disturbance, abuse of alcohol, tobacco and too rich a diet. Nervous

strain is often back of the digestive disturbance, gastric motility being interfered with fermentation results and toxins are absorbed. When people are warned against these things—too rich diet, alcohol and tobacco—they simply will not believe the physician and elect to take the chances. I do not approve of the alkaline treatment, especially iodid of potassium; it is too apt to impair digestion and is not well-borne by the stomach in many cases. I prefer to treat these patients by a simple but nutritive diet—milk, buttermilk, skim milk. The irritation of the kidneys by alkaline drugs may lay the foundation for the development of nephritis. The condition comes on in the decline of life—it is a process of decay. Therefore, be cautious about drugs. In the weak heart of this condition I would commend sulphate of spartein in doses of from $\frac{1}{4}$ to $\frac{1}{2}$ grain. It may be given in even larger doses I would be glad if members of the Section would try it.

DR. ALEXANDER G. BROWN, JR., Richmond, Va.: It is not contended in the paper that we have the hope that we will remove from the human family at one fell stroke arteriosclerosis. The purpose of the paper is to awaken in the minds of the profession the early recognition of this disease, which is a potent factor in decay, early enough to ward and to keep off decay and to prolong life. And it is with that idea in view that I recommend the administration of iodid of potassium in connection with sodium bicarbonate, for instance; not to the degree of doing harm, but to the degree in which it will do good. I hope that the members of the profession will see these early signs of breaking down and prevent them.

TETANUS DEVELOPING TWELVE DAYS AFTER SHORTENING OF THE ROUND LIG- MENTS—RECOVERY*

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In 1899 Dr. Joseph Taber Johnson reported before this section at the Newport meeting a case of tetanus following ovariectomy. The patient was operated on at his private hospital, and her death was the only one that had occurred in that institution for eighteen months. No other case of tetanus had been noted in any hospital or dispensary with which he had been connected; in fact, within his knowledge no case of tetanus had occurred throughout Washington for several years.

Twenty years have elapsed since that meeting. We have accomplished much through efforts to perfect our surgical technic. We know more about bacteriology, including the life history of the different pathogenic bacteria. The mortality and morbidity incidental to surgical work apparently has been reduced to a minimum. Even suppuration of an abdominal incision is a rare occurrence, necessitating an explanation as to causation in each individual case. Therefore, when last year tetanus developed in a patient operated on in my own institution, where the surgical technic is entirely under my control, not only was it startling, but it seemed of enough importance to warrant a thorough investigation and discussion. Let no man imagine himself so far superior to his fellow surgeons as to be exempt from complications such as this. Surely pride goeth before a fall. I am convinced now of the truth of the saying that if a man operate long enough and often enough he can illustrate in his own practice almost every surgical complication.

The case which serves as the basis of this paper is as follows:

* Read in the Section on Obstetrics and Diseases of Women of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

REPORT OF CASE

The patient was single, aged 19, a student by occupation. She had suffered severely from dysmenorrhea since the establishment of her periods at the age of 13.

Operation.—The uterus was found to be somewhat enlarged and retroverted and to overcome the dysmenorrhea, curettage and shortening of the round ligaments were advised. These operations were performed at my private hospital, Nov. 17, 1908. As the uterus was freely movable, the abdomen was not opened, but the ligaments isolated and shortened within the inguinal canals through a single suprapubic incision. The shortened ligaments were held in place by catgut rendered sterile by a modified Claudius iodine method. The same material was employed for closing the inguinal canals and bringing the deeper portions of the incision together. Michel's clamps were used to coapt the edges of the skin incision.

For twelve days the patient had an uninterrupted convalescence. The stitches were removed on the tenth day and the wound found to have healed by primary union.

Postoperative Complication.—On the twelfth day the patient laughingly said that she thought she was going to have the mumps as her face was sore at the angles of the jaw and the latter seemed stiff. Parotitis, which at times follows gynecologic operations, was suspected. Examination showed no enlargement of the glands and there was no elevation of temperature. The soreness and stiffness of the jaws continued about the same for the next few days. The patient sat up on the fifteenth day for a short time. The jaws were sore and stiff, so that she ate solid food with difficulty. There was no rise of temperature or pulse, however, and the patient did not seem ill. For the next three days the patient's condition remained about the same with possibly a slightly increasing inability to open the jaws. The real nature of the disease was not suspected until the eighth day after the first complaints of stiffness about the jaws when the muscles of the back and the neck became rigid. There were sudden spasms of the muscles of the jaw, so that the patient frequently waked from a sound sleep from having bitten her tongue. As the day progressed the patient became quite excitable and for the first time the temperature was elevated, being 100 per rectum. Thoroughly alarmed at the condition of the patient and convinced that I had to deal with a case of postoperative tetanus, I sent for my friend, Dr. W. H. Hutchings of Detroit, as he had had considerable experience with the treatment of this disease by the use of chloretone. We saw the patient together about 11 p. m. December 6, the twentieth day after the operation and the eighth day since the development of the slight soreness and stiffness of the jaws. Examination at this time revealed marked trismus, the patient being able to open her jaws only enough to admit a feeding-tube. The muscles of the neck and back were rigid so that the patient could be lifted slightly from the bed by raising the head from the pillow. The abdominal muscles were rigid and somewhat painful on palpation. The patient had no difficulty in swallowing, although nourishment had to be taken through a tube. There were slight twitchings of the muscles of the face, although there was no risus sardonius. Sudden movements about the bed, as for example the turning on of the electric light, caused contractions of the muscles of the neck and back, although opisthotonos was not present.

Treatment.—At 11:30 p. m. sixty grains of chloretone dissolved in hot olive-oil were administered per rectum. Within an hour the clonic contractions of the back muscles had ceased. The patient was much less rigid and could open her jaws decidedly more than before the administration of the antispasmodic. She expressed herself as very comfortable but very sleepy and thought she would have a good night. At 11:30 a. m. after the subcutaneous administration of 1,500 units of the antitetanic serum the patient slept until 5 o'clock when she was awakened by the spasmodic biting of the tongue. At 7 a. m. there was a return of the clonic contractions in the muscles of the back, the convulsive movements occurring from one to four minutes apart. At 9 a. m. the patient was again given sixty grains of chloretone by

the rectum and at 10 o'clock another 1,500 units of antitetanic serum. After the second dose of chloretone there was no recurrence of the convulsive seizures. There was a gradual relaxation of the rigid muscles, although it was about a week before the jaws could be opened normally. Following the two large doses of chloretone the patient continued in a drowsy condition and slept a good portion of the time. Although there were no further muscular spasms, as an additional precaution, chloretone in thirty-grain doses was given daily for three successive days. Salines per rectum were given every two hours, beginning shortly after the administration of the first dose of chloretone. These injections were continued for eight days, although of necessity, because of the intolerance of the rectum, the intervals between the injections had to be gradually lengthened. However, a large amount of saline solution was absorbed during this period. The bowels were kept open, at least one free movement being secured daily.

Course of Disease.—After the second dose of the antitetanic serum, the wound was examined. It was found to have healed by primary union with the exception of a small point at the extreme right hand corner. Here was situated a minute blister, containing clear serum. Careful bacteriologic examination of this fluid failed to demonstrate the tetanus bacillus, the cultures showing staphylococci only. The patient left the hospital in excellent condition, thirty-two days after her operation and twenty days after the first appearance of the tetanus.

Now I propose to reverse the mental processes of the operator who is unfortunate enough to have a case of postoperative tetanus in his practice. After establishing the diagnosis his first thought is to save his patient; his second consideration is to ascertain the cause of the attack, so that he may guard against such an accident in the future. Hence the questions before us are:

- I. What gives rise to postoperative tetanus?
- II. What is the treatment of such a complication?

THE CAUSE OF POSTOPERATIVE TETANUS

By postoperative tetanus is meant the unexpected development of tetanus in an operative case, when there has been no history of traumatism, or conditions favoring the introduction of the tetanus bacillus. In other words, this definition includes cases which, barring the accidental introduction of the tetanus bacillus, would have ended in the complete recovery of the patient.

In the case just reported, the only change in the ordinary surgical technic of the hospital which up to this time had yielded gratifying results, was the use of a different kind of catgut. For years in my private work I have employed a catgut prepared by a firm which deservedly has acquired a good reputation from the quality of the gut it has placed on the market. Last year, however, it was thought advisable to have the catgut prepared in quantities by my laboratory assistant, a man well trained in pathology and bacteriology. I was loath to employ a new catgut, however, until the method and results of its sterilization had been approved by the highest authority. Therefore, before using the catgut in the hospital it was prepared and tested in Prof. F. G. Novy's bacteriologic laboratory in the University of Michigan. The mode of preparation was as follows:

A saturated solution of iodine crystals in chloroform was prepared by rubbing up in a mortar and allowing to stand for forty-eight hours. This solution was then filtered and the catgut immersed in it for eight days.

The catgut, thus prepared, was then tested as follows:

Test 1.—The coils of catgut were lifted from the containing jar with sterile forceps and from each of four coils there was excised with sterile scissors a piece from 2 to 5 cm. in length. These short pieces were allowed to stand twenty-four hours in sterile distilled water and then planted in deep

bouillon tubes (20c.c. to the tube) and incubated at 37 C. for seven to fourteen days. This lot was unchanged at the end of this time save for one tube, which had been contaminated with some mould.

Test 2.—The above test was repeated with four other short pieces of catgut and after two weeks incubation only one tube was clouded. Stains and animal inoculations from this tube were negative.

From the results of these experiments I felt perfectly safe in using the catgut prepared according to this method, perhaps more so since for some years I had been using at the University Hospital practically the same catgut with the best results.

Before the development of symptoms of tetanus in the case reported the catgut had been used in quite a number of cases with the most satisfactory results, all the wounds healing by primary union and the convalescence in each case being uninterrupted.

I fear that many operators who report cases of tetanus following clean operations have fallen into the same error as did I in their attempts to absolve the catgut from any part in the causation of the disease. At first sight it seems reasonable to say it could not have been the catgut because the same material was employed in other cases with no bad results. Kuhn, however, has shown the fallacy of such an argument. He asserts that catgut is made from the intestines of sheep which exist under different conditions and vary much in health. Every catgut thread contains fibers from four or five different sheep. Just one of these fibers may contain the tetanus bacillus, while the others may be free from this particular germ. He goes on to say that the sanitary conditions in the slaughter-houses and factories from which the catgut comes are notoriously bad, exposing the raw material to all kinds of contamination. Experimentally it has been shown that it is most difficult for a sterilizing fluid to reach the interior of a catgut thread where many germs may lie. In order to insure absolute safety and do away with the possibility of postoperative tetanus, where catgut is to be used, the latter material must be taken from animals in perfect health. It must be prepared under the most hygienic conditions. Then the elementary threads should be tested for the tetanus bacillus and those found free of these organisms should be made into catgut which can be sterilized according to the most approved method.

Sterilization of catgut by boiling, while better than the use of chemical solutions, because of the possibility that the latter may not penetrate every portion of the catgut strand, has never been popular because of the difficulty of boiling the gut without destroying its integrity. It must be remembered, as pointed out by Theobald Smith, that under certain conditions, such as the formation of a pellicle or membrane over the surface of the boiled fluid, spores of anaërobic bacteria, such as the tetanus bacillus, resist repeated steamings for twenty minutes regularly, usually for forty minutes and occasionally for sixty minutes. Possibly the tests which have been employed to ascertain the asepticity of catgut, while applicable to the ordinary pathogenic bacteria, contain a source of error when used for anaërobic bacteria, like the tetanus bacillus. Are not we satisfied if the test-tubes without anaërobic conditions fail to show any growths? Implanted in the tissues, the tetanus spores, which have not been killed by the sterilization employed, develop under these anaërobic conditions and tetanic symptoms result.

Smith further on in the same article makes these statements, which are of special interest to the practical surgeon

The great resistance of tetanus spores concerns both the practicing physician and surgeon and the laboratory worker who is engaged in the preparation of biologic products for subcutaneous administration. As regards the surgeon, I do not believe that the usual disinfection by boiling or steaming at 100 C. such as may be resorted to away from the hospitals need be placed under suspicion or discarded, but whatever has come in contact with fecal matter or with material undergoing putrefaction should be autoclaved at 110 C. to 115 C. unless the disinfective action of the boiling water in which objects are immersed is increased by alkalies and other substances.

In view of the extensive use of catgut in all kinds of surgical operations, it is of the utmost importance that the question of production of postoperative tetanus through its means be thoroughly investigated and discussed. While convinced that the postoperative course of my surgical cases is much smoother since the employment of the absorbable ligature, I would give it up at once were I convinced that my patients are liable to such a deadly infection as tetanus. One experience is enough to satisfy the most callous surgeon.

Recently Richardson has reported two cases of tetanus following operations for gallstones and for strangulated omental hernia. He has collected notes of 21 such cases in which tetanus followed a surgical operation, 20 occurring during the past three and a half years. In all these 21 cases catgut was employed, and in all except 2 the peritoneal cavity was opened. The operations were performed in Great Britain and 18 of the 21 patients died. The catgut used at the operations was examined bacteriologically in 14 cases, but these examinations were incomplete and Richardson thinks that it has not been proved that the catgut was the source of the infection. We are more interested in the number of cases Richardson has collected than in his rather fantastic suggestion that the disease from which the 18 patients died was not tetanus at all, but one of the sheep diseases, the patient being the host of the bacillus at the time of the operation. Richardson seems to base his entire argument on the geographical distribution of the cases and admits that if cases of postoperative tetanus developed in the south of England, where "looping-ill," the disease in question, does not exist, then his whole argument fails. While his argument does fail, for a search through the literature shows a wide distribution of the cases, shattering the geographical explanation of the infection beyond a shadow of a doubt, we should be under great obligation to Richardson for his collection of cases and his courage in showing this complication to be so common in Great Britain.

As an aid to the study of the various aspects of the question of postoperative tetanus, I have collected from the literature some 150 cases of tetanus following operations, in the main of a gynecologic nature. A few operations, like splenectomy, appendicitis, nephrotomy and hernia, operations which the gynecologist may be called on to do, no matter how strictly he may follow the lines of his specialty, have been included in the list. Excluding traumatic tetanus, many more cases could have been added, if general surgical operations had been included.

These 150 cases have been divided into two groups; the first, Table 1, numbering 101 cases which had occurred up to and inclusive of the year 1890; the second, Table 2, comprising 49 cases reported since 1890. Richardson's two cases were included in this last group, the other 19 cases reported by Richardson being unavailable for statistical purposes because of insufficient data. The lack of references in his article implies that the records

of the 19 cases had been obtained through correspondence. If this be true, it would bring the total number of cases of postoperative tetanus since 1890 up to 70, it being remembered that these were largely abdominal and gynecologic cases, general surgical operations having been excluded.

The year 1890 has been chosen as the dividing line between the two groups, for the reasons that Phillips collected up to this date, through private correspondence and from the literature, 64 reports of cases of tetanus following ovariectomy, and because 1890 is a good date to separate the preantiseptic and antiseptic eras. For,

TABLE 1.—101 CASES OF POSTOPERATIVE TETANUS UP TO AND INCLUDING THE YEAR 1890

A. OPERATIONS INVOLVING THE OPENING OF THE PERITONEAL CAVITY			
Operation.	No. Cases.	Recovery	Death.
Herniotomy	11	0	11
Hysterectomy for fibroid	1	0	1
Myomectomy	1	0	1
Oophorectomy	2	0	2
Ovariectomy	63	5	58
Vaginal hysterectomy	1	0	1
Total	79	5	74

B. OPERATIONS IN WHICH THE PERITONEAL CAVITY WAS NOT OPENED			
Operation.	No. Cases.	Recovery	Death.
Excision of breast	11	2	9
Hydrocele	3	1	2
Operations on cervix	4	2	2
Perineorrhaphy for prolapse	1	0	1
Perineorrhaphy for complete tear.....	1	0	1
Prolapse of rectum	1	0	1
Uterine polyp	1	0	1
Total	22	5	17

Total number of operations 101.
Recoveries, 10; 9.9 per cent.
Deaths, 91; 90.09 per cent.

TABLE 2.—FORTY-NINE CASES OF POSTOPERATIVE TETANUS OCCURRING AFTER THE YEAR 1890

A. OPERATIONS INVOLVING THE OPENING OF THE PERITONEAL CAVITY			
Operation.	No. Cases.	Recovery	Death.
Alexander	2	1	1
Alexander and perineorrhaphy.....	2	1	1
Appendicitis	3	1	2
Colectomy	1	0	1
Herniotomy	4	1	3
Hysterectomy	10	1	9
Myomectomy	1	0	1
Ovariectomy	2	0	2
Removal of appendages	3	0	3
Removal of gall-stones.....	1	0	1
Splenectomy	1	0	1
Tuberculous peritonitis	1	1	0
Vaginal fixation	1	0	1
Vaginal fixation and trachelorrhaphy...	1	0	1
Vaginal hysterectomy	4	0	4
Ventral hernia	1	0	1
Ventro-fixation	2	0	2
Total	40	6	34

B. OPERATIONS IN WHICH THE PERITONEAL CAVITY WAS NOT OPENED			
Operation.	No. Cases.	Recovery	Death.
Amputation of cervix and perineorrhaphy	1	1	0
Epithelioma of vulva	1	0	1
Hemorrhoids	2	0	2
Lumbar nephrotomy	1	0	1
Nephropexy	1	0	1
Removal of uterine polyp	1	0	1
Trachelorrhaphy and perineorrhaphy...	1	0	1
Varicocele	1	0	1
Total	9	1	8

Total number of operations, 49.
Recoveries, 7; 14.28 per cent.
Deaths, 42; 85.71 per cent.

while antiseptics had been proved to be correct in principle years before, it certainly was not generally adopted by surgeons until about this year. Furthermore, it was in 1889 that Kitasato first isolated the tetanus bacillus in pure culture and studied its biologic characters.

Before 1890, outside of the mere preparation of suture material, there were many more chances for the introduction of the tetanus bacillus into the wound than after that date, when more rational means were employed to sterilize extraneous objects. Hence only the forty-nine cases collected since 1890 were studied with reference to the suture material. The information collected was very meager and unsatisfactory. The suture material

employed was mentioned in only nineteen cases: Bissell (2); Chavannoz, Coe (2); Dorsett (2); Hammond, Jerie, Koch, Martin, Meyer, Penrose, Richardson (2); Shaw, Thompson, Zacharias (21). From these cases I find that there was used:

Catgut alone	3 cases
Catgut and kangaroo tendon.....	2 cases
Catgut, silk, silkworm gut or silver wire in combination	8 cases
Silk alone	4 cases
Silkworm gut alone.....	1 case
Silk with silver wire.....	1 case

In only two or three of these cases are definite statements made as to the preparation of the catgut, so we are at a loss to determine whether a possible source of error lay in such preparation. That the infection is not

TABLE 3.—CASES SINCE 1890 IN WHICH ATTEMPTS WERE MADE TO ISOLATE THE TETANUS BACILLUS AND RESULTS *

No. of Case.	Where Found.	Attempts Made.	Failure.	Success.	Recovery.	Day of Death.
20	Silver suture.	1	Yes	...	...	2
55	Pus from stump (1); Pus from stump where mouse was inoculated (2).	2	Yes	...	...	2
83	Pus from abdominal wound.	1	...	Yes	...	25
45	Wound.	1	...	Yes	...	2
48	Pus from abscess in paravaginal wound; secretion from wound with catgut sutures; cerebrospinal fluid; piece of skin from edge of wound.	1	Yes	...	...	16
59	Pus from abscess found in pelvis.	1	...	Yes (?)	...	2
67	Serum from below sutured skin of wound.	1	Yes	...	Yes	...
12	Not stated.	1	Yes	...	...	3
130	Not stated.	1	Yes	...	...	...
52	Not stated.	1	...	Yes	...	12
89	Not stated.	1	Yes	...	...	...
82	Not stated.	1	Yes	...	...	2
102	Secretion from seat of ulcer.	1	Yes	...	...	2
27	Area of subcutaneous tissue from scab on skin under left scapula.	1	...	Yes	...	3
28	Pus from wound (1); Kangaroo tendons (2); catgut (3).	3	Yes (3)	Yes (1,2)...	...	3
87	Unused catgut.	1	Yes	...	...	2
80	Serum from blister in wound.	1	Yes	...	Yes	...
31	Blood from finger (1); Arachnoid fluid (2).	1	...	Yes	...	3
36	One stitch.	1	Yes	...	...	2
22	Blood suture materials and dressings.	1	Yes	...	...	20
23	Blood and vaginal discharges; suture material and dressings.	1	Yes	...	...	2

* The number in column "No. of Case" refers to the number of the case in the appended bibliography.
† Not stated.

due to catgut in all cases is proved by postoperative tetanus in 6 cases in which silk or silkworm gut was either used alone or in combination with silver wire. A former Chairman of this Section, Dr. Dorsett, has given by far the most satisfactory report of his two cases of postoperative tetanus. His two patients died from this complication after the uterus had been sutured to the abdominal wall in each instance by kangaroo tendon sutures prepared by one of the best known manufacturing firms of this country. By inoculation into mice, the kangaroo tendon was proved to be infected with the tetanus bacillus.

Koch was able to prove that the catgut employed was the agent through which the infection arose. While he was unable to find the tetanus bacillus or its spores within the gut, mice inoculated with the gut died of

tetanus. Chavannoz, Hammond, Coe, Richardson and Zacharias made either cultures of or inoculations with the suture material with negative results.

There were only two recoveries in the 19 cases just referred to (Meyer, Zacharias). This is of no special significance, since it is about the average of recoveries (10 per cent.) after this most fatal complication of surgical operations. The difficulties of adequate bacteriologic examination of suture material after the advent of the disease will always be great. Just as in my own case, the wound may have healed by primary union and the catgut either be absorbed or difficult to get at. The tetanus is not a rapidly multiplying organism and it is exceedingly difficult to isolate it after the infection has taken place. This applies to the bacilli and the spores in the catgut as well as to the same organisms in or about the wound.

RELATION OF THE NATURE OF THE OPERATION TO POST-
OPERATIVE TETANUS

A study of Tables 1 and 2 will show that the complication is more frequent after operations involving the opening of the peritoneal cavity. Up to 1890 there were 63 cases of ovariectomy followed by tetanus, with 58 deaths and 5 recoveries. Thus this accident followed ovariectomy in over one-half of the cases recorded for this period, while since 1890 only two cases of ovariectomy were followed by tetanus. There would seem to be only one explanation of this decrease, namely, improvement of technic whereby more tetanus bacilli were kept out of the abdominal cavity during the second period. One can not study the reported cases without becoming convinced that, considering the many thousand of abdominal operations, postoperative tetanus is a very rare

TABLE 4.—98 CASES OF POSTOPERATIVE TETANUS OCCURRING UP TO AND INCLUSIVE OF YEAR 1890
WITH SPECIAL REFERENCE TO THE ONSET AND ITS RELATION TO THE OUTCOME OF THE DISEASE

Day of onset after operation.	No. of Cases.	Recovery.	Deaths	Day of death.															
				1	2	3	4	5	6	7	8	10	11	13	20				
1	0	0	0	Not stated, 1			
2	0	0	0	..	..	..	..	..	..	..	..	..	..	..	..
3	3	1	2	..	2	..	..	..	..	..	..	..	..	..	..
4	4	0	4	..	3	..	..	..	..	..	..	..	..	..	..
5	6	1	5	2	3	..	..	..	..	..	..	..	..	..	..
6	9	1	8	4	2	..	..	..	..	..	..	..	..	..	..
7	18	0	18	3	10	5	..	..	..	..	..	..	..	..	..
8	10	0	10	3	4	..	..	..	1	..	..	..	..	..	..
9	9	0	9	..	1	5	3	..	..	..	..	..	..	..	..
10	5	0	5	..	1	1	1	..	..	..	1	..	..	..	..
11	3	0	3	..	1	1	..	..	1	..	..	..	..	..	..
12	5	0	5	1	2	2	..	..	..	..	..	..	..	..	..
13	6	1	5	..	..	1	..	1	..	..	1	..	..	1	..
14	5	1	4	..	..	..	1	..	..	1	..	1	..	..	..	
10-15	1	1	..	..	..	..	..	..	..	..	..	..	..	..	..
15	3	1	2	..	..	1	..	..	..	1	..	..	..	..	..
16	2	1	1	..	..	..	..	..	..	..	1	..	..	..	..
17	4	0	4	..	1	..	1	..	1	..	..	..	..	..	1
20	1	0	1	..	..	..	..	1	..	..	..	..	..	..	..
21	1	0	1	..	..	1	..	..	..	..	..	..	..	..	..
22	2	2	..	..	..	..	..	..	..	..	..	..	..	..	..
5th week	1	0	1	..	..	..	..	..	..	..	..	1	..	..	..	
	98	10	88																

TABLE 5.—49 CASES OF POSTOPERATIVE TETANUS AFTER 1890
WITH SPECIAL REFERENCE TO THE ONSET AND ITS RELATION TO THE OUTCOME OF THE DISEASE

Day of onset after operation.	No. of Cases.	Recovery.	Deaths	Day of death.											
				1	2	3	4	5	7	8	12	16	20	25	
1	0	0	0	..	..	..	..	..	..	..	..	..	..	..
2	0	0	0	..	..	..	..	..	..	..	..	..	..	..
3	0	0	0	..	..	..	..	..	..	..	..	..	..	..
4	2	0	2	1	..	1	..	..	..	..	..	..	..	..
5	3	0	3	..	3	..	..	..	..	..	..	..	..	..
6	4	0	4	..	4	1	1	..	..	..	..	..	..	..	Not stated, 1
7	5	0	5	..	3	1	1	..	..	..	..	..	..	..
8	5	1	4	1	2	..	..	..	1	..	..	..	..	..
9	11	0	11	2	3	2	1	1	..	..	1	..	..	..	Not stated, 1
10	6	2	4	..	3	..	..	..	..	..	..	..	..	1	
11	2	0	2	..	..	1	..	..	1	..	..	..	..	..
12	3	2	1	..	..	..	..	..	..	..	..	1	..	..
13	1	0	1	..	..	..	..	..	..	1	..	..	..	..
14	1	0	1	1	..	..	..	..	..	..	..	..	..	..
16	1	0	1	..	..	..	..	..	..	..	..	..	1	..	
19	1	1	..	..	..	..	..	..	..	..	..	..	..	..
22	1	1	..	..	..	..	..	..	..	..	..	..	..	..
	49	7	42												

Certainly Richardson's cases, in all of which catgut was employed as a ligature, are very suggestive as to the possibility, at least, of infection through this source. My own case, in which with the same technic a change in the method of preparing the catgut was almost immediately followed by a case of tetanus, is also very suggestive. While the case is not proved, enough evidence has been advanced to make the surgeon more careful than ever as to the asepticity of his absorbable ligature. Certainly it is much easier to render other objects sterile than it is catgut. While it is possible for the infection to be carried to the wound or into the patient's body through some other avenue, in some other way, one has to admit that it is not so probable. Air, dust, water, carious teeth, the patient's skin and other sources of infection have been invoked as carriers by the different authors, but their theories have added little to our exact knowledge of the question.

complication. Modern abdominal surgery exacts such good results from the surgeon, however, that he finds but little consolation from the improvement of general statistics, if he be so unfortunate as to have a case of postoperative tetanus in his own practice. As will be seen by the tables, almost every gynecologic operation has been followed by tetanus. The complication more frequently followed operations involving the opening of the peritoneal cavity. But this is also true of any infection. The variety of abdominal operations followed by tetanus has naturally increased since 1890, on account of the development of new operations since that date. But the ratio between the cases of infection in the peritoneal and non-peritoneal operations is about the same before and after 1890. The natural inference is that since tetanus is a complication of nearly every kind of gynecologic operation the nature of the operation is not a determining factor in its production.

PERIOD OF INCUBATION OF POSTOPERATIVE TETANUS

Lambert, in speaking of tetanus in general, states that the prognosis is "in direct ratio to the shortness of the incubation period and to the rapidity and intensity of the symptoms." In Table 4, 98 cases have been tabulated according to the onset of the symptoms, the outcome of the cases and the day of death in relation to the day of onset. No patient in this tabulated list received antitoxin, so it serves as a basis of comparison between the value of the two modes of treatment, when antitoxin is administered after the onset of symptoms. Table 4 shows that in 64 out of 98 cases, or in practically two-thirds, the initial symptoms were within the first ten days. In the remaining 34 cases, the onset of the disease varied from the eleventh to the twenty-second day. There was one anomalous case in which there was a five weeks' incubation period, but such cases are unusual and always open to suspicion.

In Table 5, or in the 49 cases after 1890, there were 39 in which the first symptoms appeared within the ten-day period, or practically four-fifths of the cases, figures corresponding to Joseph Jones' statistics as given by Osler. In the remaining ten cases the initial symptoms are recorded as appearing from the eleventh to the twenty-second day.

RELATION OF ONSET OF SYMPTOMS TO DAY OF DEATH

This is irrespective of the treatment administered, although again it must not be forgotten that no antitoxin was administered prior to 1890. Looking at the cases starting within the first ten days, as tabulated in Table 4, we see that up to the ninth day in 50 out of the 98 cases, the patients died on or before the third day. After the tenth day there was not one patient out of the 48 who died on the first day of the disease, the deaths being scattered from the second to the twentieth day. Practically about the same showing is made in the cases occurring after 1890, Table 5. Up to the tenth day the patients died quickly, only a few living beyond the fourth day of the disease. Those with a longer incubation period lived the longest, one even living to the twenty-fifth day. Thus these tables would seem to bear out the claims of various writers, that the shorter the incubation period the more virulent and active is the disease, and, conversely, the longer the period of incubation the milder the disease, or the longer can the patient survive before a fatal issue.

Not a single case of tetanus developed during the first two days after the operation, and in Table 2 no case appeared until the fourth day. In the 98 cases occurring before the year 1890 the maximum number of cases (18) is recorded as developing on the seventh day, while in the 49 later cases the greatest number (11) developed on the ninth day.

TREATMENT

The treatment of tetanus may be summarized briefly as follows:

1. By proper disinfection and drainage at the point of entrance of the tetanus bacilli, we should prevent, as far as possible, further development of bacteria and the absorption of the elaborated toxins.

2. The toxins in the blood which have not united with the nerve cells should be neutralized and rendered inert by the administration of antitetanic serum.

3. The muscular spasms should be controlled by some antispasmodic.

4. Elimination of the poison already absorbed is best obtained by free catharsis and the administration of large quantities of physiologic salt solution.

1. *Disinfection and Drainage.*—As has been pointed out, this is much more difficult as a rule in postoperative than in traumatic tetanus. The tetanus bacilli may have been implanted on the peritoneum, or may be in the ligature with which a pedicle was tied. There may be no evidence, as far as the wound is concerned, that tetanus bacilli or their spores are present. In many instances it would be obviously jumping in the dark to open up the wound and drain. Yet when the latter suppurates or the proper indications exist, disinfection and drainage should be employed in postoperative as well as traumatic tetanus.

For example, in the case reported, it would have been foolish to reopen the wound, which practically had healed by primary union, when it was not at all certain where the infection had entered. If the wound had suppurated, however, the indications would have been for its early opening, disinfection and drainage.

TABLE 6.—49 CASES OF POSTOPERATIVE TETANUS AFTER 1890

SHOWING EFFECTS OF ADMINISTRATION OF ANTITETANIC SERUM							
Day of onset after operation.	No. of cases.	No. of cases having anti-tetanic serum.	Recovery.	Death.	No. of cases not having serum.	Recovery.	Death.
1	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0
4	2	1	0	1	1	0	1
5	3	2	0	2	1	0	1
6	7	3	0	3	4	0	1
7	5	4	0	4	1	0	1
8	5	4	1	3	1	0	1
9	11	9	0	9	2	0	2
10	6	6	2	4	0	0	0
11	2	2	0	2	0	0	0
12	3	3	2	1	0	0	0
13	1	1	0	1	0	0	0
14	1	0	0	0	1	0	1
16	1	1	0	1	0	0	0
19	1	1	1	0	0	0	0
22	1	1	1	..	..	..	..
	49	38	7	31	11	0	11

TABLE 7.—TIME OF BEGINNING OF TREATMENT BY ANTITOXIN IN 34 CASES

SHOWING RECOVERIES AND DEATHS			
Day of beginning antitoxin treatment after onset of tetanus.	No. of cases.	Recovery.	Death.
1	24	5	19
2	6	1	5
3	2	1	..
5	1	..	1
7	1	..	1

In 6 cases in which the patients recovered the tetanic symptoms appeared on the tenth day after the operation or later.

2. *Administration of Antitetanic Serum.*—It seems to be pretty well established that after the toxins have become fixed in the nerve cells, the administration of antitetanic serum has but little influence on the course of the disease. The injury has already been accomplished and the most that the serum can do is to prevent further combination with the nerve cells. For this purpose and because its proper administration is harmless, it should be given in every case, immediately on the onset of symptoms. Inasmuch as postoperative tetanus is never anticipated, the prophylactic use of the serum has no place in the class of cases under discussion. A comparison of Table 1, in which 101 patients were treated without the antitetanic serum, with Table 6, in which 38 patients out of the 49 were treated with the serum, shows a diminution of the mortality under the use of the serum from 90.09 per cent. to 81.58 per cent. This is not much of a showing; still it is a decided gain. In the 11 cases in which no serum was employed, there was not a single recovery. The good results of the serum may have been due partly to the fact (Table 7) that in 24 of the 38 cases, its administration was begun on the first day of

the appearance of the symptoms. On the other hand, in 6 cases in which the administration was begun on the second day there was only one recovery.

It must not be forgotten, however, that whenever we consider the efficacy of any particular form of treatment we must also consider the severity of the symptoms in the cases under treatment. Thus, the good results may not have been so much due to the antitoxin as to the fact that the cases were of a mild type and the patient might have recovered under any form of treatment. Hence the significance of the note at the bottom of Table 7, which states that in six of the seven patients recovering, the tetanic symptoms appeared on the tenth day after the operation or later.

3. *Control of Muscular Rigidity and Spasms by the Use of Antispasmodics.*—The list of drugs used for this purpose is large and has not been particularly satisfactory. Opium, chloral hydrate, the bromids, calabar bean, chloroform, etc., have each been tried with varying success. The objections to the use of many of these drugs are that, while they partially control the spasms, they prevent elimination and deprive us of a most necessary form of treatment.

The subarachnoid injections of magnesium sulphate, as first suggested by Meltzer, undoubtedly control the spasms, but respiration is so inhibited at the same time as to make it questionable whether the treatment may not prove worse than the disease.

As regards the use of chloretone, I can only say that it has proved most efficacious in the hands of Dr. Hutchings, who has absolutely controlled the spasms in six cases, while as far as could be judged no bad symptoms developed from the use of the drug. Certainly the effect of chloretone in the case reported above was most satisfactory. The muscular spasms were absolutely controlled after two sixty-grain doses and the muscular rigidity practically abolished. At least, since the drug is harmless, chloretone is worthy of an extensive trial in tetanus and other spasmodic conditions.

4. *Elimination Through Free Catharsis and the Use of Salt Solution.*—The elimination of the poisons in the body is especially demanded in a disease like tetanus. The tissues may interfere with the administration of cathartics, but in that case they may be introduced through the stomach-tube, after the relaxation has been accomplished through chloretone. Fortunately salt solution can always be administered, either intravenously, subcutaneously or per rectum, the method being determined by the condition of the patient.

CONCLUSIONS

1. While tetanus can not be said to be a very frequent postoperative complication, a study of the reported cases shows it does occasionally follow all kinds of gynecologic operations.

2. It most frequently is a complication of operations involving the opening of the peritoneal cavity, although in quite a percentage of cases it complicates plastic and other non-peritoneal operations.

3. The infection in all probability is introduced at the time of operation.

4. It has been proved that the tetanus bacillus and its spores are most difficult to kill, and that under certain circumstances they survive boiling for sixty minutes; hence when this organism is present more than ordinary heat, applied over a longer time, is necessary.

5. Absorbable ligatures, like catgut, may be carriers of the infection, unless the most approved methods of sterilization be employed.

6. The process of manufacture of the catgut renders it peculiarly liable to infection by the tetanus bacillus, which may not be destroyed by the ordinary methods of chemical sterilization.

7. The initial symptoms of postoperative tetanus appear within ten days in from two-thirds to four-fifths of the cases. The onset of symptoms in the remaining cases varies from the eleventh to the twenty-second day after the operation.

8. In the 150 cases tabulated no case showed symptoms of tetanus the first two days after the operations.

9. From a study of these cases it would seem that the average period of incubation for postoperative tetanus was about eight days.

10. The shorter the incubation period the more virulent and active the disease, and, conversely, the longer the incubation the milder the disease or the longer is it possible for the patient to survive before a fatal issue.

11. Whenever possible the point of entrance of the tetanus bacilli should be ascertained and the proper disinfection and drainage be instituted. This is often difficult in cases of postoperative tetanus.

12. Antitetanic serum acts on the free toxins in the blood, but has no effect on the toxins after they have become fixed in the nerve cells.

13. A study of the tables shows that the mortality of tetanus has been reduced nearly 10 per cent. through the use of the antitetanic serum.

14. The best effects of the serum will be seen when its administration is begun on the first appearance of the symptoms of the disease.

15. Chloretone is able to control the muscular spasms of tetanus and to do away with the muscular rigidity. It is harmless and does not prevent elimination.

16. In tetanus, elimination through free catharsis and the administration of salt solution is of the utmost importance.

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ABSTRACT OF DISCUSSION

DR. W. B. DORSETT, St. Louis: In the consideration of this subject, whether it is kangaroo tendon or catgut, we ought to consider the size of the material used; for any size above No. 3 is liable to have in the center of the strand the infectious material. In other words, the manufacturer of this gut will admit that it is harder to sterilize a large strand than a small strand. Experiments have been made in which the gut has been suspended in anilin dye and sections taken showed that the anilin dye does not always penetrate to the center. The unfortunate cases that I have had prove rather conclusively that the infection did not occur from the catgut that was used, but from the kangaroo tendon. This was of a large size and the postmortem showed that it contained the tetanus bacillus and the spores. At that time I had quite a supply of suture material that I had obtained from the manufacturers. Immediately after a second case occurred I telegraphed them to call in all the gut that they had sent out and that the kangaroo was probably infected. I got no response until the agent came to St. Louis for the purpose of disposing of his material and he then found that it was not wanted in the instrument houses. Chlorotone is new to me. The anti-tetanic serum in my opinion should be used as a prophylactic rather than as a remedy after the disease has once shown itself. So much impressed have been some of my friends who do general surgery with the use of antitetanic serum, that as soon as a punctured wound is discovered in persons working about stables or coming in close contact with street dirt, the serum is used as a prophylactic before anything else is done. In my two cases it had no effect as it was not used in time, and the chloroform was used simply to control the spasms.

DR. RALPH WALDO, New York: I have seen four of these cases. Three followed abdominal operations. The material used as suture and ligature was catgut of rather large size for the adnexa which were removed. In one case a large ovarian tumor was removed. The more superficial portions of the wound were closed with silkworm gut. Whether the infection was due to the fact that the catgut was of rather large size I am unable to say. In two of these cases I performed several operations in the same operating-room at the same hour with the same assistants and using the same material. From the tenth to the twelfth day the first slight symptom appeared in the neck. No notice was taken of it until about the thirteenth or fourteenth day. The most exhaustive bacteriologic examinations were made of the catgut and everything else possible with a negative result. I speak now of three of the cases. I went very carefully into the serum question and became thoroughly convinced that if the serum was given after the disease had developed it was useless in a very large percentage of cases. My laboratory friends had used it in guinea-pigs and found that if it were used as a prophylactic the disease was prevented. If it were used after the symptoms developed, as much serum were required as the guinea-pig weighed in order to counteract the toxin. For this reason its use was impracticable. In another case a patient with uterine hemorrhage was given a hypodermic of ergot supposed to be sterile. She was brought to the hospital in the ambulance and later developed tetanus. We found a little bleb where the hypodermic had been given. This was opened and found to be full of the germs of tetanus, proving that the disease was caused by the hypodermic, whether the germ was on the skin or on the needle no one knows. In three other cases we were absolutely unable to determine anything concerning the entrance of the germs.

DR. W. H. HUTCHINGS, Detroit: The question of post-operative tetanus is so large that it cannot be given full consideration in the time at our disposal. However, I desire to call attention to the fact that surgeons, when anything goes wrong, are altogether too ready to blame catgut. They forget that catgut can be sterilized, no matter how large it is, and forget that the patient's skin and their own hands are not so easily made sterile. There are undoubtedly cases in which the catgut has been the cause of tetanus and quite as many cases in which the catgut has been sterile, and cases in which catgut was not used at all. Unfortunately, Dr. Peterson had no cultures made, so we do not know whether his cases were

those of tetanus or not. The question of treatment is a very important one. As Dr. Peterson says, the mortality is about 80 per cent. It has been lowered somewhat. For several years I have been conducting a series of experiments on sheep to study the methods of treatment that have won any recognized place. An important statement was made in a paper by Dr. Matas, at the recent meeting of the American Surgical Association, calling attention to the fact that often tetanus spores are taken into the body with salads and fruits, and eliminated in the feces, and that a large percentage of post-operative tetanus is found in cases in which the parts have been contaminated in that way; notably in the operation with clamp and cautery in hemorrhoids. I have become convinced that the best way to control the manifestations of the disease is by the use of chloretone. For the cure of the disease we must remove the source of the manufacture of the toxins. The toxins in the body are better neutralized by the antitoxin if it is used intravenously, though the antitoxin has no effect whatever if the toxins are already in contact with the nerve cells. The first problem is to keep the patient alive until the toxins can be overcome. I have treated six tetanus patients with chloretone for the control of the convulsions and have cured five of them. One was a case of abortion induced by curettement in which tetanus developed in six days. One case was a Fourth-of-July accident. Another case was that of a man who had a severe crushing injury to the hand. Several operations were done but the flaps sloughed and tetanus developed. Another case developed from fracture of the elbow. The man could not swallow. The serum was given and he was also given large doses of chloretone. He was so completely relaxed that all one night a nurse had to sit by the bed to hold his jaw forward so that he could breathe. Chloroform kills by paralysis of the center of respiration. Chloretone will control the convulsions, but that is all it will do. It is comparatively harmless. In one case a man took a large dose with suicidal intent. He slept for a week, woke up, and said he felt perfectly well.

DR. H. J. BOLDT, New York City: I have been unfortunate enough to lose two patients as the result of tetanus. An examination of the catgut gave a negative result. Then I had some catgut from the same manufactory infected with tetanus and anthrax bacilli. The catgut was untwisted and the infection made in the center of the gut, which was No. 3. The tubes were sealed in the presence of the bacteriologist. The manufacturer then put them through the same process as all the other catgut underwent, and it was then returned to our bacteriologist. A careful examination was made and it was found to be absolutely sterile. So that settles the question that my patients did not die from infection in the catgut. One case was a large ovarian tumor; the other a large fibromyomatous uterus.

DR. W. H. HUTCHINGS: Regarding the work of Wassermann, I should like to call attention to the fact that Villard has reported thirty-one cases of undoubted tetanus following the prophylactic use of serum.

DR. C. C. FREDERICK, Buffalo: I want to report a case of postoperative tetanus, the only one I ever had, which occurred in my hospital last September. It was a perfectly clean case of myofibroma for which I did supravaginal hysterectomy, the wound closing by primary union. The patient developed tetanus on the sixteenth day. I was doing a lot of work at the time. I have continued to use the catgut prepared by the iodine method. I operated on three patients on the same day that this woman was operated on and the others did not develop tetanus. I suppose that my catgut might have been the cause, though I doubt it very much. This patient did not develop tetanus until the sixteenth day after operation. The largest catgut used was No. 2. About five days prior to the beginning of the tetanus the woman had an attack of acute indigestion with diarrhea, furred tongue, elevation of temperature, etc. After two days with catharsis and withholding of food she recovered. The woman was very fond of fruits and vegetables. The attack occurred in September at a time when she was eating a great many of these things, and I have an idea that she was infected from the intestinal tract.

DR. REUBEN PETERSON, Ann Arbor: In the time permitted I could only read my paper in abstract. About everything

brought out in the discussion appears in the body of the paper and I would refer those interested to the paper itself. I am not trying to prove anything at all. I would much rather not have it proved that catgut is the source of infection. After a period of seven or eight years with the use of one catgut I changed to another sterilized by a different method and this case of tetanus developed. That is enough proof for me so far as my own surgical practice is concerned. It is difficult to prove that the catgut is at fault. It has been shown that only one fiber of the catgut need be infected. Such infection cannot be very common, because if it were, we would get all sorts of infections throughout the world when so much catgut is being used. If I have pointed out the possibility of tetanus following clean operative cases and shown the importance of careful supervision of the sterilization of catgut, I shall have accomplished my purpose. Of course we know the value of the serum as a prophylactic measure, but it must be remembered that we do not give all our operative patients antitetanic serum lest they have tetanus. The serum does neutralize the toxins as Dr. Hutchins has pointed out, and therefore should be used in the treatment in every case. Very seldom, I think, does tetanus develop from infection on the hands. If we look at the different methods of sterilization of hands, instruments and of all materials connected with the operation and see how few cases of tetanus develop, it must be very rarely that the source of infection is there. However, the infection is much more common than one thinks, as evidenced by the twenty cases of Richardson and the fifty cases since 1890 which I have collected. Chloretone, of course, is used merely as an antispasmodic, and is much safer and more effective than chloral or other drugs which have hitherto been employed. It acts so beautifully in relaxing the muscular spasm that I would advise any one so unfortunate as to have a case of tetanus, postoperative or otherwise, to give it a fair trial. It was extremely gratifying to note the relaxation of the muscles and the ability of the patient to open her jaws, following a dose of 50 grs. of chloretone.

CAUSES OF FAILURE IN THE TREATMENT OF CANCER OF THE LIP

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The frequency with which recurrent and far-advanced cases of lip cancer have of late come to my notice has induced me to study the causes of failure in the treatment of lip cancer and to present the principal findings in this short paper, trusting that some fact might be brought forward which would impress on the profession the importance of early recognition and radical excision of the disease. I am confident that in many cases the patient's refusal to accept the advice of the medical attendant is responsible for the distressing results; in a few cases the disease is not recognized until a mutilating operation is necessary, while in other instances the surgeon has limited the operation to mere excision of the palpable growth. The secret of success in the treatment of lip cancer lies (1) in early recognition of the disease—recognition before the glands are palpably enlarged—and (2) in excision of the lymphatic glands and periglandular tissue of both sides of the neck, together with the primary growth.

In many of the early cases the treatment advocated will seem somewhat too radical. Experience, however, has demonstrated that the size of the ulcer can never be trusted to indicate the degree of spread in the parts beneath. It is equally true that the glands of the neck may be enlarged and yet not contain cancer cells. Wartmann found infection of the lymph glands in eighty-four

of his one hundred collected reports of cases. Loos believes that it may occur as early as the third month after the commencement of the disease, although in one of Wartmann's cases the glands were involved at the sixth week.

Cheate has found that there are three anatomic conditions which complicate the spread of cancer of the upper lip: 1. The early spread to the alveolar margin of the upper jaw, particularly when the disease begins or spreads into the central part of the lip. 2. When cancer begins in the upper lip, the columella is earlier invaded than the ala nasi. 3. The cutaneous muscles of the upper lip are not less important in conducting the spreading disease than the cutaneous muscles elsewhere in the face.

Since the lymphatics of the lip empty into the submentals and glands seated in the submaxillary fossa, the findings of Stieda are important. Stieda has found that the glands seated in the submaxillary fossa are in most instances to be found at three perfectly determined points. The median is in relationship with the facial artery and is situated between the lower border of the lower jaw and the submaxillary gland. The anterior gland, which is the smallest, is to be found on the border of the anterior belly of the digastric, in front of the mylohyoid and beside the submental vessels. The posterior is situated at the posterior aspect of the submaxillary gland. A larger number of glands may be present. The submental glands are equally important; they are represented by all the glands which are to be found between the chin and the hyoid bone, between the anterior bellies of the digastric. The lymphatics of the upper lip not only empty into the glands already mentioned, but also into the superficial cervical as well; they are four to six in number, and are disseminated along the external aspect of the sternocleidomastoid, along the posterior border of the muscle and in the lower part of the subclavicular triangle. They are grouped around the external jugular vein and are covered by the superficial cervical fascia. The deep cervical glands also receive the lymphatics of the lips. Princetaux found that the lymphatics of the upper lip may pass through a buccinator group (which was present in ten of thirty-two cases) before emptying into the submaxillary glands.

Handley has recently attempted to establish the unrecognized law that every aggregation of carcinoma cells has a definite life-cycle, and, after increasing in size for a varying period and at a varying rate, tends spontaneously to undergo degenerative and fibrotic changes. He believes that the natural history of cancer is one of centrifugal growth followed by centrifugal death. His researches have shown that the permeation of a lymphatic is normally followed by a curative process of fibrosis. The cancer cells, which at first fill the lymphatic without distending it, by their continued proliferation finally burst the tube of endothelium within which they are enclosed. Around the split lymphatic some extravasation of blood usually takes place, and a dense aggregation of lymphocytes appears. Soon the lymphocytes are replaced by young fibrous tissue, which forms an adventitious sheath for the cylinder of cancer cells set free from the burst lymphatics. This newly formed fibrous tissue contracts on the degenerate cancer cells and they ultimately disappear. The original lymphatic is now represented by a solid thread of fibrous tissue, and the process of natural cure is locally complete. In carcinomas whose cells possess a high degree of proliferative power the life of the patient is destroyed while the cancer is still in the early stages of its life-cycle. At the

other end of the scale, in carcinomas of low proliferative power, the patient may possibly survive the carcinoma.

Microscopic studies have shown that the lymphatic vessels proceeding from the affected area to the lymphatic gland, as well as the vessel leading from such a cancerous gland, may also contain cancer cells.

Bonney has recently established the new and important fact that a local increase in the cellularity of the subepithelial connective tissues, accompanied also by a destruction of the elastic tissue, invariably precedes the appearance of a carcinoma.

The one point that I want to emphasize in the diagnosis of cancer of the lip is the fact that every fissure or crack of the lip in a middle-aged person which refuses to heal or which heals and reopens repeatedly should be regarded as a beginning cancer. In all doubtful cases the lesion should be excised and subjected to microscopic examination. The common practice of treating these lesions with salves and powders, or by cauterization until a mere tyro could make the diagnosis, is to be deplored.

The mortality from cancer of the lip is not infrequently the mortality of inefficient treatment and delay. With early recognition of the disease and proper treatment the mortality should not be more than 2 per cent. In 1889 Roger Williams studied 100 cases of lip cancer admitted to Middlesex Hospital and found that in 19 fatal cases the total duration of life, dating from the time when the disease was first noticed, averaged 37.7 months; in 7 cases, in which no operation was done, the average duration was 16 months, while in 12 cases with operation the average duration of life was 50.5 months. In 46 recurrent cases Roger Williams found that the average interval between the first operation and the first obvious recurrence in 41 cases was 20 months; in 13 of the 46 cases the initial seat of the recurrence was in the adjacent lymphatic glands, while in 33 it was at or near the primary seat of the disease.

In 1903 Crile collected reports of 535 cases of lip cancer, with operations prior to 1885. The operative mortality was 8 per cent.; recurrence, 37 per cent.; three-year cure, 27 per cent. In 1898 Loos collected 260 cases, with operations since 1885. The operative mortality was 6 per cent.; recurrence, 30 per cent.; three-year cure, 65 per cent.

In 1896 the American Surgical Association, realizing the inefficacy of simple V-shaped excision of the growth on the lip, undertook to find what further steps could be taken in the operative technic for the cure of the disease so as to prevent recurrence. After careful study and investigation the association advocated excision of the glands in the submental and submaxillary regions.

In the light of Handley's investigations and the extensive experience, the treatment of cancer of the lip is clear. The secret of success lies in early and complete removal of the growth on the lip and of the glands of the submental and submaxillary fossae. Everything must be done at the primary operation. The technic which seems best is as follows: For two or three days before operation the patient is given mouth-wash and the teeth cleansed three times daily. Under ether anesthesia a collar incision is made and the glands in the submental and submaxillary regions, together with the adipose tissue, are excised. Drainage through two small supplemental incisions is provided for. The wound is then sutured and protected with gauze pads, which latter are held in place by an assistant while the growth on the lip is being removed and the parts sutured. In my own

cases the entire wound surfaces are swabbed with Harrington's solution and then with salt solution before being sutured. The drains are removed on the second day. The patient is permitted to leave his bed on the fourth day.

In a recent monograph attention was called to the value of Harrington's solution in the prevention of cancer cell implantation. It is not to be inferred that Harrington's solution is brought forward as a substitute for radical removal of all of the diseased tissue. On the contrary, it is offered as a valuable adjunct in preventing liberated cancer cells from developing into cancerous growths in the operative wound. At this time I wish to caution against applying the solution too long. Experience has convinced me that it is best applied by means of a gauze sponge wrung out in the solution. The sponge should be applied to the entire wound area. The operative field quickly assumes a brownish-blackish appearance. A small rubber tissue drain should be placed in the lower angle of the wound. The drain is removed at the end of thirty-six hours.

The following conclusions seem warranted:

1. The causes of failure in the treatment of cancer of the lip are (1) late recognition of the disease, (2) the patient's refusal of early operation, and (3) incomplete operative technic.

2. The common practice of treating cases of persistent "fissure" or "crack" of the lip in a patient 30 years of age or over, with pastes, caustics or powders, is to be deplored. The fissure or crack should be excised and immediately subjected to microscopic examination.

3. The secret of success lies in early recognition and prompt excision of the growth, together with contents of submental and the submaxillary fossæ. The character and completeness of the primary operation determine the success or failure of the treatment.

4. Moles and warts, especially when so situated that they are subjected to more or less constant irritation, should be excised, lest they become malignant.

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THE ASSOCIATION OF AORTIC INSUFFICIENCY WITH SYPHILITIC AORTITIS*

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During the last few years our attention at the Pennsylvania Hospital has been very forcibly directed at autopsy to the frequent association of a peculiar type of arteriosclerosis, namely, mesaortitis, with a chronic aortic endocarditis, which gave rise to aortic insufficiency. The combination of these two lesions seemed so significant and was so striking that a systematic study of the autopsy material was undertaken to determine exactly how common the occurrence was; and in this paper a brief summary of the findings will be given.

For some years mesaortitis has been recognized by the school of Heller as a unique form of arteriosclerosis, but more recently the condition has been made especially familiar and its connection with syphilis emphasized by the studies of Marchand,¹ Benda² and Chiari.³ Chiari

pointed out in 1903 that mesaortitis was very common in syphilitics. In his series of twenty-seven cases of undoubted syphilis, mesaortitis was found sixteen times, and in forty-four cases of paresis it occurred in 47 per cent. Marchand, at the same time, drew attention to the constant association of mesaortitis with aneurism of the aorta and believed that, though this type of aortitis might not be specific for syphilis, was yet almost always caused by syphilis when it occurred in young people. Since the appearance of these papers the condition has been extensively studied and is now generally recognized as a type of sclerosis differing in appearance and etiology from the more usual form of sclerosis termed endarteritis deformans.

Evidence, too, has been rapidly accumulating to show that mesaortitis is due, at least in many cases, to syphilis. A similar lesion has been found by Wiesner⁴ and Klotz⁵ in the great vessels of infants and fetuses that were the subjects of congenital syphilis. Most important of all in this regard are the reports of Reuter,⁶ Benda,⁷ Schmorl⁸ and Wright,⁹ who have been able to demonstrate spiral organisms indistinguishable from *Spirochæta pallida* in mesaortitis in adults. It is interesting to note in Wright's excellent and convincing report that chronic aortic endocarditis was present in all of the five cases in which spirochetes were present in the wall of the aorta.

In a series of 930 autopsies at the Pennsylvania Hospital twenty-one cases were found in which chronic aortic endocarditis, unassociated with lesions of any of the other valves, occurred in connection with mesaortitis. In these twenty-one cases the lesions in the aorta varied somewhat in extent in the individual instances, but was always confined, and often very sharply localized, to the arch of the aorta. Occasionally it extended for only 5 cm. above the aortic cusps. The margin of the sclerotic area was very abrupt, while the aorta beyond was quite smooth. In the least extensive areas there were patches of thickening two to three cm. in diameter. The central portion was elevated, gray and somewhat succulent in appearance, while the margins were yellowish and crinkled. The sclerosis, when more extensive, was characterized by an irregular, corrugated or crinkled thickening of the wall, showing small pits and sometimes minute, aneurismal sacculations. Often the bases of these small aneurisms were so thin that they transmitted light. There was no calcification except in one instance, but rather a rubbery, pliable thickening. In four cases the arch of the aorta was the seat of large aneurism formations.

The valves showed the same rubbery thickening when extensively involved, and occasionally there were crescentic lines of whitish yellow thickening on the endocardium of the ventricle beneath the valves.

Microscopically these aortas showed even a more characteristic appearance than they did to the naked eye. The intima presented various grades of thickening, due to the heaping up of cells of the connective-tissue type, but there were no marked degenerative changes and no calcification. The principal alterations were present in the media. Here there were, in the great majority of instances, areas of necrosis in which both muscular and elastic elements were completely destroyed, while with occasional giant cells accumulations of small round cells

* Read in the Section on Practice of Medicine of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

1. Marchand: Verhandl. d. deutsch. path. Gesellsch., 1903, p. 197.
2. Benda: Verhandl. d. deutsch. path. Gesellsch., 1903, p. 164.
3. Chiari: Verhandl. d. deutsch. path. Gesellsch., 1903, p. 137.

4. Wiesner: Centralbl. f. Path. u. path. Anat., 1905, xvi, 822.

5. Klotz: Jour. Path. and Bacteriol., 1907, xii, 11.

6. Reuter: München. med. Wehnschr., 1906, liii, 10, 778; Ztschr. f. Hyg. u. Infektionskrankh., 1906, liv, 49.

7. Benda: Berl. klin. Wehnschr., 1906, xliii, 989.

8. Schmorl: München. med. Wehnschr., 1907, liv, 188.

9. Wright: Boston. Med. and Surg. Jour., 1909, clx, 539.

and plasma cells were sometimes arranged about the necrotic areas. Usually blood-vessels, surrounded by these same types of cells, were seen penetrating from the adventitia far into the media toward the thickened intima. In other instances the media was the seat of old scar-like areas containing blood-vessels and the connective tissue was richly infiltrated with plasma cells and small round cells. In such places the elastic fibers of the media, as could be shown by Weigert and Verhoff stains, were entirely destroyed and the adventitia and thickened intima were connected by the vascularized scars. In the oldest lesions the media was represented simply by slightly cellular bundles of connective tissue. The adventitia likewise was the seat of definite changes. Here the connective tissue was increased; collections of small round cells were present, situated especially about blood-vessels, the arteries were frequently the seat of an extensive endarteritis and the walls of the veins thickened.

In three cases in which the valves themselves were studied microscopically this process was seen to extend to within a short distance of their attachment. At the fibrous ring there was increase in connective tissue, and blood-vessels could be seen extending from this region, while into the thickened valve near them accumulations of small round cells and plasma cells infiltrated the fibrous tissue of the ring. The valves themselves were thickened by the formation of fairly cellular connective tissue, and near the bases, two valves were infiltrated with clusters of small round cells and plasma cells.

From this brief description it may be seen that the lesions in the aorta in these cases were quite characteristic of aortitis as it has been described by others. The process, moreover, could be traced along the wall of the aorta to the aortic cusps and, though, by reason of their structure, one could not expect to see the same type of lesion in the valves, still it was possible to determine that certain of the features characterizing mesaortitis were present here. The extension of blood vessels and groups of small round cells and plasma cells from the fibrous ring into the base of the leaflet, as well as the presence of small groups of these cells in the substance of the valve itself, was quite striking in at least one case, and, though this is not, by any means, sufficient to characterize the lesion in the valves as specific, still it does suggest that the agent which produced the chronic inflammatory and proliferative changes in the wall of the aorta had some part in the disease of the aortic valve.

It is quite evident, too, that lesions of the aortic valve accompany mesaortitis with great frequency, for in another series of thirty-seven cases of mesaortitis, in which special attention was paid to the lesion in the aorta, chronic aortic endocarditis with insufficiency occurred thirteen times, or in 35.1 per cent.

In the series of twenty-one cases under consideration all but three of the subjects presented definite signs of aortic insufficiency during life. In one case, a man who died shortly after admission to the hospital from epidemic meningitis, no cardiac murmurs were heard, and in two other instances only apical systolic murmurs were noted at the physical examination. Most of the individuals were middle-aged or young. In 17 cases the patients were under 50, in 11 under 40 and in 6 between 20 and 30 years of age. Fifteen of the patients were men, 6 were women; 14 were colored and 7 white. In 11, or a little over half, there was a definite history of syphilis or syphilitic lesions (gummata) were discovered at autopsy. In the remaining 10 cases the possible occurrence of syphilis was not noted in the history.

Although a history of rheumatic fever was obtained in a few instances, it was, on the whole, rather conspicuous by its absence. In 8 cases it was stated positively that the patient had not had rheumatism; in 3 cases there had been "rheumatic pains," and in 3 cases there was a definite history of rheumatic fever. In 6 cases the history was not taken with sufficient accuracy to determine whether or not the patients had had rheumatism.

To determine the relative importance of the association of mesaortitis with aortic insufficiency it was necessary to compare these twenty-one cases with all the other cases of chronic aortic endocarditis, and particularly with those cases which were associated with endarteritis deformans and calcification of the aorta.

Including the above group, 26 cases of chronic aortic endocarditis were found in the 930 autopsies.

In twenty-one of these cases the aortic valves were affected in combination with the mitral or tricuspid valves, and frequently an aortic insufficiency was combined with mitral stenosis or mitral insufficiency. In most of these 21 cases the disease occurred in young people and in a large proportion the disease could almost certainly be ascribed to rheumatic fever. Since this group of cases in which there are combined lesions of the mitral, aortic and often tricuspid valves is perfectly familiar, the subject needs no further discussion. Suffice it to say that the aorta in every instance was smooth and delicate in appearance, so that the possibility that a sclerosis might have had some effect in bringing about the lesion of the aortic valve is effectually excluded.

In the remaining thirty-four cases of chronic aortic endocarditis in which there was no mesaortitis, the aortic valves alone were affected and showed changes varying from a moderate thickening to a marked thickening, stiffening and calcification. In all but nine of the cases there was sclerosis of the root of the aorta, consisting of patches of yellow thickening of the intima which often showed degenerative change and calcification. Frequently the calcification was very well marked. The lesions were not confined to the root of the aorta, but often were much more advanced in the thoracic and especially the abdominal portion. In most instances the patients were elderly individuals; twenty-two, or 66.6 per cent., were over 50, and twenty-eight were over 40 years of age. In one instance the age of the patient was not given.

The condition noted in this group of cases is so familiar and is found so frequently in autopsies on old men and women that it needs scarcely any comment. Clifford Allbutt,¹⁰ contrary to the opinion which is often expressed, has stated that aortic insufficiency is not essentially a disease of old age and that it is of rather exceptional occurrence in the decay of life. The present records are in accord with this view, for in only four of the thirty-four cases, or 11.9 per cent., were there signs of aortic insufficiency during life. In two of these cases there was calcification of the aorta. One of the cases, which occurred in a man aged 46 who had had syphilis, has been placed in this group, though the exact type of sclerosis of the aorta is doubtful, owing to the fact that no tissue was preserved for microscopic study. The aorta showed areas of calcification, which is so unusual in mesaortitis that, without more definite knowledge, the case cannot be considered as belonging to the cases of mesaortitis. In one other case no cardiac murmurs were heard during life, the patient lived but a short time after admission to the hospital, but at autopsy there was

¹⁰ Allbutt, Clifford: *System of Medicine, Diseases of the Aortic Valves*.

found a markedly dilated heart and rather extensive thickening of the aortic valves. The aorta showed advanced calcification. From the extent of the aortic lesion it seemed very probable that if the heart had been examined before the break in compensation the murmurs of aortic insufficiency might have been present.

As might have been supposed, however, systolic murmurs, heard with varying intensity either at the apex or base of the heart, were common in this group and occurred in thirteen cases. It will thus be seen that, while thickening, stiffening and calcification of the aortic valves frequently goes hand in hand with calcification of the aorta and endarteritis deformans, these changes seldom gave rise to true aortic insufficiency.

In the accompanying table the cases of chronic aortic endocarditis are tabulated and show definitely the comparative frequency of the combination of aortic insufficiency and mesaortitis.

AORTIC INSUFFICIENCY AND MESAORTITIS

	Mesaortitis (Pure Aortic Endocarditis).	Endarteritis Deformans (Pure Aortic Endocarditis).	Rheumatic Fever, Etc. (Combined Aortic Endocarditis).
Aortic insufficiency	18	4	21
Chronic aortic endocarditis without signs of aortic insufficiency	3	30	00
Total	21	34	21

It may thus be seen that of the 43 cases of true aortic insufficiency giving symptoms, 18, or 41.8 per cent., were associated with mesaortitis, and of the 22 cases of aortic insufficiency uncombined with lesions of any of the other valves 18, or 81.5 per cent., were associated with mesaortitis.

It is a matter of common knowledge that syphilis is an important factor in the etiology of aortic insufficiency, but until recent years it has been difficult to prove this matter satisfactorily and to determine in exactly what proportion of cases the condition could be ascribed to syphilis. Siehe and Saathoff¹¹ have recently called attention again to the frequent association of syphilis and aortic insufficiency. In 7 cases of aortitis luetica which they report aortic insufficiency was present in 6. Albrecht¹² believed, too, that syphilis is the most important cause of aortic insufficiency. Citron,¹³ investigating this same point, obtained a positive Wassermann reaction in ten out of sixteen cases of aortic insufficiency, or in 62.6 per cent. Investigations on this point are now being made, but at the present time the number of cases studied is too small from which to draw conclusions.¹⁴

The practical bearing which such findings have on the treatment of these cases of pure aortic insufficiency becomes at once apparent; for, though one cannot hope to cure the aortic lesion, still the process may perhaps be arrested and the progress of the disease of the aorta influenced by the vigorous use of antisyphilitic treatment.

SUMMARY

In these statistics it may be seen that aortic insufficiency unassociated with disease of the other valves is rare after the fifth decade, and that it is seldom associated with that type of arteriosclerosis known as endarteritis deformans. The majority of cases of uncomplicated aortic insufficiency (81.5 per cent. in the present series) are associated with a characteristic type of sclerosis termed mesaortitis. The involvement of the valves takes place probably by direct extension of the process along the wall of the aorta to the aortic valves. Syphilis is certainly the commonest cause of this type of sclerosis.

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ABSTRACT OF DISCUSSION

DR. RICHARD C. CABOT, Boston: Since Dr. J. H. Wright called attention to the presence of spirochetes in the aorta of five cases of heart disease postmortem, we have been able to identify during life some cases similar to those to which Dr. Longcope has called attention. Some patients with heart disease, particularly of aortic disease, without a history of rheumatic or pyogenic infection, but with a history of syphilis and a positive Wassermann reaction in the blood, do respond to antisyphilitic treatment better I think than one would expect such patients to respond to the ordinary type of treatment with rest, digitalis, purgation and cardiac stimulation. In other words, in cases which we believe to be the result of syphilitic infection, pushing the iodids and mercury gives better results than could be obtained under the ordinary treatment. This is a point of great practical value. We should push antisyphilitic treatment in all these cases of non-rheumatic cardiac disease in which there is a history of syphilitic infection, especially if the Wassermann reaction is obtained.

DR. ALLEN A. JONES, Buffalo, N. Y.: In the clinical history of these cases, was there any record of chest pain or anginal pain? In a recent case I studied, a man of 46 had syphilis and shortly before death he gave a positive Wassermann reaction, but there was no history of aortic insufficiency. He had two severe attacks of angina pectoris and died during the third attack.

DR. WARFIELD T. LONGCOPE, Philadelphia: The point made by Dr. Cabot is an important one and the probability is that many of these patients would be much benefited by antisyphilitic treatment. The patient whose case I reported had severe substernal pain and one or two definite attacks of angina. That, of course, is common in this type of cases on account of the involvement of the coronary arteries.

THE BLACK VOMIT (VOMITO NEGRO) OF
IQUITOS, PERU, IDENTICAL WITH
YELLOW FEVER

ENRIQUE A. VIGIL, M.D.

LIMA, PERU

REPORTS OF CASES

CASE I.—On August 19, 1905, three months after my arrival at Iquitos, I was called to attend Mr. G. S., a German, aged 34 and robust, who had recently arrived from Brazil, where he had passed a few days in Manaos on his journey from Europe. He lived in Iquitos above a store.

A violent shivering, with intense rachialgia, cephalalgia and fever, had been the first symptoms of the patient's illness. Examining his abdomen, there was noticeable only a well-marked sensation of pain at the epigastrium. He had fits of vomiting and a temperature of 39 C. (102.2 F.). His eyes were red. I ordered him a saline purge.

On the following day I observed that the patient's liver was enlarged and the other symptoms continued. As the purge had

11. Siehe and Saathoff: München. med. Wchnschr., 1906, liii, 2050.

12. Albrecht: München. Med. Wchnschr., 1906, liii, 332.

13. Citron: Berl. klin. Wchnschr., 1908, xl, 2142.

14. Since the completion of this work Collins and Sachs have reported the results of their study of the Wassermann reaction in cardiovascular disease. In 12 out of 13 cases of aortic insufficiency they obtained a positive reaction. In contrast to these findings only 1 of the 7 cases of diffuse endocarditis affecting the mitral valve gave a positive result. They point to the importance of syphilis as a cause of aortic insufficiency and emphasize the value of antisyphilitic treatment in such cases.

caused a good evacuation, I ordered him quinin as a draught and salicylate enemas.

On the 21st a subicteric tint was observable under his eyes and his very slow pulse contracted greatly with his temperature. His face showed anxiety and fear. The vomiting, always bilious, persisted, as also the other symptoms. In the urine were found 19 gm. of albumin per liter with 21.40 of urea. I discontinued the quinin and prescribed a tonic potion with lactate of strontium and alkaline draughts.

Early on the following day my patient was in a grave condition. The most minute examination showed no alteration in the spleen. The urine gave 9 gm. of albumin per liter and 21.40 of urea. I continued the previous day's treatment, adding caffeine to the potion and the enemas and alkaline draughts.

On the 23d the patient grew worse; there was delirium; he got up and endeavored to leave his room, falling at the door. I prescribed bromid of strontium. The quantity of urine was small and contained 4.50 gm. of albumin and 26 of urea.

On the 24th his condition was the same, the icterus being more pronounced. During all these days the patient drank small quantities of iced milk; and the vomiting continued, though at less frequent intervals.

On the 25th his condition was better; the fever abated and the pulse was in harmony with the temperature. On the night of the 26th the patient slept well, showed scarcely any fever and his urine, charged with bile, contained only 4.50 of albumin and 24.8 of urea. The liver was enlarged; the spleen could not be touched. The improvement continued and on the 29th there was only 1.50 of albumin per liter; fever, persistent icterus.

On the 30th the albumin was only 0.25 per liter and the general condition good. On September 1 the patient was able to leave his bed.

From the third day I diagnosed the case as yellow fever and my colleague reserved his diagnosis but did not contradict mine. This case was not followed by others.

CASE 2.—At the beginning of 1907 I was called to see a strong young man, J. S., who, after living for some time in Manaos, had come to Iquitos on business. He was a Portuguese, who had been taken ill the previous day with shivering, fever, vomiting and slight pain at the waist. His whole body ached. When I examined him his eyes were red, as also his face; he had high fever and epigastric pain. Neither the liver nor the spleen was enlarged. On the following day, as the vomiting continued, I ordered an antiemetic, an application of ice at the epigastrium and iced champagne to drink. The same evening, as I was taking his temperature, he vomited more than half a liter of a thick liquid like coffee-grounds. The fever exceeded 40 C. (104 F.). The urine contained much albumin. I immediately injected 800 grams of Hayem's artificial serum under the skin of the abdomen, and gave the patient a cold bath, repeating the bath throughout the night, whenever the temperature exceeded 39 C. (102.2 F.). The next morning he was in a dangerous condition; he had a subicteric tint in his eyes, slow pulse, high fever, little vomiting, enlarged liver, spleen painless and untouchable, urine very bilious and albuminous. I held a consultation with two colleagues, who diagnosed the case as the bilious remittent malaria of hot countries. I pronounced it to be a typical yellow fever. On consulting the family they decided to leave the patient in my hands, and I again injected a liter of artificial serum; I continued the iced champagne, cold baths and alkaline enemas, and in the end was successful. On the sixth day the patient entered into convalescence, with his liver enlarged, icterus, and a small quantity of albumin. His spleen had not altered in the least. In a few days he was able to leave for Portugal to take alkaline baths. No other cases followed.

CASE 3.—In June, 1908, I was called to see a Spanish youth, M. C., recently arrived from Spain, who had been ill for three days. He had been given various doses of castor-oil with lemon. When I saw him he vomited several times a dark liquid like coffee, resembling the vomit of yellow fever. His pulse was slow; the fever slight; liver enlarged, and spleen inaccessible. A subicteric tint was observable in his eyes; the mouth was furred, with the appearance of typhoid; urine

albuminous; epigastrium painful; sensory dull. Before so plain a picture of yellow fever I should have injected serum, but circumstances which are beside the case prevented my doing so. I administered tamin in a draught, iced mineral water and alkaline enemas. For several days I fought the disease, but after alternately improving and growing worse, the patient died.

Autopsy.—I invited all the medical men of Iquitos to the post-mortem. A general icteric tint covered the integuments, being specially pronounced on the chest. The liver was exceptionally enlarged, yellow, fatty and absolutely bloodless on being cut. The spleen was small, with its capsule wrinkled and turned back. The stomach showed black patches in the larger curvature and the mucus was thick and somewhat blanched. The kidneys, which were large and white, attested the acute nephritis. The cardiac cavities were full of semi-liquid blood. The patient had died of yellow fever in its most dangerous form of icteroid typhus.

CASE 4.—A few days later the municipal officer of health invited us to the autopsy of a suspected case of "vómito negro." The deceased was a highlander, L. M., recently arrived from the mountains, and his family afforded the following information: On June 20, at 8 a. m., he felt pains in the head, waist and calves; eyes red; feverish and slightly delirious. He was given two doses of saline laxative which acted on him twice, and on the morning of the 30th he appeared better. In the afternoon he was worse; he had pains at the mouth of the stomach, nausea and high fever, at night he was delirious. He was given an infusion of vervain, which produced five evacuations, thick and somewhat black. On July 1 he was in the same condition, urine thick, fever and nausea. Again he was given vervain. On the morning of July 2 he was better, without fever; the nausea remained but there was no vomiting. He was given vervain again. On July 3 he awoke without fever, but had passed a bad night; his tongue was dry and showed dark spots; he had trembling fits and epigastric pain. He took a little chicken broth and even ate a piece of the fowl; passed dark urine several times and had various evacuations like coffee-grounds. At 8 o'clock that night hiccough came on and at 10 the patient vomited twice, more than half a chamber-vessel of blood of the colour of coffee-grounds. He was given the saline laxative in sweetened water. He passed the rest of the night with hiccough; next morning he was unconscious, did not speak, and died at 9 o'clock.

Autopsy.—A post-mortem was held the same afternoon; the body was that of a young man, whose eyes and face showed an icteric tint, which, however, was only slightly visible on the rest of the body; from the mouth there issued bloody foam. Notwithstanding the fact that several hours had passed since his death, the body was very warm; cadaveric rigor had set in. When the abdomen was opened the liver was found to be somewhat large in volume and of a yellowish color instead of its normal characteristic dark color; on cutting it transversely it gave a small quantity of blood (not bile), and in one place near the edge, which was quite pale yellow, it gave only a very small quantity of juice. The spleen was almost normal as regards dimensions but the volume was diminished, the capsule somewhat wrinkled and the soft pulp could easily be penetrated by the finger. Blood was taken from the viscera on two microscopic slides. The stomach, tied at the pyloric and cardiac orifices, was removed and opened at its smaller curvature; it contained almost a liter of dark fluid blood. In the large curvature was a fair-sized dark greenish-black stain which strongly tinged the mucus; there were also hemorrhagic stains of recent origin; the mucus was not easily removed. The heart, bloodless, showed nothing abnormal; from one auricle blood was taken on a microscopic slide. The kidneys, slightly enlarged in volume, offered nothing worthy of attention on being cut. The bladder, distended, contained urine which was intensely yellow, without being dark, and albuminous. Dr. Irujo, who examined the samples of blood, said nothing as to the result of his microscopic analysis.

CASE 5.—A few days after making the post-mortem just described I was called to see a Spanish youth, the companion of Patient 3, with whom he had come to Iquitos. The patient had been taken ill in the morning with fever, pains in the

body and slight shivering. On examining him, his thickly-coated tongue, violent headache, and no other symptoms worthy of attention caused me to postpone my diagnosis and I contented myself with ordering the patient some mineral water. On the following day his eyes were red and he had some epigastric pain, fever and headache. As the water did not appear to do him good, I ordered him calomel, which caused abundant motions. Next day, in spite of the effect of the purge, his condition was the same, and I noted that the slowness of his pulse did not correspond with the fever. I called my colleague, Dr. Irujo, in consultation and expressed my doubts as to the nature of the present case; by common accord we gave him quinin as a draught. On the following day the condition of the patient was serious; he had a well-pronounced icteric tint; bilious vomitings and dark urine strongly charged with albumin; the liver was large and painful, the spleen inaccessible. In consultation with Drs. Irujo and Carvallo, I bled him, injected a liter of Hayem's artificial serum and gave the patient an alkaline enema. The patient recovered slowly and was sent to Yurimaguas to recuperate.

CASE 6.—In the early part of the same month I saw in *extremis* a highlander, P., who was dying on the fourth day of his illness, emitting black vomits. I was unable to arrange a post-mortem.

CASE 7.—About the same time Dr. La Torre called Drs. Irujo, Carvallo and myself in consultation over the case of an Italian, M., who had come from Lima by the Pichis Pass, and a few days after his arrival had fallen ill. He had been treated by his countryman, an apothecary, who, believing it to be a case of malaria, had administered quinin for four days. When we saw the patient he was yellow from head to foot, had hiccup, scarcely any fever, and a sample we saw of a recent vomit was of a dark color; the urine contained much albumin; the liver was enlarged; the spleen could not be touched or felt on sounding the patient. Notwithstanding treatment by injections of artificial serum, the patient died on the following day, and eighteen hours later La Torre and I performed the autopsy.

Autopsy.—From the liver, which was yellow and enlarged, blood issued in very small quantities on cutting it; the spleen showed no alteration; the stomach displayed much ecchymosis and hemorrhagic spots; the bladder contained a small quantity of urine, yellow and albuminous; the kidneys were large and pale; the heart, yellow, with semifluid blood.

Grave circumstances connected with the health of my family prevented my continuing to attend patients, and afterward I left Iquitos, taking with me notes of the clinical history of cases which I believe to be typical of yellow fever.

I now propose to give a few facts respecting the situation of Iquitos, its climate and its fertility in parasites transmitting yellow fever; and I will also enter into considerations indispensable to the further confirmation of my opinion, notwithstanding that the above post-mortems leave no ground for concluding that malaria is the generator of the disease. It is a notable fact, and I do not tire of repeating it, that in none of the patients was there during life any alteration in the spleen, and in no cases did the autopsy reveal in it the disturbances characteristic of infections by the hematozoon of malaria.

SITUATION OF IQUITOS

On a high bank of the Amazon is situated the town of Iquitos, and like a ring of water the rivers Itaya and Nanay and Lake Moronacocha surround it. There are numerous marshes on the side facing the *montaña* (forest region), while that side of the town which faces the Amazon is dry.

Dr. H. W. Thomas, of the Liverpool School of Tropical Medicine, gives some interesting data¹ respecting its public health, and I cannot resist recording here those which chiefly concern the subject of this paper.

Iquitos is remarkable for its swarms of mosquitoes, especially alongside the river and in the neighborhood of the marshes. The houses situated along the river bank are never free from mosquitoes, and if special nets were not used for the beds it would be impossible to sleep. It has been said that the yellow fever mosquito does not exist in Iquitos. This statement is false. The *Stegomyia fasciata* is found in great numbers; it is disseminated throughout the town; practically all the houses and stores are full of this parasite; a great number of houses have been examined, as also barrels and other water deposits, and the *Stegomyia* has always been found. Examination had been made of 69 houses belonging to the better class and the larvæ of *Stegomyia* were discovered in 65; in 63 cases the *stegomyia* larva was not associated with larvæ of other *Culex*; in two cases the *Stegomyia* and *Culex* were found together; in the other four cases the *Culex* was discovered in great quantities. In one house adjoining a store there were sixteen large barrels, nine shallow vessels, seven large empty oil tins and a heap of empty preserved meat tins, in addition to a collection of more than 300 bottles; in all these there was a small quantity of water, and in 90 per cent. there were larvæ of *Stegomyia fasciata*. This house is remarkable for the large numbers of mosquitoes which infest it, and on one occasion several persons succumbed to "vómito negro" in it.

Careful attention should be given to the marshes. We took samples of water from 120 springs, and allowed the larvæ to grow and develop; four samples contained larvæ of *Anopheles argyrotarsis*; the fasciolated form was found to be present in other samples; adult specimens of *Anopheles argyrotarsis*, *albipennis* and *albipes* varieties, were always found near the marshes, and once in a house close by. An examination of these mosquitoes for malaria parasites was negative.

Is the "vómito negro" of Iquitos a form of yellow fever, or is it perchance a new disease? We have already said that the commission had no opportunity of seeing a single case of this disease. The generality of the symptoms, the temperature, the pulse record, and the duration of the illness, all coincide with those of yellow fever. The fact that newcomers are most liable to contract the disease is characteristic. The presence of the *Stegomyia fasciata* is a most important factor. All these points have been discussed with the Iquitos doctors, and a typical case of "vómito negro," the progress of which was related to me by one of the doctors,² leads me to believe in the strong resemblance which exists between yellow fever and the "vómito negro de Iquitos." Unfortunately necropsy has been impossible on typical cases of "vómito negro," which would have been of vital importance in elucidating the diagnosis.

The town of Iquitos is comparatively free from malaria and the majority of the cases come from the neighboring rivers.

CHARACTERISTICS OF VOMITO NEGRO

Case 1, that of G. S., permits no doubt as to the fact of the illness being yellow fever. How could one think of malaria when the patient grew worse on taking quinin and when, at the end of his illness, there was not the slightest alteration in the spleen? It was an isolated case of yellow fever.

The case of my second patient, J. S., diagnosed by two of my colleagues as remittent malaria, presents a most typical picture of yellow fever, is cured without quinin and shows no alteration in the spleen. Only persistent icterus remained, for which reason I sent the patient to Portugal for alkaline baths and change of climate. It was perfect confidence in my diagnosis which made me run the tremendous risk of treating this patient.

Case 3 is a typical one of ieteroid typhus. The poor man had taken much quinin in the first two days, and his illness was one of the terrible forms of "vomito negro."

The autopsy on the body of L. M. (Case 4) and the story we doctors heard from his family shows us a case of yellow fever in which nothing is lacking.

1. Thomas, W. W.: The Public Health of Iquitos, 1905.

2. Dr. Thomas refers to my Case 1, of which I gave him the clinical details.

Case 5 presents the "vómito negro" in an obscure form, for which reason I held a consultation. Not being sure of the case, I reserved my diagnosis, and, in accord with the doctor who saw the patient, I gave him quinin. As a result of this reagent the youth became worse; albumin appeared in the urine, and the icteric tint, and suspicious vomit were noticed; in this emergency we bled the patient, injected Hayem's artificial serum. The cure was slow but sure. The spleen showed no malarial reaction.

Poor P. (Case 6) was at death's door when I saw him; I found him surrounded by his coffee-ground vomits; it never occurred to me to think of malaria as the cause of his death. Unfortunately it was impossible to hold an autopsy.

Case 7, that of M., the Italian whom I saw with Drs. La Torre, Irujo, and Carvallo, presented a picture which admitted of no doubt. Serum was injected, but the poor fellow had already received from the hands of a quack enormous doses of quinin, and, in spite of everything we did for him, he succumbed. His autopsy, which I have noted above clearly, reveals, in accord with his symptoms, that the man died of yellow fever. His spleen showed no alteration at all; indeed, it was of normal size.

Why pretend to make malaria responsible for these deaths?

Soon after I arrived at Iquitos, a friend of mine, Mr. A. D., was taken ill with high fever, bilious vomiting, pain at the left hypochondrium, and two days later some albumin in his urine. As was natural, this patient was much afraid, because he thought he had been attacked by the famous "vómito negro" of Iquitos, of which we had heard so much on the Peruvian coast. I diagnosed this case as a remittent malaria of tropical countries, because I had no grounds for thinking that the patient's symptoms were those of "vómito negro." One of the doctors of the town who saw the patient diagnosed the case as "vómito negro de Iquitos," a special fever found in that locality, which, as I had only recently arrived, I did not know; he proposed to give the patient phenyl salicylate (salol) with acetphenetidinum, a remedy which at that time was the panacea for "vómito negro." I did not accept the diagnosis of the remedy, and consequently, on my judgment, I administered to the patient large doses of quinin hypodermically; in a fortnight he was better. Afterward he had a slight relapse, which compelled me to give him arsenic and iron to remove this clear infection of malaria completely.

I sometimes think that in Iquitos the same thing happens as does in Lima with typhoid fever. "Infectious fever" was the name given in Lima to a gastric complaint if it continued for some days; and the same name was applied to intestinal toxoinfection, typhoid, malarial typhus, and other similar diseases. Something analogous occurs in Iquitos with the "vómito negro."

Although the points I have noted leave no room for doubt, I venture to offer a few remarks to strengthen my opinion.

In the presence of the patients with the symptoms presented by those I attended, three thoughts arise in one's mind: First, is it a case of bilious remittent malaria of tropical countries? Second, is it yellow fever? Third, is it a special disease peculiar to Iquitos—a colibacillosis, as Irujo believes?

The symptoms of bilious remittent malaria are very similar to those of yellow fever, and there are cases in which, while the patient lives, it is impossible to distinguish; but the autopsies are very different; for while

in the bilious malaria the spleen is enlarged, and the liver enlarged, dark, bloody and full of bile when cut, in yellow fever the spleen suffers no alteration, while the liver is enlarged, of a light yellowish coffee-and-milk color, bloodless, gives scarcely more than a few drops of juice when cut and shows all the aspects of the tuberculous liver. The lesions of the stomach are very manifest in yellow fever, as also are those of the kidneys. If to this is added the circumstance that in Iquitos the mosquito most prevalent is the *Stegomyia*, as I have said, the *Anopheles* being scarcely met; and also that its climatic conditions of heat and atmospheric humidity place it in these respects in the same category as Pará and Manaos, the altitude of Iquitos above the sea-level being insignificant, it is easy to arrive at the conclusion that yellow fever and not malaria is responsible for the epidemic which raged in Iquitos and Yurimaguas last year. Bear in mind, too, the significant fact of the failure of quinin in the treatment of these patients, and the truth is so clear as to leave no room for doubt. Brought from Brazil, or originating locally, yellow fever is to-day endemic in Iquitos, where it is always present, appearing in the form either of sporadic cases, like Cases 1 and 2, or as an epidemic, such as began with Case 3 early in 1908 and has not yet terminated. It would not be far from the truth to suggest that it was this same disease, the famous "vómito negro," which destroyed the Junin battalion when it went there in 1895 with Colonel Ibarra.

On the coast we all see malaria perform its work of destruction, but, notwithstanding the abundance of cases, epidemics of bilious malaria rarely occur; the tertian and chronic malaria cause most ravage. Moreover, epidemicity is not distinctive of bilious malaria, whereas it is characteristic, in the majority of cases, of yellow fever. Again, those who are attacked by bilious remittent malaria are almost always persons who have suffered from malaria in some other form; it frequently happens, for instance, that a certain kind of intermittent malaria changes into remittent, in the same way as a simple tertian passes into a grave case of pernicious malaria.

Are we, then, dealing with a special Iquitos fever—a colibacillosis? This hypothesis has already occurred to certain doctors who have practiced in the Antilles. It is possible that colibacillosis may form part of the disease or may be wholly responsible for it; this is a question of etiology which I do not intend to discuss. It is still a matter for mature consideration to determine what is the precise cause and what is the germ of the disease. But I say to myself, "Why do we wish to make Iquitos the special locality for this disease when in Guayaquil, Pará, Manaos, etc., it always attacks by preference those who have recently arrived, as it does in Iquitos, with the same symptoms, with the same failure of quinin, with the anatomic and pathologic lesions which we all attribute to yellow fever? Why form new diseases from clinical observations which have already been well noted by others? Bretonneau, Dutrolean, Finlay, Freire, Lacerd, Silva, Lima, and others, all describe these observations of high fever, albuminous urine, black vomits, fatty degeneration of the liver and kidneys, no alteration of the spleen, in persons recently arrived in the tropics, by the name of yellow fever or black vomit?"

NOTE.—I wish to thank Dr. Albert H. Carroll of Baltimore for his very valuable aid in the preparation of this article.

A COMPUTING CHART FOR MAKING A DIFFERENTIAL LEUCOCYTE COUNT

A. E. OSMOND, M.D.
CINCINNATI

Any laboratory worker who has had any amount of blood work to do, especially in making differential leucocyte counts, has been more or less troubled with the necessity of having to figure out the percentages of the various types of cells and the liability of error.

The accompanying chart I have devised for use in the laboratory of the Cincinnati Hospital, and we have found it quite convenient in simplifying the work and removing sources of error. The chart is inexpensive and can be made out of a piece of ground glass or a slate, suitably ruled and marked in ink so as to be permanent. The temporary markings are made in pencil, can be readily erased, and the chart is again ready for service.

It is figured out on a basis of a count of two hundred leucocytes, and marked on the left to designate the various types of cells, as polymorphonuclear, large lymphocytes, small lymphocytes, eosinophiles, transitional cells, etc. At the bottom are the calculated percentages, and at the top the actual number of cells counted when the vertical columns are filled.

PERCENTAGE	MYELOCYTES	MAST CELLS	TRANSITIONAL	EOSINOPHILES	SMALL-LYMPH	LARGE-LYMPH	POLYMORPH	CELLS COUNTED
5								5
10								10
15								15
20								20
25								25
30								30
35								35
40								40
45								45
50								50
55								55
60								60
65								65
70								70
75								75
80								80
85								85
90								90
95								95
100								100
								105
								110
								115
								120
								125
								130
								135
								140
								145
								150
								155
								160
								165
								170
								175
								180
								185
								190
								195
								200

A computing chart to facilitate making a differential leucocyte estimation.

The heavy lines running vertically are put in simply to facilitate the count, by indicating when fifty, one hundred or one hundred and fifty units are counted for a certain type of cell, and by referring to the figures in the top row one can at once read off the actual number of each type of cell counted, and easily sum up when a total of two hundred has been reached.

This being done, the percentages are read off directly from the bottom figures and the usual calculating with the possibility of error is entirely removed.

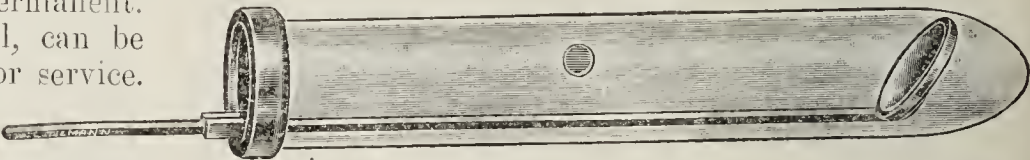
19 West Seventh Street.

A NEW ANAL SPECULUM

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BROOKLYN

The speculum here described was constructed in the hope of securing an anal speculum which could be introduced into a hypersensitive anus without causing much pain. The object has been accomplished, for, from a considerable experience with its use, I have found that even an anus which is the seat of an irritable ulcer tolerates examination with this instrument in a most surprising manner.

It has also been found that the view of the mucosa is exceedingly satisfactory. The distention is equilateral and no distortion of parts is occasioned, as is the case



A new anal speculum.

when the parts are made to present at the end of a tubular speculum or when some form of dilating speculum is used. It is possible that this instrument may facilitate the discovery of the mouth of a fistulous opening. Hemorrhoids are seen as bluish spots, and a far more accurate conception is obtained as to their number and size than when the patient forces down the entire venous tissue of the anal region by straining.

The tube is made of a glass of suitable thickness and the greatest possible clearness. The hole in the side of the tube is introduced for the possible purpose of making applications to ulcerated surfaces and the probing of spots suggestive of fistula. The mirror, which gives the view of the anal wall, is so arranged that it can be pushed in or withdrawn and also rotated showing the entire surface of the anus at different depths. Lubrication of the tube before introduction is done with a translucent lubricant, such as glycerin, or one of the proprietary preparations made for that purpose.

It is necessary to use either reflected light from a head-mirror or an electric head-light. When light such as this is thrown on the mirror the view is remarkably distinct, but ordinary diffuse light does not serve the purpose.

84 Reimsen Street.

TRANSIENT PRESENCE OF CASTS IN URINE OF HEALTHY INFANTS

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PITTSBURG, PA.

In connection with the article on "Transitory Urinary Findings Associated with Some Diseases of Childhood," by Carr,¹ I wish to report the following case:

A male child, 11½ months old, breast-fed until 9 months, had been since then on gradually increasing quantities of cow's milk, with cereals and corresponding withdrawal of breast-milk, until at the time these observations were made the child could be considered practically weaned.

This baby was larger than the average for his age, was strong and muscular, of a very happy disposition, had never been sick, and from all points of view would be considered an ideal child. I was attending another member of the family and simply out of curiosity to know something of the urinary

1. Carr, W. L.: THE JOURNAL A. M. A., Nov. 13, 1909, liii, 1622.

findings in infancy, asked for a specimen from the baby. On examining the urine the same day, I was more than surprised to find in it a large number of hyaline and pale granular casts, an appearance suggesting the showers of casts seen in adults. There was neither albumin, blood nor any other constituent to suggest renal disease.

The day before this specimen was obtained the child had been possibly a little less jolly than usual, but there was absolutely nothing else in his behavior to even suggest ill health; and on the day the specimen was obtained he was as happy and lively as any healthy baby could be.

I was able to obtain specimens daily for about two weeks, but in none of them did I find anything abnormal, and in occasional examinations since that time have always found the urine normal; and the child has continued in such good health as to exclude any idea that he might have been suffering from an unrecognized nephritis.

With the idea that casts might occasionally appear in normal infants' urine, I endeavored to make frequent examinations of the urine of several infants of the same age. The difficulty in obtaining specimens, due largely to my inability to get the parents sufficiently interested, caused me to give up the work after examining probably eight or ten samples from one other child of the same age as the one concerned; these examinations were all negative. While the cases reported in Dr. Carr's paper and in the discussion following are all interesting, they show a true nephritis complicating numerous infectious processes, and the only reason for their apparent rarity is that they are seldom looked for.

The condition here described, the transient presence of numerous casts in the urine of an apparently healthy infant, I have not seen mentioned in the literature.

632 Fulton Bldg.

THE LABELING OF DRIED BLOOD-FILMS

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QUARANTINE, LA.

It is the practice at this quarantine station to make blood examinations for malaria from the stained specimens, and to keep on file for six months or more such as show a positive finding.

It often occurs that a number of slides are made at one time, or a number of slides from one patient are taken at different hours. Such slides are labeled at once, with the name, date, hour and minute, temperature of the patient when taken, name of vessel from which the case was removed; and, after staining the preparation and completing the examination, the findings, such as "estivoautumnal rings," "crescents," "ovoids," "rings and crescents," "tertian rings," "tertian mature," "quartan," "segmenting," etc.

A simple method of labeling these slides has been adopted, which is a mere modification of one described by Stephens and Christophers, who say:¹

Films should always be labeled as soon as possible, otherwise uncertainty and annoyance are sure to arise. The use of paper labels is not at all necessary in routine work.

1. The most convenient method is that of writing on the end or back of the slide with ordinary ink. This should be quite dry before placing in alcohol. There is then no fear of its coming off.

2. An excellent and extremely simple method of labeling has been described by Dr. Powell (Bombay), viz: After

making a dry film, as described above, the name, date, and other necessary information, are scratched on the film with the head or point of the needle. The films used being extensive, the writing in no way injures them. The first half inch or so of the film is frequently rather thick, and much information as to name, date, temperature, etc., may safely be written on it.

In place of using the head or point of a needle, I use an ordinary black lead-pencil, preferably a soft one. The result is that the writing on the blood-film is, in effect, the same as writing on a piece of frosted glass. The label thus made in the blood-film, being a carbon deposit, remains permanent and is not affected by the staining and washing of the slide. The black also contrasts well against the red or copper color of the stained preparation, making it easy to read.

THE FAILURE OF THE ROENTGEN-RAY IN THE TREATMENT OF HYPERTRICHOSIS

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CHICAGO

In the early work with the x-ray, after exposures for various skin lesions, such as acne, eczema and epithelioma, it was discovered that hair present on the area treated would fall out. This occurred after a varying number of exposures. Not only was it true of fine hairs, but coarse hairs, when they existed, also yielded to the subtle influence of the ray.

In most cases the hair remained out for several weeks or even months; therefore it seemed that a new treatment for hypertrichosis had been found, which was painless, easily applied and henceforth to displace the tedious method of electrolysis. As a natural consequence the x-ray was eagerly welcomed by both patient and operator as the treatment *par excellence* for superfluous hairs. With this encouragement there was no lack of material for proving or disproving its value. Large numbers of patients were treated with apparent success at first; but almost invariably, after periods ranging from two to six months, the original growth was succeeded by a second stronger, as a rule, than that which had preceded it, and this by another and still another. Nevertheless, determined operators persevered; series on series of exposures were made in the hope that eventually the cure would be permanent, and so it was in rare instances.

Fortunately, in treating most diseases with the x-ray the ray affects the unhealthy tissue before the healthy, so that the disease often is cured with no more than a slight dermatitis. In hypertrichosis, the papilla, at which the destructive agent is aimed, is composed of healthy tissue and is no weaker than normal, but, on the contrary, stronger. Hence it must require a large amount of treatment; dermatitis must succeed dermatitis, frequently constituting a persistent or chronic inflammation, before any approach to a cure can be effected.

Because of the selective action of the x-ray on glandular tissue, under the repeated dermatitis necessary, there is atrophy of the sebaceous glands and hair-follicles, although often the papilla remain. In addition to this, there is a vasomotor disturbance resulting in dilatation of blood-vessels or telangiectases; scar-tissue forms throughout the skin and this contracting scar-tissue, contrasting with the telangiectases, gives a most

1. Stephens and Christophers: The Practical Study of Malaria, 1904, pp. 6-7.

unsightly appearance. I have seen several cases in which the tissues were in this state. Unfortunately there is no means of repair. Time, instead of improving the condition, only renders it worse by still greater contraction of the scar-tissue. Those patients who have had milder treatment, yet sufficiently protracted to cause hair to remain out for any length of time, although they do not show the telangiectases, present a decidedly wrinkled, prematurely senile appearance. One patient, whose chin was a mass of scars and telangiectases, still had five hours of electrolysis on that area. Another had received seventy-five *x*-ray exposures, given by an eminent dermatologist and experienced *x*-ray operator. A woman of 40, she looked like one of 60. The rays had weakened the hairs materially, greatly facilitating their removal by electrolysis. Twice as many hairs could be removed in an hour as when *x*-ray treatment had not been given. In spite of all this, twenty hours of electrolysis were required. This case illustrates another effect of *x*-ray treatment, namely, the strengthening of the downy hairs. The patient under consideration had, besides the twenty hours of electrolysis on the chin and neck, three hours of work on the cheeks, where, previous to the use of the ray, her face had been clear. These hairs, although not strong, were black and decidedly conspicuous. Their development might have been prevented by proper protection of the cheeks from the ray.

The stimulating action of the *x*-ray, when applied in moderate dosage, is utilized to some extent in the treatment of alopecia.

In the light of the fact that epitheliomas have developed in a number of cases on parts subjected to protracted *x*-ray exposures, should we not regard tissues in such condition as the above in a "precancerous" state? It would seem at least that the lowered vitality of the skin might render it somewhat more susceptible to epithelioma.

In a ten years' experience with the *x*-ray, having treated a large number of cases in both clinic and office practice, with no serious results, I have always made it a rule to employ the *x*-ray as a therapeutic measure only when no other form of treatment would accomplish the required result. Its use may be compared with that of anesthetics in surgery. Although, according to certain statistics, only one patient in 16,000 dies from ether anesthesia, there is always the chance of the exceptional case. In spite of the fact that in skilled hands the *x*-ray should be considered a safe remedy, it is advisable to choose the high-frequency current, electrolysis, or any other therapeutic agent which will cure the patient, rather than the *x*-ray, in view of its remote dangers. The field for the *x*-ray will still be sufficiently large.

In electrolysis is the only rational form of treatment for superfluous hair. A needle connected with the negative pole of a galvanic battery, passed into each hair-follicle to the papilla at the base of the hair, will permanently destroy the growth.

With proper technic and skill an enormous number of hairs may be removed without scarring and, by means of a recently discovered local anesthesia, the operation is rendered practically painless.

31 Washington Street.

Tuberculin in Tuberculosis of the Upper Air Passages.—The use of tuberculin preparations in selected cases of tuberculosis of the upper air tract is well warranted, but as yet there are but few recorded cases of cure, especially in this country.—J. R. Winslow, in the *Laryngoscope*.

STOCK VACCINE IN ONE CASE OF STAPHYLOCOCCUS PROSTATITIS AND TWO CASES OF FURUNCULOSIS

A. M. ROOKER, M.D.

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I wish to report on the use of stock vaccines in three cases which have occurred in my practice. The vaccine was used after all ordinary methods of treatment had failed to give relief, and the prompt results following the vaccine treatment have led me to send in this report.

CASE 1.—T. V., aged 29, had a severe attack of gonorrhea in November, 1908, was confined to bed eight weeks, and was a semi-invalid for the two following months. A discharge with severe rectal pain persisted up to May 30, when he first consulted me. The discharge contained a few gonococci, but these soon disappeared under treatment, the discharge continuing. A stricture of the pendulous portion of the urethra and a chronic prostatitis were also found. The former was soon cured by sounds, but the latter persisted after all ordinary treatment had failed. An examination of the expressed secretion showed an abundance of staphylococci in almost pure pus but no gonococci. Having no facilities for making cultures to determine the variety of staphylococci present, I used the combined aureus, citreus and albus as prepared by Parke Davis & Co., giving 100,000,000 as an initial dose. This causing no reaction, it was repeated at three-day intervals, the dose being increased at each injection until 400,000,000 was reached. The pain and irritation rapidly subsided, the prostate was nearly normal in three weeks and the secretion rapidly cleared of pus. In six weeks the patient had no trouble or pain whatever.

An interesting feature of this case is that the patient is afflicted with pulmonary tuberculosis, having had three hemorrhages and a severe cough. Within a week after the beginning of the vaccine treatment the patient's cough was markedly improved and in four weeks had practically stopped, and his weight had increased eight pounds. This unlooked-for improvement was evidently due to the effect of the vaccine on a secondary staphylococcal infection engrafted on a chronic tuberculous lesion in the lung.

CASE 2.—D. S., aged 8 months, had begun having boils when three months old. I had lanced twelve, and seven had opened spontaneously up to this time. They kept forming, notwithstanding careful asepsis after the opening of each, together with general tonic measures with calcium sulphid. Examination of the pus showing staphylococci present, I resorted to vaccine. Since I did not know whether Young's law of dosage would hold in vaccine therapy, I proceeded cautiously and gave only 5,000,000, again using the combined varieties. When the first injection was given three boils were forming; but in twenty-four hours they had practically disappeared. I gave two more doses at seven-day intervals with no recurrence up to the present time, four months after the first injection. In two weeks the baby gained three pounds, ate better and slept better than ever before. A possible etiologic factor in this case was a mammary abscess in the mother when the baby was four weeks old. The breast was opened and drained, the breast pumped and the milk fed to the child with a dropper. Whether the milk could have carried any infection or whether any of the pus was inoculated directly I cannot say.

CASE 3.—D. P., Italian, aged 18, had a secondary specific eruption, during which huge boils began to form all over his body, as many as thirty appearing in five weeks. No care being taken of them, the pus was rubbed over the surrounding skin, easily accounting for their frequency. The syphilitic eruption rapidly subsided under treatment, but the boils were unaffected. The pus showing nothing but staphylococci, I gave the patient three injections of 100,000,000, 200,000,000 and 300,000,000, each of the combined serum at four-day intervals. After the first injection one boil formed, but after the second and third there has been no further trouble, three months after the suspension of treatment.

1365 Michigan Avenue.

ENCYSTED VESICAL CALCULUS WITH
PEDICLE

A. A. BONDURANT, M.D.

CAIRO, ILL.

History.—The patient, Mrs. F. L. H., consulted me March 16, 1909, giving the following history. She had ceased to menstruate several years ago and had never been pregnant; she had a feeling of pressure and bladder irritation for at least fifteen years, a bearing down when ascending stairs, and a sensation like fire darting from side to side of the abdomen on the least exertion. She could not stoop over, as it made her feel as if a cord was drawn across the lower part of the abdomen. She had seen several physicians and had had treatment for uterine and bladder trouble. She had worn pessaries and had bladder irrigation among other remedies, which gave only temporary or partial relief at times. She was neurotic and discouraged.

Examination.—I found a very sensitive spot in the urethra just in front of the bladder. The patient had used irrigation so much that I first thought it traumatic from catheterization. The bladder was somewhat contracted and very tender to sound touch. I found what seemed to be a large rough stone encysted at inferior posterior part of bladder, dragging the wall of bladder down slightly to left. Both vaginal and rectal examination (digital) revealed what seemed to be a large stone in bladder. The sound would pass over and about the roughened body but could elicit no distinct click. I diagnosed large stone probably encysted and three other physicians confirmed my opinion.

Operation.—I advised operation and chose suprapubic incision, which was done on March 22, 1909. I made an incision to admit the index-finger and found the supposed stone completely walled off from cavity of bladder, but bimanual manipulation proved it connected with posterior wall of bladder. I immediately closed the incision in the bladder completely by means of two rows of sutures; one reinforcing. I left a small drain to the bladder wall, and next made an incision above into the peritoneal cavity which had not previously been opened and found the calculus attached to posterior wall of the bladder by means of a very short pedicle which was really an extension of the peritoneal coating of the bladder and completely enveloped the mass of hard tissue which was principally osseous with some fibrous or connective tissue. I had no trouble in ligating and removing it. I closed the wound completely. The specimen weighed 378.084 grains, and measured a little over 2 by $1\frac{1}{3}$ inches.

Postoperative History.—Two small stones the size of small peas were passed by the urethra, May 13, 1909, seven weeks after operation. They may have been there or forming at the time of operation, but I failed to detect them after a very thorough search. The shock was not excessive and temperature was never high. A stitch abscess from the upper incision produced a chilly sensation and temperature of 103 about the seventh day, which was promptly relieved by opening the abscess. I kept catheter in the bladder nine days, irrigating with boracic acid solution once or twice daily. I decided to risk union of bladder, as I had had no leakage at any time and directed the introduction of catheter every three hours, or more frequently if the patient was distressed from accumulation of urine. All went well until the end of the eleventh day from time of operation, when a slight quantity of urine came from first incision. Leakage continued more or less for two weeks, when bladder was distended even to moderate degree, after which progress was uninterrupted. Bladder symptoms gradually subsided until now, four months since operation, the patient has practically no trouble with it. The other distressing symptoms have disappeared and she looks and feels like a new person. This is certainly a rare specimen and, so far as I have been able to learn, the first with such an attachment.

The Reward of Industry.—The stairs that lead throneward start in low places. The world has owed most to its men of lowly birth. Let not the poor man murmur. To him belongs the future. The thrones of thought and of influence may be his if he is willing to climb up to them.—*United Presbyterian.*

A FAMILY EPIDEMIC OF ACUTE
TRICHINIASIS *

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The house epidemic of trichiniasis which I wish to report first came under my observation on Feb. 7, 1909, and the history was later obtained.

The household consists of eight members, namely, a grandmother, mother, five adult children and a servant. On Jan. 31, 1909, the mother purchased in the market a variety of ham which is usually eaten raw. This was eaten by the five children; the grandmother, mother and servant did not partake of it. The disease was limited to the five children.

REPORT OF CASES

CASE 1.—Miss E., aged 23, was seen on February 7, seven days after eating the ham. Her previous history is practically negative. The present illness began the previous day, the chief complaint being indefinite pains all over the body and a decided edema of the eyelids. There was no nausea or vomiting or diarrhea. Tongue was coated; heart, lungs and abdominal organs were normal. Temperature was 100, pulse 85; respirations 20. Patient was menstruating at this time, so no urinary examination was made until a week later, when the urine was normal.

On February 8, the edema about the eyelids increased, involved entire face and the soreness and stiffness about the muscles increased. Temperature was 101. The condition resembled very much the grippe, which was prevalent at this time and which I took it to be. Blood examination showed 7,600 leucocytes. Widal reaction negative.

February 10: Patient complained of severe headache and considerable abdominal colic. The pains in the muscles of the neck and chest had become much aggravated, although at no time during the illness were there the exquisite pains which often accompany an acute myositis.

By February 15 the condition had remained practically the same, temperature varying from 99 to 104 F. Blood examination gave the following results: red blood cells, 5,000,000, leucocytes 8,000; hemoglobin 90 per cent. A differential count of leucocytes showed neutrophils 55 per cent., small and large mononuclears and transitionals 11 per cent., eosinophiles 34.

A leucocyte count made on February 24 showed 18,000 with an eosinophilia of 32.4 per cent.

The condition remained practically the same for the next week. The variations in the temperature were very great, now and then reaching normal in the morning and evening, to be followed the next day by a rise to 102-103 F. The condition lasted three weeks; then the patient slowly convalesced.

CASE 2.—Mr. M. A., aged 28, on February 8, noted that his eyelids were somewhat swollen and that he had a tired feeling; he became exhausted on very slight exertion. He had not been feeling perfectly well for past three days. No nausea, vomiting or diarrhea was present. On February 10, the patient took to bed, with a picture of typical typhoid fever. At this time examination showed face anxious, severe headache, mild delirium, tongue dry, abdomen somewhat distended and decidedly tender on pressure; muscles of back and extremities painful on motion and uncomfortable on pressure; thoracic and abdominal organs negative; temperature, 104; pulse, 110; respirations, 28. Leucocyte count was 7,000; Widal negative and urine normal.

The condition remained practically the same for two weeks, when all the symptoms began to subside. There was no intermission in the temperature curve, which varied from 100 to 105. At no time were the muscles very tender on pressure, but the slightest movement was painful. Leucocyte counts made at various intervals (table of blood examinations) showed a constant leucopenia, on one occasion dropping to 4,300 leucocytes per mm. The eosinophilia varied from 21.6 to 38.7 per cent.

* Read before the Medical and Surgical Faculty of Maryland, May, 1909.

CASE 3.—Mr. G., aged 34, seen February 8, gave the following history. On February 6 patient had a severe attack of abdominal cramps which he attributed to drinking a glass of very cold beer just before retiring; he felt fairly well the following day, but the cramps returned the morning of the day I saw him. At this time he complained of great lassitude and later in the day vomited.

The following day, February 9, he was unable to get out of bed on account of the soreness and stiffness about the muscles; there was a slight puffiness about the eyelids which increased toward night. Headache and restlessness became more marked. Temperature was 99.5, pulse 90, respirations 20.

This was the mildest infection and ran its course in about three weeks. The blood examination in this case is of particular interest in that the eosinophilia was most pronounced, reaching on one occasion to 40.4 per cent, the highest of any in the series. Likewise the highest leucocyte count, 14,000, was noted in this case.

CASE 4.—Mrs. G., aged 27, had the most severe infection and gave the most typical picture of the disease. On February 10, eight days after eating the ham, the first definite symptoms appeared. The patient complained of feeling tired and the eyelids were swollen. There was no nausea or vomiting; bowels were constipated. Temperature was 99, pulse 80.

On February 12 patient went to bed. She was now complaining of severe headache, so intense as not to allow her to sleep day or night and requiring morphin to give relief. The following morning, vomiting began and was repeated at intervals of every few hours for the next two days. Physical examination at this time was negative as to heart, lungs and abdominal organs. Temperature was 102.

On February 18 headache was still a prominent feature; there were very severe abdominal cramps. Eyelids were still edematous. Pressure on the scaleni muscles gave exquisite pain. The biceps and gastrocnemi were painful both on pressure and motion; the limbs felt comfortable when they became fixed in one position, but any change from this position was attended with pain; patient said that the legs felt as if they might be made of wax and were straightened or bent only with effort. Patient complained of a peculiar pain in the upper abdomen saying she could feel it move up and down with each breath; this was undoubtedly due to the involvement of the diaphragm.

On February 20 an intense urticaria appeared over the whole body. The temperature in this case was of an intermittent type. On February 20 and 21 the temperature was normal; on the 22d and 23d it rose to 103. The respirations were constantly rapid, varying from 25 to 40; even with normal temperature the respiratory rate was as high as 30, probably owing to the diaphragmatic involvement. The blood chart in this case is also of interest; at no time was there a leucocytosis, the leucocytic count varying from 6,300 to 8,000. Likewise the eosinophilia was but of a comparative moderate degree varying from 14 to 36 per cent.

On February 27 the patient felt better and was able to sit up; the muscles still felt tender; there had been no nausea or vomiting for past few days. Temperature was normal.

Examinations of stools both by myself and Dr. Adler were negative for parasites.

CASE 5.—Mr. J. A., aged 21, was feeling well until February 11, when he began to complain of lassitude and pain in the legs, especially when going up the steps. Slight headache was present; no nausea, vomiting or diarrhea. Physical examination at this time was negative.

When patient awoke on February 12 he noted a well-marked puffiness of the eyelids. Pains in the muscles of the extremities increased. Pain was felt on motion or pressure, especially over the biceps and gastrocnemius. Temperature was 102, pulse 100, respirations 22.

On February 15 the patient was suffering from severe headache and insomnia. Temperature was continuously high with no intermissions.

On February 18 leucocyte count was 6,800, with 27 per cent. eosinophiles.

All these patients recovered, the duration of the attacks varying from three to six weeks.

TABLE OF BLOOD EXAMINATIONS IN FIVE CASES OF TRICHINIASIS

Case.	Date.	Whites.	Poly-nuclears.	Mono-nuclears.	Eosinophiles.
1.	2/18	8000	55	11.0	34.0
	2/22	12000	48.4	19.2	32.4
	2/27	10500	59.1	13.4	27.5
	3/1	7600	62.4	19.6	18.0
	5/8	.....	71.7	24.5	3.8
2.	2/18	6000	52.4	18.5	29.1
	2/22	4300	51.5	16.5	32.0
	2/27	7400	39.5	21.8	38.7
	3/1	.....	60.0	18.4	21.6
	5/8	.....	63.2	20.0	16.8
3.	2/18	12000	38.0	11.6	40.4
	2/23	14000	53.6	18.0	28.4
	2/27	9300	41.8	27.2	31.0
	3/2	9000	68.2	8.6	23.2
	5/8	.....	63.0	25.1	11.9
4.	2/18	6300	55.6	8.0	36.4
	2/23	5700	50.4	32.6	17.0
	2/27	6500	59.9	18.7	21.4
	3/2	8000	69.5	16.5	14.0
	5/8	.....	62.9	18.8	8.3
5.	2/18	6800	57.0	16.0	27.0
	2/24	7900	44.7	10.3	45.0
	2/28	7000	50.1	21.4	28.5
	3/1	.....	52.1	17.4	30.5
	5/8	.....	65.3	27.4	7.3

DISCUSSION OF CASES

An analysis of the symptoms as shown by this group of cases shows several points of interest.

The earliest symptoms showed themselves about the sixth to tenth day after the ingestion of the meat—probably at the time when the larvæ had fully developed.

Edema of the eyelids was present in every case; in three of the patients it was the first symptom observed. This edema was of a character resembling that seen in Bright's disease. In two patients the entire face was puffy. No swellings were noted elsewhere.

Gastrointestinal symptoms were the following: Abdominal cramps were present in all; in two of a particularly severe type. Nausea and vomiting was noted in Cases 3 and 4—of a particularly aggravated type in the latter. Diarrhea was not present in any; to the contrary, constipation was troublesome.

Muscle pains were prominent symptoms. All complained of a general soreness over the entire body, and before taking to bed walking became difficult. When at rest in bed the limbs would become fairly comfortable when in a fixed position, but the least motion was associated with discomfort. In but one (Case 3) was the pain of an acute nature on pressure, and this was especially evident in the scaleni; an interesting observation in the same patient was the excursion of pain following the course of the diaphragm on deep expiratory and inspiratory efforts.

In two of the cases the temperature remained constantly high; in three there were intermissions, the temperature at times remaining normal for thirty-six hours and gradually rising to 103. Chills were not present in any. Pulse corresponded to the temperature, as did also the respiration, except in Case 3, in which the respiratory rate was constantly accelerated—probably associated with diaphragmatic involvement.

The urine was negative. The stools were negative for parasites. Urticaria was present in one case and was of an extremely aggravated variety, involving practically the whole body and lasting for three days.

THE BLOOD

The study of the blood in this disease by Brown¹ has made trichiniasis one of the diseases of easy recognition. This one particular readily differentiates it from such diseases as typhoid fever, grippe and rheumatism. In Brown's original study of 3 cases, the chief change noted in the blood was a leucocytosis, in which the increase of the leucocytes occurred in the eosinophiles.

1. Brown, T. R.: Jour. Exper. Med., 1898, p. 315.

The leucocytes varied in number from 8,000 to 30,000 per cubic mm. and the eosinophiles from 8 to 68 per cent., this eosinophilia corresponding to a decrease in the neutrophiles. This observation has been confirmed by Blumer and Neuman² in an epidemic of 9 cases, by Cabot,³ Kerr,⁴ Kinnicutt,⁵ Atkinson⁶ and others.

A study of the blood charts in my cases fails to show a constant leucocytosis; in only 2 of the 5 cases was there a leucocytosis, and that was of a moderate degree, in Case 1 rising to 18,000 and in Case 3 to 14,000. In Cases 2 and 4 there was a decided leucopenia; in the former the leucocytes varied from 4,300 to 7,400 and in the latter from 5,700 to 8,000. In Case 5 leucocytes were normal—6,800 to 7,900.

The eosinophilia, however, was constant, and varied from 18 to 45 per cent. There was no relationship, however, between the severity of the infection and the extent of the eosinophilia; in Case 3, which was the mildest, the eosinophiles reached 40.4 per cent., while in Case 4, the most severe infection, 36.4 per cent. was the highest count noted.

As to duration of the eosinophilia, examination of the blood on May 10, three months after the onset, showed an eosinophilia of 3.8 per cent., 16.8 per cent., 11.9 per cent., 8.3 per cent. and 7.3 per cent., respectively.

In one of Brown's cases there was an eosinophilia of 34.7 per cent. five months after the patient's discharge. Stump's case showed 15 per cent. eosinophilia after four and a half months.

To my great regret, I was not permitted to remove a piece of muscle from these patients, so that the diagnosis must rest on the history of five members of a family of eight eating uncooked ham, and these five becoming ill; the symptoms and the blood changes.

TREATMENT

If one sees the cases early enough a brisk purgation may prove of value; but it is difficult to see that this can be of much service when the worm has penetrated the mucosa—the time when the patient is apt to come under observation.

There is no specific for the destruction of the embryos, although hexamethylenamin has been advised with the idea that the liberated formaldehyd has some effect. Relief of muscle and abdominal pains with opiates and hypnotics to procure sleep is about all that can be done until Nature takes care of the invading parasite.

The muscle trichina (the immature or larval form of the parasite) is a worm about 1 mm. in length, which lives in the muscles of the body. It is usually rolled into a spiral and lies in a capsule which occasionally contains lime salts. If a piece of muscle containing living trichinae is taken into the stomach of the host—as when uncooked pork is eaten—the capsule is dissolved and the trichinae are set free. In the intestinal canal they attain maturity in about three days, when copulation takes place.

On about the seventh day after the ingestion of the muscle trichinae the birth of the embryo begins, a process which may last for weeks. It has been estimated that a single female trichina may bear from 1,000 to 1,300 young. The female worm penetrates the intestinal wall and, according to the observation of Zenker, the dissemination of the embryos to the muscle is by way of the lymph spaces and then into the blood-stream.

Askanazy⁷ found the embryos in the abdominal lymph-glands; further studies by Graham⁸ and Staubli⁹ confirm this. Frothingham,¹⁰ in a recent article, shows that the parasites penetrate the mucous membrane of the large and small intestine. Neither the male nor the female worm penetrates the connective tissue of the villi; the embryos are discharged into the tissues and these gain entrance to the lymph spaces, the adult worms remaining under the mucous coats of the intestinal wall, which probably accounts for the difficulty of finding the worms in the stools, except when looked for very early—that is, in the first two or three days after the infection—a time when symptoms seldom point to any definite infection with this parasite.

While Staubli in 1905 reported the recovery of the embryos from the heart's blood of infected guinea-pigs, it is but recently that Herrick and Janeway¹¹ first demonstrated the embryos in the circulating blood of man. By collecting 10 c.c. blood from the arm vein in a 3 per cent. solution of acetic acid, four embryos were seen in one member of a family in which nine were affected with the disease. This is undoubtedly an important advance in our method of diagnosis, and if further observations confirm these findings, blood examinations will have the same value in this disease as in malaria.

1819 Linden Avenue.

THE COMPARATIVE STRENGTH OF DIGIPURATUM

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In another paper¹ I recently gave a brief outline of certain undesirable effects which frequently make digitalis medication difficult. These have constituted such decided hindrances to the best results where such medication was indicated that a number of investigators and manufacturers have employed many different formulas and pharmaceutic procedures in an effort to get rid, at least, of certain of these disturbing factors.

Among the more recent products of this class is digipuratum (extract of digitalis depuratum, Knoll). The method of preparation is kept secret, but digipuratum is said to be a purified extract of digitalis, which, by a process of purification originated by Gottlieb,² is freed from about 85 per cent. of inert and undesirable material, including the irritating saponin-like body digitonin. The remaining 15 per cent. is said to represent the full activity of the original extract and to contain both digitoxin and digitalin. The digitalis extract having been thus purified, the resulting yellowish solution is mixed with such amounts of milk-sugar that when tested biologically on frogs it has the same activity as a like amount of strongly active digitalis leaves—that is, 1 gm. digipuratum equals in activity 1 gm. powdered digitalis leaves.

Digipuratum is further said to be insoluble in cold water and in acids, but to be easily soluble in weak alkalis. Theoretically, therefore, it is said to have no action

7. Askanazy: Virchow's Arch. f. path. Anat., 1895, cxli, 42.

8. Graham: Arch. f. mikr. Anat., 1897, i, 219.

9. Staubli: Deutsch. Arch. f. klin. Med., lxxxv, 286.

10. Frothingham, C.: Intestinal Lesions Caused by Trichinella Spiralis in Rats, Arch. Int. Med., January, 1909, ii, 505.

11. Herrick, W. W., and Janeway, T. C.: Arch. Int. Med., April, 1909, iii, 263.

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6. Atkinson: Philadelphia Med. Jour., June 3, 1900.

on the stomach and to be absorbed only after reaching the small intestine. Clinically also Mueller asserts that symptoms on the part of the stomach do not often develop;³ but too few cases have been reported as yet to establish this claim of lessened toxic secondary effects when compared with the older preparations. Such questions must be left largely to the clinician, and the experiments which follow and the conclusions drawn from them were carried out merely to determine the drug's activity according to the biologic method of assay used at this laboratory.¹

In order to prepare the powdered digipuratum for injection, 1 gm. of the powder was taken and to this 100 mg. sodium bicarbonate was added; this mixture of alkali and digipuratum powder was then shaken from time to time for twenty-four hours with 8 c.c. 25 per cent. alcohol. The insoluble material was then allowed to settle and the resulting clear portion was decanted and set aside. The insoluble residue was further treated with small amounts of 25 per cent. alcohol until a total of 20 c.c. alcohol had been used in this shaking-out process. The later decantations were evaporated over a water bath at 80° until the total extractive when added to the first decantation equaled 10 c.c., or a solution conforming to the U. S. P. tincture of digitalis.

Digipuratum is also marketed in tablet form, each tablet representing 1½ grains (100 mg.) of the powder. Ten such tablets were treated in the manner above described so that a resulting alkaline 25 per cent. alcoholic solution of 10 c.c. was obtained.

An assay of the powder was undertaken to determine the amount of powdered digipuratum in 10 per cent. solution necessary to produce systolic stoppage of the heart of *Rana pipiens* at the end of one hour. Doses were calculated in cubic centimeters per gram of frog body weight. The experiments gave the results shown in Table 1.

TABLE 1.—EFFECT OF POWDERED DIGIPURATUM ON THE FROG

Weight of Frog.	Dose Per Gram Weight.	Result.
49	0.004	..
48	0.005	..
45	0.006	+
53	0.007	+
55	0.008	+
49	0.010	+
60	0.012	+

An assay of the tablets of digipuratum was made to determine the amount of digipuratum tablets in 10 per cent. solution necessary to produce systolic stoppage of the heart of *Rana pipiens* at the end of one hour. Doses were calculated in cubic centimeters per gram of frog body weight. The experiment gave the results shown in Table 2.

TABLE 2.—EFFECT OF DIGIPURATUM TABLETS ON THE FROG

Weight of Frog.	Dose Per Gram Weight	Result.
42	0.004	..
47	0.005	..
58	0.006	+
57	0.007	+
56	0.008	+
43	0.010	+

These results may be summarized as follows:

Preparation.	Dose to Produce Systole.
Digipuratum powder	0.006 c.c. = 0.0006 gm.
Digipuratum tablets	0.006 c.c. = 0.0006 gm.

These results indicate that the two samples are of the same strength, a result which accords with the manufacturers' claim that digipuratum is an assayed product.

They also show that digipuratum in 10 per cent. solution (corresponding to the official tincture in strength) is of about the same activity as strongly active preparations of the tincture when assayed by the same method,⁴ but when compared with a series of assays⁵ of official fluidextracts, diluted to 10 per cent. strength, digipuratum in 10 per cent. solution was considerably more active.

These biologic tests may, therefore, be said to show that digipuratum is of the same strength whether purchased in the tablet or in the powdered form, and that it is of about the same activity as the strongest official digitalis preparation on the market.

To what extent the use of digipuratum is justified on the grounds of lessened secondary effects is outside the province of this paper to discuss. On general grounds, however, it may be said that its use rather than a physiologically standardized official preparation seems to offer no special advantages and, except in those cases in which secondary toxic effects are produced by them, that the official preparations would be equally efficient and are about 1,500 per cent. cheaper. Whether digipuratum also produces secondary toxic effects as often as the official galenicals do is a matter which must be decided by the clinician.

Twenty-fifth and E Streets N. W.

THE DISTRIBUTION OF ANTIBODIES AND THEIR FORMATION BY THE BLOOD *

LUDVIG HEKTOEN, M.D., AND A. J. CARLSON, M.D.

CHICAGO

In the following we give a brief summary of the principal results that we have obtained from a study of the distribution of antibodies in the body fluids of dogs and of their formation by the blood. The complete article will be published later.

In active immunization of dogs by a single intravenous injection of goat blood the lysin, agglutinin and opsonin for goat corpuscles reach their highest concentration in the blood. They are uniformly slightly less concentrated in the thoracic lymph and the neck lymph, while in the cerebrospinal fluid and aqueous humor only traces of the lysin and the opsonin can be detected at the height of immunity.

In dogs similarly immunized with rat blood the opsonin and agglutinin in the blood and lymph describe parallel curves, the concentration being greatest in the blood. In the cerebrospinal fluid opsonin only is present, and, while the concentration is much lower than that of the blood and lymph, the curves are parallel. No increase in lysin for rat corpuscles was demonstrated by the methods used.

This relative concentration of antibodies in the blood and lymph seems to obtain in normal animals as well as in all the stages of immunization.

On transfusion of blood of dogs immunized with goat blood into normal dogs previously bled through the carotid, the antibodies can be detected in the lymph of the recipient in 30 minutes, and in a short time the same relative distribution of the antibodies is effected as in

4. Edmunds, Charles Wallis: The Standardization of Cardiac Remedies. THE JOURNAL A. M. A., May 25, 1907, xlviii, 1744. The doses recorded in this paper are based on the amount necessary to produce systolic stoppage of the heart of 20-gram frogs and should be divided therefore by twenty to permit of comparison.

5. Edmunds and Hale: Bull. 48, Hyg. Lab., U. S. P. H. and M.-H. S., Washington.

* From the Memorial Institute of Infectious Diseases, and the Department of Physiology of the University of Chicago.

active immunization. It seems, therefore, probable that in active immunization the distribution depends on the equilibrium relation between the blood and the lymph rather than the place of formation of the antibodies, and that the rate of passage of the antibodies from the blood to the lymph is probably in part a function of the concentration in the blood.

There appears to be no difference in the rate of passage of the various antibodies from blood to lymph, but our methods might not disclose slight variations.

When the blood of an immune animal is transfused into a normal animal previously bled dry, there is a rapid fall in the concentration of antibodies during the first 24 to 48 hours; then follows a more gradual disappearance of the antibodies until the normal limit is reached, the rate of diminution being a measure of the rate of destruction and elimination of antibodies as there is no production in the transfused blood. Hence the duration of passive immunity after as complete transfusion as possible depends on the concentration of the antibodies in the donor's blood and the quantity of this blood transfused, a point of possible importance in connection with direct transfusion for therapeutic purposes in infectious diseases.

Bleeding a dog dry while in the latent period after intravenous injection of goat blood and then transfusing him from a normal dog may have no other than a stimulative effect on the processes of antibody formation. And transfusion of a normal dog (previously bled dry) from a dog injected intravenously with an optimum antigenic dose of goat blood from 3 to 48 hours previously does not lead to the production of antibodies in the recipient. If the transfusion is made some time later after the introduction of the antigen the result is a simple passive immunization. These facts indicate that in this case the blood takes no direct part in the fixation of the antigen or the production of antibodies.

New and Nonofficial Remedies

SINCE THE PUBLICATION OF THE BOOK "NEW AND NONOFFICIAL REMEDIES, 1909," THE FOLLOWING ARTICLES HAVE BEEN ACCEPTED BY THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION. THEIR ACCEPTANCE HAS BEEN BASED LARGELY ON EVIDENCE SUPPLIED BY THE MANUFACTURER OR HIS AGENT AND IN PART ON INVESTIGATION MADE BY OR UNDER THE DIRECTION OF THE COUNCIL. CRITICISMS AND CORRECTIONS TO AID IN THE REVISION OF THE MATTER BEFORE PUBLICATION IN THE BOOK ARE ASKED FOR.

THE COUNCIL DESIRES PHYSICIANS TO UNDERSTAND THAT THE ACCEPTANCE OF AN ARTICLE DOES NOT NECESSARILY MEAN RECOMMENDATION, BUT THAT SO FAR AS KNOWN IT COMPLIES WITH THE RULES ADOPTED BY THE COUNCIL.

W. A. PUCKNER, SECRETARY.

(Continued from page 2101, Vol. liii)

LACTOPHENIN—*Lactopheninum*.—*Phenetidinum* lactylatum (Pharm. Helvetica, edit. 4)—*Lactylparaphenetidin*.—*Lactophenin* is *lactylparaphenetidin*, $C_8H_4OC_2H_5NH(CH_3)CHOH.CO=C_{11}H_{15}NO_3$, a phenetidin derivative differing from acetphenetidine (*Phenacetin*) in that the acetic-acid radicle of acetphenetidine is replaced by the lactic-acid radicle (lactyl).

It is prepared by heating lactic acid and paraphenetidin, in molecular proportions, at $180^\circ C.$ ($356^\circ F.$) until all the liberated water is expelled and crystallizing the product from hot water. *Lactophenin* occurs as a white, crystalline, odorless powder, of slightly bitter taste and neutral reaction. It melts at 117.5° to

$118^\circ C.$ (243.5° to $244.4^\circ F.$). It is rather difficultly soluble in cold water (1:330), and is soluble in 55 parts of boiling water. It is soluble in 8.5 parts of alcohol, and is not precipitated from this solution by water. In ether and petroleum it is difficultly soluble.

On boiling 0.2 Gm. of *lactophenin* with 2 Cc. hydrochloric acid for one minute, then diluting the solution with 20 Cc. water, and filtering when cold, the filtrate will become colored a ruby red on the addition of chromic acid solution.

On dissolving 0.1 Gm. *lactophenin* in 10 Cc. hot water, and filtering when cold, the filtrate, on the addition of bromin water, should afford a decided turbidity which disappears on the addition of much water.

The aqueous solution of *lactophenin* must not have an acid reaction.

No blue coloration should develop on adding potassium dichromate solution to the cold aqueous solution of *lactophenin* (absence of phenetidin salts).

Lactophenin should dissolve in concentrated sulphuric acid in the cold without coloration (absence of foreign organic mixtures), and on incineration should leave no weighable residue (absence of inorganic admixtures).

Actions and Uses.—*Lactophenin* is an antipyretic and analgesic similar to acetphenetidin (*phenacetin*). It is claimed that it has a more marked action as a hypnotic than acetphenetidin (*phenacetin*) and that at the same time respiration and circulation remain unchanged. It is also claimed that the lactic acid constituent is more easily separated from the compound than is the case with the acetic acid radicle of acetphenetidin. It is stated that the preparation is absorbed from the stomach to a large extent, so that the activity of the doses given reaches its maximum in a short time.

The therapeutic indications of *lactophenin* are similar to those of acetphenetidin (*phenacetin*). It is claimed by the manufacturers to be particularly valuable in the treatment of typhoid fever on account of its combined antipyretic and sedative properties. On the other hand, it is the general opinion that antipyretics should not be used in the treatment of typhoid fever unless under very exceptional circumstances. In the opinion of good authorities the action and uses of *lactophenin* do not materially differ from those of acetphenetidin (*phenacetin*).

Dosage.—The initial dose is 0.5 Gm. (8 grains) for adults and the maximum daily dose 3 to 5 Gm. (45 to 75 grains).

Manufactured by C. F. Boehringer & Soehne, Waldhof near Mannheim. (Merck & Co., New York.) U. S. patent 503743. U. S. trademark 24643.

QUININE AND UREA HYDROCHLORIDE—*Quininae et Ureae Hydrochloridum*.—*Chininum* bihydrochloricum Carbamidum. — Quinine and urea hydrochloride, $C_{20}H_{24}N_2O_2 \cdot HCl + CH_4N_2O \cdot HCl + 5H_2O$, is a compound of quinine hydrochloride and urea hydrochloride.

Quinine and urea hydrochloride is prepared by dissolving 400 parts of quinine hydrochloride in 300 parts of dilute hydrochloric acid, sp. gr. 1.061, mixing the solution with 60 to 61 parts of pure urea ($CO(NH_2)_2$) warming the mixture until dissolved, filtering it through glass wool and setting the filtrate aside for crystallization. After twenty-four hours the crystals are brought on a filter, drained, washed with very cold distilled water, spread on flat plates and dried at room temperature. The mother liquor is evaporated and again set aside for crystallization. The second mother liquor which is colored brown is exposed in a dish to spontaneous evaporation, during which all of the double salt of quinine slowly crystallizes out and may be separated.

The hydrochloride of quinine and urea crystallizes from hot solutions in hard white interlaced four sided prisms. On spontaneous evaporation of a concentrated solution very large transparent prisms are formed. The salt dissolves at ordinary temperature in its own weight of water forming a somewhat viscid straw colored liquid, not altered by exposure to light. During its solution a marked lowering of temperature occurs.

It is not hygroscopic and is unalterable in the air excepting when warmed, the crystals lose their transparency and become yellowish. They fuse at from 70° to $75^\circ C.$ (158° to $167^\circ F.$) with the loss of 10 per cent. of water forming a yellowish liquid which congeals on cooling to a yellow mass. If this mass is allowed to stand in the air it takes up after a few days the whole amount of water expelled and becomes again white. If the melted salt is dissolved in water it may be completely recovered in a crystalline form. It is also soluble in alcohol and from this solution a salt of somewhat variable composition is precipitated by ether.

Actions and Uses.—Quinine and urea hydrochloride has the actions of quinine. It is non-irritating when injected hypodermically. Recent investigations have shown that when injected hypodermically or when applied locally to mucous membranes it exerts an anesthetic action similar to that of cocaine. It is reported that the anesthesia is in some cases prolonged for several days.

Quinine and urea hydrochloride is said to be especially useful in the treatment of malaria by hypodermic injections. It

has also been applied as a substitute for cocaine in the production of local anesthesia for operations.

Dosage.—The same as Quinine. For the production of local anesthesia injections of a solution of from $\frac{1}{4}$ to 1 per cent. strength are used. The $\frac{1}{4}$ per cent. solution is said to be free from the risk of producing fibrous indurations, which sometimes occurs with the stronger solution. For application to mucous membranes solutions varying in strength from 10 to 20 per cent. should be used.

ARSEN-TRIFERRIN—Arsentriferrinum.—Arsen-Triferrin is an iron arsenoparanucleate containing arsenic in organic combination and standardized to contain a definite amount of arsenic by diluting with iron paranucleate. It should contain about 16 per cent. of iron, 0.1 per cent. of arsenic (As.), and 2.5 per cent. of phosphorus, all in organic combination.

Arsen-Triferrin is an orange colored, tasteless powder, soluble in dilute alkalis from which it can be precipitated by the addition of an acid. It is also soluble in about 8 per cent. of hydrochloric acid on warming.

The determination of the amount of iron, arsenic and phosphorus in arsentriferrin is carried out according to the method in "Prüfungsvorschriften für die pharmazeutischen Spezialpräparate." (Knoll & Co.)

Actions and Uses.—Arsen-Triferrin passes through the stomach unchanged and undissolved, but is dissolved in the intestines and absorbed. This behavior prevents injurious action of arsenic on the gastric mucous membrane.

Arsen-Triferrin is said to be useful in cases of anemia which are rebellious to iron alone, and in neurasthenia, hysteria, and in skin diseases.

Dosage.—5 grains three times a day after meals.

Manufactured by Knoll & Co., Chemical Works, Ludwigshafen a-Rhine, Germany and New York (Merck & Co., New York). U. S. trademark No. 36,747.

Arsen-Triferrin Tablets, 5 Grains.—Each tablet is said to contain 0.3 Gm. (5 grains) of arsen-triferrin.

Arsen-Triferrol. Elixir Arsen-Triferrini. Arsen-Triferrol is an elixir of arsen-triferrin containing in each 4 Cc. (1 fluidram) about 0.06 Gm. (1 grain) of arsen-triferrin in a menstruum containing 15 per cent. of alcohol. It is prepared by dissolving a soluble form of arsen-triferrin in a vehicle consisting of water, alcohol, tincture of orange, compound tincture of cardamon and vanillin.

OXYNTIN.—Oxyntin is a compound of protein and hydrochloric acid containing 5 per cent. hydrogen chloride (absolute hydrochloric acid) in unstable combination.

Oxyntin is prepared by combining hydrochloric acid with the albumin of fresh egg, desiccating the product at low temperature, and standardizing it to a uniform content of hydrochloric acid.

Oxyntin is a dry, granular powder, readily miscible with water, to which it imparts but a slightly acidulous taste.

The method of assay by which the acidity is determined is as follows:

1. About 1 Gm. oxyntin is weighed and mixed with 20 to 25 Cc. water and then titrated with standard sodium hydroxide, phenolphthalein being used as the indicator, and the result calculated to hydrogen chloride.

2. (a) About 3 Gm. oxyntin is weighed moistened with sodium carbonate solution in excess, dried, charred and extracted with hot water until free from chloride. The extract is slightly acidified with nitric acid and neutralized by the addition of an excess of calcium carbonate. This solution is titrated with standard silver nitrate potassium chromate being used as an indicator. From the result the total chloride content of oxyntin is calculated.

(b) About 3 Gm. oxyntin is weighed and treated as in 2 (a), the addition of sodium carbonate being omitted. From this result the fixed chloride is calculated.

The volatile chloride is calculated from the difference in the results between (a) and (b), and expressed as hydrogen chloride.

Actions and Uses.—Oxyntin is said to be useful as a substitute for dilute hydrochloric acid in the digestion of protein.

Dosage.—Being one-half the strength of diluted hydrochloric acid, U. S. P., oxyntin may be given 0.3 to 1.0 Gm. (5 to 15 grains) dry upon the tongue or in capsules, followed by a draught of water; or mixed with two or three tablespoonfuls of cold water, plain or sweetened to taste.

Manufactured by Fairchild Bros. & Foster, New York. U. S. trademark No. 50,968.

Articles Accepted for N. N. R. Appendix

Sharp & Dohme, Baltimore, Md.

Liquor Santalra. Liquor Santali et Copaibae Compositus, S. & D. Each 30 Cc. (1 fluidounce) contains santal oil 0.3 Cc. (5 minims), and copaiba 0.6 Cc. (10 minims), dissolved in 55 per cent. alcohol with addition of aromatic oils.

Dosage. 4 Cc. (1 fluidram).

(To be continued)

Therapeutics

[EDITOR'S NOTE: The following is the second of a series of five articles by Professor Osborne on the revision of the Pharmacopeia. These special articles will take the place of the regular therapeutic matter, which will be resumed on the completion of this series.]

SUGGESTIONS FOR THE PHARMACOPEIA OF 1910

USEFUL DRUGS OF THE PHARMACOPEIA OF 1900

OLIVER T. OSBORNE, M.D.

Professor of Therapeutics, Yale Medical School
NEW HAVEN, CONN.

(Continued from page 51)

MINERAL ASTRINGENTS

These are alum, bismuth salts, copper salts, silver salts, and zinc salts.

Alum should never be used internally, except possibly as an emetic in lead colic. It should not be used in solution in the mouth and throat, as it injures the teeth. It may be used in the form of the alum stick as an astringent in canker of the mouth, or on granular eyelids. In the former condition, viz., canker, the nitrate of silver stick tends to cause quicker healing and the pain from the application is less prolonged, and the frequency of application should not be more than once in two or three days, while the alum application must be frequent. One or two applications of nitrate of silver stick (lunar caustic) is generally sufficient to heal an ordinary canker sore. Such sores and syphilitic ulcerations in the back part of the mouth are better treated by the application of a swab wet with a 25 per cent. solution of nitrate of silver.

There is no need in the Pharmacopeia for alumini hydroxidum or for alumini sulphas.

The best astringent for inflammation of the mucous membrane of the stomach and intestine is bismuth, and, if properly used, it will always do some good and will cause many cures.

There is but little difference between the action of the subnitrate of bismuth and the subcarbonate of bismuth, the subnitrate of bismuth being perhaps the better preparation. For treatment of the mucous membrane of the stomach it must naturally be administered when the stomach is empty, and the smallest dose for such a purpose, in an adult, should be 1.0 gram (15 grains). It is often well combined with bicarbonate of soda in a 0.50-gram ($\frac{7}{12}$ -grain) dose, with the direction that a powder be taken before meals, with just sufficient water for it to be easily swallowed. Emulsions of bismuth are unsatisfactory, and any liquid mixture of bismuth is unsatisfactory, as the dose desired is rarely received on account of the bismuth depositing all over the bottle. A "milk" of bismuth is prepared, and is a very pleasant method of administering bismuth to a child. If a patient finds a powder very disagreeable to take, such powder may be administered in an effervescing water, as Vichy or carbonated water. The gas bubbles so well suspend the insoluble, heavy bismuth powder that one does not know he is taking anything more than a liquid.

It is often well, in stomach inflammations, to precede the administration of the sedative, astringent bismuth with a glass of hot water half an hour before the bismuth is taken, either plain water, or water to which a little salt has been added, or in which a simple alkaline mucous solvent has been dissolved, such as half of a Seiler's tablet. This washes the mucus from the inflamed membrane and leaves it ready for its bismuth treatment.

If an ulcer is suspected, and if thorough coating of the stomach with bismuth is desired, it is better to take a very large dose of bismuth once a day than small doses more frequently, such as about 3 grains (45 grains) at one dose, with just enough water to swallow it.

If it is desired to treat the duodenum with bismuth, the best time to administer it is one or two hours before the next meal. This will allow the bismuth theoretically to find the duodenum empty and the mucous membrane ready for local treatment.

For an ordinary diarrhea there is no better treatment than a complete evacuation of the bowels with any cathartic deemed advisable, followed by bismuth, 1.0 gram (15 grains), and phenyl salicylate (salol), 0.30 gram (5 grains), in powder, every two hours. After ten such powders have been taken, and the diarrhea has not been stopped, the frequency of the powders should be made once in four hours, and perhaps an occasional dose of 1/10 of a grain of morphin added. This, with proper diet and proper rest, will cure any simple diarrhea.

If there is a persistent subacute or chronic diarrhea, bismuth tablets are best for prolonged bismuth treatment of the small intestine, but to expect any bismuth action on the large intestine from bismuth administered by the mouth is a mistake. Bismuth administration by the mouth for colitis in any form is futile, although bismuth colon enemas may be given with great satisfaction.

For whatever purpose bismuth is used, it should never, in any form, be given in large quantities more than a week, or in small quantities more than two weeks, without an intermission, as bismuth concretions readily form scybalous masses in the intestine and may cause considerable trouble. The bowels may move even if such masses are present, as such retained bismuth is rarely sufficient to cause obstruction.

There is no need in the Pharmacopeia for bismuthi citras, or for bismuthi et ammonii citras.

The only preparation of copper that is used therapeutically is the sulphate, and this salt is never used in any way except as a mild cauterizer in the form of the blue stick, or as a very efficient irritant emetic. The dose as an emetic is 0.30 gram (5 grains) repeated every fifteen minutes for three times if needed, or perhaps as well in a 0.50 gram (7½ grain) dose given once. Copper sulphate would not be used as an emetic except in case some poison had been swallowed after which the vomiting was not sufficient, and in any case of such poisoning, if the stomach is not quickly emptied after the emetic has been given, instead of repeating it, the contents of the stomach should be removed with the stomach pump and syphonage. If copper sulphate remained long in the stomach it would produce irritation, inflammation, and even slight corrosion; therefore, it must be removed, if it has been administered and has not been quickly vomited.

There is no systemic internal use for silver. Its only use is in the form of the nitrate as a local astringent and caustic. In fact, its use for systemic treatment or action after absorption is probably without justification. As an astringent in the stomach for ulceration and chronic inflammation it has its advocates. The dose must be small, not more than 0.03 gram (½ grain) and that administered but once a day, or, perhaps even better, once in two or three days, and this not repeated for more than five or six doses. For such action it is best prepared with some inert powder in a dry capsule, and the capsule should be uncapped just before taking with a half a glass or more of moderately hot water. It is

obvious that, to act on the stomach, the stomach must be empty, and it is best that, one-half hour before, a glass of hot water with either a half a teaspoonful of salt or a little bicarbonate of soda dissolved in it, be drunk, to wash off the mucus from the stomach walls; then the nitrate of silver taken, and it being quickly dissolved in the water taken with it will perhaps have the desired local effect on the mucous membrane of the stomach.

Nitrate of silver for action on the small intestine is unsatisfactory, and it probably should never be used for this purpose. The large intestine is often treated by weak injections of nitrate of silver, when there is chronic ulceration and chronic inflammation. The solution may vary in strength, but a large amount should not be used, and if it does not all soon again pass out of the body an injection of sodium chlorid solution should be given.

In inflammation of the urethra, silver nitrate injections have been largely superseded by organic preparations of silver. These are less irritant, quite germicidal, and are not corrosive. A number of such unoffical preparations of silver can be obtained, and it is for the Committee on Revision to decide which preparations shall be made official in the next Pharmacopeia.

Solutions of nitrate of silver of varying strength are still used with benefit as high injections, in small amount, in the posterior urethra and the bladder, when chronic or subacute inflammation is present. The stick, or lunar caustic, is valuable in many ulcerations.

There is no need for argenti cyanidum, as it is only used to prepare acidum hydrocyanicum dilutum, and this acid is so useless in small doses and so dangerous in large doses that it should be omitted from the Pharmacopeia. Argenti oxidum is not needed, and it is doubtful if argenti nitras mitigatus (mitigated caustic stick) is often used.

There is no use for zinc internally for systemic action. Even the supposed sedative action of zinc valeris (valerate), zinc valerianate, is probably a myth so far as the zinc action is concerned. It is possible that valerianic acid, in any form, and valerian salts may have slight stimulant action on the higher nervous system. In other words, an hysterical patient may be stimulated to better control of nervousness. It is the only possible explanation of valerian acting as an apparent antispasmodic and sedative.

The therapeutic uses of zinc, then, are local, and it is used as an astringent on mucous membranes, and, generally, only as such, in the eye, urethra and vagina. The sulphate is the best preparation for this purpose, and there seems to be no necessity for the acetate of zinc which acts very similarly.

Zinc sulphate is often used as an emetic, and is nearly as efficient, and less irritant than copper sulphate. The dose should be a large one, viz., 2 grams (30 grains) given in a glass of water. If it is not quickly vomited, the stomach should be washed out, although it cannot corrode as can copper sulphate.

Zinc in the form of the precipitated carbonate, zinc oxid and zinc stearate is used as a sedative to irritated and inflamed skin.

Zinc chlorid is an escharotic, and liquor zinci chloridi is a disinfectant. Both are probably not needed in the next Pharmacopeia.

Zinc bromid is not needed; zinc iodid is not needed, and, as above stated, zinc valeris is also not needed.

Zinc phenolsulphonas (zinc sulphocarbolate) has been superseded as an intestinal antiseptic and is probably rarely used externally.

(To be continued)

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[For other information see second page following reading matter]

SATURDAY, JANUARY 8, 1910

X-RAY CARCINOMA

For further progress in our investigations into the etiology of cancer the thing that we most need is a method of experimentally producing cancer at will. With such a method available it will be possible to study, step by step, the transformation of normal cells into malignant cells, to observe the conditions that favor and impede such transformation, and ultimately to settle conclusively the relation or non-relation of extraneous parasites to malignant growth of tissues. The prevailing method of research, by the study of transplantable tumors in animals, while giving us invaluable information as to tumor biology, is defective in not showing us the earliest stage, the critical point when cells that were once normal members of the community of cells assume anarchistic relations to that community. One of the nearest approaches to an experimental production of cancer was made in the well-known experiments of B. Fiseher, which consisted in causing an overgrowth of epithelium into oil that had been saturated with stains; but this overgrowth merely resembled cancer and never did actually become malignant; hence the results of this work have not been of great significance. In the cancers which follow *x*-ray exposures, however, we have a true malignant growth produced under conditions which can be properly considered as experimental, although involuntary. As Wolbach insists, the fact that "the subjects of these experimental carcinomas have been men instead of animals, and the observers not laboratory workers, does not invalidate the evidence."

It is, indeed, strange, in view of the striking character of *x*-ray lesions and the resulting malignant degeneration, that they have not been more systematically considered by the experimental pathologists as a source of information for the elucidation of tumor etiology. A good foundation for future work, however, is laid in the two extensive articles recently published by C. A. Porter and S. B. Wolbach,¹ which consider at length both the clinical and the pathologic aspects of *x*-ray lesions. Dr. Porter has had the unique experience of studying and operating on thirteen patients with severe lesions following exposure to these rays, in all but three of which malignant proliferation was present. In the literature he found records of thirty-four other similar cases, but

this unquestionably represents by no means all the cases of this kind that have been observed. Among the most interesting features of clinical study may be mentioned the following: The *x*-ray dermatitis is a perfectly typical form of occupation dermatitis, and in the chronic variety is entirely distinct from all other forms of skin lesions. The changes are distinctly atrophic, with keratoses which are entirely comparable to the senile changes of the skin, as pointed out by Pusey. As in the senile, but much more frequently, there develops in the base of these keratoses a squamous cell carcinoma, and this malignant change, it is to be emphasized, occurs just as certainly in the neglected *x*-ray lesions of the young as in the old. In other words, *x*-rays produce senile changes in the skin, and senile epithelioma follows as a result, irrespective of the age of the individual who possesses the senile skin. As to malignancy, *x*-ray cancer is also entirely comparable to senile cancer, not tending to early or extensive metastasis, and being easily controlled if only radical measures are used in the early stages. It seems that cancer is more likely to occur in those who also subject the skin to the irritation incidental to the development of the plates than in those who do only *x*-ray work, just as the senile skin becomes cancerous chiefly at the points where it is most exposed to irritation. As the slight protection afforded by the cuffs seems to prevent *x*-ray dermatitis, Porter suspects that the harm is not done by the *x*-rays themselves, but by other emanations from the tubes.

Dr. Wolbach considers that all the changes produced by the injurious emanations, whatever they may be, are primarily of a degenerative character, and of such a nature that after a certain amount of injury has been done normal repair becomes impossible. Progressive vascular changes, leading to obliteration, keep up the degenerative processes, so that even years after the last exposure active changes are found to be still taking place. Of all the exposed tissues the epithelium is least injured, and so, as the underlying connective tissue disintegrates, the epithelium grows down to reach the deeper and less injured strata where it can still obtain nourishment. In this way the surface integrity is preserved, but with the formation of thickened layers of epithelium, from which, eventually, the carcinomas develop. By the study of many lesions at different stages it is possible to follow out the entire sequence of events in the genesis of a carcinoma, under conditions as favorable as in any animal experiment.

It will be noticed from the above account that it is the degeneration of the connective tissue which is primary to the overgrowth of the epithelium, an observation which is in harmony with the hypothesis of Ribbert, who held that the increased activity of cell growth was due to the diminished resistance offered by the surrounding tissues. It also recalls von Hansemann's "anaplasia" theory, namely, that malignant proliferation is essentially a reversion of the cells to a purely proliferative and vegetative type at the expense of functional capacity. Wol-

1. Porter, C. A., and Wolbach, S. B.: Jour. Med. Research, 1909, xxi, 357; abstr. in THE JOURNAL, Jan. 1, p. 81.

bach believes that in *x*-ray cancer the epithelial cells achieve slowly an increased power of growth at the expense of differentiation, as a result of repeated periods of overgrowth lasting for years, and under conditions of impaired nutrition, as a result of which the cells acquire the ability to gain their sustenance at the expense of other living tissue. Similar reasoning can be applied to the many other forms of surface cancer following protracted injury, such as the cancers of chimney-sweeps, aniline workers, paraffin workers, the cancers following on lupus and leucoplakia, etc., and it seems to be thoroughly logical and satisfactory. It will be observed, also, that the activity of parasites does not need to be assumed to explain the characters and genesis of these neoplasms.

There seems no evident reason why *x*-rays and the other agencies mentioned, which produce cancer so readily in man, should not be capable of producing cancer equally well in laboratory animals, once the proper conditions have been learned. If this can be done with any considerable frequency it will put the study of cancer on a better foundation than it has ever yet enjoyed, with corresponding prospects of rapid progress in our understanding of the etiology of neoplasia.

GERMOPHOBIA

The development of the science of bacteriology has given rise to a new type of 'phobia—the dread of microbes. That vague dread of the mysterious and unseen or unknown which formerly attached to gnomes and kobolds now surrounds microzoa and bacteria, beings as invisible to the unaided eye of flesh and, to the popular fancy, ten times as full of maleficent power. The very word "microbe"—innocent enough in its definition of "a little living being"—has, in the minds of most persons, an ill-defined malign implication. Science itself has encouraged, though without design, this one-sided view of the activities of micro-organisms, for, naturally, the pathogenic germs have been studied before the non-pathogenic, and largely to the exclusion of the latter. Popular writing, moreover, usually exaggerates and often distorts the obvious trend of science.

A typical example of this exaggeration is to be found in the recent book by Mr. Upton Sinclair and Mr. Michael Williams on "Good Health and How We Won It." Mr. Sinclair and Mr. Williams succeeded in regaining their health by greatly limiting their diet and by cutting meat out of their dietary. They proceed to show on the strength of statistics and observations the value of the exclusion of meat from the dietary of those who would be healthy, since bacteriologic examination shows that all the forms of meat contain immense numbers of germs. How appalling for the general public it must be to be told that an ordinary specimen of sirloin steak such as was served at the table of a prominent city hotel, when taken to the bacteriologic laboratory and examined

without delay, contained nearly four hundred million anaerobic germs per gram of moist material! This was, however, "not a counter" to what was found in other food materials, fish and flesh. For instance, in round steak there were five hundred sixty million of anaerobes and four hundred twenty million aerobic microbes per gram. In large sausage there were five hundred sixty million of anaerobes and four hundred twenty million aerobes. In small sausage there were eight hundred thirty-four million aerobes and six hundred sixty-three million anaerobes. After these materials had been kept at room temperature for some hours the number of microbes in most cases very nearly doubled and sometimes more than doubled—all this in spite of the fact that these observations were made in the winter when germs are less abundant because of the diminished amount of dust in the air, and when the low temperature prevents them from growing as luxuriantly as in warmer weather.

If these statistics were to be taken as seriously as the authors suggest, it would seem utter foolhardiness to eat any meat. Especially would this be true in regard to the meats which supply the poor with their proteid nutriment, such as ham, bacon, sausage and Hamburg steak, for, even more than higher priced classes of meats, these swarm with microbes. It is evident that most people have been eating germ-laden food ever since the world began; and all who are not yet dead have survived it so far, which seems a wonder at first glance. Stolid, unscientific common sense, however, refuses to be frightened away from the food on which it has thriven for so long, and serious science finds some justification for the common-sense attitude.

Of course, the pseudoscientific fallacy lies in the assumption that all germs are dangerous, whereas, just as some macroscopic plants and animals are noxious to human beings and others innocuous, so it is with microscopic organisms. The microscopic plants that are dangerous to human life are very few indeed. We know about two score that produce seriously injurious results; and probably there are thousands of others that are either harmless or even positively beneficial. We deliberately eat certain microbes in cheese and consume their products in vinegar or in sour milk or in other food materials. Not only are these not harmful, but in proper quantities and at proper times they are adjuvants to nutrition. We deliberately encourage certain forms of fermentation (which is, after all, one kind of microbial growth) in silo for cattle and in sauerkraut for human beings and do not anticipate serious harm from the moderate use of these foods. How much the microbial flora constantly present in the intestines and increased in quantity and probably also in variety every time any kind of food, animal or vegetable, is taken, may help in digestion we do not as yet know. There is a theory, however, that these microbes of various kinds are helpful rather than hurtful in digestive processes.

An aversion to unnecessary contamination by noxious micro-organisms may well serve as a protection against disease; but an insane terror of infection may make life very miserable without appreciably lengthening or strengthening it. In the first place, the paradise of faultless prophylaxis—the aseptic Eden which seems to be the ideal of the germophobes—is unattainable. We cannot banish micro-organisms from our human world; we can only try to keep that balance of conditions most favorable to the life of the human organism. In the second place, the attitude of mind cultivated in the perpetual endeavor to evade disease may be almost a worse evil than the disease itself; certainly it furnishes the best excuse for the existence of those sects which deny the existence of all disease and the usefulness of any precautions. “Life is a dangerous thing at best and very few of us get out of it alive,” while those of us who spend all our energies trying to elude its incidental risks might almost as well never have lived at all. Health is largely a matter of a proper balance of opposing forces; and that balance can be preserved, in part, by cultivating a due measure of indifference to inevitable dangers.

THE PHARMACIST AND THE NOSTRUM BUSINESS

For more than half a century the American Pharmaceutical Association has done splendid work in the interest of scientific pharmacy, its annual reports embodying a vast amount of invaluable data. Unfortunately, until within the last few years this association has dealt almost exclusively with the scientific side of pharmacy, having to a large extent ignored the economic problems of the profession; it also neglected to recognize aright the needs of the individual pharmacist and did little to encourage local organization. More recently, however, and when too late, it has extended the scope of its activities and branches have been established here and there which are dealing with local problems. By its former short-sighted policy, the American Pharmaceutical Association lost its opportunity—its hold on the retail pharmacists. By ignoring the very evident fact that pharmacy was a business as well as a profession and by refusing to recognize the equally patent fact that the very existence of pharmacy as a science was dependent on its success in coping with the economic problems involved, the association failed to appeal to the rank and file of druggists.

To fill the gap thus left, another body was organized—the National Association of Retail Druggists—whose *raison d'être* was frankly that of helping the pharmacist in his commercial dealings; it was, in brief, to deal with the druggist as a business man rather than as a professional man. This latter organization grew, and has branches all over the country. A little while ago it originated the “get-together” meetings—a splendid idea—to bring physicians and pharmacists into more intimate touch with one another. Incidental to this and con-

nected with it was the movement to get physicians to prescribe official rather than proprietary medicines. In this the pharmacists recognized their own shortcoming in the past and expressed their desire to cooperate with physicians in an attempt to make druggists compounders of drugs instead of retailers of ready-made mixtures and to make physicians writers of real prescriptions rather than the dupes of proprietary companies.

Unfortunately the National Association of Retail Druggists has within the past few months entered into a *mésalliance* with the “patent medicine” evil in its most insidious form. It has become, apparently, the creature of a cooperative “patent medicine” concern, comprised of a number of its own members, a concern to which we devote some space in the Pharmacology Department of this issue. If the retail druggists are sincere in the propaganda which they instituted with the object of weaning physicians from the unreliable and mystery-provoking proprietaries, back to prescribing official and non-secret preparations, then let them at least be consistent. If they insist on the right to prescribe, then, in the name of consistency, let them prescribe official and non-secret preparations themselves instead of substituting cooperatively-made, for privately-made, “patent medicines.”

The coalition is an unfortunate one, especially at a time when the medical profession and the public are keenly alive to the viciousness that is inseparable from the nostrum business. It was to be hoped at this juncture, when the so-called ethical nostrums are being discarded by physicians and the use of “patent medicines” by the laity is decreasing, that the druggists of the country would rise to the opportunity that presented itself to bring the profession of pharmacy back to its one-time position of honor. Nor for years has the time been so propitious for welding together the interdependent professions of pharmacy and medicine. We are still optimistic enough to believe that the eagerness of the retail druggists to go over, body and soul, to the nostrum business is more apparent than real, and that the present control of the National Association of Retail Druggists by an organization whose objects are so plainly inimical to the science of pharmacy is but a passing phase. The self-respecting druggist can assert himself in this matter none too soon; that this profession has so far forgotten its ideals as to lend its support to the vicious “patent medicine” business is a standing advertisement of shame to the retail pharmacy business of this country.

A NEW ERA IN PHARMACOLOGY

We published last week¹ a report of an investigation of the pharmacology of digalen, a preparation of digitalis that has been on the market a number of years and which has attracted much attention both here and abroad. There has been and still is some controversy as to

1. Hale, W.: A Comparative Study of Digalen, THE JOURNAL A. M. A., Jan. 1, 1910, p. 35.

exactly what the preparation is; when it was first introduced the advertisements contained a number of distinctly misleading and exaggerated statements. The latter having been eliminated, the Council on Pharmacy and Chemistry accepted it for New and Nonofficial Remedies, with, however, the following qualifying statement: "The Council has not determined whether digalen contains 'soluble amorphous digitoxin' or not, but accepts it merely as a standardized, soluble and fairly stable digitalis preparation." Hale's results show that pharmacologically it is much weaker than crystallized digitoxin (digalen is claimed to be soluble digitoxin), being more like digitalein, and he finds little in its pharmacologic action to indicate that it has advantages, for ordinary purposes at least, over the usual preparations of digitalis.

This week² Dr. Hale gives the results of his experiments with another proprietary preparation of digitalis—digipuratum. These indicate that this product possesses a definite strength which, apparently, is constant, but he finds that it offers, on general grounds, no marked advantages over physiologically standardized official preparations.

Attention is called to these two articles, not primarily because of their findings, although these are of more than passing interest, but because of what such investigations mean to the medical profession. It is an encouraging sign of the times that disinterested and skilled men will thus take up the examination of proprietary drugs. It is, moreover, another evidence of the results of the work which the American Medical Association is accomplishing for therapeutics through the Council on Pharmacy and Chemistry and THE JOURNAL. Even five years ago it would have been practically impossible to find any work done on proprietary preparations except that of a purely commercial nature, with "findings" that savored more of the testimonial than of the scientific spirit. Now all is being changed. Not only are men of high professional standing subjecting the newer proprietary remedies to dispassionate and unprejudiced examination, but also—and this is of even greater moment—medical and other scientific journals are willing to publish the results of such examination, whether the findings are favorable or unfavorable. This changed attitude can only be productive of the greatest good for pharmacology. Valuable additions to *materia medica* will be more quickly recognized; honest but valueless remedies will more quickly be discarded, while the proprietary nostrum will be unable to pursue for long the course of vicious deception which has in the past characterized products of this class.

While wonderful advance has been made along the lines of bacteriology, pathology, physiologic chemistry, etc., comparatively little progress has been made in pharmacology. The study of therapeutics, so far as drugs are concerned, has been neglected. The one need

which now confronts the medical profession is more knowledge of drugs and their physiologic and therapeutic action; and this means that there is a need of more institutions in which work such as that done by Hale can be carried on. The number of laboratories in which pharmacologic research can be done is deplorably small, yet the active practitioner of medicine is more directly interested in investigations of this nature than he is in the investigations in any other of the fundamental branches of medicine. Unfortunately, even the best among our medical colleges have been woefully slow in recognizing this fact. Efficient departments of pharmacology in our medical schools is the great need to-day.

A FINAL WORD ON TUBERCLE BACILLI IN THE BLOOD

About one year ago Rosenberger advanced his theory that tubercle bacilli are in the blood in considerable numbers in practically all cases of localized tuberculosis. But since then systematic study of the blood in tuberculous patients and in tuberculous cattle, coupled with appropriate animal experiments, have uniformly yielded wholly negative results in the hands of so many careful observers that Rosenberger's theory now must be dismissed as without any standing whatsoever. In place of marking a great step in the growth of our knowledge of tuberculosis, as was daringly prophesied, the "discovery" in reality proves to be an insignificant episode of mere evanescent interest. Probably the same fate awaits the less-noticed assertion in regard to the frequency of tubercle bacilli in the feces. An outcome of positive value from this work is the finding that water, even when distilled, may contain acid-proof bacilli strikingly like the tubercle bacillus. That the use of such water in staining for tubercle bacilli under certain conditions may lead to error is self-evident. Knowing this possible source of error, it will be easy to guard against it hereafter. Of theoretical rather than immediate practical bearing is the observation that even when very large numbers of tubercle bacilli are thrown into the bloodstream they are removed from the circulating blood with astonishing rapidity.¹

MEDICAL SECRECY AND THE INSANE

Judge Stafford of the Supreme Court of the District of Columbia, in a recent decision, holds that the law requiring communications from a patient to his physician to be considered privileged does not apply to the evidence of an asylum superintendent as to his observations of or communications with a patient who is suing for release by habeas corpus. He held that the legislature could not have intended the law to apply to such a case, as such a construction would paralyze the government in its treatment of the insane. Even if such communications were privileged, the patient waived the privilege by instituting the proceeding. There are many difficult questions which arise in the construction and

² The Comparative Strength of Digipuratum, page 129, this issue

¹ Anderson: Bull. 57, Hyg. Lab., U. S. P. H. and M.-H. S.; Sawyer, Wilbur A.: Tubercle Bacilli in the Blood, Arch. Int. Med., 1909, iv, 628.

enforcement of statutes requiring medical secrecy, but in this case the judge seems to have given a straight common-sense decision. If a patient in an asylum could claim to be sane and bar out all evidence to the contrary, except what he might himself give by his conduct in court, or from unskilled underlings and casual visitors, a very large proportion of the most dangerous inmates of the state hospitals could very easily obtain their liberty, and society would have no defense whatever against the possible consequences.

Medical News

ALABAMA

Personal.—Beginning with the October issue, Dr. Henry A. Moody became associate editor of the *Gulf States Journal of Medicine and Surgery* and *Mobile Medical and Surgical Journal*.—Dr. Paul E. Gwin, Bessemer, has resigned as city physician and has taken charge of the Woodward Ironworks Company at Dolomite, vice Dr. Lycurgus Thomas, deceased.

County Societies Elect Officers.—At the annual meeting of the Mobile County Medical Society, held December 19, Dr. William R. Jackson was reelected president; Dr. Marion J. Bancroft, vice-president; Dr. Stephen F. Hale, secretary, and Dr. Marion T. Gaines, librarian, all of Mobile. Dr. Calvin N. Owen, Mobile, was reelected a member of the board of censors.—Tallapoosa County Medical Association, at its annual meeting, held in Dadeville, December 14, elected Dr. William T. Langley, Jr., Camp Hill, president; Dr. James O. Griffin, Hackneyville, vice-president; Dr. Aaron L. Harlan, Alexander City, secretary; Dr. Neal B. Dean, Alexander City, treasurer, and Dr. James A. Goggans, Alexander City, county health officer.—At the annual election of Madison County Medical Society, held in Huntsville, December 14, the following officers were elected: Dr. Claud C. Pettus, Huntsville, president; Dr. Marion R. Moorman, Huntsville, vice-president; Dr. Edgar Rand, Huntsville, secretary-treasurer; Dr. William C. Wheeler, Huntsville, censor; Dr. William W. Haden, Huntsville, monitor; Dr. James F. Burnam, Huntsville, county health officer; Dr. Ollie B. Patton, city health officer of Huntsville; Dr. Benjamin E. Graham, health officer of Gurley; Dr. Luther L. Winkle, health officer of Madison; Dr. William C. Wheeler, Huntsville, jail physician, and Dr. Ernest Walker, physician of the poor-house.

COLORADO

New Sanatorium.—The nuns of the Order of St. Francis plan a sanatorium for tuberculosis on one hundred acres of land secured near Denver. The sanatorium is to be designed both for the wealthy and poor, the proceeds from the treatment of the former to be used to defray the expenses of the latter.

Denver Deaths.—During the year ended Dec. 1, 1909, there were 3,186 deaths from all causes in Denver, as compared with 3,358 in the preceding year. The deaths from typhoid fever and pneumonia were decreased and deaths from tuberculosis increased. Suicide passed typhoid fever as cause of death and took the tenth place on the list.

Women Physicians of State Meet.—The Colorado Woman's State Medical Society held its annual meeting at Denver, December 28, and elected the following officers: Dr. Kate Lindsay, Boulder, president; Drs. Lucy M. Wood, Boulder, and May B. T. Kruse, Denver, vice-presidents; and Dr. Kate E. Geiger Yont, Denver, secretary-treasurer.

DISTRICT OF COLUMBIA

Dinner to Col. Havard.—The officers of the medical corps on duty in and around Washington gave a farewell dinner to Col. Valery Havard, prior to his retirement from active service, at which the surgeon-general presided.

Surgeon-General Entertained.—Brigadier General George H. Torney, Surgeon-General U. S. Army, spent December 6 and 7 in Philadelphia. He was guest of honor at a dinner at the Union League Club, made an address on "The Medical Officer of the United States Army" before the Northwestern Medical Society. During his stay in Philadelphia, General Torney was the guest of Dr. Clarence B. Franklin.

Personal.—Surgeon-General Walter Wyman, P. H. and M.-II. Service, has sailed for Port Limon, Costa Rica, to attend the International Sanitary Conference of American Republics.—Dr. Thomas A. Lee has resigned as resident physician at the Casualty Hospital.—Surgeon William C. Braisted, U. S. Navy, has been assigned to special duty as general supervisor of the construction of hospitals at naval stations and has been succeeded as assistant to the chief of the bureau of medicine and surgery by Surgeon Frank L. Pleadwell.—Dr. Charles S. White sustained a serious sprain of the left wrist and right knee in a collision between his automobile and a street car November 24.—Dr. Charles P. Grandfield has been appointed postmaster of Washington.—Dr. Joseph J. Kinyoun, who resigned as professor of bacteriology and pathology in George Washington University, has been appointed bacteriologist of the District Health Department.—Dr. and Mrs. Walter A. Wells have returned from Europe.

GEORGIA

Personal.—Drs. Nicholas Peterson, Tifton, and Thomas R. Wright, Augusta, have been appointed trustees of the Georgia State Sanitarium, Milledgeville.—Dr. Charles M. Curtis has been made chairman, and Dr. James T. Henley, secretary of the College Park Board of Health.—Dr. Bernard McH. Cline, Milledgeville, has been appointed a member of the staff of the State Sanitarium.—Dr. Charles G. Giddings, a member of the visiting staff of Grady Hospital, Atlanta, has resigned.

Society Meetings.—At the annual meeting of the Sixth District Medical Society, held in Macon November 10, the following officers were elected: President, Dr. James A. Combs, Locust Grove; vice-president, Dr. Johnson M. Moore, Macon, and secretary-treasurer, Dr. Irby H. Adams, Macon.—The annual meeting of the Second District Medical Society was held in Albany, November 10. Dr. James M. Barnett, Pretoria, was elected president; Dr. C. Kosciusko Sharp, Arlington, vice-president, and Dr. Francis M. Martin, Shellman, secretary-treasurer.—At the annual meeting of the Tenth District Medical Association, held in Augusta November 9, Dr. Noel M. Moore, Augusta, was elected president; Dr. Joshua R. Beall, Blythe, vice-president; Dr. George A. Traylor, Augusta, secretary-treasurer, and Dr. Wyman W. Pilcher, Warrenton, councilor.—The Macon Branch of the State Antituberculosis and Sanitary Society was organized at Macon, December 7. Dr. Charles C. Harrold was elected president; Dr. Herbert Respass, vice-president; Dr. Samuel B. Palmer, secretary, and Dr. G. T. Miller, censor.—Ware County Medical Association, at its annual meeting held in Waycross, December 7, elected the following officers: President, Dr. Robert P. Izlar, Waycross; vice-president, Dr. James C. Ripard, Waycross; secretary-treasurer, Dr. Albert Fleming, Waycross; delegate to the state society, Dr. Charles R. Oglesby, Waycross; alternate, Dr. William R. Moore, Patterson, and censors, Drs. John L. Walker, Charles R. Oglesby and James H. Latimer, all of Waycross.

ILLINOIS

Food Standard Commission.—On December 6, the governor appointed as members of the State Food Standard Commission Charles E. M. Newton, "a representative of the Illinois Food Manufacturing Industries," and Dr. Walter S. Haines, Chicago, "an expert food chemist of known reputation" in accordance with the requirements of the law, and these gentlemen constitute the State Food Commission, with Mr. A. H. Jones as chairman, Dr. T. J. Bryan, 1620 Manhattan Building, Chicago, as corresponding and recording secretary. Among the early subjects to be considered are ice cream, condensed milk, and evaporated milk. The commission will not make a standard until it has fully investigated both the scientific data with reference to the products, and the trade conditions and customs relating thereto. It requests all interested to submit briefs in triplicate to the secretary of the commission at as early a date as possible. After these briefs have been considered, a public hearing will be given to those interested, for the presentation of evidence and arguments.

Personal.—Dr. Benjamin E. Gleeson, Danville, has been appointed local oculist and aurist to the Illinois Traction System and the Chicago and Eastern Illinois Railway.—Drs. George W. Mitchell and J. C. Osterbeck, assistant physicians at the Bartonville State Hospital, have resigned as the result of action taken by the Illinois Civil Service Commission.—Dr. M. William Fitzpatrick, Decatur, has been elected physician of Macon county.—Dr. John F. Taylor, Buda, has been obliged to give up practice on account of ill health, and will soon leave for Montana.—Dr. Francis E. Melugin, Thomson,

was operated on recently at Mercy Hospital, Clinton, for disease of the gall-bladder.—Dr. Martin Sancerman, Rock Grove, has left Freeport Hospital, where he has been a patient for the past six weeks.—Dr. Ellie Current, formerly of Danville, who went to Colorado for her health, has taken up professional work in a tuberculosis sanatorium in Brush.—Dr. Robert C. Bourland, Rockford, has been appointed district medical examiner by the civil service board.—Dr. Harry C. Hill and family, Streator, leave January 15 for Europe.—Dr. William M. Richards, Joliet, was operated on for appendicitis at Silver Cross Hospital, December 24.—Dr. Emma B. Standley, Alexis, is taking a trip to the Orient.—Dr. Ira O. Paul, Winnebago, was thrown from his sleigh, December 24, fracturing his left hip.

Chicago

Personal.—Dr. Henry D. Shonts is critically ill with pneumonia at his home.—Dr. Myer Nuta was operated on for double hernia by Dr. Thomas Jonnesco, December 22.—Dr. and Mrs. Jacob Frank have left for Europe and the Orient.—Dr. Eleazar A. LaMothe has been elected professor of ophthalmology in the Chicago Eye, Ear, Nose and Throat College.—Dr. Thomas F. Doyle was seriously burned on the head and face by a gas explosion in his bath room, December 19.

Gifts to Hospitals.—By the will of the late Thomas Murdock, who died Christmas day, one-third of \$2,500,000 is devised to the Presbyterian Hospital, to be used for an endowment fund, to be known as the Jane Murdock Memorial Fund, in memory of the sister of the donor.—A gift is said to have been made to the Iroquois Memorial Association, sufficient to complete the building fund for the hospital to be erected at 87 Market street, which is to cost between \$50,000 and \$75,000.

Hospital Committee Named.—The president of the Board of Commissioners of Cook County has appointed a committee of six, consisting of Dr. William L. Baum, the warden of the County Hospital, the county attorney, and three county commissioners to meet a similar committee appointed by the city council, consisting of Drs. William A. Evans and Heman Spalding, the corporation counsel, and three aldermen, to discuss ways and means of turning over the county hospital to city control.

Chicago Mortality in 1909.—During 1909, 31,262 deaths were reported, equivalent to a death rate of 14.05 per 1,000. Of the dead, 6,392 were under 1 year of age, 2,972 between 1 year and 5 years, 1,949 between 5 and 20 years, 13,169 between 20 and 60 years, and 6,734 over 60 years, and 46 of unknown age. Chief among death causes were pneumonia, with 4,962 deaths; tuberculosis, with 3,870; diarrheal diseases, with 3,560; heart diseases, with 2,897; violence, with 2,388; and nephritis, with 2,338. Diphtheria caused 675 deaths, scarlet fever, 360; typhoid fever, 269; measles, 174; and whooping cough and influenza, each 151.

KANSAS

Medical Board Wins Case.—In the case of D. J. Smith, Athol, who was prosecuted by the State Board of Medical Registration and Examination on the charge of practicing medicine without a license, the defendant is said to have entered a plea of guilty and promised to cease practice, whereupon the minimum fine of \$50 and costs was imposed.

Personal.—Dr. Christian B. Stemen, who located in Kansas City, Kan., several years ago, has returned to his old home in Fort Wayne, Ind., and will resume practice there.—Dr. George W. Hochrein, first assistant physician at the State Insane Hospital, Topeka, has resigned.—Dr. Lot D. Mabie has been appointed a member of the Kansas City Board of Health.

Society Meetings.—At the annual meeting and election of Shawnee County Medical Society, held in Topeka, December 6, the following officers were elected: Dr. Charles F. Menninger, president; Dr. Melancthon C. Porter, vice-president; Dr. H. Milton Connor, secretary; Dr. Samuel A. Johnson, treasurer; Drs. Herbert L. Alkire, William E. MeVey, and Daniel E. Esterly, delegates to the state society, and Drs. Samuel A. Johnson, Clarence A. McGuire, and Robert S. Magee, alternates, all of Topeka.—Lyon County Medical Society, at its annual meeting and banquet, held December 6, in Emporia, elected the following officers: Dr. Charles W. Lawrence, president; Dr. Clarence A. Neighbors, vice-president; Dr. James F. Worley, secretary-treasurer; and Drs. Frank A. Eekdall, Thomas F. Foncannon and Oliver J. Corbett, all of Emporia, censors.

LOUISIANA

Quarantine Station Purchased.—The State Board of Health has sold to the United States government, for \$100,000, the quarantine station at the mouth of the Mississippi.

Personal.—Drs. Charles M. Menville, Joseph B. Duval, and Hugh St. Martin have been elected members of the Honma Board of Health.—The New Orleans City Council has reelected Drs. William H. Robin, William T. O'Reilly, and Oliver F. Ernst members of the board of health.—Dr. and Mrs. Thomas L. Mills, Zachary, celebrated the fiftieth anniversary of their marriage, November 22.

Antituberculosis League Election.—At the annual meeting of the Louisiana Antituberculosis League, held December 9, the following officers were elected: Dr. Luther Sexton, New Orleans, president; Drs. George Dock and George S. Bel, New Orleans, vice-presidents; Dr. J. George Dempsey, New Orleans, secretary; and Dr. George S. Brown, New Orleans, treasurer. Drs. Clifford H. Irion, Benton, Edward L. McGehee, New Orleans, Charles Chassignae, New Orleans, and Stanford E. Chailier, New Orleans, were elected honorary vice-presidents of the league.

Elections.—At the annual election of Orleans Parish Medical Society, held in New Orleans, December 11, the following officers were elected: President, Dr. Benjamin A. Ledbetter; vice-presidents, Drs. Eugene H. Walet, P. Leonee, Thibaut, and Charles N. Chavigny; secretary, Dr. Charles P. Holderith (reelected); treasurer, Dr. Howard D. King (reelected); librarian, Dr. Homer Dupuy (reelected), and directors, Drs. William H. Seemann, Arthur Nolte, and Joseph T. DeGrange, all of New Orleans.—Shreveport Medical Society held its annual meeting, December 7, and elected Dr. Oscar Dowling, president; Dr. Thomas P. Lloyd, vice-president; Dr. Arthur A. Herold, secretary (reelected), and Dr. John A. Hendrick, treasurer (reelected). A resolution was passed by the society denouncing the alleged practice of certain members of the society of issuing prescriptions for intoxicating liquors for other than medicinal purposes.

MARYLAND

Medical Corps to Be Organized.—Medical officers now serving with the regiments in the militia will be assigned to the medical corps as provided by the new state militia law, thus making the organization similar to that of the medical corps of the U. S. Army.

Health Department Banquet.—The ninth annual banquet of the health department of Baltimore was held December 28, Dr. James Bosley, commissioner of health being the guest of honor. Among the speakers were the mayor, Drs. Bosley, C. Hampson Jones, William R. Stokes, and Eugene H. Hayward.

Pure Food Laws.—A final public hearing of the advocates of the three pure food bills proposed for presentation to the legislature was given by the commission appointed by the governor, December 29 and 30. Wholesale drug men and representatives of the state medical society were not agreed regarding the administration of the law, the former opposing and the latter advocating its administration by the State Board of Health. After an animated discussion the following section was approved: "The State Board of Health shall have the power to appoint a pure food and drug commissioner at a salary of \$2,500 a year, whose duties shall be exclusively the administration of this law under the direction and supervision of the said State Board of Health." This compromise section is said to be satisfactory to the various interests involved. At no time was there any expression of lack of confidence in the State Board of Health, and the secretary of the board was strongly endorsed by the attorney-general, by Dr. William H. Welch, and by Dr. James Bosley.

Organization of Home for Widows and Orphans of Physicians.—The board of managers of the Home for Widows and Orphans, founded by the Medical and Chirurgical Faculty of Maryland met for organization December 28. The members of the committee of the fund for the relief of widows and orphans of deceased members are considered members ex officio of the board. Rules for the government of the board were adopted. Great enthusiasm was manifested by the ladies who were honored by the society with the conduct and responsibility of this great charity, the first of the kind undertaken by a medical organization in America. The following officers were elected: Mrs. John S. Fulton, president; Mrs. Sophia Cook Waters, vice-president; Mrs. William B. McDonald, recording secretary; Mrs. E. L. Whitney, corresponding secretary; Dr. Eugene F. Cordell, treasurer; executive committee, Mrs. William J. Todd, Mrs. David Streett, Mrs. Nicholas L.

Dashiell, Miss Constance Kuch, and the officers ex officio. The board expects to have the home in operation in a few months. —The Ladies' Auxiliary for the Fund for the Relief of Widows and Orphans is making arrangements for a supper, concert and sale to be held February 2 and 3.

MISSISSIPPI

Vital Statistics.—The legislative committee of the Mississippi State Medical Association has framed a bill creating a state bureau of vital and mortuary statistics and also a bill authorizing the state board of health to inaugurate a campaign of education and hygiene, and providing adequate appropriation therefor.

Amendment to Medical Practice Act.—Dr. Peter W. Rowland, Oxford, chairman of the legislative committee of the Mississippi State Medical Association has forwarded to the governor a bill which the latter is said to have approved, and which bars from application for license to practice medicine, all persons who have not completed a four-years' course in a reputable medical college, and regulates the compensation of county health officers.

Definition of the Practice of Medicine.—An amendment to the Medical Practice Act, proposed by the state medical association, thus defines the practice of medicine: "The practice of medicine shall mean to suggest, prescribe, recommend, or direct for the use of any person any drug, medicine, appliance or other agency whether material or not material, for the cure, relief, or palliation of any ailment or disease of the mind or body, or for the cure or relief for any wound or fracture or other bodily injury or deformity, or the practice of obstetrics or midwifery, after having received or with the intent of receiving therefor either directly or indirectly any bonus, gift, profit or compensation."

Medical Societies Meet.—The Newton-Neshoba-Winston Tri-County Medical Association, at its annual meeting held in Newton, elected the following officers: Dr. George H. McNeill, Newton, president (re-elected); Drs. Joseph N. Whittle, Union, and W. D. Davis, Deemer, vice-presidents; Dr. Sidney A. Majure, Dixon, secretary-treasurer; Drs. Joseph N. Whittle, Union, Sidney A. Majure, Dixon, and Daniel J. Rush, Philadelphia, censors; Drs. William G. Allen, Newton, and Daniel J. Rush, Philadelphia, delegates to the state medical association, and Drs. Z. Carl Hagan, Decatur, and W. D. Davis, Deemer, alternates.—At the annual meeting of the East Mississippi Four-County Medical Association, held in Houston, Dr. Richard M. Boyd, Houston, was elected president; Dr. Andrew J. Brand, Buena Vista, vice-president for Chickasaw county; Dr. B. H. Durley, Aberdeen, vice-president for Monroe county; Dr. Thomas F. Elkin, Tupelo, vice-president for Lee county; and Dr. John T. Senter, Fulton, vice-president for Itawamba county.

MISSOURI

Superintendent Wins Judgment.—In the case of Dr. William F. Kuhn, formerly superintendent of State Hospital, No. 2, St. Joseph, for salary for the months of July and August, Judge L. J. Easton, on December 18, made an order that judgment be entered against the board of managers in favor of Dr. Kuhn for the amount demanded.

Physicians in Trouble.—Dr. L. W. Miller, Kirksville, is said to have been fined \$800 by a jury, December 13, on four charges of illegally writing prescriptions for liquor.—Dr. Hume, Columbia, whose license to practice medicine was revoked by the State Board of Health, has appealed his case to the supreme court.—The State Board of Health, at its session December 7, is said to have revoked the license of Dr. J. Frank Gullie, Koshkonong, on account of drunkenness, and that of Dr. Calvarcero Benedetto Tripirao, Kansas City, on the charge of practicing medicine with a diploma alleged to have been obtained fraudulently, and which he claimed had been issued by a college in Palermo, Sicily.—On the charge that he prescribed intoxicating liquor promiscuously, the State Board of Health has revoked the license of Dr. G. A. Meyer, Buffalo.

St. Louis

Cancer Research.—The directors of the St. Louis Skin and Cancer Hospital have made an appropriation of \$6,000 a year for the study and investigation of the cause and treatment of cancer.

Annual Meeting of St. Louis Society.—The St. Louis Medical Society, at its annual meeting, December 27, elected the following officers: President, Dr. Henry Schwartz; secretary, Dr. Carroll Smith; treasurer, Dr. J. Henry Amerland; councilors, Drs. George Homan, Cyrus E. Burford, Robert M. Funk-

houser, Henry C. Dalton, Walter H. Fuchs, Frederick C. E. Kuhlmann, Henry J. C. Sieving, Henry Schwartz, Albert F. Koetter, John C. Morfit, Clarence M. Nicholson, and William E. Sauer; delegates to the state association, Drs. William W. Graves, J. Henry Amerland, Thomas A. Hopkins, Herman L. Nietert, George C. Crandall, Vilray P. Blair, Louis H. Hempelmann, Louis Rassieur, Willard Bartlett, Walter Baumgarten, Joseph Gridon, Walter C. G. Kirchner, and Malvern B. Clifton, and alternates, Drs. Paul Y. Tupper, William E. Sauer, Frederick J. Taussig, Horace W. Soper, Jesse S. Myer, George Homan, E. Lee Dorsett, William G. Moore, William H. Luedde, Albert F. Koetter and Warren P. Elmer.

NEW JERSEY

Free Visits to Poor Only.—A committee of the Woodbury City Council conferred with the Woodbury Physicians' Association, on December 31, for the purpose of deciding on a method whereby the worthy poor of the city might be cared for free and not those who refuse to work. It is likely that in the future it will be necessary to secure an order from some official to get free medical aid, and then the city will pay a stipulated price to the physician.

William Pierson Library Lecture Course.—The William Pierson Medical Library Association announces the following lecture course: January 18, "Perversion of Stomach Digestion," Dr. George R. Lockwood, New York City; February 15, "Chronic Ulcer of Stomach and Duodenum," Dr. Max Einhorn, New York City; March 15, "Carcinoma of Stomach," Dr. Walter B. James, New York City, and April 19, "Surgery of Stomach," Dr. Joseph C. Bloodgood, Baltimore.

Personal.—Dr. Andrew F. McBride, mayor of Paterson, is reported to be ill with septicemia, due to an operation wound.—Dr. Harry M. Harman has resigned as a member of the Frenchtown Board of Education, and has been appointed medical inspector of schools.—The citizens of German Valley have made up a purse for Dr. William James, who recently sustained serious losses in a fire.—Dr. Edwin E. Bond has succeeded Dr. David M. Gardner as health officer of Caldwell.—Drs. Harry B. Slocum and William K. Campbell have been appointed medical examiners of school children for Long Branch.—Dr. J. Edward Blair, Burlington, is reported to be seriously ill with pneumonia.—Dr. Arthur H. Dundon, Plainfield, has succeeded Dr. Frederick J. Hughes as school physician.

NEW YORK

Sanitarium Burned.—The sanitarium of Dr. F. T. King, Little Farm, near White Plains, was burned to the ground, December 30, at an estimated loss of \$20,000. The patients were all removed.

Efforts to Educate Defectives Unsatisfactory.—Leonard P. Ayres, lecturer for the Russel Sage Foundation, states that it costs New York City about \$1,250,000 a year in a fruitless effort to teach children who are so handicapped by physical defects that their mental faculties are deadened. From two-thirds to three-fourths of all the pupils in the day schools suffer from physical defects, and in spite of physical examinations the defects go uncorrected. It has been observed that there are more accidents among backward than among normal children.

New York City

Brooklyn Health Department Moves.—The Health Department of Brooklyn moved, January 1, to the new municipal building, which is at the Flatbush avenue extension and Fleet place.

Appoint Coroner's Assistants.—The following assignments of coroner's assistants have been made for the ensuing year: Dr. Phillip F. O'Hanlon, Dr. Albert I. Weston, Dr. Otto H. Shultze and Dr. Timothy D. Lehan.

Harvey Lecture.—The fifth lecture of the present course of Harvey Society lectures will be given January 15 when Prof. Ludvig Hektoen, of the University of Chicago, will speak on "Certain Phases of the Formation of Antibodies."

Personal.—The East Side Physicians' Association has elected the following officers: President, Dr. William M. Leszynsky; vice-presidents, Drs. Max Gherler and Sigmund Epstein; secretary, Dr. David Satenstein, and treasurer, Dr. Herman C. Frauenthal.—Dr. H. Holbrook Curtis was the guest of honor at a dinner at the Harvard Club on December 28, given by his former assistants and associates who are now residing in New York City. The party consisted of Drs. George E. Brewer, David O. Edson, Wm. Ledlie Culbert, Percy E. D. Malcolm, Nathaniel B. Potter, Hampton P. Howell, Rufus P. Hubbard and Lawrence D. Alexander.

Low Death Rate for 1909.—Dr. Darlington announces that the death rate in this city for the year 1909 was the lowest ever recorded officially. The rate was 16.24 per thousand population, while for the preceding year the rate was 16.52. There was a falling off in the number of deaths from typhoid fever and measles, but an increase in the number of deaths from scarlet fever, diphtheria, influenza, tuberculosis and organic disease.

Alumni Association Prize.—The Prize of the Alumni Association of the College of Physicians and Surgeons, Columbia University, is a biennial prize valued at \$500 open for competition to the alumni of this college and is awarded for the best medical essay submitted on any subject. The essay must contain the results of original investigations made by the author. The prize will be awarded at commencement, 1910, and essays must be sent in before April 1.

NORTH CAROLINA

Medical Men Elect Officers.—At the annual meeting of the Iredell-Alexander County Medical Society, held in Statesville, December 6, the following officers were elected: Dr. William G. Nicholson, Harmony, president; Dr. Archibald A. Campbell, Statesville, vice-president; Dr. John E. McLaughlin, Statesville, secretary-treasurer, and Dr. E. E. Kluttz, Trontman, delegate to the state society.—Yadkin County Medical Society, at its annual meeting, December 6, elected Dr. Calvin M. Holcomb, Chestnut Ridge, president; Dr. Thomas R. Harding, Yadkinville, vice-president, and Dr. John L. Woltz, Booneville, secretary-treasurer, and delegate to the state society.

Decision for Hospital.—More than two years ago, after a most atrocious crime had been committed by a lunatic recently discharged by order of the directors from the State Hospital at Morganton, a suit for damages was instituted against the directors by friends of the deceased. The case was fought through the lower courts and was last week decided in favor of the directors. The order reads: "The directors and superintendent of a hospital for the insane under the provision of Revisal 4596 in discharging or releasing a patient therefrom cannot be held responsible for damages by the subsequent killing of such a patient by another, under the charge of negligence, Revisal 4560."

PENNSYLVANIA

Antituberculosis League Election.—At the annual meeting of the Wilkesburg Antituberculosis League, December 14, Dr. Theodore Baker was elected corresponding secretary, and Drs. Clyde W. Semple, James M. McNall, David B. Beggs, Stewart L. McCurdy and Silas G. Wertz, directors.

Nurses Registered in Pennsylvania.—The State Board for the Registration of Nurses announces that it has no affiliation with any other board, society, hospital school or sect of medicine. Its object is to protect the public and the medical profession against persons not properly educated for the responsibilities of a nurse. The board at its recent meetings granted registration to 485 applicants. These, by Act of Assembly, approved May 1, 1909, are privileged to use the title "registered nurse" or its abbreviation, R.N., and to wear the pin authorized by the board.

Personal.—Dr. Jason G. Hanks, Breezewood, Pa., while making a professional call, December 18, was thrown from his automobile, breaking his collar bone, ribs, and receiving severe contusions.—Dr. Jacob Rothrock, manager of the Mont Alto Sanatorium, has been selected as superintendent of the new sanatorium to be built by the Reading Society for the Prevention of Tuberculosis, at Neversink Mountain.—Dr. J. Paul Roebuck, Lititz, has been appointed physician to the eye, ear, nose and throat department. Dr. D. Galen McCaa, Lancaster, pathologist, and Dr. Walter B. Weidler, Lancaster, consultant to the eye, ear, nose and throat department of the Lancaster General Hospital.

Philadelphia

Neurologists Hold Joint Meeting.—A joint meeting of the Philadelphia Neurological Society and the New York Neurological Society was held December 18, in Thomson Hall, College of Physicians. The meeting was followed by a smoker at the Rittenhouse Hotel. A report will appear in THE JOURNAL.

Personal.—John A. Vogelsson, an engineer of construction in the filtration division of the bureau of water, was appointed, December 31, chief of the bureau of health vice Dr. Alexander C. Abbott, resigned.—Dr. Mary M. Wolfe has been appointed professor of psychiatry in the Woman's Medical College. Dr.

Wolfe was until recently resident physician at the women's department of the Norristown State Hospital for the Insane.

German Hospital Surgical Conference.—The physicians visiting the surgical clinic of the German Hospital have formed a society to be known as the German Hospital Surgical Conference, which has as its objects "the advancement of its members in the science and art of medicine and the promotion of a free and open discussion of cases presented, of operations performed, of methods, technique and treatment used in the German Hospital surgical clinic." Regular meetings will be held at the German Hospital on Tuesday and Friday afternoons of each week at 3 p. m. and at each meeting a special reporter will present a résumé of the work done in that clinic during his term of service. The following officers were elected: President, Dr. Luther Williams, Indianapolis; vice-president, Dr. Alexander, Annapolis, Md., and secretary-treasurer, Dr. Albert D. Whiting, Philadelphia.

Officers Elected.—At a meeting of the North Branch of the Philadelphia County Medical Society held December 21, Dr. Samuel P. Gerhard was elected chairman and Dr. Jesse O. Arnold, clerk.—The Kensington Branch of the Philadelphia County Medical Society elected the following officers: Chairman, Dr. Thomas R. Currie; vice-chairman, Dr. John J. Gilbride, and clerk, Dr. Harry S. Bachman.—At the meeting of the West Philadelphia Medical Association, the following officers were elected: President, Dr. Sherman F. Gilpin; vice-president, Dr. Hiram L. Lutz; secretary, Dr. Henry G. Munson; financial secretary, Dr. William M. Miller, and treasurer, Dr. Edmund L. Graf.—At a meeting of the South Branch of the Philadelphia County Medical Society, December 30, the following officers were elected: President, Dr. William N. Bradley; secretary, Dr. Joseph S. Kitchen, and associate vice-president to the county medical society, Dr. R. Oliver Kevin.

SOUTH CAROLINA

Smallpox on Board Steamer.—The British steamer *Winifred* is being held at the quarantine station, Charleston, with one case of smallpox and two suspicious cases on board.

Antituberculosis League Formed.—The physicians of Lexington county have formed a temporary antituberculosis league with Dr. Ransom H. Timmerman, Batesburg, president, and Dr. G. Frank Roberts, Lexington, secretary.

Elections.—At the annual meeting of Anderson County Medical Society, in Anderson, December 6, the following officers were elected: Dr. James R. Young, president; Dr. R. Lee Sanders, vice-president; Dr. W. Frank Ashmore, secretary-treasurer, and Dr. Joseph O. Wilhite, censor, all of Anderson.—Florence County Medical Society, at its annual meeting, held in Florence, December 6, elected Dr. John G. McMaster, Florence, president; Dr. Dudley H. Smith, Florence, vice-president; Dr. Edward M. Allen, Florence, secretary-treasurer; Dr. Albert G. Eaddy, Timmons ville, delegate to the state association, and Dr. Lawrence Y. King, Florence, censor.—At the annual meeting of Chester County Medical Society, held in Chester, December 6, Dr. William B. Cox, Chester, was elected president; Dr. Samuel G. Miller, Chester, vice-president; Dr. W. R. Wallace, secretary-treasurer, and Dr. John P. Young, Richburg, delegate to the state association.—Columbia Medical Society, at its annual meeting, December 13, elected Dr. Samuel E. Harmon, president; Dr. Robert A. Lancaster, vice-president; Dr. Mary R. Baker, secretary, and Dr. Francis A. Coward, delegate to the state association.—Williamsburg County Medical Society held its annual meeting in Scranton, December 21, and elected the following officers: Dr. Irvine M. Woods, Sardinia, president; Dr. Thaddeus B. Hinnant, Lake City, vice-president; Dr. Edward T. Kelley, Kingston, secretary; Dr. Clarence D. Rollins, Lake City, treasurer; Drs. William S. Lynch, Scranton, and S. B. W. Courtney, Lake City, censors; Dr. Clarence D. Rollins, Lake City, delegate to the state association meeting, and Dr. Juline D. Eaddy, Lambert, alternate.—Clarendon County Medical Society, at its annual meeting, held in Manning, December 22, elected Dr. Charlton E. Gamble, Turbeville, president; Dr. A. S. Todd, Manning, vice-president; Dr. Charles B. Geiger, Manning, secretary-treasurer; Dr. A. S. Todd, Manning, delegate to the state association, and Dr. Henry L. Wilson, Jordan, alternate.

WASHINGTON

Medical Societies Incorporate.—The incorporation is announced of the Washington State Medical Association by Drs. William D. Kirkpatrick, Bellingham, O. Lewis Adams, Davenport, Burt Thomas, Walla Walla, et al., and the King County Medical Society, of Seattle, by Drs. Grant Calhoun, Robert M. Smith, and Louis H. Redon, et al.

Antituberculosis Activities.—The Antituberculosis League of King county has purchased eighty acres of land on the east side of Lake Washington, on which to erect a sanatorium to accommodate sixty tuberculosis patients. Dr. Robert M. Stith is to be medical director of the institution.—As the result of the sale on Button Day, more than \$6,000 was raised in Seattle for the relief of sufferers from tuberculosis.

Children's Hospital.—The plans for the proposed Children's Orthopedic Hospital, Seattle, have been prepared. The new building is to cost \$75,000, of which \$63,350 is already available. The hospital is urgently needed, as during October and November, 8 crippled children were refused admittance on account of the crowded condition of the present quarters.

Personal.—Dr. William F. Arnann, Ritzville, has returned from abroad.—Dr. Marion F. Setters, Spokane, who is said to have been temporarily suspended two months ago for alleged unprofessional conduct in advertising a sanitarium in the lay press in connection with an unlicensed practitioner, was reinstated on bringing proof before the board showing that he had severed his relations with the practitioner referred to and with the sanitarium.

Society Meetings.—At the annual meeting of Whatcom County Medical Association, held in Bellingham, December 13, the following officers were elected: Dr. John W. Goodheart, Bellingham, president; Drs. C. Beebe, D. S. Clarke, and Ernest S. Reedy, Blaine, vice-presidents; Dr. H. Max Mehlig, Bellingham, secretary; and Dr. George F. Cook, Bellingham, treasurer.—At the third annual banquet of the Spokane County Medical Society, December 20, the guest of honor was Dr. Darius Mason, Spokane, a practitioner of fifty-six years' experience. Dr. Harold H. McCarthy, Spokane, was toastmaster, and 125 members of the profession of Spokane and the neighboring district were in attendance. Dr. Wallace W. Potter, Spokane, responded to the toast, "Our Guest."

How the Plague Problem was Handled in Seattle.—The occurrence of three cases of bubonic plague in Seattle in October, 1907, caused a campaign of cleaning to be instituted by the Public Health and Marine-Hospital Service, and also induced the city to reorganize its health department. The present head of that department is Dr. James F. Crichton, who was appointed in March, 1908, for five years. He is given ample authority to enforce the health ordinances of the city, and in its organization the department ranks with the best. The city maintains a chemical and bacteriologic laboratory and the plague laboratory conducted by the Public Health and Marine-Hospital Service is also maintained by the city. There is inspection of markets, milk and other foods, contagious diseases are reported and quarantined in the case of smallpox, diphtheria, scarlet fever and plague, and the occurrence of a case of contagious disease is reported by the health department to the police department, the superintendent of schools and the public library, with the location of the case. The population is 276,000, and the death rate, on the reorganization of the health department, dropped from 9.27 in 1907 to 7.35 per 1,000 in 1908. The low death rate may be attributed in part to the fact that the population is largely of the pioneer class, young and strong. Tuberculosis is the most frequent cause of death, there being 218 cases in 1908. The city maintains a charity hospital of 56 beds and also a contagious disease hospital, although there is urgent need for a larger one. There are a number of private hospitals, but further hospital accommodations are needed. The city water supply comes from the Cedar river and is brought by gravity 28 miles from an elevation of 6,000 feet. The water is good and contains from 70 to 4,000 bacteria per c.c., being greatest in the rainy season. The city has 5 miles of water front mostly occupied by wharves of cheap timber construction, and sanitation, particularly against rat plague, is difficult. However, no plague has been discovered among rats since September, 1908. The subject of building a sea wall and filling the space inside has been agitated, but there are difficulties in the way. The sewage is disposed of by the gravity system, being discharged far out in the sound. The city produces 200 tons of garbage daily, and maintains at present one incinerator with a capacity of 70 tons. The rest of it is dumped into the sound or in the low places about the city. This is one of the sanitary questions demanding attention as is also that of a larger contagious disease hospital. The ever present danger of bubonic plague invasion requires unceasing vigilance, as it does in all the Pacific coast towns.

GENERAL NEWS AND COMMENT

Medical Journal for the Laity.—We have received the first issue of the *Layman's Medical Journal*, to which we referred December 18. This little monthly magazine is published by

the Wisconsin Medical Woman's Association, Oshkosh, for the education of the public in matters of health. Subjects to be considered are: "Hygiene, sanitation, water, milk and food supplies, and the knowledge of preventable diseases." The first number contains articles on the fight against tuberculosis, prevention of scarlet fever, duty of the physician to the school child, sanitation, and ventilation, besides a number of useful hints regarding such common ailments as frost bite and catching cold. There is a question corner and subscribers are encouraged to ask questions concerning health.

Typhoid in Bermuda.—"The Spectator" in the *Outlook*, December 11, after describing the beauties and advantages of the Bermuda Islands as a resort, says "the single drawback to a summer in Bermuda is the ever present possibility that a typhoid germ in active health may be wending its silent way into one's insides." He goes on to say that the disease has been endemic in the islands for a century past and is very prevalent. Even the cultured Englishmen on the island show an astonishing ignorance of its causes and the methods of its prevention. There are few screens in the windows and millions of flies. The sanitary arrangements are apparently poor, and, while the law requires water tanks to be screened, it is often done with a half inch mesh, which would of course keep out cats and dogs but not mosquitoes or other germ-carrying insects.

A Peerless Champion.—Under this title, *Collier's Weekly* for December 25 has the following comment on one of the leaders in the movement against animal experimentation, whose zeal in the cause is only equalled by his superb disregard for facts: "The antivivisectionists are planning a grand coup. They are about to send the most eminent antivivisectionist in the world to visit us—Hon. Stephen Coleridge. He is the son of the late Lord Chief Justice of England. He has done in his lifetime several ungentlemanly and several misleading things which makes it unfortunate that he should be selected as a representative of a cause. He was, for instance, guilty of trying to ally the British Museum with his own personal propaganda by means of a cheap and somewhat ungentlemanly trick. He asked the librarian in the British Museum to give him a competent translator, to translate for him a catalogue of one of the physiological instrument manufacturing companies. He then put on the title-page of the translation the title of the librarian in the British Museum, as if lending favor to his antivivisection crusade. The librarian called what Mr. Coleridge had done an 'unwarrantable abuse of a mere act of courtesy.' Another time Mr. Coleridge, without investigation, saw fit to repeat the wild and picturesque statements of the beautiful Miss Lind-af-Hageby. She had claimed to have seen many quaint and piteous happenings inside the laboratory of Dr. Bayliss, University College, London. Her remarks, fortunately, were confined to private life. But Mr. Coleridge eagerly trumpeted them forth from a platform. He was sued by Dr. Bayliss and had to pay heavy damages, to the extent of nearly \$25,000—£2,000 for damages and nearly £3,000 for trial costs—for his falsification. Many instances of his false statements and his gift for twisting facts into malicious fiction will be found in the blue-books of the proceedings of the Royal Commission on Vivisection. This is the gentleman who will so shortly visit us and continue his romancing on an important department of science."

CANADA

Tuberculosis Fund Doubled.—The government has decided to appropriate \$10,000 annually, instead of \$5,000, to prevent the spread of tuberculosis.

Children's Hospital.—The Children's Hospital at Halifax, N. S., celebrated Children's Day, December 22. The hospital was opened for inspection December 20. The institution can accommodate 14 patients, but can be made to accommodate 23 patients.

Hamilton Physicians Meet.—The annual meeting and dinner of the Hamilton Medical Association was held December 1. Dr. Douglas G. Storms was elected president; Dr. John P. Morton, vice-president; Dr. Alexander D. Unsworth, corresponding secretary; Dr. Daniel P. Kappel, recording secretary, and Dr. Marshall E. Gilhrrie, treasurer.

Personal.—Dr. Oscar Klotz, assistant in pathology at McGill University, Montreal, has been appointed professor of pathology in the University of Edinburgh.—Dr. Abraham K. Malouf, Montreal, has been elected president of the Letellier Club.—Dr. James M. McCarter, Verona, is reported to be ill in Kingston Hospital with typhoid fever.—Dr. Robert J. Manion, health officer of Fort William, Ont., has resigned.

Names Stricken from Roll.—By a vote of 17 to 7, the council of the Ontario College of Physicians and Surgeons, on December 10, is said to have decided that Dr. William R. Cook, Toronto, was guilty of "infamous and disgraceful conduct in a professional respect," and that "his name be erased from the register of the college forthwith."—On the same day the council decided to strike from the register the name of Dr. Stephen B. Pollard, who is now said to be serving five years' imprisonment for the performance of a criminal act.

Dominion Registration.—At a special session of the Ontario Medical Council, held in Toronto, December 11, the proposed amended Roddick or Canada Medical Act was presented and affirmed. The amendment to this act was the result of a meeting of the special committee on dominion registration, held in Montreal, through whose act the principle was reaffirmed, the Quebec delegates alone standing out against the act as at present on the statute book, objecting chiefly to what would purport to be the infringement of provincial rights in the matter of education and examination. The composition of the proposed dominion council is as follows: Three members from each province, appointed by the governor-in-council; a number of members representing each province, fixed in each case by the number of practitioners registered under the laws of the province in the proportion of one for the first 500, one for the next 1,000 or fraction thereof, and for all over 1,000, one, and never more than three; one from each university or incorporated medical college engaged in the active teaching of medicine; and one member to be appointed by the governor-in-council or elected from the members of any distinct school of medicine who are entitled to practice by the laws of any province. The amended bill also provides for the first meeting in Ottawa, appointment of registrar, and reciprocity with Great Britain. Any person who has practiced six years in any province of Canada may, on payment of the necessary fees, be registered to practice in any province.

Milk Defined.—The government has prepared a scheme for proposed food standards which classifies milk and its products, as milk, modified milk, skim milk, pasteurized milk, sterilized milk, certified milk, condensed milk, and evaporated milk. The standard for pasteurized milk is milk which has been maintained for twenty minutes at a temperature of 150 F. or thirty minutes at a temperature of 140 F., and immediately thereafter refrigerated to 45 F. and kept at that temperature until delivered to the consumer; certified milk is described as milk examined and guaranteed by any local board of health or incorporated society or association of legally qualified medical practitioners. Cows are to be subjected to the tuberculin test semiannually and be found without reaction. Milk must contain not more than 10,000 bacteria per cubic centimeter, must be free from pus, blood, preservatives and all foreign matters, and must not have been heated.

FOREIGN

New Queen of Belgium a Physician.—The wife of the new king of Belgium is the daughter of the late Duke Karl Theodor of Bavaria, whose death we recorded Dec. 11. She always took great interest in her father's scientific work and used to assist him in his eye clinic and hospital. She early announced her intention to study medicine, but it met with strenuous opposition on the part of all her relatives with the exception of her father. Under his encouragement she began to study medicine with him at the age of 16 and completed her course, obtaining her medical degree at Leipsic, not long before her marriage. She continued her medical studies in Brussels, and founded there the Albert-Elizabeth tuberculosis dispensary, which has been doing excellent service in prevention and cure of tuberculosis among the poor. Until her recent accession to the throne she was a daily visitor and took an active part in its work.

LONDON LETTER

(From Our Regular Correspondent)

LONDON, Dec. 25, 1909.

Extension of the Work of a Medical Defence Society

At present there are two medical defence societies in this country. On payment of a subscription of \$2.50 per annum the defence of a physician will be undertaken against actions brought against him by patients for negligence. Such actions are usually vexatious or speculative and brought with the aid of unscrupulous lawyers, by patients who have no money. If the physician wins a verdict with costs he is unable to recover from an impecunious plaintiff. The result has been that in addition to the worry of litigation the physician has to pay a considerable sum, sometimes as much as \$5,000, to defend

himself against a baseless charge. Membership of a medical defence society relieves him of this and often prevents such actions, when the patient and his lawyer find that the physician has a strong society at his back which cannot be intimidated. But if the physician is unfortunate enough to lose his case all that the society will do is to pay the costs of his defence. He will be liable for any damages and costs which may be given against him. For some time the London and Counties Medical Protection Society has been considering the advisability of arranging for an insurance of the members against damages and costs up to \$10,000, but the proposal received little support from the members. Circulars and requests to attend a meeting for the purpose received only a small number of positive replies and fewer negative ones, the majority of the members not replying at all. To do this it would be necessary to raise the subscription to \$5. After a long discussion the society has now decided to arrange with an insurance company for a policy covering these risks. The council of the society will strictly guard their rights to conduct the trials in what way they think proper.

Dentists and the Royal College of Surgeons

The Royal College of Surgeons has celebrated the jubilee of its recognition of dentistry as a profession and institution of the licentiateship in dental surgery (L.D.S.). Fifty years ago the practice of dentistry in this country was in a chaotic condition and much behind that in America. There was no recognized dental diploma and druggists and even artisans practiced dentistry and described themselves as dentists. The college was the first licensing body in the United Kingdom to institute a diploma in dentistry. In the fifty years which have elapsed great progress has been made and dentistry has ceased to be merely an art and been transformed into a science taking rank with ophthalmology, laryngology and the other specialized branches of medical science. This progress has been largely due to the work of the Odontological Society which has now become merged as one of the sections of the Royal Society of Medicine. It accumulated a magnificent collection of 5,000 specimens, probably the most extensive and valuable ever brought together to illustrate the anatomy, embryology and pathology of the teeth. This collection includes the original specimens of pigs' teeth by which John Hunter demonstrated by administration of madder that the teeth are laid down layer by layer with the growth of the body. These specimens were used by Hunter for the preparation of his book on "The Natural History of the Human Teeth," published in 1771. There are specimens of early English skulls side by side with modern specimens showing that the crowded uneven teeth so common at the present day are due to a decrease in the size of the jaws with the advance of civilization. A similar contrast is shown by comparing predynastic Egyptian skulls with those of the civilized ages of the Egyptian kings. The jaws and teeth of 1,500 species of animals from fossil fishes to the monkey are represented. Sets of artificial teeth from the first crude attempts in 1790 up to the perfect specimens of the dental art of the present day are exhibited. This invaluable collection has now been transferred to the keeping of the Royal College of Surgeons. It is housed in a large room in the basement with the dental specimens already in the museum of the college.

PARIS LETTER

(From Our Regular Correspondent)

PARIS, Dec. 23, 1909.

Lecture of Dr. Debove on the Rôle of Medicine

Professor Debove, former dean of the Paris medical school, gave some time ago at the School of Higher Social Studies, an interesting lecture on the rôle of medicine. To-day, said Dr. Debove, there are certain medical concepts of which no one has the right to be completely ignorant. The philosopher is particularly interested in mental pathology. It should be no longer possible to study philosophy without knowing a little of anatomy and physiology. We have decentralized the faculties of the mind and we know that it is not the brain alone which exercises an influence on the mentality of the individual. The intellectual and moral faculties may be influenced by an alteration of the suprarenal capsules or of the thyroid gland. These concepts are such as to modify our ideas in regard to human responsibility. It is necessary then that the philosopher should be somewhat of a physician; but it is also necessary that the physician should be somewhat of a psychologist, for how many moral diseases he is called on to treat! One division of morality is only a branch of medicine, namely, that which relates to the conservation of the race and to reproduction of the species. Dr. Debove par

ticularly emphasized the dangers of depopulation, which are increasing each year in France.

He then pointed out the importance of medicine in war. Statistics prove that in war disease is an important factor. In 1870 we lost 23,470 from variola while the Germans lost only 450, which shows how important it is that commanders of armies should take medicine into account. In closing Dr. Debove dwelt on the evil effects of the great poisons of the human race: opium, alcohol, etc. In order to combat the lamentable condition created by alcoholism in particular, Debove recommends early school instruction in hygiene. By showing children all the dangers of alcoholism, which poisons our insane asylums and our prisons and which is unfavorable to the reproduction of the species, it may be possible to make young people shun alcohol. It is necessary also to educate the people in regard to tuberculosis and while insisting on the precautions to be taken against tuberculosis. Dr. Debove made a strong argument in favor of the compulsory reporting of tuberculosis.

BERLIN LETTER

(From Our Regular Correspondent)

BERLIN, Dec. 15, 1909.

Personal

Prof. P. Krause, lately appointed professor extraordinary and head of the medical policlinic at Bonn, who has distinguished himself by investigation of the prevailing epidemic of acute spinal paralysis in the Rhine country and Westphalia, has been made a regular professor.

As successor of Prof. H. Kossel, Prof. R. Neumann of Heidelberg has been appointed director of the hygienic institute at Giessen.

Dr. Holle, formerly minister of education, who was compelled by illness to abandon his post a year or so ago, after a brief incumbency, has now succumbed to his disease, a severe brain affection of an arteriosclerotic nature, developing in consequence of the great pressure of work involved in the activities of the department of education. He was only 54 years old.

Dr. Jastrowitz, of Berlin, a well-known physician for mental diseases, celebrates his seventieth birthday on the twentieth of this month. The *Verein für innere Medizin*, whose secretary Jastrowitz was for many years, has elected him an honorary member.

Dr. R. Lennhoff, one of the founders of the forest convalescent stations mentioned in my former letter, has received the title of professor. He is the editor of the *Medizinische Reform*, a weekly journal devoted to social medicine and hygiene, and has won distinction for his systematizing and practical development of social medicine.

Municipal Medical Affairs

The city has made a supplementary appropriation of \$24,000 (100,000 marks) for treatment at sanatoriums (*Heilstättenkuren*).

The board of aldermen has asked the administration to provide as soon as possible for the erection of large, simply constructed forest convalescent stations for weakly children of both sexes, to be opened the entire year.

The city government has decided to erect at Rummelsburg, a suburb of Berlin, a hospital with 150 beds for patients with female diseases.

International Institute for Medical Bibliography

An international institute for the bibliography of medicine and the related natural sciences has just been founded and is to publish a central organ which shall abstract the entire medical literature. In addition there is to be established an information bureau for questions regarding medical and scientific literature. Professor Aberhalden of Berlin is to be the editor of the *Centralblatt* in question.

Infant Mortality in Prussia

The infant mortality of Prussia after a temporary decrease before 1908 shows now a slight increase. Of 1,000 legitimate children born living there died in the first year of life in the cities 157 as contrasted with 154 in 1907; in the country 166 instead of 162. The average from 1886 to 1890 was 210 in the cities and 187 in the country; from 1896 to 1900, 195 and 185, and from 1901 to 1905, 181 to 178. It is evident that the infant mortality has been materially reduced and further that it has decreased to an extent distinctly greater in the city than in the country so that the infant mortality is now generally smaller in the cities than in the country. The chief reason for the more marked reduction of infant mortality in

the cities is to be sought in the greater improvement in the hygiene and care of infants in the cities as compared with the rural districts. Others attribute the difference to the marked reduction of the birth rate in the cities; the extra fertility of the country women tends to lessen the consciousness that infants need special care. Furthermore, the removal of part of the infants, shortly after birth, from the city to the country tends to increase the death rate of the country and to lessen that of the cities. The two latter factors, however, are surely of minor importance compared with the former. The death rate of illegitimate children, which as is well known always surpasses that of the legitimate children, after a previous marked decrease shows an increase as compared with the previous year, the figures being 291 (in 1907: 281) in the cities, and 307 (1907: 205) in the country. The average from 1891 to 1905 was 385 for the cities and 336 for the country; from 1901 to 1905, 329 for the cities, and 322 for the country.

Marriages and Births in Germany

While for the last twenty years the number of marriages has about paralleled the increase of the entire population, the birth rate shows a menacing decrease. Since 1896, the birth rate has dropped about a fourth. In 1888, with a population of 48,168,000 the number of marriages was 376,654 and the number of births 1,828,379 (of which 66,972 were still-births). In 1898, with a population of 54,406,000, the number of marriages was 458,877, and of births 2,891,000 (65,960 still-births). In 1907 the population was 62,083,000, the marriages numbered 503,964 and the births 2,060,973 (61,040 still-births).

Outdoor Schools for Higher Grades

Charlottenburg will found in Grünewald an outdoor school for children of the upper grades. The school is to open in the middle of April and continue until the summer vacation and then be resumed until the end of September. During the summer vacation the forest school will be rented as a vacation colony. With this rent and with the tuition money it is hoped to meet the expenses of maintenance which are estimated at \$8,000 (32,500 marks). The tuition is placed at \$70 (290 marks) for each pupil, and the school is planned to accommodate 120. Free tuition is to be provided for some pupils and for this purpose the city of Charlottenburg will assume one-fifth of the expense. The cost of the establishment of the school was provided by a private benefactor who contributed \$8,500 (35,000 marks).

Bills in the German Reichstag

For the present session of the Reichstag a large number of bills dealing with public hygiene and education have been presented by the various parties. These bills are submitted for discussion in the Reichstag and after their adoption are laid before the federal council for further action. A bill has been introduced providing for united action by the individual state governments of the empire by which the threatening influx of foreign students to the German universities shall be restricted in the interests of our own people. (This has to do principally with the increase of Russian students who, without sufficient preparatory studies, often crowd the German universities, and by securing the best places thus discommodate and injure the German students.)

In regard to housing reform, the imperial chancellor is requested to appoint a committee from the official representatives of the kingdom and the various federal states and from the members of the Reichstag and from others who have scientific and practical knowledge of the housing question, to develop a uniform plan for the settlement of this problem. In addition the imperial chancellor is to be requested to prepare a bill for a law to provide for persons accidentally injured in the saving of persons or of goods, especially in voluntary aid at fires and in drownings. Also a bill to ensure a successful campaign against tuberculosis in those classes of the population especially affected with this disease; particularly in reference to ways and means for disinfection of infected dwellings.

Centennial of the Hufeland Society

February 1, 1910, the *Hufelandische Gesellschaft* of this city celebrates its centennial. The society was founded by the renowned Hufeland who was the first professor of medicine at the university which was established in 1810. The jubilee of this society is also to a certain extent the first event in the centennial of the Berlin university itself which, as previously mentioned, is to be celebrated next August.

Pharmacology

THE AMERICAN DRUGGISTS SYNDICATE

An Arrangement Whereby Retail Druggists Become Wholesale Nostrum Manufacturers

For years the manufacturers of "patent medicines" have been reaping a golden harvest at the expense of the public's purse and health. Naturally those druggists who think more of profits than pharmacy and dollars than decency have, to a large extent, participated in the dividends of the nostrum exploiters in the capacity of distributors. More recently, however, the growth of "department store" druggists and other "cut rate" concerns have made serious inroads on the profits to be realized by the sale of "patents." This loss of profits, in turn, has led many of the none-too-particular druggists to take stock in one or the other of the cooperative enterprises that have entered the field to "out-Herod Herod" in the matter of exploiting ready-made remedies to cure all diseases that human flesh is heir to.

Of these organizations, one of the most impudent in its claims and obnoxious in its methods is the American Druggists Syndicate, more euphoniouly known as the A. D. S. This concern, which has been referred to before in *THE JOURNAL*,¹ was founded by one C. H. Goddard, formerly a newspaper man in California and interested in the mining business. According to the advertisements, the A. D. S. is an association of retail druggists "who are daily compounding thousands of prescriptions written by the most eminent physicians of the country."

"They not only compound these prescriptions, but they are in daily contact with the patients, and thus have an opportunity of watching their results and those which prove the very best by practical tests are forwarded by each druggist member to the A. D. S., and from the thousands presented, a competent board of physicians and chemists select the premium prescription and offer it to the public in a ready-made package."

Despite all that has been said about the general harmfulness of ready-to-take panaceas, and despite all of the positive knowledge that we now have regarding the immediate, as well as the remote damage done by taking "patent medicines," we have here the appalling evidence that a very large number of retail druggists, men that should and no doubt do know at least something of the harm that is being done by nostrums, are openly cooperating in the manufacture and exploitation of nostrums! Baldly stated in their own words: "The American Druggists Syndicate Places the Profit Side of the Patent Medicine Business Where it Belongs"—that is with the retail druggist.

These preparations are objectionable because they tend to mislead and harm the purchaser, degrade the morals of the men who make and sell them, and discredit all who are in any way connected with the drug business, or with pharmacy.

As an illustration of the generally objectionable nature of these preparations we would call attention to:

A. D. S. PELVITONE: "A blessing to weak women. A purely vegetable compound." "Is the prescription used by the most eminent and successful physicians." "... was selected by an association of three thousand successful druggists." "Try one bottle and you will recommend it to your afflicted lady friends."

Is this ethically, morally, or scientifically on a higher plane than the Lydia Pinkham or the Pierce nostrums?

A. D. S. HEADACHE WAFERS: "This prescription was selected from a thousand as the very best, most effective and safest remedy on earth for headache." "Will positively relieve you and not hurt the heart." [Each wafer contains four grains of acetanilid.—Ed.]

Wherein is this better than the thousand-and-one other headache cures that flood the nostrum market?

A. D. S. BRAIN AND NERVE TONIC: "It feeds both brain and nerves." "A scientific nerve food." "It never fails."

Truly a scientific (?) preparation. The courts of the District of Columbia have decided that the words "brain food" are "false and misleading."

These are but examples of the preparations put on the market by this cooperative "patent medicine" concern—a concern comprised of druggists who not only get the regular commission for retailing these nostrums, but who, by owning stock in the A. D. S., participate in the profits that accrue from their manufacture. In the advertising pamphlets distributed by the A. D. S., we also find listed "A remedy for every ailment," and among dozens of others, the following:

PENNYROYAL PILLS: "For female irregularities. Mild and safe."

OBESITY REMEDY: "Removes fat slowly and harmlessly." [Harmless? Asserted to contain thyroid extract!—Ed.]

CELERY COMPOUND: "Great for nervous disorders." EX-Z-MO: "It will cure eczema."

And so on *ad nauseam*.

Nor is the "patent medicine" business the only line put out by the A. D. S. One of the former directors of this organization was Dr. C. S. Roberts whose activities in the "consumption cure" business *THE JOURNAL* has had occasion to expose. It will be remembered that Dr. Roberts exploits hydrocine (now called oleozone), the marvelous "hyper-oxidized hydrocarbon" which he recommended as "a positive cure for tuberculosis." Analysis of Dr. Roberts' product disclosed that it consisted of 95 per cent. sugar and small quantities of volatile oils and a trace of pancreatin. This mal-odorous sugar mixture is now manufactured in the A. D. S. nostrum factory as the reproduction of the hydrocine label shows.

One of the advertising schemes of the A. D. S. is the sending out of a Pullman car containing an exhibit of A. D. S. products. This advance agent of the nostrum manufacturers was labelled "A Druggist Organization for the Protection of the Public Health!" After this, can we blame Dr. Hartman, of Peruna fame, and Lydia Pinkham, for posing as public benefactors?

Summed up, what does it all mean?

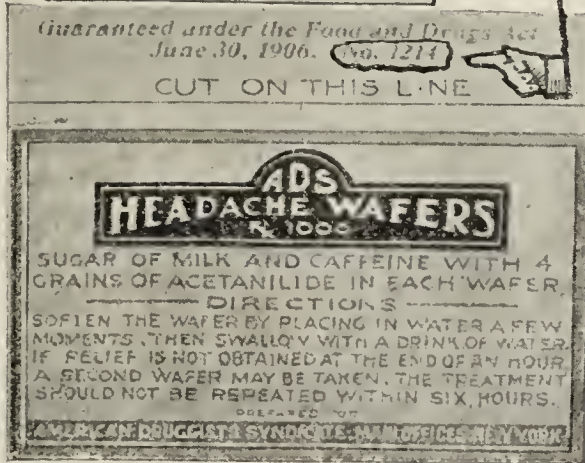
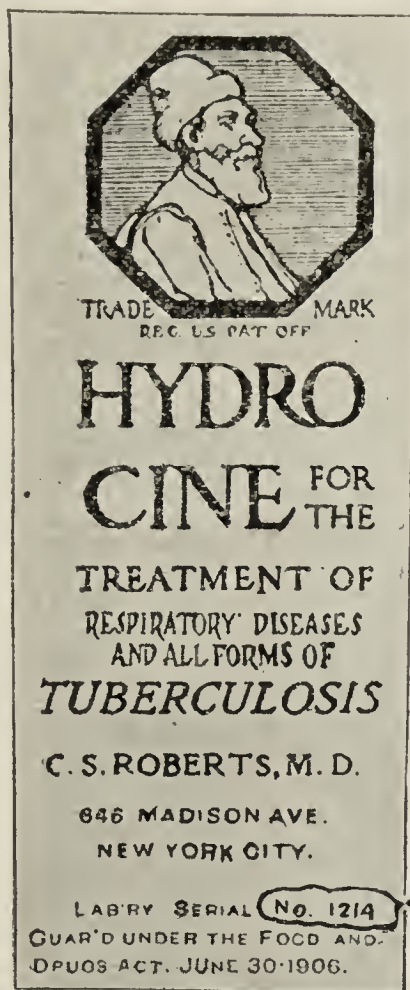
It means that the druggists constituting the A. D. S. are concerned not with scientific pharmacy, but with the marketing of nostrums.

It means that the filling of physicians' prescriptions is being utilized by many retail druggists as a cloak of respectability to hide their real object in business, and finally:

It means that the medical profession in its fight against "patent medicines" of a harmful nature is deprived of a part of the assistance that should be forthcoming from pharmacists.

THE N. A. R. D. AND THE A. D. S.

For some months it has been persistently rumored that the National Association of Retail Druggists, more familiarly known as the N. A. R. D., has become in effect a creature of the A. D. S. While there have been denials of this, particularly in the pages of *N. A. R. D. Notes*, the official organ of the National Association of Retail Druggists, the secretary of this



Photographic reproduction of two labels: one from a "headache cure" put out by the A. D. S., the other from a "consumption cure" (Hydrocine, now called Oleozone), exploited by C. S. Roberts, one of the original directors of the A. D. S. Notice that the serial number on the two labels is the same, indicating a common source.

association recently admitted that with two exceptions all of the officers of the N. A. R. D. are now A. D. S. men.

Even with this admission, however, it might be considered that these A. D. S. members were interested in the N. A. R. D. in their individual capacity were it not for the positive statement recently made by Secretary Goddard of the A. D. S., who, in the *Voice of the Retail Druggist* (the A. D. S. house organ) for October, 1909, says:

"Notes, the official organ of the N. A. R. D. seems to be ashamed of the action of the delegates of its organization at the last annual meeting in electing an A. D. S. man as president, and they try to make it appear that the newly elected president was chosen by the 'Old Guard,' of which he was a great favorite.

"This is a most surprising position for Notes to take for many reasons:

"First: Because it is not in accordance with the facts.

"Second: Because it should be proud that its organization is at last officered by a man who is (through his prominent connection with the A. D. S.) a recognized representative of the retailers.

"If Notes is still in doubt as to the attitude of its subscribers toward the A. D. S., we would suggest that the editor of that publication submit the matter to its members, for we feel sure that if it were left to a vote of its subscribers, a large majority would not be unfriendly, for the reason that organization druggists generally are almost a unit behind the A. D. S.

"I cannot go into further details, but if I were in the retail business, I would get busy pushing A. D. S. preparations. You cannot lose, and it offers unlimited possibilities."

And this, it should be remembered, comes, not from a pharmacist, but from an erstwhile country newspaper publisher and promoter, who does not hesitate to tell the druggists of the country how to conduct their business—and not a few of them seem to be willing to accept his advice.

Incidentally, it may be added that the president of the N. A. R. D. was—last month—unanimously reelected president of the A. D. S.

From what has been said, then, it appears that the "Great American Fraud" has secured the unequivocal endorsement of a majority of the members of an association that might have been a powerful influence for good, in safeguarding the public welfare.

Altogether, it is deeply to be regretted that at least a very large number of pharmacists are as yet quite unwilling to dissociate themselves from the "trickery, treachery, humbug, fraud and lies" with which the nostrum business is so inextricably involved, and it is devoutly to be hoped that the very near future will bring with it a means for differentiating between the nostrum advocate and the pharmacist who is content to do a legitimate business.

In closing, let it be said that against the cooperative plan in itself there can be no objection. No one, except the druggists themselves, realizes more keenly than do physicians, the disgraceful way in which the "patent medicine" and proprietary interests have exploited for their own gain the retail druggist. And it must regretfully be admitted that the medical profession itself has been in no small degree responsible for this state of affairs—at least with regard to proprietaries. That druggists should revolt against the tyranny of these conditions is not only natural but encouraging; organization has no better field. If by cooperation the pharmacists of the country can produce legitimate products, well and good; the public will be the gainer. But that they should combine for the purpose of engaging in such a nefarious trade as that of the "patent medicine" business, not only fails to redound to the credit of pharmacy but at once damns the cooperative company thus engaged.

TANSAN MINERAL WATER

"One Use for a Senatorial Frank"

"Physicians are being solicited by mail to buy stock in The Tansan Mineral Water Company, 'an investment opportunity of unique possibilities,' shares one dollar each. The promoter is G. C. C. Howard, Eastern Manager and Selling Agent, 1626 Spruce Street, Philadelphia. Mr. Howard avoids a large

part of the expenses common to promoters of his kind, by distributing some of his literature postage free under the frank of the Hon. Boies Penrose. Senator Penrose's home is pretty close to 1626 Spruce Street; nevertheless we are sure his faults, which are many and big, do not include this sort of petty advantage of his Senatorial privilege."—Mark Sullivan, in *Collier's Weekly*.

Correspondence

Institutional Care for the Epileptic

To the Editor:—In a recent number of THE JOURNAL there appeared a query as to the institutions devoted to the care of epileptics in this country. The following is a list of the state institutions which are devoted exclusively to the care of epileptics:

Ohio.—Ohio Hospital for Epileptics, Gallipolis, Ohio. Dr. W. H. Pritchard, Superintendent. Founded 1892. Present census, 1,499. This institution cares for both the sane and insane epileptic, and it is contemplated to increase its capacity by 200 and remove all the insane epileptics thither from the state hospitals. The buildings are rather large detached buildings.

New York.—Craig Colony for Epileptics, Sonoma, N. Y. Dr. W. T. Shanahan, Superintendent. Founded 1894. Present census, 1,320. Intended only for sane epileptics of high grade, but there are also a considerable number of low-grade cases. The buildings are small cottages for the better classes and larger buildings for the low-grade. A new combined institution has recently been established in the eastern part of the state which may eventually relieve the Craig Colony of some of its lower-grade cases.

Massachusetts.—Massachusetts Hospital for Epileptics, Palmer, Mass. Dr. Everett Flood, Superintendent. Present capacity, 900. Only sane epileptics are received. Buildings for children are recently available. Buildings are small cottages.

New Jersey.—New Jersey State Village for Epileptics, Skillman, N. J. Dr. D. F. Weeks, Superintendent. Census, 305. Small cottages. The school facilities are excellent.

Kansas.—Hospital for Epileptics, Parsons, Kan. Dr. M. L. Perry, Superintendent. Census, 462. Takes both sane and insane epileptics. Both small and larger buildings are used, according to the mental grade of the patient.

Texas.—Epileptic Colony, Abilene, Texas. Dr. T. B. Bass, Superintendent. Census, 375. All classes of epileptics except the low-grade mentally are received.

Indiana.—Indiana Village for Epileptics, New Castle, Ind. Dr. W. C. Van Nuys, Superintendent. Sane epileptics only are received. The buildings are small cottages. Census, 116.

North Carolina.—Epileptics are cared for in connection with one of the state hospitals. The epileptic department is subordinate to the superintendent of the hospital.

Virginia.—A site has been purchased for a colony.

Connecticut.—The last legislature appropriated \$25,000 for the purchase of a site and the erection of buildings. The work is in the hands of a commission.

Illinois.—Illinois has had for some time an act providing for a colony but no money was obtained to purchase a site or build cottages. There has been great activity in Illinois of late in the direction of a colony.

There are many state institutions in which epileptics are received along with other defectives, either the feeble-minded or the insane. There are also some semiprivate enterprises caring for epileptics:

The Passavant Memorial Homes for the Care of Epileptics, Rochester, Pa. Census, 57.

The Emmaus Asylums, St. Charles and Marthasville, Mo., are patterned after the great colony at Bielefeld, Germany, and hence care for many classes of unfortunates. Epileptics make up the largest number of their charges.

The Pennsylvania Epileptic Hospital and Colony Farm, Oakbourne, Pa., under the presidency of Dr. Wharton Sinkler, is a semiprivate charity. Census, 86.

The Silver Cross Home, Port Deposit, Md., also cares for many epileptics.

There has recently been organized in Philadelphia an association having as its object the obtaining of employment for epileptics. Dr. Matthew Woods, of Philadelphia, is one of the leaders.

The National Association for the Study of Epilepsy and the Care and Treatment of Epileptics, under the presidency of Dr. W. F. Drewry, of Petersburg, Va., attempts to bring into closer touch those who have as a common interest the study of the epileptic and his needs; it serves as a source of information on the subject and endeavors to stimulate interest in its field in states where there is no care at present for the epileptic.

The colony or village seems to be the form of institution most generally favored. The epileptic is unfitted by his disease for life in the outside world, and in the properly designed

state institution he finds not only care, but the stimulus and opportunity to make the most of what abilities he has.

The segregation of epileptics in institutions has an additional value, aside from the good accruing to them and their friends by their removal from home surroundings—namely the prevention of the increase of the disease through procreation by the epileptic. The more advanced standpoint, advising compulsory procedures looking toward the prevention of procreation by defectives of any sort, meets the earnest support of any one conversant with the family histories of epileptics.

J. F. MUNSON, Sonyea, N. Y.

Improved Method of Applying the Plaster Jacket

To the Editor:—In THE JOURNAL, December 25 (page 2158), is an article by Dr. K. D. Panton of Vancouver, advocating an improved method of applying the plaster jacket. I am not in any sense decrying the advantages of the method, though I have considered it rather an emergency method than one of choice. My purpose in writing is to call attention to the fact that in the second edition of Bradford and Lovett's "Orthopedic Surgery," brought out ten years ago, there is on page 50 a drawing by myself, illustrating precisely the same method, which had then been in use in this community for some years. I do not know who originated it, but suspect that the method has been used by various men, who have worked out the mechanical problem for themselves, just as Dr. Panton has done. There is, I think, no question of originality involved, but purely one of priority.

FREDERICK J. COTTON, Boston.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

INSTRUCTION IN HYGIENE IN PUBLIC SCHOOLS

To the Editor:—Please refer me to matter relative to the teaching of physiology and hygiene in the public schools.

JUANITA J. LEA, M.D., Detroit.

ANSWER.—To mention only a few, the following articles may be of use to you:

Putnam, Helen C.: Laws Concerning Teaching Hygiene, THE JOURNAL A. M. A., Dec. 23, 1905, p. 1945.

Editorial: Public Instruction in Sexual Hygiene, THE JOURNAL A. M. A., March 10, 1906, p. 729.

Department of Foreign News: Teaching of Hygiene and Temperance in British Elementary Schools, THE JOURNAL A. M. A., Dec. 15, 1906, p. 2021.

Kenwood, R. H.: Hygiene as a School Subject for Elementary Schools, *Lancet*, London, Oct. 12, 1907.

Jackson, E.: Teaching regarding Sex in the Public Schools, *Denver Med. Times*, May, 1908.

EFFECT OF REMOVAL OF FAUCIAL TONSILS ON VOICE AND REPRODUCTIVE POWERS

To the Editor:—What effect would the removal of the faucial tonsils from a child have on the voice and the procreative powers?

F. J. FRESHLEY, M.D., Plainville, Ind.

ANSWER.—The opinion of laryngologists and of recent authors, so far as they treat of the matter at all, may be summed up in the following, quoted from Ingals' "Diseases of the Chest, Throat and Nasal Cavities": "It will improve the voice if it alters it in any way. There is no reason for believing that the tonsils have any influence whatever on the generative organs, though the statement of Chassaignac indicates his belief that hypertrophy of the tonsil tends to arrest the growth of these parts, and that removal of the tonsils favors their development."

HISTORICAL ACCOUNT OF BACTERIOLOGY

To the Editor:—Please give me references to some historical facts on bacteriology.

C. B. FULKERSON, Kalamazoo, Mich.

ANSWER.—Almost any standard book on bacteriology will give the historical facts desired. A brief historical account of the subject may be found in W. H. Parks' "Bacteriologic Organisms" (1905), or in A. C. Abbott's "Principles of Bacteriology" (1909), both published by Lea and Febiger, 925 Sansom St., Philadelphia.

The Public Service

Medical Department of the Army

Changes for the week ended, Jan. 1, 1910:

Smith, Herbert M., granted 3 months' leave of absence.

Talbot, E. M., capt., left Fort D. A. Russell, Wyo., on 30 days' leave of absence.

Weed, F. W., capt., left Fort Totten, N. Y., on 10 days' leave.

Goldthwaite, R. H., lieut., left Fort Niagara, N. Y., on 10 days' leave of absence.

Field, Peter C., left Fort Slocum, N. Y., on detached duty en route to Detroit.

Bloombergh, H. D., capt., detailed as a member of the board of medical officers appointed in Par. 21, S. O. 16, Jan. 16, 1906, War Dept., for the purpose of studying tropical diseases as they exist in the Philippine Islands, vice Capt. James M. Phalen, Medical Corps, relieved.

Boyer, Perry L.; Woodhall, Wm. P.; Macy, Frederick S., capt., and McCord, Donald P.; Delacroix, A. C.; Bierbower, H. C., 1st lieuts., M. R. C., relieved from duty in the Philippines Division, and to sail on transport leaving Manila, P. I., about April 15, 1910, and on arrival in San Francisco, to report by telegraph to the Adjutant General of the Army, for further orders.

Schmitter, Ferdinand, capt., ordered to Fort Slocum, N. Y., instead of Fort Logan, Colo., for duty at expiration of his present leave of absence.

Gray, William W., col.; Clayton, Jere B., major; Collins, C. C.; Smart, Wm. M., and Connor, C. H., capt.; Warringer, B. B., and Thorne, James I., 1st lieuts., M. R. C., relieved from duty in the Philippines Division, and to sail on transport leaving Manila about May 15, 1910, and on arrival at San Francisco, to report by telegraph to the Adjutant General of the Army, for further orders.

Smith, Allen M., major, granted 7 days' leave of absence.

The following named officers of the Medical Corps and Medical Reserve Corps are relieved from duty at the stations designated after their respective names, and will proceed to San Francisco, and take transport to sail from that place on or about March 5, 1910, for the Philippine Islands, and on arrival at Manila will report to commanding general, Philippines Division, for assignment to duty: Foster, Charles L., capt., Army General Hospital, Presidio of San Francisco, Cal.; Morris, Samuel J., capt., Fort Washington, Md.; Coburn, Henry C., Jr., 1st lieut., Fort Slocum, N. Y.; Snow, Corydon G., 1st lieut., Fort Leavenworth, Kan.; McDiarmid, Norman L., 1st lieut., Jefferson Barracks, Mo.; Kershner, Warren E., 1st lieut., M. R. C., Fort Hancock, N. J.; Griffin, John C., 1st lieut., M. R. C., Fort Howard, Md.; Heterick, Robert H., 1st lieut., M. R. C., Fort Oglethorpe, Ga.; Browne, Roderic W., 1st lieut., M. R. C., Fort Monroe, Va.

Purviance, Wm. E.; Chamberlain, W. P., and Truby, Albert E., majors, appointed members of board to meet at Manila, P. I., for the examination of such officers of the Medical Corps as may be ordered before it to determine their fitness for promotion.

Medical Corps of the Navy

Changes for the week ended Jan. 1, 1910:

Taylor, J. S., surgeon, detached from the *New York* and ordered to the *Mississippi*.

Robnett, A. H., P. A. surgeon, detached from the Naval Hospital, Boston, and ordered to the Naval Training Station, Narragansett Bay, R. I.

Public Health and Marine-Hospital Service.

List of changes for the week ended Dec. 29, 1909:

Trask, J. W., asst. surgeon-general, granted 3½ days' leave of absence, from December 28, 1909.

Austin, H. W., surgeon, detailed as a member of a Revenue-Cutter Service Retiring Board, to meet at the Barge Office, New York, N. Y., December 27, 1909.

Carter, H. R., surgeon, granted 2 months' leave of absence from December 5, 1909, on account of sickness.

Fricks, L. D., passed asst. surgeon, leave of absence for 3 months from September 24, 1909, amended to read 2 months and 18 days.

Fox, Carroll, passed asst. surgeon, granted 6 days' leave of absence from December 6, 1909, under paragraph 191, Service Regulations.

McClintic, T. B., passed asst. surgeon, granted 5 days' leave of absence from December 27, 1909, under paragraph 191, Service Regulations.

Francis, Edward, passed asst. surgeon, leave of absence for 6 days from December 6, 1909, revoked.

Collins, G. L., passed asst. surgeon, detailed as a member of a Revenue-Cutter Service Retiring Board to meet at the Barge Office, New York, December 27, 1909.

Spratt, R. D., passed asst. surgeon, granted 7 days' leave of absence from December 30, 1909.

Wollenberg, R. A. C., asst. surgeon, leave of absence for 2 months from October 6, 1909, amended to read 20 days.

Warner, H. J., asst. surgeon, granted 7 days' leave of absence from December 23, 1909.

Wood, C. E., asst. surgeon, granted 3 days' leave of absence from December 21, 1909, on account of sickness.

Leake, James P., asst. surgeon, relieved from duty at Chicago and directed to proceed to Ellis Island, N. Y., and report to the Chief Medical Officer for duty.

Kolb, L., asst. surgeon, granted 3 days' leave of absence from December 24, 1909, under paragraph 191, Service Regulations.

Branham, H. M., acting asst. surgeon, leave of absence for 3 days from December 15, 1909, without pay, revoked.

Fox, M. C., acting asst. surgeon, granted 15 days' leave of absence from January 3, 1910.

Gill, S. G., acting asst. surgeon, granted 3 days' leave of absence from December 24, 1909, under paragraph 210, Service Regulations.

Walsh, W. H., acting asst. surgeon, granted 4 days' leave of absence from December 23, 1909, under paragraph 210, Service Regulations.

Watkins, McD., acting asst. surgeon, granted 2 days' leave of absence from December 25, 1909.

BOARD CONVENED

Board of medical officers convened to meet at the Marine Hospital at Baltimore, December 22, 1909, for the purpose of re-examining an alien. Detail for the board: Surgeon W. P. McIntosh, chairman; Passed Asst. Surgeon M. K. Gwyn; Passed Asst. Surgeon J. W. Schereschewsky, recorder.

Health Reports

The following have been reported to the Public Health Service, during the week ended Dec. 31, 1909:

SMALLPOX—UNITED STATES

Alabama: Mobile, Dec. 4-11, 1 case; Montgomery, 10 cases.
Florida: Jacksonville, Dec. 4-11, 1 case.
Indiana: Muncie, Dec. 4-11, 2 cases; South Bend, 1 case.
Kentucky: Lexington, Dec. 7-14, 2 cases.
Tennessee: Knoxville, Dec. 11-18, 1 case; Nashville, Nov. 13-20, 2 cases.
Wisconsin: La Crosse, Dec. 4-11, 5 cases; Milwaukee, 1 case; Superior, 2 cases.

SMALLPOX—INSULAR

Philippine Islands: Manila, Oct. 30-Nov. 6, 1 case.

SMALLPOX—FOREIGN

Canada: Halifax, Dec. 4-11, 1 case.
France: Paris, Nov. 27-Dec. 4, 4 cases.
Great Britain: London, Nov. 20-27, 4 cases.
Italy: Naples, Nov. 27-Dec. 5, 6 cases, 2 deaths.
Mexico: Aguascalientes, Dec. 4-11, 2 deaths; Mexico City, Nov. 6-13, 1 death; Monterey, Dec. 5-12, 1 death.
Newfoundland: St. Johns, Dec. 4-11, 3 cases.
Portugal: Lisbon, Nov. 27-Dec. 4, 3 cases.
Russia: Libau, Nov. 21-Dec. 5, 4 cases, 1 death; Moscow, Nov. 13-20, 4 cases, 2 deaths; Riga, Nov. 20-Dec. 4, 22 cases; Warsaw, Sept. 25-Oct. 23, 39 deaths.
Spain: Barcelona, Nov. 20-Dec. 6, 2 deaths; Madrid, Nov. 1-30, 96 deaths; Seville, 1 death.
Turkey: Constantinople, Nov. 21-28, 1 death; Smyrna, Oct. 15-Nov. 4, 59 deaths; Valencia, Nov. 15-Dec. 4, 2 cases.

YELLOW FEVER

Ecuador: Guayaquil, Nov. 13-27, 12 deaths.
Venezuela: Caracas, Nov. 22-25, 2 cases.
Philippine Islands: Manila, Oct. 30-Nov. 6, 11 cases, 10 deaths; Provinces, 160 cases, 121 deaths.

CHOLERA

India: Rangoon, Nov. 6-13, 10 deaths.
Java: Batavia, Nov. 6-13, 218 cases, 26 deaths.
Russia, general, Nov. 14-20, 85 cases, 39 deaths; St. Petersburg, 31 cases, 5 deaths.
Sumatra: Palembang, Nov. 6, present.

PLAGUE

Ecuador: Guayaquil, Nov. 13-27, 39 deaths.
India, general, Nov. 6-13, 5,002 cases, 3,901 deaths; Rangoon, 1 death.
Japan: Kobe, to Nov. 30, 244 cases.

Association News

NEW MEMBERS

List of new members of the American Medical Association for the month of December, 1909.

ALABAMA

Hogan, E. P., Birmingham.
Pearson, C. F., Montgomery.
Scott, E. M., Avondale.
Sellers, H. G., Birmingham.
Westmoreland, H. D., Huntsville.

CALIFORNIA

Barry, Ernest, San Francisco.
Bricca, C. R., San Francisco.
Christian, J. T., Lodi.
Fleischner, E. C., San Francisco.
Holland, J. H., Riverside.
Ledyard, C. C., Pasadena.
Hunter, Leo, San Francisco.
Magnus, M. E., San Francisco.
Putnam, V. E., San Francisco.
Shields, J. W., San Francisco.
Sweet, Earl, Los Angeles.
Thorne, I. W., San Francisco.
Tiffany, E. N., Coalinga.
Wright, A. H., San Francisco.

COLORADO

Doane, Bert L., Del Norte.

CONNECTICUT

Bartlett, W. B., Hartford.
Godfrey, W. T., Stamford.

FLORIDA

Pillans, P. P., Orlando.

GEORGIA

Lyle, W. C., Augusta.
McArthur, T. J., Cordele.

ILLINOIS

Chapman, F. P., Oak Park.
Conroy, C. L., Chicago.
Davenport, G. L., Chicago.
Deane, F. H., Hindsboro.
Edmonson, O. B., Clinton.
Gordon, J. M., Chicago.
Hayward, Martha, Aurora.
Inwall, C. W., Chicago.
Kalliontzis, C. P., Chicago.
Kraus, H. A., Chicago.
McGann, M. E., Joliet.
Mellinger, H. V., Chicago.
Meyer, Rudolph, Chicago.
Meyerovitz, Max, Chicago.
Mosser, Robert, Chicago.
Potter, W. E., Oak Park.
Riggs, J. P., Media.
Rogers, H. H., Canton.
Rosenblatt, Sol, Chicago.
Rosenzweig, Louis, Chicago.
Stephen, H. E., Joliet.
Webster, G. O., Murrayville.

INDIANA

Inks, C. A., Nappanee.
Jennings, W. L., Bridgeport.

IOWA

Hovenden, J. H., Laurens.
Parrish, W. O., Osceola.
Reppert, Lyell, Muscatine.
Reinecke, E. L., Dubuque.
Ward, E. C., Mt. Auburn.

KANSAS

Coe, W. B., Tonganoxie.
Dobson, S. J., Ema.
Lloyd, C. D., Leavenworth.
Rea, J. G., Wellington.
Wood, A. J., Fulton.

KENTUCKY

Higbee, B. D., Clinton.
Jeit, N. A., Brooksville.
Lawson, N. E., Red Ash.
McClellan, Mary C., Lexington.
Nickell, G. C., Morehead.

MARYLAND

Browne, J. N., Baltimore.
Hodgson, H. M., Lonaconing.
Hutchins, E. H., Baltimore.
Lassman, G. A., Baltimore.

MASSACHUSETTS

Denning, F. J., S. Boston.

MICHIGAN

Campbell, W. A., Muskegon.
Cramer, J. T., Muskegon.
Goodnow, L. L., Michiganame.
Jackson, J. B., Kalamazoo.
King, W. T., Allouez.
McEwan, J. W., Detroit.
Roberson, G. G., Utica.
Wickware, M. M., Cass City.
Wilson, P. S., Negaunee.

MINNESOTA

Arneson, Thomas, Balaton.
Kean, N. D., Coleraine.
Mignussen, G. A., Aitken.
Morris, Minor, Hopkins.
Tilton, A. J., Harris.

MISSOURI

Fischer, J. G. W., Alma.
Harris, C. G., Festus.
Rehfeldt, C. S., St. Louis.
Russler, J. J., St. Louis.
Scheele, M. H., St. Louis.
Schoor, Edward, Garden City.
Scott, J. N., Kansas City.
Summers, J. S., Jefferson City.
Wenger, O. C., St. Louis.

NEBRASKA

Morse, R. H., Wisner.
Swartzlander, L. C., Omaha.

NEVADA

Schwartz, C. E., Luckyboy.
NEW MEXICO
McCormick, W. W., San Pedro.

NEW JERSEY

Hasking, A. P., Jersey City.
Jalin, A. E., Jersey City.
Miner, Donald, Jersey City.

NEW YORK

Blanchard, R. B., Jamestown.
Gilmore, A. W., Auburn.
Gould, D. N., Sherburne.
Haberman, J. V., New York City.
Hays, H. M., New York City.
Hirsh, C. E., Brooklyn.
Lobenstine, R. W., New York City.
Schoenberg, M. J., New York City.
Van Winkle, L. P., Amityville.
Richardson, C. H., New York City.

NORTH CAROLINA

Kirby, G. S., Marion.
Linville, W. C., Winston-Salem.

NORTH DAKOTA

Husser, A. A., Berthold.

OHIO

Coleman, J. A., Toledo.
Heyl, A. B., Cincinnati.
Jones, A. L., Lima.
Manley, O. T., Cleveland.
Miller, T. C., Massillon.
Murphy, E. D., Antwerp.
Steer, C. L., Lima.
Syler, A. H., Sugar Creek.
Watkins, F. L., Columbus.

OKLAHOMA

Hughes, J. E., Shawnee.

OREGON

Macrum, C. A., Portland.

PENNSYLVANIA

Boyer, G. H., Pottsville.
Campbell, W. B., Jackson.
Chalfant, H. B., Huntingdon.
Dengler, R. H., Philadelphia.
Hinchcliffe, J. H., Philadelphia.
Kunkel, O. F., Klinesville.
Lubken, W. O., Johnstown.
Mitchell, L. T., Aspinwall.
Molyneux, S. D., Nanticoke.
Muller, W. K., Philadelphia.
Myers, N. R., Wanamie.
Putts, B. S., Mont Alto.

SOUTH CAROLINA

Bell, F. A., Sampit.
Bowen, W. C., Belton.
Coggeshall, J. T., Darlington.
Davis, J. W., Clinton.
Haynie, W. R., Belton.
Hughey, J. B., Greenwood.
Johnson, F. B., Charleston.
Pepper, W. H., Anderson.
Smith, D. H., Florence.
White, W. G., Yorkville.

SOUTH DAKOTA

Church, E. O., Revillo.

TENNESSEE

Baird, W. O., Henderson.
Swanay, O. M., Treadway.

UTAH

Clark, F. G., Ogden.
Morrell, J. R., Ogden.
Smith, E. H., Ogden.

VIRGINIA

Arday, N. I., Kooke.
Driver, W. F., New Market.

WASHINGTON

Campbell, F. M., LaCrosse.
Jacobson, L. H., Seattle.
Johanson, N. A., Seattle.
Rich, E. A., Tacoma.
Rosenkranz, O. H. G., Farmington.

WEST VIRGINIA

Leon, M., Mannington.

WISCONSIN

Chaney, Eugene, Wauwatosa.
Halsey, H. A., Milwaukee.
Johnston, G. B., Abbotsford.
McGovern, P. H., Milwaukee.
Malone, E. W., Waukesha.
McCarthy, T. H., Madison.
Newell, F. F., Burlington.
Parkhill, F. G., Delavan.
Rice, F. A., Delavan.
Rittenhouse, W., Lake Geneva.
Weld, W. H., Ft. Atkinson.

Society Proceedings

COMING MEETING

Medical Society of State of New York, Albany, January 25.

WESTERN SURGICAL AND GYNECOLOGICAL ASSOCIATION

Nineteenth Annual Meeting, Held at Omaha, Neb., Dec. 20-21, 1909
The President, DR. ARTHUR L. WRIGHT, Carroll, Iowa, in the Chair

The officers elected were given in THE JOURNAL, Jan. 1, 1910, p. 60.

Gastrointestinal Surgery

DR. T. C. WITHERSPOON, Butte, Mont.: In this paper I call attention to an occurrence which I believe throws some light on the question of paralytic conditions observed in the stomach and bowels, and report the following case as an illustration. A man previously healthy, except for gastric symptoms, wiry and active, suffered from gastric ulcer of a chronic type. The ulcer was

not situated in the pylorus, but to the left, and there was no obstruction to outflow from the stomach, nor was there dilatation. Eight days after the gastroenterostomy the stomach became acutely dilated until its lower curvature reached the pelvic cavity. A second operation, done because of the dilatation, nine days after the first, proved the duodenum was normal; the bowels were flat, the gastrojejunal opening still patulous, and no point of obstruction could be discovered beyond the stomach. Neither was there evidence of inflammation of the stomach or intestinal wall or peritoneum. A gastrostomy was performed and the fluid in the stomach had to be removed by pumping it out, as the stomach was completely paralyzed. The original incision in the epigastric area was not healed after eight days. It opened without instrumentation immediately on snipping the stitches at the second operation. On the ninth day this man suffered considerable pain in the stomach area and behind to the left. Following the gastrostomy the pain ceased. The epigastric incision through which both operations were done was closed at the second operation by through-and-through silkworm gut stitches, and healed without the slightest inflammatory reaction. The conclusions to which I came after observing this case were: 1. The acute dilatation was the direct result of a paralysis of the stomach wall. 2. The lack of healing in the epigastric incision following a careful closure at the time of the first operation, and not associated with an evidence of infection, must be attributed to a trophic disturbance. 3. The stomach and epigastric abdominal wall are both innervated by the same spinal segment. It is a matter of logical deduction that the central apparatus was responsible for disturbance in both stomach and wound. 4. Some toxic agent only could have become so rapidly operative after eight full days of a normal condition following the operation, and this agent must have produced its effects by acting on the ganglionic nerve cells in the spinal segment. 5. This toxic agent most probably took its origin from an abnormal fermentation within the bowel and altered protective action of the mucous membrane of the bowel or of the liver failed to render harmless some product absorbed from the bowel lumen. In the last two and a half years I have had forty-six patients with general peritonitis following perforation of the appendix and of stomach ulcer recover. In these cases a continuous proctoclysis was practiced in only two. The method of administering the water was that of intermittent injections into the rectum, averaging from 60 to 80 ounces in twenty-four hours. When the patients' condition allowed removal of the appendix or closure of the ulcer and the establishment of pelvic drainage, they recovered. During this period I have had five deaths when simple drain of the pelvis was all that was done due to the extreme condition of the patient. All agree as to the value of introducing water by rectum and keeping the stomach empty, but I think that too much stress has been laid on the value of continuous proctoclysis, using physiologic salt solution. The Fowler position, with pelvic drain, seems to be the life-saving factor in general peritonitis.

DISCUSSION

DR. LEONARD FREEMAN, Denver, Col.: Dr. Witherspoon has called attention to dilatation of the stomach which takes place without apparently mechanical cause, and he attributes to some of these cases the action of bacteria on the nervous system. That may be true, but I doubt the absence of mechanical cause in addition to the action of the bacteria on the nervous system. We know that there are certain individuals who have stomachs that are difficult to empty, and that difficulty in emptying the stomach is due perhaps to a sagging of the intestines, large and small, particularly the large intestine, in pulling down on the stomach and to a certain extent influencing the pylorus. Such cases occur once in a while and account for many difficulties in the emptying of the stomach. I think that if we were to trace these cases of dilatation of the stomach we would probably find in the stomach of those people who have had such dilatations some difficulty in the emptying of the stomach originally. Some time ago I operated in a very simple pelvic case, which was followed by dilatation of the stomach clear down to the pelvis, resulting in the death of the patient. The autopsy showed that there was no absolute obstruction to the pylorus. There was no obstruction of the intestines them-

selves, and yet a fresh adhesion took place at the site of the pelvic operation to the omentum, which pulled on the large intestine, and that in turn pulled on the gastrocolic omentum to such an extent as to shut off the pylorus. This was demonstrated at the autopsy and accounted for the fact that the stomach had dilated to a certain extent. I think a combination of these things, namely, a stomach which does not empty itself very readily, combined with a toxemia and possibly with some pelvic affection, will serve to explain these cases better than to adopt the theory that the trouble is entirely nervous.

DR. CLIFFORD U. COLLINS, Peoria, Ill.: I am interested in the reference which was made to the separation of the abdominal incision. Madelung some years ago reported a number of cases in which separation of the abdominal incision had occurred and came to the conclusion that the kind of suture material used for closure of the wound had nothing to do with the separation. Dr. Emil Ries a few months ago reported three cases in which separation of the incision had occurred. The separation began at the peritoneal layer, and there was a gradual separation until the skin was reached, the skin being the last process in the separation. In the first case Dr. Witherspoon mentioned, did the peritoneal and muscular layers show any granulating process to indicate that separation had occurred some days before? The second case was rather unique in the fact that separation occurred first in the skin and then the muscle layer. In most of the cases reported the separation occurred in the peritoneal and muscular layers.

DR. CHARLES H. MAYO, Rochester, Minn.: I understood Dr. Witherspoon to recommend gastrostomy for the treatment of acute dilatation of the stomach. In the cases reported the stomach was greatly distended and flaccid and so paralyzed that it would not empty through the incision made into it, and the contents had to be pumped out. A great many more cases of dilatation of the stomach occur than is generally believed, and I would recommend the more frequent use of the stomach tube. In most cases the stomach tube is applied in the post-operative treatment of surgical cases when vomiting occurs or sick stomach exists. When these patients are not doing well it will be found many times that there is so much paralysis that there is no effort on the part of the stomach to empty itself, and yet it will be found to contain half a pail full of fluid, the pressure of which on the abdominal wall has a great deal to do in producing anemia of the area of the blood supply which promotes healing, so that if we have an internal pressure beneath the suture line, limiting the capacity of the abdomen, we will have slow healing, and when we want to reoperate, if we cut the sutures, the wound readily opens, and it quickly heals after distention is relieved. Often the distention can be relieved by resorting to the stomach tube without a secondary operation, and I think a little more stress should be laid on that point.

DR. I. B. PERKINS, Denver, Colo.: It is usual to have considerable nausea following anesthesia, and for several years I have made it a practice to put the patient in the high Fowler position, and I find that in that position patients have much less nausea, and can take water freely, and that it passes readily into the intestines. I also find that there is much less dilatation of the stomach in these cases than I formerly had. I had occasion to experiment a little on myself in this line. I took an anesthetic to determine whether or not it was the psychic effect or whether it was due to my theory of drainage. At any rate, I had no nausea after I was put in the Fowler position.

DR. CHARLES H. WALLACE, St. Joseph, Mo.: I think we all agree that the failure of union of abdominal incisions, or incisions anywhere, is due to sepsis, no matter whether the sepsis be preoperative or postoperative. Another condition which I have encountered two or three times in the failure of union of the abdominal wall, and which I think is a factor in these cases, is the condition of the blood of the patient before operation. I recall two cases in which there was pronounced anemia, although operation was imperative, and there was failure of union of the incision, evidently due to the general anemias that existed. Of course, we witness this failure of union in other constitutional dyscrasias, such as chronic nephritis, and when we are compelled to operate on such patients

the wounds may fail to unite on account of the constitutional condition present.

Abdominal Contusions with Special Reference to Indications for Early Operation

DR. L. W. LITIG, Iowa City, reported four cases of contusion of the abdomen with a view to giving the indications for early operation. After discussing the symptoms and diagnosis he said that if there be a contusion of the abdomen and if the muscles are rigid, one should operate. Patients may be seemingly well for a number of hours or even days, and injury to the mesentery may result in gangrene of the intestine and death. Given a case of abdominal contusion, followed by board-like rigidity of the abdominal muscles, which does not quickly disappear, a laparotomy should be performed immediately. This symptom may be absent during shock in the absence of pain, but its absence under these conditions must not be regarded as a favorable symptom. There may be some cases in which necessity for immediate operation is not clear. In such cases he would not give opium. There will be other cases which do not seem severe, and in which an operation does not seem to be indicated. In these cases also he would not give opium.

DISCUSSION

DR. CHARLES W. OVIATT, Oshkosh, Wis.: A case recently came under my observation of a man who was struck in the right iliac region with a board from a circular saw. In this case rigidity was marked from the start, but other symptoms did not develop for forty-eight hours. The patient refused operation, and died. Autopsy revealed that the cecum was torn loose from its attachment, with a hole in the bowel. No symptoms which would seem to call for immediate operation presented themselves for at least thirty-six hours, and yet this case emphasizes the importance of operating early when rigidity is marked.

Foreign Body in the Intestine

DR. CHARLES W. OVIATT, Oshkosh, Wis., reported the following interesting and unique case:

A Swede, male, aged 53, was admitted to St. Mary's Hospital, Feb. 22, 1908. It was impossible to obtain anything like a clear history of the patient's previous condition, and no account was given of the swallowing of the foreign body. He complained of pain low down in the right side and on physical examination a circumscribed area of resistance could easily be made out with pain on pressure at this point. The pulse and temperature were normal. The diagnosis of appendicitis was perhaps too quickly made, but inability to get a clear history of the case is the excuse. On opening the abdomen through the outer border of the right rectus, a pointed foreign substance could be felt in the cecum. Through a very short incision into this viscus, a lead pencil, seven and a half inches in length, was removed. The appendix was small, presented no evidence of disease and was not removed. On the day following the operation the patient was shown the pencil and asked if he could account for its presence inside of him. He then remembered that about ten weeks before, while engaged in a game of cards in a saloon, acting in the capacity of score-keeper, he had the pencil in his mouth and during a fit of laughter swallowed it. He stated that for a day or two following the accident he had some pain in his stomach, but after that had experienced no trouble and had forgotten the incident entirely.

Secondary (Posterior) Gastrojejunostomy for Gastric Ulcer

DR. J. F. PERCY, Galena, Ill., reported a case in which, following an anterior gastroenterostomy performed eight years previously, he removed the jejunum from the stomach wall and closed up the openings, including the ulcer, and then did a posterior gastrojejunostomy with the short loop. He does not believe that hyperacidity accounts for all phases of the causes of these ulcers, but gives the chief rôle to chronic cholecystitis. His paper will appear in full in THE JOURNAL later.

DISCUSSION

DR. L. L. McARTHUR, Chicago: I am inclined to agree with Dr. Percy as to the influence which an abnormal flow of bile

may have in the maintenance of ulcerative conditions in the stomach, and the maintenance of hyperacidity. The bile is naturally the antidote of the acid secretions, and irritation about the gall-bladder will not infrequently influence the condition of the stomach secretions. The theory advanced by Dr. Percy might be further elucidated by laboratory experiments, and I would like to suggest that he have them carried out.

DR. CHARLES H. MAYO, Rochester, Minn.: This paper brings to my mind that, ten years ago, when there were comparatively few gastroenterostomies done, we heard more about ulcers of the jejunum in proportion than we do to-day. Out of a good many gastroenterostomies we find that condition very rare in our own experience. Our experience, however, corresponds to what Dr. Percy has reported, namely, after anterior gastroenterostomy the ulcer has been at the site of the gastroenterostomy instead of being lower down in the bowel.

DR. PERCY: I have just completed some laboratory work by which I shall try to prove some of the things that are merely visionary now.

(To be continued)

SOUTHERN SURGICAL AND GYNECOLOGICAL ASSOCIATION

Twenty-second Annual Session, held at Hot Springs, Va., Dec. 14-16, 1909

(Continued from page 72)

Treatment of Advanced Extrauterine Pregnancy

DR. REUBEN PETERSON, Ann Arbor, Mich., drew the following conclusions:

1. Wherever conditions permit, operation for the removal of the gestation sac is indicated in the first half of an extrauterine pregnancy, since at this period the mother is in great danger from rupture and sepsis, and the chances for the survival of the fetus are very poor. 2. During the latter part of an extrauterine gestation the chances of rupture and a fatal hemorrhage are much less (4.8 per cent.) and the chances of the survival of the fetus are much greater. 3. While malnutrition and malformation of the extrauterine child are more common than with the fetus under normal conditions, they are not frequent enough to contraindicate attempts at saving its life; hence, under favorable surroundings, when the patient can be watched, she should be allowed to go within two or three weeks of term before operation. 4. Since the maternal mortality is more than twice as great after operations in advanced extrauterine pregnancy when the placenta is left behind, its removal should be one of the cardinal principles of each operation. 5. In the discoid variety of placenta, in which only a small surface of this organ is not attached, the blood supply must be controlled either by tying the vessels, or by compression of the aorta before an attempt be made to remove the placenta. 6. When, for any reason, removal of the placenta is impossible, the sac should be stitched and the placenta shut off from the peritoneal cavity by gauze. 7. Dependent drainage through the vagina should be secured whenever possible.

Advantages of Neglect in Appendicitis Operations

DR. ROBERT T. MORRIS, New York City: We have conscientiously tried to do too much in appendicitis operations and have damaged our patients unnecessarily. According to the principles of the pathologic era in surgery, we felt bound to remove all the products of infection in a most thorough way. We made elaborate arrangements for drainage, and we took the greatest care to avoid infection of the normal peritoneum. All these things which we did with so much care and caution were commendable until we learned step by step over to the principles of the fourth or physiologic era in surgery, allowing the patient to do most of the work of managing infections himself. The function of the surgeon to-day is merely to turn the tide of battle, and to place the patient in such condition that he can call out his own resources and fight the battle better than the surgeon could do it for him.

The application of most of our resources damaged the patient in such a way that he was prevented from calling out his own good resources. If we neglect to protect the peritoneum by putting in a mass of gauze while at work, it gives the patient an advantage, because the fear of pus infecting the normal peritoneum is now known to be a fanciful fear. If we neglect to make very long incisions or multiple incisions, it gives the patient an advantage, because he avoids the shock incident to large incisions, and he loses the menace of subsequent hernia. If we neglect to wash or wipe the field of operation thoroughly the patient has the advantage of avoiding the shock, and of the prolonged period of anesthesia required for such detailed work. If we neglect to cleanse and beautify the surroundings of a postoperative fistula, the patient has the advantage of rapid closure of such a fistula through the rapid contraction of connective tissue which is not meddled with.

DISCUSSION

DR. JOSEPH PRICE, Philadelphia: I want to condemn unqualifiedly stump operations of every character, because we are too far advanced to leave one-sixth or one-eighth of the appendix when operating for appendicitis. A clean removal of the appendix is a simple procedure.

DR. W. P. CARR, Washington, D. C.: Dr. Morris is right in one respect, namely, that in the bad cases of appendicitis we must fit the operation to the condition of the patient. I have seen many patients recover after a simple opening has been made, and pus let out, nothing further being done except perhaps to put a catgut ligature around the appendix and remove it, if possible to do so at the time. Such patients would not have stood a prolonged operation.

DR. J. M. T. FINNEY, Baltimore: I wish to take exception to the word "neglect" in the title of Dr. Morris' paper, and venture by that, observance of certain fundamental principles of surgery. If there is anything that has been accepted as settled to-day, it is that unnecessary handling of the tissues, or unnecessary trauma inflicted on the intestinal organs, especially, is a surgical sin; also the unnecessary application of certain irritating antiseptic solutions to the peritoneal surface is also a surgical sin. In reference to the management of the stump of the appendix, I want to be considered as one of those who ligate the stump; I have always done so, and from an experience of a thousand or more cases of appendicitis, in which this has been done, I do not recall a single instance in which the slightest degree of trouble could be referred to the stump. It seems to me that we are blaming a system for the faulty application of it.

Unusual Type of Bladder Tumor

DR. ROBERT C. BRYAN, Richmond, Va.: I here report briefly a cavernous angioma of the bladder. By suprapubic cystostomy the tumor was located with difficulty, owing to the collapsed condition of the bladder. With serrated scissors it was carefully dissected out of the mucosa, the base was thoroughly seared with the Paquelin cautery, the free edges of the mucous membrane were stitched together with catgut, the bladder sewed to the abdominal wall, and drainage established. There was little hemorrhage. The patient reacted well, and made a good recovery.

Surgery of the Knee-Joint

DR. J. GARLAND SHERRILL, Louisville: Of the major traumas, fracture of the patella is of chief importance. This may be a very simple injury, if, for instance, the fracture is incomplete and the fragments are not separated. On the other hand, a compound fracture of this bone becomes a most serious accident. The result, after the so-called expectant treatment of fracture of this bone, may be sufficiently good to insure fair functional use of the limb. The results of the open operative treatment, however, are so much better that in healthy young patients and under proper surroundings the open method is strongly to be advised. My plan of treatment in fracture of the patella consists in a semilunar incision across the front of the joint at or just below the site of the

fracture. Any clots of blood present are removed and all bleeding vessels controlled. The lacerated tendon of the quadriceps muscle is then sutured on each side and over the patella with a chromic catgut. The fascia and skin are then closed with catgut without drainage. After the wound is dressed the limb is placed in plaster of Paris. Passive motion is advisable in the third week and the patient can walk before the end of the fourth week. The fractures of the femur and tibia are always the accompaniment of very severe violence and ought to be treated according to the general principles for use in such injuries. Dislocation of the semilunar cartilage proves very troublesome to the patient and frequently causes great pain as well as fixation of the joint. The internal cartilage is affected more frequently than the external and the dislocation may be partial as a folding of the cartilage on itself, or the entire cartilage may be separated. The causative factor is in most cases a sudden torsion of the tibia, although a blow driving the tibia backward in moderate flexion might produce it. The diagnosis is to be made by the sudden fixation of a previously healthy joint accompanied by a sharp pain with subsequent restoration of function, and later a recurrence of the symptoms. Effusion into the joint may follow the injury and in some cases the cartilage may be felt in front of the joint near the margin of the tibia. Pressure over its former attachment will elicit pain and soreness. The latter is a valuable point in the diagnosis of this condition from loose (extraneous) bodies in the joints. Treatment is either palliative or operative.

DISCUSSION

DR. A. R. SHANDS, Washington, D. C.: I have no more hesitation in opening the knee-joint than I would in opening the abdomen, and I have been doing it right along in cases of obstinate synovitis. In many cases of recurrent synovitis the joint has never been emptied of synovial fluid. The accumulative synovial fluid forms a mass similar to that in the bottom of an old vinegar barrel, and that is what causes recurrence of the trouble.

DR. W. O. ROBERTS, Louisville: I have long since given up the use of metal appliances for holding fragments together. I resort to the open method in the treatment in cases in which we have the advantages of a suitable infirmary. I have seen but two cases of dislocation of the patella.

DR. HORACE J. WHITACRE, Cincinnati: I wish to report two cases of loose semilunar cartilage, one in a boy, 10 years of age, in which the cartilage was organized and was removed; the other in a patient in whom the cartilage seemed to be in fairly good shape, and was sutured in place. The boy has remained in good condition except that he has had some pain from time to time when he exerted himself, but he has had no further displacement.

DR. JOHN C. WYBOR, Clifton Forge, Va.: I recall one case in which I found fifteen floating bodies in the knee-joint ranging in size from the size of the end of my little finger to more than an inch in diameter. Operation was followed by a good result.

Myositis Ossificans Traumatica

DR. J. M. T. FINNEY, Baltimore: The pathologic condition which forms the basis of this paper is one, the existence of which has been recognized for a long time, but only within a comparatively few years has it attracted any general attention. Including the seven cases reported in the paper, over 150 cases now have been so far recorded. There is always danger of mistaking this disease for sarcoma. Three of my patients came to me with a provisional diagnosis of sarcoma of the femur. There still exists a considerable difference of opinion as to the manner in which these bony deposits take place, and the source from which they come. A number of distinct conditions have been grouped under the general head of "myositis ossificans;" these all represent different pathologic processes.

The factor most concerned in the production of this trouble is unquestionably a single severe trauma, as, for instance, a kick by a horse. Nearly one-half of all the cases observed in the front of the thigh, involving the quadriceps extensor muscle. This and the flexor muscles of the arm seem to be

the most common sights. The symptomatology is, as a rule, characteristic. Following a severe trauma there may be noticed the usual clinical phenomena, namely, localized swelling, tenderness, ecchymosis and disturbance of function. The ultimate prognosis is good. So far as the individual operation is concerned, it depends largely on the stage in which it is performed. There is always tendency to recurrence in those patients operated on early during the period of activity of the osteoid tissue. In later cases the condition does not tend to recur, that is, cases in which growth of bone has ceased. The pathology of the condition has given rise to a great deal of discussion, and it is yet not definitely determined. As prophylactic measures, aspiration and pressure are of somewhat doubtful efficacy, although highly recommended. Early incision with the evacuation of effused blood, the thorough removal of small fragments and spiculæ of bone, with drainage of the affected area may, in some instances, prevent the formation of the trouble. Massage in the early stages is contraindicated, as it may affect unfavorably the development of the trouble by stimulating the production of bone. The indications for operation are the presence of the tumor, the disturbance of function, pain, etc.

Cholecystenterostomy in Certain Cases of Pancreatitis

DR. LE GRAND GUERRY, Columbia, S. C., made a plea for the more general use of this operation in this disease. He reported a case which is typical of a number to serve as a concrete illustration.

Mr. M., aged 38, married, several years ago had an attack of pain in the gall-bladder region with slight jaundice, pain occasionally radiating under the right shoulder, slight fever, indigestion, etc. These attacks occurred at infrequent intervals, but there was gradual weakening and loss of flesh. There was no sugar in the urine. A diagnosis of gall-stones or pancreatitis or both was made, and at the operation a slightly distended gall-bladder, with no stones, was found. The bladder was full of the characteristic ropy, tarry, black bile with a well-marked colon bacilli odor to it. The head of the pancreas was markedly enlarged. Operation consisted in cholecystotomy after the common duct had been thoroughly explored and a probe passed into the duodenum to insure the patency of the choledochus. Drainage was continued three months, during which time the patient gained twenty pounds in weight and was completely restored to health. Later, he had another attack, at which time cholecystenterostomy was done with the result that he has been permanently relieved from all of his symptoms and is now in perfect health.

Pancreatic Hemorrhage and Acute Pancreatitis

DR. JOSEPH RANSOHOFF, Cincinnati: I here report three cases, two of the former, and one of the latter. They were all of the ultra-acute type. In two of the cases the hemorrhage into the free peritoneal cavity was very extensive, so that one might have thought of the rupture of one of the large vascular viscera or of a large mesenteric vein. In the third case the fluid was only tinged with blood. In two of the cases in which the hemorrhage was very severe, no fat necrosis was seen at the time of operation. In the third a fat necrosis led to the diagnosis during the operation. In one of the acute cases with severe hemorrhage, the patient recovered after laparotomy with drainage and gauze packing. In one of the fatal cases, fat necrosis was not seen at the time of the operation nor after autopsy was made. In none of the cases was a diagnosis made. In one it was thought of on account of the slight jaundice which was present. While, as in phlegmonous conditions elsewhere, it would seem necessary that the lesion of the pancreas should be attacked in every case from an academic viewpoint, it is not practicable in all cases. The condition of the patient is often so desperate, that a prolonged search for the lesion would be fatal, while drainage and gauze packing properly placed would give the patient a chance for recovery. Statistics show the value of attacking the pancreas in a formal way as part of the operative interference as compared with drainage alone. Statistics, however, can have little value in determining the procedure to be adopted when one considers the great variation which exists in the symptoms at the time an operation

is performed. Each case must be considered on its own merits and the operator must know to what extent operative interference beyond drainage and walling off the focus of the disease with tampons the patient will tolerate. No fixed and fast rules should be laid down. In regard to chronic pancreatitis, I object to the off-hand way in which a diagnosis is often made at an operation by the sense of touch alone and regardless of the existence of the well-known clinical evidence of chronic pancreatic disease.

(To be continued)

Marriages

ROBERT ABERCROMBIE SMITH, M.D., to Miss Emily Wilk, both of Chicago, January 1.

VICTOR MAURICE GORE, M.D., to Miss Hazel Wilkinson, both of Kingfisher, Okla., December 22.

BRADFORD ALLEN CAMFIELD, M.D., to Miss Augusta Esther Butts, both of Chicago, December 23.

ALBERT LEE YOCOM, JR., M.D., to Miss Jennie Marie Curtis, both of Chariton, Iowa, December 25.

ELEANOR JANE TAYLOR, M.D., York, Pa., and Rev. Edwin E. Calverly, of Philadelphia, September 6.

MARSHALL W. WEIR, M.D., to Miss Jessie May Watson, both of Oklahoma City, Okla., December 23.

SYLVESTER WESLEY THORNE, M.D., to Miss Helen Mary Denny, both of Memphis, Tenn., December 23.

Deaths

Samuel Benedict St. John, M.D. College of Physicians and Surgeons, New York City, 1870; a member of the American Medical Association; secretary of the Connecticut State Medical Society from 1883 to 1888; secretary of the American Ophthalmological Society from 1888 to 1908, and president in 1909; a member of the American Otological Society and American Academy of Ophthalmology and Oto-laryngology; president of the New England Ophthalmology Society in 1890-1891; a fellow of the New York Academy of Medicine; consulting ophthalmic and aural surgeon to St. Francis Hospital, Hartford, and Litchfield County Hospital; visiting ophthalmic and aural surgeon to the Hartford Hospital; a director of the Hartford Public Library; lecturer on ophthalmology in Yale University, New Haven, from 1881 to 1905; died suddenly at his home in Hartford, December 21, from angina pectoris, aged 64.

Reginald W. Garstang, M.D. Medical College of Indiana, Indianapolis, 1896; a member of the Indiana State Medical Association; formerly a member of the Association of Military Surgeons of the United States, and International Association of Railway Surgeons; surgeon to the Big Four System, Indianapolis; captain and assistant surgeon of the One Hundred and Fifty-ninth Indiana Volunteer Infantry during the Spanish-American War; for several years surgeon of Battery "A," Ind. N. G.; at one time police surgeon of Indianapolis; died at the Sanitarium of Dr. Albert E. Sterne in Indianapolis, December 21, from hemorrhagic meningitis due to an injury to the head received three weeks before while cranking an automobile, aged 35.

William Kelly Newton, M.D. College of Physicians and Surgeons, New York City, 1877; a member of the American Medical Association, American Public Health Association and New York Academy of Medicine; formerly coroner and health officer of New York City; first president of the Washington (D. C.) Pure Food Society; organizer of the board of health and first health officer of Paterson, N. J.; a trustee of the Free Public Library; a member of the staff of the Paterson General Hospital; and consulting physician to the Paterson Eye and Ear Infirmary; president of the New Jersey Sanitary Association; died at his home in Paterson, December 20, from peritonitis, aged 59.

Sarah Read Adamson Dolley, M.D. Randolph Eclectic Medical College, Rochester, N. Y., 1851; a member of the American Medical Association; professor of obstetrics in the Woman's Medical College of Pennsylvania in 1872 and 1873; president of the Provident Dispensary, Rochester, for several years; the second woman to receive a medical degree from an

American college; a member of the Monroe County (N. Y.) Medical Society, and delegate from that society to the American Medical Association at the Newport meeting; president of the Woman's Medical Society of New York State; died at her home in Rochester, December 27, aged 80.

John J. Archinard, M.D. Tulane University, New Orleans, 1893; professor of clinical microscopy in his alma mater; vice-president of the Louisiana State Medical Society; at one time president of the Orleans Parish Medical Society; medical inspector in Central America for the Louisiana State Board of Health; and later bacteriologist of the board; assistant in the Charity Hospital; surgeon of the Fourth Battalion, La. N. G.; and later major of the Second Louisiana Infantry U. S. V., and brigade surgeon with service in Cuba during the Spanish-American War; died at his home in New Orleans, December 27, from cerebral hemorrhage, aged 38.

George Mitchell, M.D. Medical College of Ohio, Cincinnati, 1862; a member of the Ohio State Medical Association; formerly professor of therapeutics and materia medica in the University of Wooster, Cleveland; censor of the Cleveland College of Physicians and Surgeons; a member of the board of trustees of the Ohio Wesleyan University, Delaware; a trustee of the Columbus State Hospital; president of the pension board of Mansfield, Ohio; assistant surgeon of the One Hundred and Second Ohio Volunteer Infantry during the Civil War; died at his home in Mansfield, December 17, from pneumonia, aged 72.

Evermont Ward Witten, M.D. Missouri Medical College, St. Louis, 1891; a member of the Oklahoma State Medical Association; professor of materia medica and therapeutics and clinical medicine in Oklahoma Medical College; a member of the medical staff of Bethany and St. Anthony's hospitals, Oklahoma City; physician of Oklahoma county; city physician for eight years; and a member of the local pension examining board; died at his home in Oklahoma City, December 17, from cerebral hemorrhage, aged 52.

John Benjamin Ruffell, M.D. Hahnemann Medical College, Philadelphia, 1898; Medico-Chirurgical College of Philadelphia, 1900; a member of the Medical Society of the State of Pennsylvania; for ten years assistant to Dr. L. Webster Fox; visiting physician to the eye department of the Medico-Chirurgical Hospital; died at his home in Philadelphia, December 22, from pneumonia, aged 33.

Edward F. Taylor, M.D. University of Pennsylvania, Philadelphia, 1853; one of the oldest members of the Monmouth County (N. J.) Medical Society; and for many years visiting surgeon to the Monmouth Memorial Hospital, Long Branch; surgeon of volunteers throughout the Civil War; died at his home in Middletown, N. J., December 11, from senile debility, aged 79.

Edward L. Perrault, M.D. University of California, San Francisco, 1885; a member of the American Medical Association; at one time a member of the board of supervisors of San Francisco; formerly chief surgeon of the Oregon Short Line Hospital, Boise, Idaho; died at Lane Hospital, San Francisco, December 15, from pneumonia, aged 48.

Wilson Lee South, M.D. Louisville, 185—; a surgeon in the Confederate Service during the Civil War; and afterward a practitioner in Texas; twice a member of the territorial legislature of New Mexico and county judge; formerly mayor of Trinidad, Colo.; died at the home of his daughter in Denver, November 29, from senile debility, aged 80.

Frank Eugene Risley, M.D. New York Homeopathic Medical College, New York City, 1889; for 15 years physician in charge of the Brooklyn Nursery and Infant Hospital; a member of the visiting staff of the Cumberland Street and Prospect Heights hospitals; died at his home in Brooklyn, December 10, from heart disease, aged 55.

William Henry St. Clair (years of practice, Ill., 1877); a member of the American Medical Association; said to have been the oldest practitioner of Effingham county, Ill., where he had practiced for forty-two years; died at his home in Effingham, November 19, from heart disease, aged 81.

Henry Orne Stone, M.D. Harvard Medical School, Boston, 1841; said to have been the oldest alumnus of that institution; one of the founders of the Framingham Public Library; a prominent abolitionist; died at his home in South Framingham, December 13, from paralysis, aged 91.

William H. Wheeler, a Confederate veteran; for two terms collector of internal revenue; twice a representative from Forsyth county in the legislature; for four years mayor of Winston-Salem, N. C.; died at his home in that city, April 23, from tuberculosis, aged 70.

Jacob Schneider, M.D. Cleveland University of Medicine and Surgery, 1871; formerly of Cleveland, Ohio; for thirty years house physician to the German Methodist Orphan Home, Berea, Ohio; died at his home in Daytona, Fla., December 11, from pneumonia, aged 64.

Guy Melville Dunning, M.D. University of Michigan, Ann Arbor, 1904; a member of the American Medical Association; and a specialist in diseases of the eye, ear, nose and throat; died at his home in Lansing, Mich., December 24, from pneumonia, aged 40.

Thomas M. Curran, M.D. University of Pennsylvania, Philadelphia, 1882; a veteran of the Civil War; for more than 50 years a practitioner of York county, Pa.; died at his home in Cross Roads (R. F. D., Felton), December 19, from cerebral hemorrhage.

John J. Weeks (license, Ohio, years of practice, 1896); at one time editor of the *Medina (Ohio) Gazette*; and provost marshal during the Civil War; died at his home in Cleveland, December 9, from asphyxiation by natural gas, aged 81.

Edwin P. B. Wilder, M.D. Chicago Medical College, 1874; district surgeon for the hospital fund of the Union Pacific Railroad; coroner and health officer of Wallace county, Kan.; died at his home in Sharon Springs, December 9, aged 55.

Elizabeth Genevieve Monville, M.D. Woman's Medical College of Pennsylvania, Philadelphia, 1909; assistant demonstrator in anatomy in her alma mater; died in the Woman's Hospital, Philadelphia, December 4, from nephritis, aged 33.

William I. Stark, M.D. Pulte Medical College, Cincinnati, 1881; of Terre Haute, Ind.; was instantly killed in a collision between a passenger train of the Vandalia System and a street car in Terre Haute, December 15, aged 52.

Irvin Negus Frasse, M.D. University of Pennsylvania, Philadelphia, 1890; formerly of Sequel, Cal.; a member of the American Medical Association; died at his home in Monterey, Cal., December 17, from heart disease, aged 44.

Henry Holcombe Malone, M.D. New York University, New York City, 1860; a member of the Medical Association of the State of Alabama; a Confederate veteran; died at his home in that city, December 19, aged 72.

Robert Mark Wilson, M.D. Kansas Medical College, Topeka, 1899; of Nortonville, Kan.; a member of the American Medical Association; died in Topeka, Aug. 12, 1908, from cerebral hemorrhage, aged 38.

John W. Steffin, M.D. College of Physicians and Surgeons, Chicago, 1894; physician of Cheboygan county, Mich.; and health officer of Cheboygan; died at his home in Cheboygan, December 3, aged 52.

William H. Kynett, M.D. College of Physicians and Surgeons, Chicago, 1885; a veteran of the Civil War; died at his home near Bartow, Fla., November 13, from chronic bronchitis, aged 67.

Frank P. Dundore, M.D. Jefferson Medical College, Philadelphia, 1870; a member of the Medical Society of the State of Pennsylvania; died at his home in West Leesport, December 15, aged 61.

Richard Henry Duff, M.D. Western Reserve University, Cleveland, Ohio, 1884; a member of the American Medical Association; died at his home in Girard, Pa., December 15, aged 53.

Almon Brooks, M.D. University of Virginia, Charlottesville, 1865; a prominent specialist in internal medicine; died at his home in Chicago, December 25, from valvular heart disease, aged 68.

Oscar C. Webb, M.D. Maryland Medical College, Baltimore, 1904; a member of the Medical Association of Georgia; died at his home near Gray, June 21, from tuberculosis, aged 33.

Samuel Wheeler Shaw (years of practice, Ill., 1901); for 47 years a practitioner of Chicago; died at his home in that city, December 20, from arteriosclerosis, aged 86.

William Bowman Chalfant, M.D. Western Reserve University, Cleveland, Ohio, 1869; died at his home in Pennsville, Pa., December 19, from arteriosclerosis, aged 74.

Ruth Barstow, M.D. John A. Creighton Medical College, Omaha, Neb., 1909; died at her home in Council Bluffs, September 1, from valvular heart disease, aged 23.

John M. Yancey, M.D. Reform Medical College, Macon, Ga., 1856; died at his home in Russellville, Ark., December 13, from pneumonia, aged 77.

Wilson H. Van Dusen, M.D. Miami Medical College, Cincinnati, 1869; died at his home in Lancaster, Wis., December 2, aged 63.

Book Notices

ROTUNDA PRACTICAL MIDWIFERY. By E. Hastings Tweedy, M.D., F.R.C.P.I., Master of the Rotunda Hospital, and G. T. Wrench, M.D., Late Assistant Master. Cloth. Pp. 464, with illustrations. Price, \$6. New York: Oxford University Press.

When the American Medical Association and the Association of American Colleges are working to perfect a time schedule of required studies and the American Gynecological Society is studying the teaching of obstetrics in American medical colleges, it is interesting to learn that the master of Rotunda Hospital says that "the requirements of practical midwifery are so inadequately provided for in the curriculum of our universities and licensing corporations that it is not an exaggeration to say that many recently qualified practitioners are a danger rather than a help to their lying-in patients." The book is written as a concise guide in the elucidation of the difficulties of obstetrics and aims to present the practical aspect of the subject.

Only about one-sixth of the book is devoted to normal pregnancy, labor and puerperium, but the diagnosis and management of pregnancy and the conduct of labor are discussed with great clearness. It is interesting to note that the authors do not hesitate to mention proprietary medicines and manufacturers' names with a freedom that would hardly seem proper to an American author. Telephones do not seem to be in common use, for the nurse is directed to "write a letter to you before breakfast to tell you that labor has started." It is consoling to learn that "in the hospital 50 per cent. of our primiparae got torn perineums to a greater or less extent, and have to be stitched." It is rather surprising, however, to hear that in case of "retention of the membranes in the uterus without hemorrhage the patient is given a dram of ergot and the membranes allowed to come away in the lochia, which they usually do without trouble in a few days."

In Part 2, under the abnormalities of pregnancy, we turn with special interest to the subject of accidental hemorrhage. The well-known "Rotunda" treatment is described carefully and illustrated. The illustration of the method of infusion into the breast shows the injection actually into the breast, a practice which we hope is not in reality common. The treatment of eclampsia is eliminative and non-operative unless the cervix is dilated so that extraction is possible.

The chapters on dystocia are clear and satisfactory. The diagnosis and treatment of abnormal presentation is especially thorough and practical. In the discussion of forceps it is singular that the awkward lateral position of the patient is still retained. It is true that the author says "If the pull begins to prove hard get the patient on to her back." It is also hard to understand why so important an operation is done on the bed and why the genitals are not shaved.

The discussion of puerperal infection is very satisfactory, especial attention being given to the question of natural and acquired immunity. The management of the breast is not treated very fully. In general the puerperium is somewhat slighted. The chapters on the baby, however, are unusually thorough.

The authors have succeeded in their efforts to present the subject in a brief practical way and in simple language, and from the standpoint of the practitioner who has largely to rely on his own resources.

EXERCISE IN EDUCATION AND MEDICINE. By R. Tait McKenzie, B.A., M.D., Professor of Physical Education and Director of the Department, University of Pennsylvania. Cloth. Pp. 406, with 346 illustrations. Price, \$3.50 net. Philadelphia: W. B. Saunders Co., 1909.

Dr. McKenzie has succeeded admirably in his effort to present the subject of physical education in an effective way to three hitherto widely separated groups of people, school teachers, teachers of physical training, and physicians. The recent rapid growth of an appreciation of the place and value in an educational system of physical training and as an important adjuvant in preventive and curative medicine makes this book particularly timely and opens for it a wide field of usefulness.

The subject-matter is well arranged, and the various topics are treated in a very readable way, which is popular and untechnical without sacrificing accuracy. The amount of space devoted to each subject is necessarily small in a book

that covers so wide a range as this. The illustrations are numerous and bear close and helpful relation to the text. The pictures are well chosen, instructive and artistic.

The author has brought together in the first part of the book considerable historical material relating to the beginnings and governing principles of the various systems of physical training. The discussion of the German, Swedish, Japanese jiu-jitsu, and Delsarte systems is critical and direct. On page 128 the statement that "in a game of football the time occupied in actual play is only four or five minutes" is open to criticism, as under the new rules it is not uncommon for a team using series plays to continue in action for three or four minutes without interruption, so that the total time spent in actual play is many times larger than here stated.

The classification of athletic games, exercises on gymnastic apparatus, etc., from the point of view of the physiologic effects, parts of the body brought into play, and most suitable age, is very suggestive; but one wonders why basket-ball, which makes a heavier demand on speed, endurance, and attention than almost any other form of team competition, should be classed with work with gymnastic apparatus instead of with other athletic games. The chapters on the physical education of the blind and the deaf-mute and of the mentally and morally defective are excellent in presenting a detailed statement of the latest methods that are being successfully used in this difficult field, and in giving reports of the markedly beneficial effects of physical training in these groups. The section on exercise in medicine will prove to be of interest to the medical practitioner, to whom it will be of real value in suggesting supplements to the purely medical treatment of the conditions there discussed. There is a very real danger, however, in the attempted application of these principles and methods by physical directors who have had, at best, a very superficial training in medical subjects, to cases of circulatory disturbance, hernia, and extreme obesity. Such cases should not be treated by a non-medical man unless he has had a thorough training in medical gymnastics or unless he is working under the close supervision of a trained physician.

The book is worthy of careful study by both educators and physicians, and the sane, comprehensive treatment of the wide range of subjects that are included in physical education should be very helpful in stimulating the further extension of this work in both education and medicine.

MEDICAL SOCIOLOGY: A Series of Observations Touching on the Sociology of Health and the Relations of Medicine to Society. By James Peter Warbasse, M.D., Surgeon to the German Hospital. Cloth. Pp. 355. Price, \$2. New York: D. Appleton and Company, 1909.

"Medical Sociology" as a title of a work for the use of physicians seems stranger in this country than it would in Europe. German universities require of their medical students a certain knowledge of economics and sociology, and in order to supply the older practitioners with such knowledge special courses are provided in Berlin and other universities dealing with social evils and conditions and the most effective ways to combat them. The University of Vienna has recently taken the step of establishing a chair of social medicine. The author of this work gives in the preface his thesis: that as medicine is the science devoted to the study of health, so medicine has as its special aim the investigation of conditions which destroy health, the study of their causes, their prevention and their treatment. Dr. Warbasse has spoken frequently before medical societies on this subject and some of these addresses appear as chapters in his book. A number of chapters are devoted to the question of sexual hygiene, which is openly and freely discussed, as it ought to be in the interest of society at large. The stand taken in almost every instance is a broad-minded one, although some readers will feel that the author departs a little from it where he speaks of the influence of religious doctrines and superstitions. In opposition to many of his colleagues, he is in favor of a wide diffusion of medical knowledge among the public, his argument being that the man who knows most about his body and its functions will take the best care of it.

A good deal of space is devoted to the necessity of cooperation among physicians to secure their own best interests. This cooperation is not only possible in large cities, but has become

very effective in smaller places. There physicians club together, each contributing some standard work, to make up an up-to-date medical library, placing the most expert knowledge within the reach of every member. This club serves, besides, as a common meeting-place for the discussion of interesting cases.

EINFÜHRUNG IN DIE MODERNE KINDERHEILKUNDE. Ein Lehrbuch für Studierende und Aerzte. Von Dr. B. Salge, Professor der Kinderheilkunde in Friburg i. B. Cloth. Pp. 356, with 9 illustrations. Price, 9 marks. Berlin: Verlag von Julius Springer, 1909.

This book is intended, as the title implies, as an introduction to the study of pediatrics. The whole subject is covered, not exhaustively as in a text-book, but rather with full emphasis on those things which pertain especially to infancy and childhood, and passing quickly over such diseases as are practically identical in childhood and adult life. It is intended to meet the needs of the student who approaches the subject of pediatrics for the first time, after he is fairly familiar with internal medicine; and of the busy practitioner who wishes to keep abreast with the very latest advances without wading through original articles and monographs or more exhaustive text-books. This purpose it fulfils admirably.

Especial interest attaches to the chapters on infant-feeding and nutritional disorders in infancy. One hears much at the present time of Czerny and of Finkelstein. Salge's book, perhaps largely because it is the newest, combines for the first time in one volume, and that fortunately not a large one, all of this wealth of new ideas that seems destined to exert a determining influence on our ideas concerning these subjects. To those who wish to familiarize themselves with these ideas without wading through the original articles and books, this compact, clear-cut exposition will heartily commend itself.

A PRACTICAL TREATISE ON DISEASES OF THE SKIN. By James Nevins Hyde, A.M., M.D., Professor of Dermatology in Rush Medical College, Chicago. Eighth Edition. Cloth. Pp. 1100, with 223 engravings and 58 plates in colors and monochrome. Price, \$5. Philadelphia: Lea & Febiger, 1909.

The author states in the preface that the untimely death of his associate, Dr. Frank H. Montgomery, delayed the appearance of this edition. The work has been carefully revised and new matter added, which has necessitated the addition of 250 pages. Considerable space is devoted to diseases of the tropics. Pellagra is classed as a "tropical disease of uncertain nature." The symptoms, etiology, diagnosis and treatment are summarized briefly, and a fairly complete bibliography is given. New articles have been added on the following subjects: prurigo nodularis, several of the special forms of erythema, the "fourth disease," paraffin prothesis, osteoma and calcification of the skin, meralgia paresthetica, aerodermatitis pustulosa hiemalis, lichen spinulosus, keratolysis exfoliativa congenita, lipoma, Fordyce's disease, causalgia, leucemia and pseudoleucemia cutis, tinea ciliarum and, in particular, diseases produced by animal parasites, especially the brown-tail moth dermatitis. The book therefore is brought well up to date and will continue to hold the high place it has heretofore held as a standard text-book on diseases of the skin.

A TEXT-BOOK OF SPECIAL PATHOLOGY. By J. Martin Beattie, M.A., M.D., Professor of Pathology and Bacteriology, University of Sheffield, and W. E. Carnegie Dickson, M.D., B.Sc., F.R.C.P., Lecturer on Pathologic Bacteriology in the University of Edinburgh. Cloth. Pp. 509, with illustrations. Price, \$5. Philadelphia: P. Blakiston's Son & Co., 1909.

In reviewing the text-book on general pathology by the same authors, we spoke of it as being almost an excellent book, but falling short of excellence by reason of its lack of thoroughness and the evident lack of high ideals in the author's conception of medical education. The volume of special pathology falls far short of the general pathology. It seems to be intended for the student who wishes his lessons in pathology in as compact a form as possible, without any troublesome whys and wherefores. It will certainly never stimulate a student to do much collateral reading or independent thinking. There is little fault to be found with the book on the score of accuracy, and the subjects are presented well, but the most modern views are not always given as much attention as they deserve in even so compact a treatise. Except for the illustrations the subjects are handled about as completely and well in good text-books on practice, where

the pathologic physiology is usually discussed more effectively. The reproductions are excellent, although not so prominent a feature as in the general pathology, from which many of them are borrowed.

THE PHYSICIAN'S POCKET ACCOUNT BOOK. By J. J. Taylor, M.D. Flexible leather. 24 pages of practical instructions for physicians, 216 pages of accounts. Price, \$1. Philadelphia: The Medical Council, 4105 Walnut Street.

This book is so arranged with page and column headings that one simple entry is intended to complete the bookkeeping as far as that particular entry is concerned, no posting to a ledger being necessary. The information is in such shape that it is easily understood by any one, no hieroglyphics being used to indicate the service, and is therefore said to stand the test of the courts when it is necessary to bring suit on an account. Each account is kept separately and a glance shows its exact status. Besides the 216 pages for accounts, the book contains an index, business suggestions, suggestions for the treatment of poisoning, table of infectious diseases, average fee bill, record of births, deaths and vaccinations and a cash account. Its use should simplify the bookkeeping of physicians and save them much time.

BACTERIOLOGY FOR NURSES. By Isabel Meisaac, Author of "Primary Nursing Technique," etc. Cloth. Pp. 176, with illustrations. Price, \$1.25. New York: The Macmillan Co., 1909.

The average nurse, at least after graduation, requires only an elementary knowledge of bacteriology, and the author states in the preface that in this work for pupil nurses no attempt has been made to do more than endeavor to present a practical arrangement of the subject. A schedule is suggested for laboratory work compiled from several outlines in use in various schools. The phraseology is simple and the book is practical.

Medical Education and State Boards of Registration

COMING EXAMINATIONS

ALABAMA: Montgomery, January 11. Chairman, Dr. W. H. Sanders.
DISTRICT OF COLUMBIA: Washington, January 10. Sec., Dr. George C. Ober, 210 B Street., S. E.
ILLINOIS: Coliseum Annex, Chicago, January 19-21. Sec., Dr. J. A. Egan, Springfield.
INDIANA: Room 120, State House, Indianapolis, January 11. Sec., Dr. W. T. Gott.
NEW MEXICO: Santa Fe, January 10. Sec., Dr. J. A. Massie.
OKLAHOMA: Ione Hotel, Guthrie, January 11. Sec., Dr. Frank P. Davis, Enid.
SOUTH DAKOTA: Sioux Falls, January 12-13. Sec., Dr. F. W. Freyberg, Mitchell.
VERMONT: Montpelier, January 11-13. Sec., Dr. W. Scott Nay, Underhill.
WISCONSIN: Milwaukee, January 11. Sec., Dr. John M. Bessel, 3200 Clybourn Street.

Report of the Commissioner of Education for 1909

The last report of the United States Commissioner of Education, which has recently made its appearance, shows how deep is the interest now being taken in educational standards and how large is the number of boards, commissions, councils and associations which are at work in the development of such standards. This report will not only be a convenient reference book for information regarding the work which each agency is doing but it will help to bring about more cooperation between these agencies.

Those who are interested in higher standards of medical education, and who are dealing with only one department of education, have long since fully appreciated that all agencies should cooperate to bring about a carefully planned educational system wherein the work and limitations of each department, elementary, secondary, collegiate, professional and technical, are clearly outlined. It is of no less importance that the various state educational boards which have the legal power to create standards should work together for the development of a national standard rather than a large number of dissimilar or even conflicting standards. Toward these ends the annual reports of the Commissioner of Education are exerting a decided influence. The chapters relating to the

educational progress in other countries also allow of valuable comparisons and will suggest similar improvements at home.

The statement is often heard that a thing is valued in proportion to the amount of money paid for it. Since the reports of the Commissioner of Education may be obtained free of cost we doubt whether they really receive the appreciation which is due them for the highly important and valuable information they contain.

Connecticut November Report

Dr. Charles A. Tuttle, secretary of the Connecticut Medical Examining Board, reports the written examination held at New Haven, Nov. 9-10, 1909. The number of subjects examined in was 7; total number of questions asked, 70; percentage required to pass, 75. The total number of candidates examined was 22, of whom 17 passed, 4 failed, and 1 withdrew. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Georgetown University	(1909)		79
Yale Medical School	(1908) 82.5	(1909)	75.2
Kansas Medical College	(1902)		77.7
Baltimore Medical College	(1909)		79.2
College of Physicians and Surgeons, Baltimore	(1909)		77.7
Maryland Medical College	(1908)		77.7
Johns Hopkins University	(1909)		82.6
Harvard Medical School	(1899) 87.2	(1904)	76.5
Cornell University Medical College	(1903) 79.6	(1909)	83.9
Columbia University, College of Phys. and Surg.	(1909)		80.2
New York University Medical College	(1884)		78.2
Long Island College Hospital	(1909)		83.3
Queen's University, Canada	(1909)		81
University of Naples, Italy	(1905)		75
FAILED			
Howard University	(1904)		71.2
Georgetown University	(1908)		73.3
Yale Medical School	(1909)		74
Jefferson Medical College	(1909)		74.5

Medical Economics

THIS DEPARTMENT EMBODIES THE SUBJECTS OF ORGANIZATION, POSTGRADUATE WORK, CONTRACT PRACTICE, INSURANCE FEES, LEGISLATION, ETC.

Reduced Incomes of Physicians

In the *Lancet-Clinic*, November 27, appears a letter in the correspondence department signed by "A Medicus, Jr.," which discusses the economic side of the practice of medicine. Commenting on a previous communication, Medicus admits the influence of recent financial depressions, increasing accessions to the ranks from medical colleges, the influence of present-day preventive medicine and public sanitation, etc., in decreasing the average income of physicians, but adds that three great evils are mainly responsible for present economic conditions: the abuse of medical charity, the development of contract practice and the lack of system on the part of individual physicians in keeping and collecting their accounts.

Discussing the average income of the physician, which he places at \$600 per annum, or about \$1.60 per day, he says, "Compare this with the average wage of the most ordinary laborer and then you may feel that comparisons are indeed odious at times. If you wish to know where the shoe pinches most, ask the physician's wife and his creditors. Ministers and school teachers' wives have been immortalized in prose and poetry for their ability to make both ends meet and for their heroic fortitude in facing genteel poverty. The physician's wife is fast joining them." He states that the names of 20,000 physicians appear on the dead-beat list of a national organization and that an officer of the organization states that the list should contain the names of at least 20,000 more. This, he says, is six times larger than the average number of dead-beats in other professions and occupations, "which," he says, "either speaks very ill of our morals or points to some very erroneous conceptions of our relations to the general public."

After discussing the abuse of medical charity and the work done along that line in Chicago and the development of the contract and lodge practice system in Germany, he takes up the third factor, namely, lack of system in keeping and collecting accounts, to which he attributes a large share of the economic loss which the profession is sustaining.

Legislative Notes

STATE LEGISLATURES IN SESSION

Although an off year in state legislative work, twelve legislatures have met or will meet during the winter. The Georgia legislature met in November; the Kentucky and Virginia legislatures convened in December, while the following legislatures will assemble in January: Maryland, Massachusetts, Mississippi, New Jersey, New York, Ohio, Rhode Island and South Carolina. The Louisiana legislature will meet in May.

LEGISLATION PROPOSED IN KENTUCKY

In Kentucky the work has already been outlined, the following bills relating to health matters having been prepared for presentation to the state legislature: State Board of Health appropriation, vital statistics, medical inspection for third and fourth class cities, abortion, and tuberculosis sanatorium bills. In an editorial in the *Kentucky Medical Journal*, December 15, it is stated that these bills are substantially the same as those passed by an almost unanimous vote of the legislature two years ago, but vetoed by Governor Wilson for various reasons. The bills have been modified so that it is hoped that they will be acceptable to the governor.

The State Board of Health appropriation bill provides for the appropriation of \$30,000 a year for the state board to establish and equip a state laboratory, to employ a bacteriologist, to conduct an annual school for county and city health officers for instruction in the latest practical methods of preventing disease, to hold public health conventions in connection with farmers' and teachers' institutes, to investigate the water supply, to establish and maintain a board of vital statistics, to control diseases among domestic animals, and to pay the general expenses of the board. The vital statistics bill follows the line of the model bill endorsed by the American Medical Association.

The medical inspection bill provides for the medical examination of all persons teaching or proposing to teach and all pupils attending or proposing to attend any public or high schools in cities of the third and fourth class. It provides that teachers shall be examined semi-annually and pupils at the beginning of each term or oftener if requested by the teacher, by the superintendent of the school, or by the board of education. Any teacher found to have tuberculosis in any form or any other contagious disease shall not be permitted to teach. Any pupils found suffering from contagious or infectious diseases are not to be admitted until permitted by the medical inspector. City physicians or physicians employed by the board of education are to make the examinations.

The abortion bill has been prepared by Hon. Aaron Kohn and provides that it shall be unlawful for any person to prescribe or administer to any pregnant woman or to any woman whom he supposes to be pregnant, any drug, medicine or substance with the intent thereby to procure the miscarriage of such woman or to use any instrument or means whatever, unless such miscarriage be necessary to preserve her life, under penalty of a fine of from five hundred to one thousand dollars, and imprisonment for from one to five years. In case of miscarriage and the death of the child results the person responsible for the miscarriage shall be guilty of a felony and on conviction punished by from two to twenty-one years in the penitentiary. In case the death of the woman results the person offending shall on conviction be held guilty of murder or manslaughter. The consent of the woman shall be no defense and she shall be a competent witness in any prosecution under the act.

POSTGRADUATE COURSE FOR COUNTY SOCIETIES

DR. JOHN H. BLACKBURN, DIRECTOR
BOWLING GREEN, KENTUCKY

[The Director will be glad to furnish further information and literature to any county society desiring to take up the course.]

Fifth Month—Third Weekly Meeting

DISEASES OF THE INTESTINES

CATARRHAL ENTERITIS: Etiology. Primary causes, improper food, toxic substances, nervous influences, changes in weather, changes in intestinal secretions. Secondary causes, infectious diseases, typhoid, tuberculosis, etc.

Inflammatory disturbances, peritonitis, etc. Circulatory disturbances, and cachexia of cancer, anemia, etc. Clinical forms, (a) acute, (b) chronic diarrhea; treatment of each.

CROUPOUS ENTERITIS: Etiology. (a) toxic, mercury, lead, etc.; (b) infections, pyemia, pneumonia; (c) terminal process in chronic nephritis, cirrhosis of liver, etc.

ULCERATIVE ENTERITIS: (a) Follicular ulcer; (b) stercoral ulcer; (c) simple ulcerative colitis, (d) cancerous ulcer, (e) ulceration from external perforation, (f) tubercular, syphilitic and typhoid ulcerations. Etiological diagnosis of intestinal ulceration.

DYSENTERY: (a) Amebic, (b) bacillary. Etiology and diagnosis of each.

APPENDICITIS: Differential diagnosis, from biliary lithiasis, renal lithiasis, tubo-ovarian disease, intestinal obstruction, intestinal colic, Dietl's crisis, acute hemorrhagic pancreatitis, hysteria.

INTESTINAL OBSTRUCTION: (a) Strangulation, (b) intussusception, (c) volvulus, (d) strictures and tumors, (e) abnormal contents. Diagnosis in each; location of obstruction.

ENTEROPTOSIS, SPLANCHNOPOTOSIS: (a) Without symptoms, following repeated pregnancies, etc.; (b) with symptoms, associated with neurasthenia. Symptoms and physical signs.

Medicolegal

Validity of Law and Board of Health Order Prohibiting City Discharging Raw Sewage Into Stream

The Supreme Court of Montana says, in the case of *Miles City vs. Board of Health of the State of Montana* (102 Pac. R. 696), that, by an act of 1907, the state, in the valid exercise of its police power, has said that hereafter no polluting sewage and no human excrement shall be discharged into any stream which is the source of water supply for a city or town until such deleterious matter is rendered harmless by some means of sewage purification acceptable to the State Board of Health. Section 8 of this act authorizes the board to make, or cause to be made, a thorough investigation in a case of this character; and, if in the judgment of the board the public health so requires, the board may make such an order as one in question here prohibiting the city from extending a sewer, into a river, and directing that the city at as early a date as practicable dispose of its sewage in some sanitary manner acceptable to the board. This section does not contemplate a public trial, but rather an *ex parte* (one-sided) investigation, and the legislature, being the repository of the police power of the state, could designate the State Board of Health as its agent, and prescribe the manner in which such police power should be exercised. If the board informs itself by any means, the fact that testimony is not taken is altogether immaterial.

Moreover, the court holds that, notwithstanding the length of time the city has enjoyed the privilege of discharging its sewage into the river, the state may, in the interest of the public health and safety, regulate such use, or, if necessary, prevent the continuance of it. Indeed, if the state had consented to the use of the river by the city for the purpose of discharging its sewage therein, such consent would not have amounted to more than a license, which the state might revoke whenever public interests required it.

This statute does not deprive the city of any property right. It does not forbid the city using the river for the purpose of discharging its sewage, provided the sewage has been subjected to some practical means of purification. The statute looks only to a proper regulation of the use asserted, and not to a denial of the use; and the mere fact that the city was making use of the river for discharging raw sewage into it at the time this statute was enacted, which modifies such use, is not any valid objection to the statute.

Then, since the statute is couched in prohibitive terms, and, in addition thereto, provides that pending an appeal to the district court the order of the board shall continue in

force, unless otherwise ordered by the board, the conclusion would seem irresistible that the city has the burden of showing that the order was not justified.

Liability for Malarial Fever of Maintainers of Breeding Places for Mosquitoes—Expert and Other Evidence

The Court of Appeals of Georgia holds, on the appeal of *Towaliga Falls Power Co. vs. Sims* (65 S. E. R., 844), a suit brought by the latter party, that public service corporations in the construction of dams and in the backing of water must choose their sites with due regard to the surroundings. They are not authorized to maintain stagnant ponds, polluted pools of water, or places in which mosquitoes breed, in unusual numbers, to the endangering of the health of surrounding communities.

There was testimony in this case from which the jury might have found that the plaintiff had a spell of malarial fever as a result of being bitten by anopheles mosquitoes, bred in unusual numbers in stagnant water caused by the power company's dam, but that the mosquitoes would have been incapable of communicating the disease if they had not previously bitten a person having malaria in his system. It is held that the court properly refused to charge the jury that under these circumstances the damages would be too remote to hold the company liable therefor.

Where the question is as to the cause of an attack of malarial fever suffered by the plaintiff, it is relevant for him to prove that the defendant erected a dam which caused the water to become stagnant and the mosquitoes to breed in unusual numbers; that previously there had been no malarial fever in the community; that the erection of the dam and the breeding of the unusual number of mosquitoes was followed by an epidemic of malaria; and that in the opinion of experts malaria is communicated by mosquitoes. The testimony is circumstantial, but of probative value.

Counsel ingeniously, and the court suspects, somewhat facetiously, argued in this case, the court says, that the mosquito is an animal *ferae naturae* (of a wild nature), and that in an action for damages done by a dangerous animal scienter (knowledge) on the part of the person harboring it is a necessary allegation. But, without making any specific classification of mosquitoes, the court holds that they are a common pest, and that the maintenance of a place where they breed in unusual numbers is such a menace to persons residing nearby as to make that place ordinarily a nuisance; and that if, as a result of the maintenance of such a place, the mosquitoes do in fact breed there, as they otherwise would not have bred, and become inoculated with malaria, and, in accordance with what is naturally to be expected, fly abroad and communicate malarial fevers, the proprietor of the breeding place is in legal contemplation proximately the author of the damage.

Testimony that prior to the creation of the pond there were but few mosquitoes and no cases of malarial fever in the community, that the pond had stagnant pools in it favorable to the breeding of mosquitoes, that, following its creation, the mosquitoes appeared in unusual numbers, and an epidemic of malarial fever broke out in the community, would, in connection with expert testimony that malaria is conveyed by mosquitoes, be relevant circumstantial evidence on the question as to whether the creation of the pond caused the epidemic of fever. The range of such testimony, like that in cases of experiments, is largely within the discretion of the trial judge.

Presumptively, any practicing physician is by virtue of his profession an expert on the methods by which diseases are communicated. In order to qualify one as an expert witness, it is not necessary that he or any one else should testify in so many words that he is an expert, but the fact that he is entitled to give expert testimony may be shown by a statement of his profession, occupation, education, and experience. The extent of the witness' knowledge or opportunities for accurate information on the subject may be shown either by the direct or the cross-examination. The weight to be given his testimony is for the jury. A practicing physician who has treated a case of malarial fever, and who is acquainted with surrounding conditions, is competent to express an

opinion as an expert on the causes of the fever, although his general ideas on the question may be out of harmony with those entertained by his profession generally and by the majority of scientific men.

When one is in possession of premises as a tenant and another maintains a temporary nuisance, whereby the premises are rendered unhealthful, and the tenant and dependent members of his household are made sick, the tenant may recover, not only for the diminution caused to the value of his leasehold interest by the fact that the premises have become undesirable for habitation, but also for the direct damages caused him by the illness of himself and his family. His illness and that of the household is evidentiary on the question as to whether the premises have been rendered undesirable for habitation and therefore of less rental value, but the pain and suffering, physician's bills, loss of time, etc., directly resulting from the illness, are elements of damage apart from the loss sustained in the shrinkage of the value of the property and there may be a recovery of the damages from both sources when the pleadings and the evidence are such as to authorize it.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

New York Medical Journal

December 25

- 1 Preparation, Enthusiasm, and Self Sacrifice. J. MacFarland, Philadelphia.
- 2 A Personal Experience with the Method of Cesarean Section used in the Lying-In Hospital of New York. S. P. Warren, Portland, Me.
- 3 The State, the Municipality, and Tuberculosis. W. C. White, Pittsburg, Pa.
- 4 *Foreign Bodies Removed from the Ears. H. Foster, Kansas City, Mo.
- 5 The Infancy of the Practice of Medicine and Surgery. H. Pomeranz, New York.
- 6 Influenzal Meningitis. A. Hymanson, New York.
- 7 *Treatment of Tuberculosis by Succinimide of Mercury Injections. H. Freeman, New York.
- 8 Trachoma. L. J. Goldbach, Baltimore.

4. **Foreign Bodies Removed from the Ear.**—Foster reports eight cases to show the variety of foreign bodies which may find their way into the ears. The substances removed were: (1) Three live screw-worms; (2) a piece of a sharp-pointed slate pencil; (3) a bead; (4) a small stone; (5) a grain of wheat; (6) a grain of corn; (7) a small green electric light bug; (8) a bit of broken pencil.

7. **Mercury in Tuberculosis.**—In 8 cases of tuberculosis in which Freeman has used succinimid of mercury there has been improvement in the general condition, evidenced by increase in weight, normalizing of temperature and diminution of cough, expectoration, and night sweats. The destructive action of the mercury on the tubercle bacilli in two cases was strikingly apparent. Percussion and auscultation uniformly reflect the general improvement. Freeman believes that the inevitable conclusion to be drawn from such cases as those must be that, in succinimid of mercury, hypodermically administered, we have an efficient means of arresting tuberculous degeneration and of improving in a most striking manner the general condition of the patient. The only question which appears to remain for test is whether we may not have here a specific remedy for the disease in all stages at which the tissues are not yet so broken down and disorganized that reestablishment is a physical impossibility.

Medical Record, New York

December 25

- 9 Results Achieved by the Movement for Sanitary and Moral Prophylaxis—Outlook for the Future. P. A. Morrow, New York.
- 10 Freud's Conception of the Psychoneuroses. A. A. Brill, New York.
- 11 *Stenosis of the Larynx Cured by Intubation. E. Mayer, New York.
- 12 Study of the Eustachian Tube in Relation to the Radical Mastoid Operation. S. Oppenheimer, New York.
- 13 Studies with the Wassermann Reaction. E. C. White and S. D. W. Ludlum, Philadelphia.
- 14 Frequency of Hepatic Sclerosis in Non-Alcoholics. A. L. Benedict, Buffalo.

11. **Stenosis of the Larynx.**—The three cases of laryngeal stenosis reported by Mayer were all due to different causes. The first was due to a gunshot wound, comminuting the thyroid cartilage, the second was a post-thyroid perichondritis, and the third was a recurrent granuloma of the larynx. The cases are of special interest, first because of their unusual nature, and second, because of the satisfactory results following intubation.

Lancet-Clinic, Cincinnati

December 11

- 15 The Outlining of Normal Organs, and the Diagnosticating of Diseased Conditions of the Pleura and Lungs by Means of Palpation. F. M. Pottenger, Monrovia, Cal.
 - 16 Case of Traumatic Neurosis Illustrating Successful Psychotherapy. T. A. Williams, Washington, D. C.
 - 17 The Simplified Faucial Tonsil Operation. O. J. Stein, Chicago.
- December 18
- 18 Surgery of the Gall-Bladder. W. D. Haines, Cincinnati.
 - 19 The Latent Gall-Stone. C. N. Smith, Toledo, Ohio.
 - 20 Latent Duodenal and Gastric Ulcer. W. J. Stone, Toledo, Ohio.

Northwestern Lancet, Minneapolis

December 1

- 21 *Empyema: Diagnosis and Treatment. W. T. Adams, Elgin, Minn.
- 22 A Plea for Medical Inspection of Schools. R. M. Wheeler, Hot Springs, S. D.
- 23 Tumors of the Bladder. E. S. Judd, Rochester, Minn.
- 24 *Enlargement of the Prostate. F. R. Wright, Minneapolis.
- 25 Cicatricial Strictures of the Esophagus. W. Lerche, St. Paul.

21. Abstracted in THE JOURNAL, Nov. 27, 1909, p. 1850.

24. **Enlargement of Prostate.**—The points of interest in Wright's case are the small size of the tumor (150 grains), which completely closed the outlet of the bladder while at the same time it offered no obstruction to the passage of the catheter, and the smooth, even hypertrophy of the bladder wall, which showed no trace of trabeculae or saccules.

Kentucky Medical Journal, Bowling Green

December 1

- 26 *Mental Diagnosis. E. M. Wilcy, Lexington.
- 27 *The First Interview with the Patient. J. L. Atkinson, Campbellsville.
- 28 *Treatment of Mutilated Extremities. R. C. McChord, Lebanon.
- 29 *Delirium Tremens. F. M. Stites, Hopkinsville.
- 30 *Chronic Diseases of the Faucial Tonsils. S. G. Dabney, Louisville.
- 31 *The Pupils During Health and Disease. A. O. Pfingst, Louisville.
- 32 *Diagnosis of Acute and Chronic Mastoiditis. J. A. Stucky, Lexington.
- 33 *Treatment of Acute Mastoid Disease. L. S. Givens, Cynthiana.
- 34 Treatment of Chronic Mastoid Disease. J. T. Reynolds, Mt. Sterling.
- 35 Radical Treatment of Chronic Mastoid Disease. W. N. Offutt, Lexington.

26, and 28 to 33. Abstracted in THE JOURNAL, Nov. 13, 1909, pp. 1680, 1681.

27. **First Interview with the Patient.**—Atkinson speaks of the practice of medicine as a calling. He discusses the mission of the doctor, the confidential relationship of the medical adviser to the patient, and the necessity for such relationship, and methods to be employed.

Medical Fortnightly, St. Louis

December 10

- 36 Washington's Leper and America's Leper Colony. F. J. Koch, Cincinnati.
- 37 Relation of the Physician and Surgeon. H. C. Crowell, Kansas City, Mo.
- 38 The Problem of Living. C. Pope, Louisville, Ky.

Surgery, Gynecology and Obstetrics, Chicago

December

- 39 *Anatomic Considerations in Peritoneal Adhesions. J. C. Clarke, Philadelphia.
- 40 Operative Treatment of Puerperal Thrombophlebitis. J. Brettauer, New York.
- 41 *Etiology of Cholecystitis. J. E. Else, Pullman, Wash.
- 42 *Relation of the Thyroid and Thyroidism to the Toxemia of Pregnancy. G. G. Ward, New York.
- 43 Difficulties of Gall-Bladder Surgery. J. N. Baker, Montgomery, Ala.
- 44 *A Method of Obtaining More Reliable Knowledge of the Exact Areas of Pain Complained of by Patients Afflicted with Visceral Disease. P. A. Harris, Paterson, N. J.
- 45 Case of Typhoid Spine. J. Halpenuy, Winnipeg, Canada.
- 46 *Cancer Mortality. J. A. McGinn, Philadelphia.
- 47 Thrombi and Emboli—Postoperative Importance. H. Crouse, El Paso, Tex.
- 48 An Apparatus for Aspiration. J. H. Kenyon and E. H. Pool, New York.
- 49 Fracture of the Eminentia Capitata. H. Reineking, Milwaukee, Wis.
- 50 Pseudo-Hermaphroditismus Masculinus Externus. K. Das, Calcutta, India.

- 51 Protective Appendicitis and Fourth Era in Surgery. R. T. Morris, New York.
52 *The Use of Rubber Elastic Bands for Drainage. E. S. Ryerson, Toronto.
53 Two Intractable Cases of Vesicovaginal Fistula. E. S. Stevenson, Rondebosch, Cape Colony, South Africa.
54 The So-Called Murphy-Fowler After-Treatment of Appendicitis. G. S. Brown, Birmingham, Ala.
55 Toxemia of Pregnancy. H. Morell, Regina, Canada.
56 The Table-Side Sterilizer. J. D. Singley, Pittsburg, Pa.

39. **Peritoneal Adhesions.**—Omental adhesions associated with traction, according to Clarke, act directly on the transverse colon and the stomach, limiting the function of both and giving rise to chronic symptoms, frequently classified under the glittering generality of indigestion. Kinking of the pylorus, direct tugging on the superior mesenteric artery through bad fixation and consequent traction on the omentum, and adhesions about the jejunum are all causes for gastric disturbances following local and general peritonitis. Obstinate constipation without gastric disturbance suggests merely a distortion of the colon, whether in its transverse or sigmoidal sections. On the other hand, symptoms referable to the gastric area, such as eructations of gas and fluids, fulness after eating, with distress, should suggest the probability of the effects of the adhesions expending their force on the upper intestinal tract. For several years it has been the author's custom, at the completion of every abdominal operation, unless there was some lesion or operation on the colon contraindicating its hydraulic distention, to give by enema, while the patient is still under the anesthetic and in the Trendelenburg posture, from one and a half to two liters of salt solution. Through many observations he has found that not only is the entire colon partially filled, but that the fluid frequently backs out in a serpentine wave through the ileocecal valve into the ileum. In this way the transverse colon is naturally dropped back by the weight of the fluid into its normal situation, and the sigmoid flexure is untwisted and assumes its natural situation, if it happens to occupy, through the distortion of packs or operative manipulation, a bad position in the pelvis. The fluid, if the patient is still under the anesthetic, and if care is observed in placing her in bed, is almost invariably retained, acts as a splendid stimulant in overcoming shock, lessening the refrigerant effects of the anesthetic and the stress thrown on the kidneys. Not only is immediate post-operative tympanites of less frequent occurrence, but the ultimate convalescence and freedom from post-operative sequelæ incident to adhesions have been minimized. In other words, the transverse colon, when thus employed, is a most serviceable hot-water bag applied directly to the sympathetic system and great vessels. The fluid is rapidly absorbed, and not only gives the patient the stimulating value of the heat, but the even greater benefit of a large volume of fluid.

41. **Etiology of Cholecystitis.**—Else found by experimentation that motile organisms can and usually do reach the gall-bladder from the intestines by ascending the common and cystic ducts. Organisms rarely, if ever, reach the gall-bladder from the intestines by way of the portal vein. The tubercle bacillus and the ameba coli are probably exceptions to this. But these organisms produce an infection of the liver first, and an infection of the gall-bladder is secondary to the liver infection. These organisms extend deeply into the intestinal wall and probably enter the smallest branches of the portal vein directly. Infective organisms can reach the gall-bladder through another route, the exact course of which must be worked out.

42. **Thyroidism and Toxemia of Pregnancy.**—The study of the relation of thyroidism to the toxemia of pregnancy in the light of some of the recent researches as to the nature and treatment of Graves' disease is the basis of Ward's paper. He believes that the thyroid gland is in all probability concerned in promoting nitrogenous metabolism, because there is considerable evidence that it normally hypertrophies during pregnancy and plays an important part in the increased nitrogenous metabolic processes incident to that state. He regards it as very probable that the toxemia of pregnancy is largely dependent on faulty metabolism, at least an insufficient metabolism is an accompaniment which greatly adds to the seriousness of the condition. Failure of the thyroid to hypertrophy during pregnancy is probably followed by insuf-

ficient metabolism, and may result in the various forms of toxemia of pregnancy. Graves' disease, by materially altering the quantity and quality of the thyroid secretion, has an important influence on metabolic processes; therefore if associated with pregnancy, owing to the increased metabolism incident to that state, it becomes a grave complication. When there is failure of the normal hypertrophy of the gland during pregnancy, and when there is a diseased thyroid, as in exophthalmic goiter, the administration of thyroid substance, by supplying the deficiency of the normal thyroid secretion and by diuretic action, may materially improve a faulty metabolism, and thus have a favorable influence on the manifestations of the toxemia of pregnancy. The use of a saline extract of thyroid proteids made from fresh normal human glands is much more efficient in rapidity and reliability of action than the sheep thyroids as ordinarily prepared; therefore much more satisfactory results may be expected from its use. The hypodermic administration of thyroid proteids is greatly superior to oral administration, especially when used in cases of toxic vomiting of pregnancy, or in eclampsia.

44. **Area of Pain and Visceral Disease.**—With the hope of obtaining more accurate knowledge of the location of pain complained of by patients afflicted with disease of the abdominal and pelvic viscera, Harris has for some time required that nurses mark the skin in such a manner as to show all localities of pain. He employs characters to indicate pains, pain area centers and directions of radiation. The first of these characters consists of a continuous or unbroken line; the second of a broken line or a dash; the third of a dot; and the fourth of a dash and a dot. Beginning with the fifth localization of pain Arabic numerals are employed for the purpose of successive enumeration and identification of all centers of pain.

46. **Cancer Mortality.**—Mortality statistics reviewed by McGlimm show that, while there was a general decrease in mortality from all causes of 1.8 per 1,000 population during the period between 1890 and 1900, cancer not only did not decrease, but showed an actual increase of 12 per 100,000 population during this period. It is frequently stated that this increase is only apparent and not real, being due to more accurate diagnosis and better registration reports. However, a study of these figures shows that this increase is almost universal, and that the disease shows a proportionate increase in those parts of the body which are readily accessible and in which the diagnosis, on account of its ease, has always been fairly accurate. In the registration area of the United States in 1906 out of a total death rate for males at all ages of 358,283 there were 11,166 who died of cancer, and out of a total of 299,819 for females, 17,854 died of cancer. This showing that one male out of 32 will die of cancer, and one female out of 11.2 will die of cancer. The corresponding phthisis rates being for males one out of 9.9 and for females one out of 10.2. This shows that almost as many women die of cancer as of phthisis.

In the same area for 1906 out of a total death rate of 186,944 for males over 35 years of age, 10,644 died of cancer and out of a total of 156,465 for females over 35 years of age, 16,879 died of cancer. This means that one man in 17.5 over 35 years of age will die of cancer, and one woman in 9.2 over 35 years of age will die of cancer. The corresponding phthisis rates for this age period being for males 1 in 9.9 and for females 1 in 14.1. In other words, more women past the age of 35 die of cancer than of pulmonary tuberculosis. The stomach is the most frequent site of the disease in man, occurring in 43.06 per cent. of all cases. In women the stomach is second in point of frequency, occurring in 24.47 per cent. of cases, while the uterus is first, being the site in 27.68 per cent. of all cases.

Statistics show that more women die of cancer than men, but eliminating cancer of the organs peculiar to sex, actually more men than women die from this disease. The age of greatest frequency in reference to the site of cancer is shown as follows: Abdomen, males 60 to 64, females over 50; bladder, males 60 to 70, females 50 to 60; brain, equally over 20 for both males and females (the number of cases is so small that the statistics are valueless); breast, males equally over

40, females equally over 45; eye, males and females equally over 20 (number of cases very small); genitals, males 60 to 75, females 60 to 64; head, face, and neck, males and females equally over 75; kidney, males 45 to 49 and over 75, females 55 to 59; larynx, males 60 to 70, females very rare; liver, males 60 to 70, females 55 to 65; lower extremity, males and females equally after 40; lungs, males 50 to 54, females 50 to 65; mouth, tongue, and throat, males 55 to 59, females 65 to 69; ovaries, 45 to 60; penis, after 40; rectum, males after 55, females 55 to 59; stomach, males 55 to 69, females 60 to 64; testicle, after 20; upper extremity, males after 20, females after 40; uterus, 45 to 49.

52. Elastic Rubber Bands for Drainage.—Ryerson uses the ordinary elastic band for carrying out the principles of drainage. It was first applied in all cases in which drainage was required, with the exception of those cases in which a tube was still considered advisable. From the test cases it was learned that the discharge was taken up into the dressing, practically none of it being dammed back into the cavity as the result of drying around the mouth. The discharge was found to run up between the approximated surfaces of the two layers of rubber as well as between the outer surface of the band and the surrounding wall of the sinus. As the approximated surfaces of the bands were always moist with discharge and the cavity emptied of its contents it was considered that capillary action was the force which was responsible for the drainage of the wounds. Among the advantages of the bands that were noted, were the ease of introduction, the absence of pain, and the efficient way in which they carried out the drainage. The flexibility of the bands also allows the cavity to collapse and in this way hastens the healing process. On account of the flatness of the band and the small amount of granulation tissue that forms in a collapsed cavity, the resulting scar with its subsequent contraction will be small. The conditions in which Ryerson considers that rubber bands will carry out drainage satisfactorily are abscess cavities, acute and chronic sinuses, operation wounds of medium size in which bloody oozing is expected, e. g., thyroidectomy, or in which the wound is expected to become septic.

Vermont Medical Monthly, Burlington

November

- 57 Clinical Relationship of Ophthalmology to General Medicine and General Surgery. J. H. Woodward, New York.
- 58 Sleep—Sleeplessness and Hypnotics. S. W. Hammond, Rutland.
- 59 The Secondary Work of the Digestive Juices. C. F. Dalton, Burlington.
- 60 The Individual Assuming Personal Care. J. W. Watson, So. Braintree, Mass.

Journal of Ophthalmology and Oto-Laryngology, Chicago

November

- 61 "Trachoma Bodies" possibly the Etiologic Factor of Trachoma. B. Pusey, Chicago.
- 62 Surgical Correction of Deformities of the Nasal Septum. E. Pynchon, Chicago.

61. Published in the *Bulletin of the Northwestern Medical School*, June, 1909. The important points of this article were covered in an article on this subject published in *THE JOURNAL*, July 3, 1909, p. 28.

Pennsylvania Medical Journal, Athens

November

- 63 *Present Status of Cancer Research. L. Loeb, Philadelphia.
- 64 *Differential Diagnosis of Gall-Stones, Ulcer and Cancer of the Stomach. C. Graham, Rochester, Minn.
- 65 *Prevalence of Cancer. S. G. Dixon, Philadelphia.
- 66 Early Diagnosis of Cancer of the Breast and Best Operative Technic. W. L. Rodman, Philadelphia.
- 67 *Cancer of the Mouth and Lip. E. Laplace, Philadelphia.
- 68 *Early Diagnosis and Best Treatment of Cancer of the Rectum. R. W. Stewart, Pittsburgh.
- 69 *Early Diagnosis of Cancer of the Uterus: Operative Technic. T. S. Cullen, Baltimore.
- 70 Education of the Public Concerning Cancer of Uterus. J. G. Clark, Philadelphia.
- 71 Place of the X-Ray in the Treatment of Cancer. J. C. Price, Scranton.
- 72 *The X-Ray in Relation to Carcinoma of the Breast. W. S. Newcomet, Philadelphia.
- 73 Cerebrospinal Syphilis: Five Cases with Necropsy. S. D. Ingham, Philadelphia.
- 74 *Indications for Antisyphilitic Treatment of Tabes Dorsalis. J. H. W. Rhein, Philadelphia.
- 75 Advantage to Physician and Pharmacist in the Use of U. S. P. and N. F. Preparations. W. P. Kirk, Monessen.

63. Present Status of Cancer Research.—Loeb says that whether or not cancer is a parasitic disease can neither be affirmed nor absolutely denied at present, but he believes that, on the whole, the increase in knowledge in recent years has not tended in the direction of the parasitic hypothesis. Only systematic breeding experiments in animals, such as those carried out at present by Tyzzer, can definitely decide what part hereditary factors play in the pathogenesis of cancer. If no fact known so far necessitates the assumption of micro-organisms as the cause of cancer, nevertheless their presence as intracellular parasites would explain the apparently endless proliferation of the cancerous cells. There can be no doubt that various non-specific physical or chemical stimuli are among the best established factors in the pathogenesis of cancer. Experiments prove how important the study of animal tumors has been and will be still more so in the future for the analysis of cell and tissue growth in general. At present, the principal weapon in the struggle against cancer still consists in thorough extirpation of the tumor. Certain experiences in tumor inoculation prove that the liability to the formation of local metastases may differ even in tumors of the same histologic structure. It will be necessary, therefore, to avoid carefully any contact between the tumor and the surrounding tissues during the operation. Inasmuch as mechanical injury to a tumor may lead, in certain cases, to an increased energy of growth, it seems to Loeb that whenever possible an exploratory incision ought to be followed at once by radical removal of the tumor. It will be necessary to use all means to secure an early diagnosis and an early operation.

64. Differential Diagnosis of Gall-stones.—Graham says that in gall-stones the general health does not suffer until complications are present. The course of ulcer is prolonged and fluctuating; in cancer it is short and steadily downward. Pain in gall-stones is irregular in time, of sudden onset, and of severe but short duration, abrupt cessation, radiates to right arch and back and is independent of food. In ulcer, pain is usually clear cut, in spells, regular in time, and eased by food to reappear in from two to four hours. In cancer, the pain is continuous, dull, depressing and not only is not controlled by food, etc., but is immediately increased by it. In gall-stones the vomiting is less a factor in diagnosis. In ulcer it is as regular as is pain. It is irregular in cancer. In gall-stones gas is troublesome only at the time of the colic. In ulcer it is a symptom at a time when other symptoms are present and is controlled in the same manner as the other symptoms are controlled. In cancer, gas is continuous and increased in amount, with periods of great increase usually soon following the ingestion of food. Blood is rare in gall-stones; in ulcer quite rare; in cancer common. In gall-stones the patient is normal physically, save when there are late complications with pancreatic disturbance. In ulcer, the patient is hopeful and active; in cancer, depressed, languid, weakened, discouraged, pale, and, perhaps, cachectic. Diagnosis of gall-stones is made with considerable satisfaction; that of peptic ulcer is, perhaps, less clearly defined. Diagnosis of cancer of the stomach is extremely difficult to make in that early stage when surgery, the only means of relief, offers a hope of cure, and when delay is fatal. Though late in his diagnosis, either because of insuperable circumstances, lack of knowledge or unpardonable neglect, the internist has met his responsibility, at least in a small measure, when he places his patient with gall-stones, ulcer, or suspected gastric cancer in the hands of a competent surgeon. The surgeon's responsibility, however, does not cease with exploration or gastroenterostomy alone, because careful resection is necessary in cancer or any suspicious ulcerous lesions.

65. Prevalence of Cancer.—Dixon says that so far as statistics are concerned, the term cancer may be considered as including "cancer" and other "malignant tumors," and excluding all tumors which are not definitely stated to be of a malignant nature. In the Bureau of Vital Statistics in the Pennsylvania State Department of Health, it is necessary to ask each month not less than twenty-five physicians throughout the state for a more definite statement, even as to the location of cancers and malignant growths. Material aid in the study of cancer is thus withheld.

67. Cancer of Mouth and Lip.—Laplace claims that cancer of the mouth and tongue is especially destructive to life because of the ease of infection from the lymphatics and the excessive virulence of the disease in that locality. A clinical differential diagnosis should be accompanied by laboratory tests for early diagnosis. The ocular or cutaneous tuberculin test may eliminate tuberculosis, the Wassermann reaction will eliminate syphilis, whereas the Crile blood test may finally determine the cancerous diathesis. A radical operation should then be performed. Removal of a specimen for microscopic examination is always risky for fear of spreading the disease. The parts should be cauterized thoroughly with the thermocautery after an operation and allowed to heal by granulation or a secondary suture performed. X-ray or radium treatment is of doubtful value in the mouth. Early diagnosis and early complete removal must remain the treatment at present. All tentative canterizations must be avoided and the patient submitted at once to a radical operation, remembering that warts, moles, etc., may be considered as potential cancers.

68. Cancer of Rectum.—Inasmuch as acute inflammatory conditions producing perirectal infiltration, tuberculosis and syphilis or benign neoplasms are the conditions usually mistaken for cancer of the rectum, Stewart thinks it probable that the cures following colostomy have really been for one of the above conditions. Cancer of the rectum is not necessarily a disease of middle or advanced life; it may occur in early adult life. The slowness with which the growth involves the surrounding structures emphasizes the value of early radical excision. From the patient's standpoint, good surgical judgment is of far more importance than great operative skill, as he may be injured by an excision, no matter how skilfully performed, if the growth has clearly extended beyond operative limits, as his suffering could have been as effectively relieved by a simple colostomy. In the majority of cases, the operation to be recommended for the removal of the cancerous growth is the combined abdominal and perineal methods, by which the entire rectum is excised, including the lymphatic-bearing area behind the rectum. This operation should not be undertaken except by an experienced abdominal surgeon. Unfortunately it is applicable only in the minority of cases; much, however, may be done in the worst cases by inguinal colostomy.

69. Cancer of Uterus.—Cullen asserts that any bloody or watery vaginal discharge that cannot be definitely accounted for demands an immediate and careful local examination. When the physician cannot decide whether or not malignancy exists, a specimen should be sent to the pathologist. Extra-uterine pregnancy frequently gives rise to intermenstrual bleeding and occasionally to a slight menstrual discharge, but there is usually a history of a missed period or of a period that has persisted, and localized pain. Pelvic inflammatory conditions are sometimes accompanied by a bloody or watery discharge, but in these cases a recent local vaginal infection or an old pelvic lesion may account for the condition. Here, too, there is rise of temperature, whereas in early cancer there is no fever.

72. X-Ray in Carcinoma of the Breast.—Newcomet says that occasionally one will see some remarkable instances of advanced disease yielding to the x-rays. This, however, is not usual, for the best results are to be found by prompt and energetic treatment, and here alone is the only hope of removing the disease. At present, it is difficult to state the actual worth of the x-ray immediately after a primary operation as a prophylactic. Years of observation are necessary to reach definite conclusions. In cases showing involvement of the axillary glands early x-ray treatment may prove to be of great value. While cases of recurrence are not hopeful, the patients will sometimes recover after vigorous x-ray treatment. In unfavorable cases it should be ascertained whether or not the x-ray was properly applied, remembering that this is a new agent and one whose application is not thoroughly understood.

74. Antisyphilitic Treatment of Tabes Dorsalis.—Rhein advises antisyphilitic treatment in tabes because it is his belief that the antisyphilitic treatment should have a favor-

able influence on the meningitis which, it is proper to conclude, is present in most of the cases. While such a treatment may not have any direct bearing on the progress of tabes, it certainly cannot but favorably affect the meningitis which in many, if not all, of the cases is syphilitic in origin; and if this meningitis is not the cause of the degeneration in the posterior columns as is claimed by some, and which Rhein believes is doubtful, yet it is conceivable that the presence of such a meningitis cannot but unfavorably influence the progress of the tabetic process. The treatment should not, however, be prosecuted when cachexia, due to chronic liver, kidney, lung or other diseases, is present, and where the administration of the iodids and mercury increases auto-infections of a gastrointestinal type, or where optic atrophy is an early symptom.

Memphis Medical Monthly

November

- 76 Treatment of Typhoid. B. W. Fontaine, Memphis.
77 Case of Head Injury. B. N. Dunavant, Memphis.
78 Complications of Tympano-Mastoiditis. W. L. Simpson, Memphis.

Interstate Medical Journal, St. Louis

December

- 79 *Cure of Movable Kidney by Restoring the Standard Weight with a Pure Milk Diet. L. Kolipinski, Washington, D. C.
80 *Outlining of Normal Organs and Diagnostizing of Diseased Conditions of the Pleura and Lungs by Means of Palpation. F. M. Pottenger, Monrovia, Cal.
81 Labor as a Factor in Pelvic Disease. J. E. King, Buffalo.
82 Psychiatry (continued). S. I. Schwab, St. Louis.

79. Movable Kidney.—Kolipinski believes that dietetic treatment will cure most cases of movable kidney when emaciation is present. Hence it should be resorted to before any other method of cure or treatment is entertained. The operation of nephrorrhaphy may, he says, be done in the obese, in degenerative floating kidney, and the same with hydronephrosis and when the milk diet has restored the weight, but not the kidney, to normal.

80. Published in the *Lancet-Clinic*, Dec. 11, 1909.

Mississippi Medical Monthly, Vicksburg

December

- 83 *Causes of Insanity. V. B. Martin, Bogue Chitto.
84 Tapeworms. H. S. Capps, Gulfport.
85 Prognosis in Different Forms of Insanity. T. E. Hewitt, Bogue Chitto.

83. Tapeworm.—The following prescription has given Capps excellent results:

R.	gm. or c.c.	
Olioresin aspidii	8	3ij
Chloroformi	4	or 3j
Olii tiglii	13	gtt. j
Glycerina	60	q. s., 3ij

M. Sig.: To be taken in 2 doses at interval of an hour.

Capps generally directs his patients to fast for one or two days before taking the medicine; only a little milk or toast is allowed. On the day previous to administering the anthelmintic, a saline cathartic and an enema are given to clear the bowels. The next morning give the above prescription and follow within two or three hours with another saline. This generally succeeds in bringing away the worm. As the treatment is very weakening, however, follow it up with a tonic, containing brandy or strychnin. If the head of the worm is not secured, it will continue to form segments which will ripen and be discharged again within about three months. In this case the treatment is to be repeated. If no segments reappear in the stools after five or six months, the patient may be regarded as cured.

Woman's Medical Journal, Cincinnati

November

- 86 Morphology and Physiology of Areas of Langerhans in Some Vertebrates. L. M. De Witt, Ann Arbor, Mich.
87 Technic of Tonsillectomy and Adenectomy. G. P. Yankauer, New York.
88 Case of Hydatiform Mole. J. K. Qua, Amsterdam, N. Y.
89 Evolution of Asepsis. E. L. Call, Boston

St. Paul Medical Journal

December

- 90 *Epidemic Paralysis. C. R. Ball, St. Paul.
 91 *Infantile Paralysis. H. Davis, St. Paul.
 92 Present Status of the Serotherapy of Puerperal Septic Infection. J. L. Rothrock, St. Paul.

90. **Epidemic Paralysis.**—Anterior poliomyelitis, as seen in epidemic form, according to Ball, presents so many different types that the names, "The New Disease" and "Epidemic Paralysis," do not seem inappropriate. The so-called abortive type in Ball's opinion simply means a case in which the nervous system has not been overcome by the toxin. Notable points are: 1. The usually free sensorium even in the fatal cases in contradistinction to the mental confusion and stupor in ordinary meningitis. 2. The method of death in the fatal cases by paralysis of the respiration. 3. The transient character of the paralysis, in some cases lasting from a few hours to several days, and then completely disappearing. 4. The sensitiveness of the nerves to pressure in the majority of cases before the development of the paralysis. 5. Rest in all cases from the very beginning and the possibility of preventing the occurrence of the paralysis in some cases by this measure.

91. **Infantile Paralysis.**—According to Davis, the treatment is not satisfactory. He cleans out the intestinal canal with ealomel, and then uses salicylates, ergot and ice to the posterior cervical region. After the acute stage is over, he gives iodid of potassium and strychnin. In one case of respiratory paralysis he lowered the head, thereby flooding the upper spinal region and brain with blood, immediately relieving the distressing symptoms for half an hour, and then there was a return of the trouble, and death.

Monthly Cyclopedia and Medical Bulletin, Philadelphia

November

- 93 Achylia Gastrica. A. L. Benedict, Buffalo, N. Y.
 94 Dementia Præcox Caused by Dental Impaction. H. S. Upson, Cleveland.
 95 Cataract. C. A. Oliver, Philadelphia.
 96 Problem of Efficient Nursing for Persons of Moderate Means. W. O. Stillman, Albany, N. Y.
 97 The Adrenals in Sudden Death (concluded). C. E. de M. Sajous, Philadelphia.
 98 Influenza. J. V. Shoemaker, Philadelphia.
 99 Infantile Gonorrheal Vulvovaginitis. Aphthous Stomatitis. W. C. Hollopeter, Philadelphia.
 100 Light Energy in Treatment of Disease. J. F. Wallis, Norristown, Pa.
 101 Medical and Surgical Testimonies on the Mummy Grove Potteries of old Peru. A. S. Ashmead, Philadelphia.

Journal Indiana State Medical Association, Fort Wayne

November

- 102 *Consideration of the Prophylaxis and Treatment of Cicatricial Rectal Stricture. A. B. Graham, Indianapolis.
 103 Melanuria: Report of a Case. B. W. Rhamy, Fort Wayne.
 104 Sketches of the Medical History of Indiana (continued). G. W. H. Kemper, Muncie.
 105 *Neglected Appendicitis. B. Van Sweringen, Fort Wayne.
 106 Influenza—Its Complications and Treatment. B. W. Egan, Carroll.
 107 Sporadic Cretinism: Results of Thyroid Feeding. E. Charles, Summitville.
 108 Mechanical Assistant for the More Correct Adjustment of Colles' and Pott's Fractures. N. W. Cady, Logansport, Ind.
 109 *The Appendotome. S. J. Young, Valparaiso.
 110 Acute Endocarditis. W. F. Fankboner, Marion.
 111 Status Lymphaticus. A. Kern, Wabash.
 112 *Iliohypogastric Hyperesthesia. M. A. Austin, Anderson.

102. **Cicatricial Rectal Stricture.**—While the surgical measures employed in the treatment of cicatricial rectal stricture, excision, complete posterior proctotomy, colostomy and gradual dilatation have their fields of usefulness, Graham emphasizes the fact that no one of these surgical measures is applicable to every case; each must be studied carefully, and the operation of choice should be the one best suited to the existing conditions. Prophylaxis implies a careful rectal examination; a careful rectal examination implies an early diagnosis; an early diagnosis implies correct treatment, and correct treatment includes the prevention of a stricture.

When cicatricial rectal stricture is diagnosed, surgical intervention is indicated. In cases where there is no danger of infection, excision should be the choice of all surgical measures at our command. If successful, its results are ideal because it effects a cure by the complete removal of the stricture. In cases in which it is not safe to practice the

excision method (and there are many such cases), complete posterior proctotomy or colostomy, either alone or combined, should be performed. Gradual dilatation should be employed only in cases of small annular stricture. In such cases it is possible that a symptomatic cure can be effected by this surgical measure. The excision method, he says, needs no defense, as its results are all that could be desired.

105, 112. Abstracted in THE JOURNAL, Oct. 23, 1909, pp. 1422, 1423.

109. **The Appendotome.**—This instrument is a combination of clamp and scissors. After ligation, it clamps, cuts, seals and removes the appendix at one stroke. This is all done with one hand, leaving the other free. It saves time. It prevents leakage from the proximal cut end of the appendix. It locks, automatically, and is removed from the field attached to the severed appendix, thus precluding subsequent use of the instrument in some other part of the operation—a mistake which is possible by other methods. The instrument is simple, easily and quickly taken apart when cleaned, and therefore aseptic.

Louisville Monthly Journal of Medicine and Surgery

December

- 113 *Medical Treatment of Exophthalmic Goiter. S. P. Beebe, New York.
 114 Early Diagnosis of Gall-Stone Disease. J. E. Cannaday, Charleston, W. Va.
 115 Acute Pancreatitis, due to Retroinjection of Bile. L. Frank, Louisville.
 116 *Burns. A. H. Barkley, Lexington.

113. Abstracted in THE JOURNAL, Nov. 13, 1909, p. 1675.

116. Abstracted in THE JOURNAL, Nov. 20, 1909, p. 1709; also published in the *Virginia Medical Semi-Monthly*, Nov. 26, 1909.

Albany Medical Annals

December

- 117 The Exaggerated Fear of the Hospital and Operations. A. H. Traver, Albany.
 118 The Alcoholic Psychoses. C. G. McGaffin, Taunton, Mass.
 119 *Retroadisplacements of the Uterus. J. B. Harvie, Troy, N. Y.
 120 Tuberculosis Dispensary work in Albany. A. T. Laird, Albany.

119. **Retroadisplacements of the Uterus.**—In Harvie's experience the Alexander operation has not been associated with complications during gestation except some discomfort referred to the inguinal region. Labor has not been complicated and the process of involution has been prompt and satisfactory. He has never seen a case presenting unusual complications following ventral suspension. The success of a ventral suspension necessitates the closest calculation to secure an easy resting place for the uterus so that the least strain will be obviated on its attachment. If the suture should be applied too far forward on the fundus so that the ligature is called on to sustain the weight of the uterus, it will be a matter of a very short time when it will break away from its moorings or the peritoneal ligament which is formed in those cases will become so stretched out that the uterus will be permitted to drop back in its former position. The moment the peritoneal ligament is called on to sustain the weight of the organ it soon ceases to be of any use, but so long as it performs its functions by acting as a stay just so long will it continue to hold the uterus in anteversion.

Intraabdominal shortening of the round ligaments, as recommended by Mann, Wylie and others, has not proved satisfactory in Harvie's work. He has done this operation a few times, and has, in addition, supplemented it by placing a purse-string suture low down in the broad ligament. This seemed to maintain the uterus fairly well in a forward position, and Harvie sees no objection to the proceeding, but is unable to speak of its permanency inasmuch as the operations have been done too recently. One of the women operated on is now pregnant for the first time and so far has expressed very little discomfort. He believes, however, that the feeble attachment of the round ligaments in the inguinal canal would argue against their standing any prolonged strain and this has perhaps accounted for the reported failures of the Wylie and Mann operations.

Texas State Journal of Medicine, Fort Worth

December

- 121 Practical Applications of New Tests of the Semilecular Canals. M. E. Taber, Dallas.
122 Five Cases of Hypernephroma. J. J. Terrill, Galveston.
123 Importance of Teaching Oral Hygiene in the Public Schools. L. P. Robertson, Marlin.
124 Medical Ethics. J. W. Largent, McKinney.
125 Mineral Wells: Its Climatology and the Therapeutic Value of Its Waters. J. H. Eastland, Mineral Wells.
126 Symptom Grouping in Typhoid. R. L. Kimmins, Iredell.
127 Diagnosis and Treatment of Typhoid. J. Greenwood, Galveston.
128 Local Anesthesia in General Surgery. L. F. Watson, Oklahoma City, Okla.
129 Diagnosis and Surgical Treatment of Diseases of the Upper Abdominal Cavity. W. W. Grant, Denver, Colo.

Buffalo Medical Journal

December

- 130 Our Family's Solution of the Milk Problem. W. S. Ball, Buffalo.
131 Headaches and their Treatment. G. Rankin, Buffalo.

Progressive Medicine, Philadelphia

December

- 132 Diseases of the Digestive Tract and Allied Organs, the Liver and Pancreas. D. L. Edsall, Philadelphia.
133 Diseases of the Kidneys. J. R. Bradford, London.
134 Surgery of the Extremities, Tumors, Surgery of Joints, Shock, Anesthesia, and Infections. J. C. Bloodgood, Baltimore.
135 Genitourinary Diseases. W. T. Belfield, Chicago.
136 Practical Therapeutic Referendum. H. R. M. Landis, Philadelphia.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

Lancet, London

December 11

- 1 Acute Overstraining of the Heart. Professor Schott.
2 *Functional Disorders of the Colon. E. W. H. Groves.
3 *The Role of Fats in the Treatment of Disorders of the Stomach. F. C. Moore and R. L. Ferguson.
4 Relationship between Avian and Human Tuberculosis. S. G. Shattock and L. S. Dudgeon.
5 Use of Radium for Local Application within the Body. A. C. Jordan.

2. **Functional Disorders of the Colon.**—Groves describes all conditions of the colon which are associated with marked constipation without the occurrence of any gross disease. He includes, on the one hand, the extreme cases of idiopathic dilatation of the colon, most of which are congenital; and, on the other, those cases of chronic constipation which are probably due to a sluggish action of the large intestine. For details the original article must be consulted.

3. **Fats in the Treatment of Stomach Disorders.**—In 62 cases in which there were subjective manifestations of gastric disorder, either with or without indications of organic disease of the stomach, the effect of the administration of oil of sweet almonds on the secretory activity of the stomach was determined by Moore and Ferguson. On consecutive days a plain test breakfast and a test breakfast preceded 30 minutes by one ounce of almond oil was given, and in the stomach contents the free HCl and the total acidity were estimated; in certain cases the digestive power of the stomach contents (peptic and tryptic) was also determined by the method of Mett. The stomach contents after the oil breakfast separated on standing into three layers—oil on the surface, the fluid contents with its granular sediment below, and between the two a narrow layer of emulsified oil, and but for the presence of the oil the contents were similar in appearance to those after the control meal; in no instance was there any evidence of the presence of bile pigments or of variations in the mucous content, and the quantity varied quite irregularly, being in some greater, in others less than in the control.

The results of the analyses expressed in averages where a series of observations were made on any one case, show without exception that the administration of oil is associated with a marked reduction in the acid values, free HCl and total acidity, of the stomach contents. Although it is well recognized that in any individual, normal or otherwise, the acid values of the stomach contents, removed at a definite time after a meal of constant composition, vary within somewhat wide limits, yet the constancy with which they are diminished after the exhibition of oil in so large a number of cases precludes the possibility of coincidence.

Clinically, the administration of fats, such as cream, butter, almond oil, in conditions in which hyperacidity of the stomach

contents has been found to exist, has shown this action of fats to be associated with a very definite amelioration of the subjective manifestations of the condition. In simple forms of hyperacidity depending on slight degrees of digestive hypersecretion (the so-called hyperchlorhydria of Riegel), the addition of cream and butter in abundance to the diet, with a diminution of the starches, will often suffice to remove the subjective manifestations. It is only in the severe types, and particularly of the severe degrees of digestive or continuous hypersecretion so commonly associated with chronic ulcer about the pylorus or duodenum, in which heart-burn, acid pyrosis, the sudden gnawing pain in the epigastrium ascribed to pyloric spasm, and the vomiting of acid fluid, that the administration of almond oil is undertaken, and then in doses of one ounce first thing in the morning and repeated before subsequent meals if necessary. This method has proved of value not only in alleviating the symptoms which follow the digestion of food in the stomach, but also in contributing very considerably to the nutrition of the patient, and is certainly preferable to the sole use of alkalis for the purpose of neutralizing the hyperacid stomach contents, and so obtaining relief from the symptoms. In no case have they found that oil so administered has been badly tolerated or in any way proved objectionable.

British Medical Journal, London

December 11

- 6 Mistakes in Diagnosis and their Avoidance. R. P. Rowlands.
7 *Physical Signs of Incipient Pulmonary Tuberculosis. D. B. Lees.
8 *Severe Persistent Hemoptysis. T. W. Dewar.
9 The Dietetic Theories of America. A. Bryce.
10 *Treatment of Chlorosis. C. H. Melland.
11 Tetanus Treated with Carbolic Injections: Recovery. E. M. Phillips.
12 Congenital Blepharorrhoea of the Lachrymal Sac. J. Foster.
13 Perforating Wound of the Eye: Operation: Recovery. C. Killick.
14 Chronic Disease of the Colliculus Seminalis. A. Edwards.
15 Use of Pure Animal Wool in Medical and Surgical Work. N. Porritt.

7. **Physical Signs of Incipient Pulmonary Tuberculosis.**—During the last four years Lees has treated all his cases of early pulmonary tuberculosis by inhalation of antiseptics with remarkable results. The inhaler employed has been the simple oro-nasal cage of perforated zinc advocated by Yeo. It is worn over the nose and mouth and is kept in place by elastic bands behind the ears; it contains a piece of sponge or felt on which the solution is dropped. The only precaution necessary is to take care that the edges of the inhaler which rest on the skin are not wetted, lest the skin should be stained or made sore. The antiseptic solution employed has been:

R.	gm. or e.c.	
Acidi carbolici	8	3ij
Creosoti	8	3ij
Tinct. iodi	4	or 3j
Spir. ætheris	4	3j
Spir. chloroformi	8	3ij

Of this solution, 6 to 8 drops are poured on the felt of the inhaler every hour during the daytime, and two or three times during the night, if the patient is awake. The odor of the solution is not unpleasant, and patients appear to derive great benefit from its use. Cough is readily relieved without any sedative or expectorant medicines, and sputum, if any, is more easily expectorated, and is lessened in quantity. The use of this solution has no irritating tendency, nor does it cause hemoptysis. If hemorrhage should occur, it might be well to remember Yeo's suggestion and add turpentine to the solution.

The absolutely continuous use of the inhaler (except at meal-time) must be rigidly required, and it is very desirable to keep the patient at rest in bed for a week at least, the windows of his bedroom being widely open. During the second week he may be allowed to rise for an hour or two daily, but the continuous use of the inhaler is essential. When the temperature is normal, after the first ten days or so, he may be allowed to omit the inhaler for an hour every morning and take a walk in the open air. Gradually the periods of exercise may be increased and the number of hours during which the inhaler is used may be very gradually diminished.

8. **Severe Persistent Hemoptysis.**—Dewar checked the bleeding by intravenous injection of 10 c.c. of normal serum by the month, three times a day, all other means of treatment having proved futile.

10. **Treatment of Chlorosis.**—Melland emphasizes the importance of elimination of water by the bowel, by the kidney, or by the skin, but the intake of water must be limited at the same time, and he recommends taking as little salt with the food as possible. It has struck him as a possible explanation of the origin of chlorosis, which is still wrapped in mystery, that the kidneys might be functionally incapable of secreting urine containing more than a certain proportion of salts, such as is well-known to be the case in chronic interstitial nephritis, with resulting retention of salts and retention of fluids to keep the salts in solution.

Medical Press and Circular, London

November 24

- 16 Examination of the Person. F. J. Smith.
- 17 Study and Treatment of Acute Peritonitis (continued). Professor Federmann.
- 18 The Teaching of Practical Midwifery in the Past, and at the Present Time. H. Jellett.
- 19 Relations of Physic to Physies, and their Bearing on Therapeutics. W. G. Smith.

Clinical Journal, London

November 24

- 20 Difficulties and Dangers Met with in Connection with Uterine Fibroids. T. G. Stevens.
- 21 Stricture of Intestine. F. J. Steward.
- 22 Routine Treatment of Recent Syphilis. H. Oppenheimer.

Journal of Tropical Medicine and Hygiene, London

December 1

- 23 Peripheral Neuritis of Malarial Origin. G. H. Fink.
- 24 Bilharziosis of the Penis. F. C. Madden.
- 25 Spirillum Found in Cases of Relapsing Fever in the Sudan. J. B. Christopherson.

Indian Medical Gazette, Calcutta

November

- 26 Indications and Technique of Transfusion in Cholera: Cholera in Europeans in Calcutta. L. Rogers.
- 27 One Hundred Consecutive Cases Operated on under Spinal Analgesia. H. B. Melville.
- 28 Litholapaxy in Young Children: Suggestions for a Modified Evacuating Apparatus. A. Lankester.
- 29 Experiences with the Lactic Acid Bacillus. J. R. Roberts.

Intercolonial Medical Journal of Australasia, Melbourne

October

- 30 Hernia in Infants. R. H. Russell.
- 31 *Trophing for Double Optic Neuritis. J. W. Barrett and W. F. Orr.
- 32 Traumatic Pulsating Exophthalmos. J. W. Barrett and W. F. Orr.
- 33 Clinical Chemistry of the Urine. A. H. Rothera.

31. **Trophing for Double Optic Neuritis.**—The patient complained of headache, had been feeling out of sorts for some time, and had suffered from slight giddiness on stooping. About Christmas time she suffered from nausea but actually vomited for the first time on New Year's day. The vomiting came on suddenly and recurred frequently, sometimes immediately after food, sometimes two hours after food. She suffered from increasing headaches. The pain was not localized, but affected the whole of the head. Subsequently, objects seemed to turn around and she saw double. She then found that she was losing control over the right hand in playing the piano. Listlessness and weakness developed to such an extent that sitting up was troublesome. There was no history of any previous illness, beyond an injury to the back of the head some years since, which apparently did not leave any after-effects, and was due to a fall.

When examined first, the vision was, right eye, 6/24; left eye, 6/24. Fundus, media and fields were normal, but there was marked rotatory nystagmus in both eyes, which probably accounted for the defective vision. She had difficulty in walking, and had little control over her legs. She complained that when she stood up, objects seemed to be moving round in a direction reverse to that of the hands of a clock. While unable to stand firmly, she did not tend to fall in any particular direction. She complained in a general way of pain behind and below the right ear. Knee jerks were active right and left. Urine normal. The right side of the face and the

fore part of the head was markedly anesthetic, and there was anesthesia of the left leg from the knee downward. There was also anesthesia on the right side of the tongue. She was put to bed and treated with small doses of mercury and iodids. The rest in bed was at first followed by some amelioration of the general symptoms, but was soon followed by the development of violent optic neuritis on both sides, commencing first on the left side, but becoming more marked on the right.

In the course of four or five days, the elevation of the discs became considerable, amounting to between two and three diopters, and the other symptoms intensified. She was then trephined on the right side below the tentorium, and midway between the ear and the occipital protuberance. The dura mater bulged; there was little pulsation. On the opening of the dura mater, there was little escape of cerebrospinal fluid, but very marked protrusion of the brain. A trochar was introduced in various directions, and forward and in the midline, in the direction of the superior cerebral peduncles, it was thought that there could be detected material of different consistency. It was conjectured that there was a new growth in this position, but its removal was considered inadvisable. A few days after operation, considerable escape of cerebrospinal fluid occurred through the wound, and continued for some time. The headache lessened and general condition improved. The rotatory nystagmus was much less, and the neuritis was perhaps a little less intense. Pupils reacted to light and accommodation. During the next fortnight, the patient lost ground and appeared to be almost moribund. There were occasional clonic spasms throughout the entire body associated with collapse and partial loss of consciousness. The temperature rose to 103 F., and vomiting was frequent. At the request of the father of the patient, radium was applied to the wound.

From this time, steady improvement took place. What the lesion may have been in this case, it is idle to speculate. It is sufficient to note that the effectual decompression of the brain stopped the optic neuritis, restored vision, and has, at all events for the time being, put an end to the imminent danger to life. It is improbable from the subsequent history that there will be any further trouble.

The Dublin Journal of Medical Science

November

- 34 Aims of Anatomy. A. C. Geddes.
- 35 Hematemesis and its Surgical Treatment. W. Taylor.

Archives Générales de Médecine, Paris

October, LXXXIX, No. 10, pp. 741-804

- 36 Deep Pitting Following Subcutaneous Injections of Quinin in the Obese. (Théorie adipogénétique des eschares produites par les injections sous-cutanées de quinine.) F. Gorriti.
- 37 Psychic Disturbances in Insular Sclerosis. (Troubles psychiques dans la sclérose en plaques.) Enzière.
- 38 Pleurisy with Effusion of the Apex. (La pleurite exsudative du sommet.) B. F. Mareou.

Lyon Chirurgical, Lyons

November 1, II, No. 6, pp. 651-762

- 39 Diversion of Fecal Matters in Treatment of Cancer of the Rectum. (Étude critique de la dérivation préalable, temporaire ou définitive, des matières dans le traitement chirurgical du cancer du rectum.) L. Bérard and A. Chalié.
- 40 Treatment of Foreign Bodies in Air Passages. (Le traitement des corps étrangers des voies respiratoires.) Sargnon and Barlatier.
- 41 Anatomy and Physiology of the Foot. (Variations sur l'anatomie et la physiologie du pied.) E. Destot. Commenced in No. 5.
- 42 Hernia in Front of and Behind the Uterus as Factor in Prolapse. (Les hernies pré et rétro-utérines dans la constipation des prolapsus.) H. Violet. Commenced in No. 5.
- 43 Conservative Treatment of Sarcoma of Long Bones. (Étude du traitement conservateur dans les sarcomes présumés malins des os longs.) M. Gangolphe.

Obstétrique, Paris

October, II, N. S., No. 10, pp. 693-796

- 44 Structure and Development of the Uterus Muscular. E. Retterer and A. Lillèvre.
- 45 *Contracted Pelvis and Childbirth. (L'accouchement dans les bassins rétrécis.) E. Pestalozza.
- 46 Successful Vaginal Cesarean Section in 9 Cases of Eclampsia. (A propos de la dilatation rapide du col et de la césarienne vaginale.) E. Essen-Möller.

45. **Delivery with Contracted Pelvis.**—This is the third address on this subject which Pestalozza has delivered by request before international medical congresses. He reviews

the progress realized during the years since his first address at Geneva in 1896, regarding Müller's method of measurement by palpation as the most important achievement the years have brought. The only other important advance in the management of contracted pelvis of late, he declares, is the increasing tendency to expectant treatment. This requires, however, that the woman must be under constant supervision, and preferably in an institution where all is prepared for a serious operation if such becomes necessary. In his experience spontaneous delivery occurred on an average in 50 per cent. of all cases in which the true conjugate was between 7.5 and 10 cm. The danger of rupture of the uterus when the woman has passed through a previous pregnancy sets a limit to expectant treatment for pluriparae. Pubiotomy is contraindicated for primiparae, at least for those with rigid soft parts. Cesarean section is favored by operating in the Trendelenburg position, drawing the uterus out before opening it, and making a transverse incision in the fundus without previous hemostasis. His mortality in 14 pubiotomies and 7 symphysectomies has been 19 per cent., while it was only 7 per cent. in 71 Cesarean sections. Excluding the fatalities for which the operation was not responsible in any way, the mortality was only 3 per cent. in 68 Cesarean sections. The new revival of the old forms of Cesarean section, extraperitoneal, suprasymphiseal, etc., he does not regard as much of an acquisition. There is only one operation that is safe in cases of manifest infection, and that is embryotomy on the living child. In 63 cases of contracted pelvis at the Rome lying-in clinic in his charge last year, spontaneous delivery occurred in 23, in 13 delivery was aided with forceps, in 3 by version, in 5 by induced premature delivery, in 4 by pubiotomy, and in 15 by Cesarean section; perforation was not required in any instance. The clinic has a regular and flourishing outside department for obstetric aid in the home, which has enabled all the women with contracted pelves to be sent in time to the clinic in a practically aseptic condition.

Presse Médicale, Paris

November 17, XVII, No. 92, pp. 817-824

- 47 Mechanism of Lactation. J. P. Langlois.
48 *Induced Mydriasis as Test for Pupil Reaction. (L'épreuve de la "mydriase provoquée" et l'inégalité pupillaire.) A. Cantonnet.

November 20, No. 93, pp. 825-840

- 49 *Suprarenal Treatment of Osteomalacia. L. Bernard.
50 *Dangers of Taxis in Hernia. (Réflexions sur le taxis.) P. Hardouin.
51 Serodiagnosis of Echinococcus Disease. (Quelques données pratiques sur le précipito-diagnostic de l'échinococcose.) G. Fleig and M. Lisbonne.
52 The Role of the Microbes. G. Barbézieux.

November 24, No. 94, pp. 841-848

- 53 Moving Pictures of Ultramicroscopic Field. (L'ultramicroscope et la cinématographie.) M. Comandon.

November 27, No. 95, pp. 849-856

- 54 *Typhobacillosis and Tardy Localizations of Acute Tuberculous Infection in Children. (Typhobacilliose de Landouzy.) E. Weill and G. Mouriquand.

December 1, No. 96, pp. 857-864

- 55 Cycle Depression and Exaltation. (La cyclothymie.) P. Hartenberg.
56 Roentgen-Ray Examination of Appendix and Stomach. (Diagnostic d'appendicite et radioscopie gastrique.) G. Leven and G. Barret.

48. **Differential Diagnosis with Induced Mydriasis.**—Cantonnet remarks that the loss of the pupil reflex occurs much more frequently than is commonly supposed, as it is not recognized until the reflex contraction of the iris is almost entirely lost; slight impairment of contracting power is overlooked. In order to detect it in its incipency the eyes should be examined with as little light as possible, illuminating both eyes exactly alike, the accommodation muscles relaxed by having the patient look at some object several yards away. The examination is still further facilitated by instilling into each eye the same small amount of a 4 per cent. solution of cocaine. This induces a gradual mydriasis, less marked than that from atropin, and not appearing for from 8 to 15 minutes. Any lack of symmetry in the dilatation of the iris is rendered plainly apparent by this means and slight inequality is magnified to excessive proportions. In 67 tuberculous patients only 3 had a normal pupil reflex, and these were in the earliest stage of the disease; only 4 in 18 patients with

exophthalmic goiter, and 8 of 39 patients with organic nervous disease. In 33 of the positive responses to the induced mydriatic test there was nothing to suggest this loss of the pupil reflex before the application of the test.

49. **Adrenalin in Treatment of Osteomalacia.**—Bernard reports a case of non-puerperal osteomalacia in a woman of 36. The first symptoms had been observed at the age of 16 after a nervous shock and were ascribed to a nervous origin until the girl became quite crippled with several spontaneous fractures. Immobilization for a year and a half induced some improvement, but two years later nervous stress and overwork were followed by recurrence and exaggeration of the symptoms of osteomalacia. After two years in bed and failure of all other measures, suprarenal extract was given according to Bossi's technic. By the thirtieth injection great improvement was manifest and in time the entire syndrome was arrested, the bones were apparently restored to approximately normal, all pains ceased and almost complete functional capacity was restored. From eight to ten injections were made each month, in single doses of 1 c.c. Not a trace of injury from the suprarenal treatment has been discovered in this case. He is inclined to ascribe its effect to an influence arresting the decalcification of the bones which he regards as the essential process in osteomalacia, both this and rachitis representing practically the same process, differing only in the age at which it occurs.

50. **Taxis in Hernia.**—Hardouin declares that forcible reduction of a strangulated hernia should never be attempted except when everything is in readiness for an immediate operation. It does not belong in the domain of ordinary medical practice, but it had been applied in all of his 12 cases of gangrene of a strangulated hernia and in all but 3 or 4 of his 70 cases of strangulated hernia in general. Before taxis is attempted the patient must be anesthetized and everything else done to reduce the contraction of the wall preventing the reduction of the hernia. The congestion in the loop of intestine must also be reduced as much as possible and the loop should be reduced spontaneously by traction from its mesentery, never by applying force directly to the hernia. The abdominal wall contracts on account of the pain, and consequently the pain should be abolished by a preliminary injection of 0.01 gm. morphin; the patient should draw up the legs, and a small pillow should be placed under the shoulders to relax the abdominal muscles. To the hernia itself, ice or compresses wrung out from ice water or ether, should be applied, and the buttocks raised, the head and shoulders being lowered. The mass of intestines slides down on the diaphragm and the mesentery under the influence of gravity pulls on the loop strangulated in the hernia, and exactly in the best way to induce its spontaneous reduction. If reduction is in any way possible these measures will accomplish it in two hours at most. If they fail, direct force would not have accomplished more. The patient is then in the best conditions for an immediate operation and there need be no fear of the serious complications liable to follow even the most careful taxis. In one case he applied gentle continuous pressure with his fingers for not longer than five minutes, and found distinct traces of interstitial hemorrhage at each point where the fingers had been applied.

54. **"Typhobacillosis" in Children.**—This term was applied by Landouzy to a general tuberculosis which induces a syndrome suggesting typhoid at first. A number of such cases are described here, with others of tardy localization in the meninges, peritoneum, pleura or lungs. The typhobacillosis in itself seems to be a mild affection if there is no special localization, but the bacilli circulating in the blood generally settle at some point of lesser resistance. In the child more than in adults, Weill remarks, local tuberculous affections are more apt to be preceded by this acute phase of typhobacillosis.

Beiträge zur klinischen Chirurgie, Tübingen

September, LXIV, No. 3, pp. 539-780

- 57 Fever after Goiter Operations and Traumatic Rupture of a Parenchymatous Goiter. (Zur Frage des Fiebers nach Kropfoperationen.) H. Kolaczek.
58 Mechanism of Twisting Fracture. (Zum Mechanismus der Torsionsfraktur.) H. Zuppinger.

- 59 Relaxation of Muscles in Extension for Fracture of Leg. (Muskulentspannung bei der Permanentextension der Ober- und Unterschenkelfrakturen.) Id.
- 60 Sarcoma of Tendon Sheaths. (Zur Kenntnis der Sehnenscheidensarkome.) A. Rosenthal.
- 61 Plastic Closure of Gap in Ureter. (Plastische Deckung von Ureterdefekten.) H. Flörcken.
- 62 Pseudoinvagination of Appendix. (Ueber Pseudoinvagination des cystisch veränderten Processus vermiformis.) J. E. Schmidt.
- 63 Appendix Cysts and Diverticula. Elbe.
- 64 *Aims and Tasks of Experimental Surgery. (Leistungen und Aufgaben der experimentellen Chirurgie.) H. Klose.
- 65 Relations of Neurology to Surgery. (Beziehungen der Neurologie zur Chirurgie.) H. Vogt.
- 66 Pathogenesis and Etiology of Static Coxa Vara. W. Hagen.

64. **Experimental Surgery.**—Klose describes in detail the new institute just completed at Frankfurt for topographic and experimental surgery and allied research, and discusses the ends and aims of such work. He expatiates on the importance of the principle that the conditions in experimental work must be identical in every respect with those of clinical surgery, as otherwise the deductions drawn for man are misleading. He also emphasizes the importance of conducting metabolic research as the invariable accompaniment of surgical research. Neurology, biochemistry, etc., are all indispensable, so that those doing experimental surgical work must have a thorough knowledge of at least the more important branches of medicine, besides being well grounded in the historical, literary and anatomie aspects of the subject, overcoming difficulties with energy and precision technique, and must also be humane and capable of inaugurating and superintending extensive research work.

Berliner klinische Wochenschrift

November 22, XLVI, No. 47, pp. 2089-2132

- 67 Treatment of Placenta Prævia. J. Veit.
- 68 Dissecting Aneurisms with Puerperal Eclampsia. C. Wegelin.
- 69 *Relations between Pregnancy and Diabetes, and Treatment. (Schwangerschaft und Zuckerkrankheit, ihre Wechselbeziehungen und Behandlung.) H. Neumann.
- 70 Two Cases of Operative Cure of Multiple Cholangitic Liver Abscesses. A. Hochheimer.
- 71 Influence of Sports on Vital Capacity. W. Frankfurter.
November 29, No. 48, pp. 2133-2176
- 72 Pathogenesis of Dropsy of Renal Origin. (Zur Pathogenese der Nierenwassersucht.) P. F. Richter.
- 73 Gastroscopy. (Ein Gastroskop.) H. Elsner.
- 74 Decline in Mortality from Tuberculosis. (Abnahme der Tuberkulosesterblichkeit.) A. Gottstein.
- 75 Shaking Renders Ferments and Complement Inactive. (Ueber die Inaktivierung der Komplemente durch Schütteln.) M. Jacoby and A. Schütze.
- 76 Nature of Antitrypsin in the Serum. O. Schwarz.
- 77 Improved Technique for Graphic Registration of Pulse. (Zur Methodik der Pulsschreibung.) F. Fleischer.
- 78 Indications and Technique for Vaginal Operations. G. Siefert.
- 79 High-Frequency Currents in Therapeutics. (Ueber d'Arsonvalisation.) F. Nagelschmidt.

69. **Pregnancy and Diabetes.**—Neumann has encountered 6 cases of diabetes with pregnancy; 4 of the women had inherited the tendency to diabetes and the others were from neurotic families with obesity or syphilis. In 4 the first signs of the diabetes were observed during the pregnancy; another developed the diabetes after emotional stress and the sixth woman showed signs of diabetes a few months after her first and difficult childbirth. Under dietetic measures the pregnancy proceeded in all unmolested to term. The tendency to a malignant course in the young imposes the necessity of forbidding marriage to diabetic girls and protecting diabetic married women against conception. Diabetic women who have become pregnant and pregnant women who have become diabetic must be kept under close supervision and strict dietetic measures, which can be carried out at home. Operative intervention is necessary only when indications demand it without regard to the diabetes.

Centralblatt für die Grenzgebiete der Med. und Chir., Jena

October 30, XII, No. 19, pp. 721-768

- 80 *Postoperative Parotitis. D. G. Zesas. Commenced in No. 18.
- 81 *Fibrous Polyserositis and its Surgical Importance. (Morbus Bamberger.) L. Isler.
November 11, No. 20, pp. 769-800
- 82 Phosphaturia and Its Appearance in Gonorrhea. M. Oppenheim.
November 25, No. 21, pp. 801-848
- 83 Radiologic Indications for Operative Intervention on the Stomach. (Ueber radiologische Indikationen für operative Eingriffe am Magen.) S. Jonas. Commenced in No. 20.

80. **Postoperative Parotitis.**—Zesas reviews 162 articles or theses on this subject which have accumulated since it was described in 1879. All but 15 per cent. of the cases on record were in women, but the postoperative parotitis may develop after various kinds of operations or even after mere general anesthesia without operation. The trouble is always an inflammatory process in the gland, but in no case on record is there any mention of a focus of inflammation in the vicinity of the gland. The prognosis is generally grave, the mortality in the pure cases was 32.2 per cent., and in those with abscesses 34.44 per cent. Among the complications have been reported hemorrhages, thrombosis, mediastinitis, edema of the glottis and meningitis. The first symptom is generally high fever while the patient feels well and the wound is healing smoothly. This was recorded in 48 of the reported cases; in 5 others there was no change in temperature or pulse. Another constant early symptom is the dryness of the mouth. The parotid gland swells and becomes painful; the left is generally involved, seldom both. This condition lasts for 3 or 4 days, and in 40 per cent. of the cases smooth recovery then followed, while suppuration occurred in the others, and if the pus was not artificially evacuated it found its way toward the skin or into the mouth or auditory passages. As a rule, the parotitis is crossed. Bumm has reported a case of bilateral parotitis after bilateral removal of the ovaries. Some advise early incision, others wait for fluctuation. In case of extensive infiltration only prompt incision can prevent serious trouble. The main point is in prophylaxis; as the infection generally occurs from the mouth, the most careful care of the mouth before and after the operation is required and also care not to press on the jaw and gland while administering the anesthetic. After the operation, frequent cleansing of the mouth and teeth is advisable, a little citric acid being added to the water to stimulate the secretion of saliva.

81. **Polyserositis.**—Isler refers to the fibrous polyserositis first described by Bamberger, and reviews 60 articles on the subject, discussing the various features of the affection. The cases on record showed an acute onset, the abdomen being the scene of the drama; sudden pains generally interpreted as gall-stone colic, with vomiting, chills and depression. These symptoms subside but ascites develops and becomes chronic, or pleuropneumonia may be the first act and the heart may first present symptoms. The liver is generally enlarged and sometimes the spleen; jaundice was noted in the majority, but the recurring ascites is the main feature. The affection may last for from two to twenty-five years with occasional tapping, the general health being not much impaired until the patients succumb to debility from the loss of albumin in the effusions. The affection has an afebrile course, and the trouble is evidently due to toxins circulating in the blood. It has been called variably pericardiac pseudo-eirrhosis of the liver (Pick), ieed liver (Curschmann), hyperplastic cirrhosis of the liver, peritonitis with exudation (Vierordt), fibrous polyserositis (Rose), orromenitis (Galvagni), and perivisceritis (Labadie-Lagrave).

Correspondenz-Blatt für Schweizer Aerzte, Basle

November 1, XXXIX, No. 21, pp. 721-760

- 84 Treatment of Hyperacidity with Alkalines. (Begründung der Alkalithérapie bei Hyperaciditätszuständen.) M. Hausmann.
November 15, No. 22, pp. 761-800
- 85 *Torsion of the Omentum. (Ueber Netztorsion.) P. Schönholzer.
- 86 *Tardy Chloroform Fatality. (Fall von protrahiertem Chloroformtod.) Häberlin.

85. **Torsion of the Omentum.**—Schönholzer has been able to find on record 70 cases of torsion of the omentum in recent literature and reports the details of 2 cases from his own experience. In about two-thirds of the cases the torsion occurred after a part of the omentum had slid down into a hernial sac. In case of adhesions the torsion may be double. In 8 cases the torsion was intra-abdominal, without apparent cause, and without connection with any other organ. One of his cases was of this kind; the patient was a young woman with signs of assumed appendicitis and probable abscess in the right side, but the laparotomy revealed that the omentum had twisted completely around four times and hung from the transverse colon with a corkscrew-like pedicle, the result of

a subacute or chronic unrecognized appendicitis of long duration with chronic inflammation of the omentum, local swelling, pedicle formation and gradual rotation of the resulting bag. If the circulation in the parts becomes impeded there is serious trouble at once. The large and rapidly increasing tumor on the same side as the hernia and the discovery of a hard, tender cord connecting the hernia with the tumor are the main differential features. In 8 of the 70 cases the patients succumbed to peritonitis following an incomplete operation or to postoperative pneumonia, arteriosclerosis or gangrene of the omentum; 2 died of peritonitis without surgical intervention. The omentum must be examined to its base to ensure discovery of any further torsion above. Neglect of this precaution is responsible for more than one fatality. In most of the cases, the severe syndrome has an acute onset but the patients then recall long preceding vague discomfort in the abdomen, generally referred to the hernia.

86. Tardy Chloroform Fatality.—Häberlin's patient was a previously healthy man of 25, inclined to abuse of alcohol, who was operated on for mild recurrent appendicitis. About 70 or 80 c.c. chloroform was used in the 25 minutes of the operation. The wound healed smoothly but jaundice developed by the third day and the patient died the sixth day with symptoms of general intoxication affecting the liver, kidneys and heart. The case is analogous in every respect, even to the fat degeneration of these organs, to the dozen cases on record of tardy chloroform death. These cases emphasize, he says, the importance of refraining from too vigorous purgation as liable to leave the blood too concentrated before the anesthetic is administered, and also the importance of ample supply of carbohydrate food to ensure adequate production of glycogen.

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- 87 Nephritis and Alleged Inflammation of Parenchymatous Organs. H. Ribbert.
 - 88 *Cerebellum Surgery. (Ueber Kleinhirnehirurgie.) O. Hildebrand.
 - 89 *Glycosuria in Women. (Zur Glycosurie bei Frauen mit experimentellen Untersuchungen über ihre Aetiologie.) M. Henkel.
 - 90 *Pubiotomy and Extraperitoneal Cesarean Section. (Hebostomie und extraperitonealer Kaiserschnitt.) K. Baisch.
 - 91 *Importance of the Momburg Belt Tourniquet for Postpartum Hemorrhage. (Zur Anwendung der Aortenkompression nach Momburg bei einer Blutung in der Nachgeburtsperiode.) B. Kröning.
 - 92 Diagnosis and Treatment of Glaucoma. L. Heine.
 - 93 Imbecility from Clinical and Forensic Standpoint. W. Weygandt.
 - 94 Therapeutic Combinations of Drugs. (Kombination von Arzneimitteln.) G. Trempel.
 - 95 Simplified Opsonic Technic. (Vorschläge zur Vereinfachung der Opsoniertechnik.) C. Hoerder.
 - 96 *The Blood Diagnosis of Lead Poisoning. P. Schmidt.
- November 25, No. 47, pp. 2041-2096
- 97 *Life Expectancy with Albuminuria. (Prognose der Albuminurie mit besonderer Berücksichtigung der Versicherungsmedizin.) M. Fürbringer.
 - 98 Favorable Outlook for Serotherapy of Cholera. (Zur Frage der Serumtherapie der Cholera asiatica.) W. Kollé.
 - 99 Heredity, Selection and Hygiene. (Vererbung, Auslese und Hygiene.) M. Gruber. (Commenced in No. 46.)
 - 100 Analyses of New Propteraries. (Neue Arzneimitteln, Spezialitäten und Geheimmittel.) F. Zernik.

88. Cerebellum Surgery.—In this address read at the recent international medical congress Hildebrand reviews what has been accomplished in this line to date with the points that have proved useful in differentiation and localization of the lesions. He also discusses the technic and the results which differ widely according to the process in question. Conditions are favorable, he asserts, in case of a cerebellar cyst; only one of the 20 patients with this lesion died, although vision was irretrievably lost in a few. The others recovered. Hildebrand successfully removed an echinococcus cyst from the base of the cerebellum near the fourth ventricle, but the patient, a young woman, died a few months later from a similar lesion elsewhere in the brain. Conditions are much less favorable with a tuberculoma; 11 patients out of 20 succumbed soon after the operation and another nine days later. Only 8 patients survived the intervention and recurrences followed in from 2 to 7 months in all but 2 cases; one of these patients was in good health 13 months after the operation. Of the 2 patients with gumma one was cured and the other succumbed to the operation. Conditions are still less

favorable with solid tumors in the cerebellum. Only 17 out of the 101 cases on record are reported as definite cures and the ultimate outcome is not known in all. Only in 39 of these cases was the diagnosis confirmed by the operation and 22 patients in this group died. In 62 cases the assumed tumor was not found, but in some of these autopsy or the clinical course later revealed the growth. How many of these cases in which no tumor was found are to be regarded as serous meningitis is still a question but in one case an interval since of four years seems to establish it. Surgical treatment in 30 cases of tumor at the cerebellopontine angle has been reported, with survival of 7 of the patients; in a number the tumor proved inoperable and in only 4 of the surviving 7 could the tumor be removed *in toto*. Injury of the fourth ventricle is the chief danger in removing tumors of this class; infection was the cause of the fatality in very few cases.

89. Glycosuria in Women.—Henkel reports a case of myoma and another of ovarian tumor both of which induced glycosuria which vanished after removal of the cause. It is important to differentiate these cases of "intoxication diabetes" from true diabetes, as any expectant or preparatory treatment is useless, the sugar disappearing spontaneously from the urine when the tumor is removed. The proportion of sugar in one of these cases was 3 per cent., the amount of urine was not much increased and there was no abnormal thirst. The findings of acetone or acetic acid are not characteristic as they are sometimes observed in purely gynecologic affections without diabetes. He hesitated before operating, dreading diabetic complications, but the course of the cases showed that the fear of true diabetes was unfounded.

90. Operative Treatment of Contracted Pelvis.—Baisch has compiled the statistics from a number of clinics in regard to pubiotomy and extraperitoneal Cesarean section. He states that with Döderlein's subcutaneous pubiotomy there need be no fear of sepsis, hemorrhage or injury of the bladder, but certain infection contraindicates this technic as also a true conjugate of less than 7 cm. and infantile genitalia in a primipara. Pubiotomy must not be preceded by the high forceps or version. He advocates a pelvis-enlarging operation or Cesarean section in institutions in the place of high forceps, prophylactic version or artificial premature delivery. With these principles the mortality of the mothers with contracted pelvis can be reduced below 1 per cent. and of the children below 10 per cent., while the number of spontaneous deliveries approximates 80 per cent.

91. The Momburg Belt Tourniquet to Arrest Postpartum Hemorrhage.—Kröning reports a case which has convinced him that this Momburg technic for compression of the aorta will banish the dread of hemorrhage in the third stage of labor for many physicians when they once have become convinced of the feasibility of the method. Its application for postpartum hemorrhage is particularly harmless as it is merely a brief compression while the blood pressure is unusually low, so that the patients can stand the raising of the blood pressure better than under other conditions. When the practitioner has a case of postpartum hemorrhage and must choose between compression of the aorta and introducing his insufficiently disinfected hand into the uterus, the former is by far the least dangerous. Even if the compression fails to arrest the hemorrhage completely, the physician at least gains time to disinfect his hands properly and be ready for skilful tamponing of the uterus. (See illustration, abstract 69 in these columns, Oct. 30, 1909, page 1519.)

96. The Blood in Lead Poisoning.—Schmidt has been studying the blood of 110 healthy and anemic persons, having nothing to do with lead, and Trautmann has examined 200. Comparison of the findings with those in 34 cases of certain lead poisoning and in 819 workers with lead has confirmed the fact that the blood picture becomes modified very early in the course of lead poisoning. The change in the blood is the granulation of the red corpuscles, the granules taking the basic stains. The microscope is thus able to reveal lead poisoning in its incipency. More than 100 granulated red corpuscles per million should be accepted as an index of lead poisoning, the number usually ranging between 300 and 3,000;

in one case of snieide with white of lead 38,000 granulated corpuscles per million were encountered. Other affections with similar findings will seldom be confounded with lead poisoning, malaria, pernicious anemia, leucemia, chronic intestinal hemorrhage and cancer cachexia; malaria alone is liable to mislead in this respect. He has found in experimental research that long after the intake of lead has ceased, lead still circulates in the blood combined with the formed elements, especially the leucocytes. This probably occurs in man, and chemical examination of the blood may be necessary in very important and obscure cases, particularly in forensic testimony.

97. Prognosis of Albuminuria from the Standpoint of Life Insurance.—Fürbringer declares that very small proportions of albumin should not be taken into account in relation to life insurance, and consequently he does not regard as of much moment the efforts to produce more and more delicate tests for albuminuria. The so-called physiologic slight albuminuria after excessive exertion, sports, etc., may also be disregarded. The majority of cases of orthostatic albuminuria are also comparatively harmless; it is exceptional for nephritis to develop later in these cases. In examining it is important to note the absence of the higher blood pressure characteristic of contracted kidney, also that the urine is free from albumin during reclining. Another sign indicating the comparative harmlessness of orthostatic albuminuria is the precipitation of euglobin by acetic acid, cold. The more abundant the euglobulin, the better the prognosis. A few tube-casts and corpuscles are no longer regarded as indicating necessarily true nephritis; a predominance of the cylindroids speaks against the latter. He has frequently encountered a condition of slight chronic nephritis without any acute phase, characterized by continuous or intermittent slight albuminuria for years and decades, with occasional tube-casts, sometimes granulated, and corpuscles, but without other signs of actual nephritis and without impairment of the general health. Complete recovery occurred finally in 3 patients in his practice, and he advises their acceptance by the company with an extra premium or the proviso that the contract is void if death occurs from kidney disease. Actual nephritis should exclude the candidate from life insurance and the examiner should not be misled by the periods of latency. Prolonged observation is necessary for the subacute nephritis following an acute infectious disease, as also for pregnancy nephritis. As a rule the latter subsides completely, or it may leave merely the minute patches of contraction which are evidently responsible for the chronic benign form mentioned above; it is exceptional for true pregnancy nephritis to entail actual kidney disease.

Deutsche Zeitschrift für Chirurgie, Leipsic

October, CII, Nos. 1-3, pp. 1-300

- 101 Congenital Hernia of the Brain due to Hydrops of the Ventricle. (Ueber Hirnbrüche.) A. Exner.
- 102 Nephropexy. R. Lenk.
- 103 Restoration of the Nose. (Zur Technik der totalen Rhinoplastik.) K. Foramiti.
- 104 Retrograde Incarceration of the Intestine. (Ueber das Wesen der sogenannten retrograden Inkarceration des Darmes.) H. Lorenz.
- 105 Hernia of the Lung. (Lungenhernien.) J. Urbach.
- 106 Prehistoric Surgical Affections and Operations. K. Jäger.
- 107 Division of the Scaphoid Bone. (Ueber das Os naviculare bipartitum manus.) O. E. Schulz.
- 108 Importance of "Concave Torsion" in Treatment of Scoliosis. (Bedeutung der sogenannten Konkavtorsion für die Therapie der Skoliosen.) R. Fibich.
- 109 Pathologic Cubitus Valgus. F. A. Schwarz.
- 110 Increased Secretion in Rabbit Intestine after Obstruction. (Experimentelle Untersuchungen über die vermehrte Sekretion des Kaninchendarms beim Darmverschluss.) J. Boese and H. Heyrovsky.
- 111 Statistics of Sarcoma on the Extremities. (Extremitätensarkome.) G. Piperata.
- 112 Massive Hemorrhage into the Bed of the Kidney. (Massenblutungen in das Nierenlager.) R. Lenk.
- 113 Two Cases of Leiomyosarcoma of the Gastrointestinal Tract. M. Richter.
- 114 What to Do with the Ureter in Nephrectomy for Tuberculosis. (Versorgung des Ureters bei Nephrektomie wegen Tuberkulose.) R. Paschkis.
- 115 Primary Carcinoma in the Appendix. (Beitrag zu den Irrtümern mikroskopischer Diagnosen.) R. Milner.
- 116 Ileus from Twofold Intestinal Obstruction. (Ileus infolge zweifachen Darmverschlusses.) Id.
- 117 Spontaneous Birth as Cause of Shoulder Deformity. (Spontan Geburt als Ursache von Schulterdeformitäten.) H. Sellheim.

- 118 Importance of Wassermann Reaction for Surgical Diagnosis, especially the Stern Modification of the Test. Kreuter and R. Pöhlmann.
- 119 Hard Tumors of the Jaws. (Ueber Adamantinome insbes. ihre operative Behandlung.) S. Kinoshita.

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November 10, XXVII, No. 31, pp. 1153-1200

- 120 Clinical and Experimental Research on Atoxyl Poisoning. (Atoxylvergiftung.) G. Köster.
- 121 Present Status of Trachoma Research. Wolfrum.
- 122 Familial Chronic Leucemia. (Familäres Auftreten der chronischen Leukämie.) F. Brandenberg.

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November 14, V, No. 46, pp. 1727-1766

- 123 Production of Keratin. (Ueber Verhornung.) P. G. Unna.
- 124 Serodiagnosis of Syphilis Controlled by Autopsy Findings. (Klinische Beobachtungen über die Wassermann-Neisser-Brucke Reaktion und deren Kontrolle durch Sektionsresultate.) F. Glaser and G. Wolfsohn.
- 125 Chronic Organic Affections of the Central Nervous System Following Trauma. F. Schultze.
- 126 Drugs that Act on the Heart. (Ueber medikamentöse Herztherapie.) Lethaus.
- 127 Blunders in Diagnosis. (Einige Beispiele von diagnostischen Irrtümern und von selteneren Tumoren.) H. H. Preysing.
- 128 *Acute Dilatation of the Stomach. (Zur akuten Magendilatation.) H. Hellendall.
- 129 Antitryptic Action of Urine. (Ueber die antitryptische Wirkung des Harns.) J. Bauer and Z. Reich.

November 21, No. 47, pp. 1767-1802

- 130 *Epidemic of Acute Poliomyelitis. (Zu der rheinisch-westfälischen Epidemie von spinaler Kinderlähmung.) J. Grober.
- 131 Action of Antiseptics on Wounds. (Wirkungsweise der sogenannten Wundantiseptika.) K. Büdinger.
- 132 Importance of Tonsil Region in Relation to Acute Articular Rheumatism and Heart Diseases. (Erkrankung und Behandlung des lymphatischen Schlundrings in ihrer Bedeutung für Gelenkrheumatismus und Herzkrankheiten.) K. Hess.
- 133 Treatment of Coryza and Influenza with Electric Baths. (Behandlung des Schnupfens und der Influenza mit elektrischen Lichtkastenbädern.) R. May.
- 134 Treatment of Bromoform Poisoning. (Bromoformvergiftung.) Walldorf.
- 135 *Test for Estimation of Pepsin. (Eine neue Methode klinischer Pepsinbestimmung.) P. Liebmann.

128. Acute Postoperative Dilatation of the Stomach.—Hellendall has collected from the literature 91 cases of postoperative dilatation of the stomach with a cure in 32. The number of cases on record has tripled in the last eight years, while the proportion of cured cases has become much larger. The acute postoperative dilatation results from paralysis of the stomach walls of central or reflex origin, due to injury from the general anesthesia and the operative intervention itself, the dilatation being liable to lead to fatal kinking of the duodenum. The principal sign of it is discovery of pancreatic juice in the vomitus, large proportion of indican in the urine and the bilious character of the vomitus with clay-colored stools. In Schmitzler's case mesenteric incarceration of the duodenum followed acute dilatation of the stomach after a bilateral operation for hernia, and the patient was cured by lying in the ventral decubitus for several hours, without lavage of the stomach. Among the cases reported as cures there were 40 after abdominal operations, 12 with operations on the bile passages, and 21 after gynecologic operations. Fifteen prompt recoveries under this position treatment are on record, but Borehardt's patient died with fulminating exaggeration of the symptoms when the ventral decubitus was assumed. Special caution is necessary after a laparotomy. In Hellendall's first case the patient did not stand the position very well. In his second case the patient recovered under lavage of the stomach alone.

130. Epidemic Spinal Paralysis.—Grober discusses the present epidemic of spinal infantile paralysis in Germany calling attention to the way in which the classic syndrome seems to be becoming modified. It now includes cerebral features while the mortality is increasing until it averages 15 per cent. The frequency of gastrointestinal symptoms and lesions early in the disease confirms the assumption that the trouble is a general infection originating in the intestines and passing by way of the blood to localize finally in the brain and spinal cord.

135. Clinical Estimation of Pepsin.—Liebmann uses an emulsion of particles of coagulated egg albumin, measuring the proteolytic power on it of the gastric juice by the amount of dilution necessary to render limpid the contents of the control tube to the same degree as in the test-tube in a given interval of time.

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November 16, LVI, No. 46, pp. 2353-2400

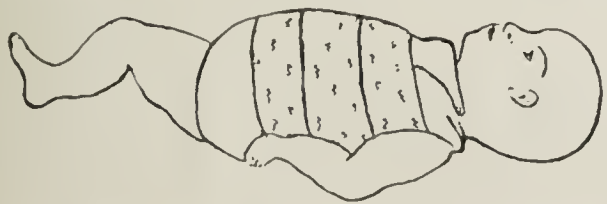
- 136 Acute Polymyelitis. H. Hochhaus.
137 The Benzidin Test in Forensic Diagnosis of Blood Spots. (Praktische Verwertung der Benzidinprobe für die forensische Blutdiagnose.) H. Merkel.
138 Blood Supply of Sinus Node and its Connection with the Atrioventricular Node. (Blutversorgung des Sinusknotens und etwaige Beziehungen des letzteren zum Atrioventrikularknoten.) W. Koch.
139 Destructive Influence of Osmotic Currents on Bacteria. (Einfluss osmotischer Strömungen auf Entwicklung und Lebensfähigkeit der Bakterien.) F. Holzinger.
140 *Intravenous General Anesthesia. (Intravenöse Narkose mit Aether und Chloroform.) L. Burkhardt.
141 Traumatic Appendicitis. (Traumatische Perityphlitis.) M. Tiegeler.
142 *Apparatus for Automatic Extension in Treatment of Fracture of Upper Arm and Shoulder. A. Hofmann.
143 *Treatment of Fracture of the Femur in New-Born Infants. (Zur Behandlung der Oberschenkelbrüche bei Neugeborenen.) G. Zancarini.
144 Negative Influence of Spengler's IK on Tuberculosis. (Behandlung mit Carl Spengler's IK.) H. Schaefer.
145 The Sternal Angle. (Zur Nomenklatur und klinischen Bedeutung des Sternalwinkels.) E. Ebstein.

November 23, No. 47, pp. 2401-2456

- 146 Normal Peristalsis of the Colon. G. Holzknecht.
147 *Cardiac Neuroses. (Herzneurosen.) G. Trempel.
148 *Remote Neuralgiform Affections of Intestinal Origin. (Ueber intestinale Körperschmerzen.) W. Ebstein.
149 Intravenous Suprarenal Treatment in Severe Cardiovascular Collapse. (Weitere klinische Erfahrungen über intravenöse Suprarenalinjektionen bei schweren Herz- und Gefäßskollapsen.) M. John.
150 Eczema. (Zur Ekzemtherapie.) T. Veiel.
151 *Progress in Differential Pressure Procedures for Intrathoracic Operations. W. Meyer.
152 Behavior of Zinc-Copper Fragments Embedded in the Tissues. (Fremdkörper im Organismus.) H. v. Baeyer.
153 *Connection between Syphilis and Idiocy. (Zusammenhang von Idiotie und Syphilis.) H. Lippmann.
154 *Importance of Chloral for Pathologic-Anatomic Research and for Local Therapeutics. (Wert des Chloralhydrates für pathologisch-anatomische und lokaltherapeutische Zwecke.) A. Heller.
155 *Prophylaxis and Treatment of Impending Gangrene. (Drohender Fingergangrän bei Raynaudscher Krankheit.) H. Noeske.
156 Can We Prevent Blunders in Diagnosis and Treatment with Fractures and Dislocations? (Wie weit lassen sich Fehldiagnosen und Misserfolge bei Frakturen und Luxationen in der Praxis vermeiden?) R. Grashey.
157 *Treatment of Acute Rhinitis. J. Trumpp.

140. **Intravenous General Anesthesia.**—Burkhardt is convinced that there is no necessity for the anesthetic to traverse organs on its way to the blood and that the best results will be attained by introducing the drug directly into the circulation. After much experimental research he applied this technic in 33 clinical cases, injecting a 5 per cent. solution of ether like a saline infusion. The amount of fluid injected ranged from 200 to 800 c.c. There were no disturbances in breathing in any case nor cyanosis, vomiting or retching during the anesthesia or vomiting afterward in 30 cases. Three of his patients had nausea or vomited twice. In another series of 8 cases he injected a mixture of ether and chloroform or a 7 per cent. solution of ether; transient hemoglobinuria developed in one of these cases. In all the patients the anesthesia was tranquil and free from reflex action. A great advantage of this technic is that the blood pressure does not fall even during a long operation. An over-dose is scarcely to be feared on account of the low concentration, so that it is safer for the inexperienced than the usual inhalation anesthesia. Recovery afterward is more rapid and there are no by-effects. The drug is eliminated more rapidly than when inhaled. He generally precedes the intravenous infusion with the scopolamin-morphin twilight sleep.

143. **Treatment of Fracture of the Femur in the New-Born.**—Zancarini points out the disadvantages of ordinary treatment of obstetric fracture of the femur and describes a simple



method which he has found satisfactory. The leg is flexed on the body similarly to the fetal position, the front of the thigh on the front of the abdomen, the foot reaching to the shoulder.

der, the clavicle serving as the solid support. The trunk is protected with cotton and the bandage is passed around the leg and trunk. This position is borne readily by the new-born infant while it does not interfere with keeping the child clean. No skill is required for its application and the family accepts it more readily than weight extension or more complicated measures. He describes a few cases in which he has examined the children four and seven years after the fracture was cured in this way. The limbs show no trace of injury, not even in a skiagram, and the gait is normal. The leg is immobilized in this way for about twenty days, but the bandage is taken off every day and light massage applied.

147. **Cardiac Neuroses.**—Trempel emphasizes the necessity for long study of the case and winning the patient's confidence so that the particulars of the onset of the disturbances can be made out. This is of the greatest importance for treatment. He has had about 400 cases of this kind, free from organic basis. The neurosis had developed in consequence of increased or abnormal erotic sensations in about a third of his cases; in others after dread or excitement. In the pure neurosis the heart is not enlarged, rather the reverse; he has been impressed with the smallness of the heart in some patients, especially in young men. The patient must be examined sitting, standing and reclining and after exercise. Heart tonics are useless but sedatives and general tonics are indicated, with a light diet and restriction of fluids to about three pints, bed rest is indicated for a day or so occasionally if the patient is leading a strenuous life, and encouragement to exercise if too sedentary. The main point is to convince the patient that his heart is sound and that the subjective disturbances are of little moment. This and time are the chief factors in the cure.

148. **Pains Throughout the Body of Intestinal Origin.**—Ebstein refers to the neuralgiform pains at various points in the body curable by clearing out the clogged digestive tract. The painful affection is generally misunderstood and treatment instituted for rheumatism, etc., as he shows by several examples. The constipation in these cases is beyond relief by ordinary purgatives and enemas of oil are the only means of conquering it, as a rule. An important element in the differentiation is the discovery of tender points where the nerve emerges. He has encountered numerous cases of neuralgia in the knee and hip joint accompanying inveterate constipation and vanishing as the latter was cured. In one such case a robust army officer of 52 had chronic pains in the knees for which no objective cause could be found and the trouble seemed to be a nervous functional disturbance; it was so severe that he had to be lifted on his horse. Under large oil enemas the existing constipation was relieved and the knee trouble subsided with it. In another case an officer had taken all kinds of courses of treatment for supposed rheumatism in his knees but without effect until the oil enemas relieved his tendency to constipation, when the pains vanished. Every return of sluggish bowel action is followed by recurrence of the pain in the knees but the constant progress toward improvement promises final complete recovery. A history of trauma affecting the involved joint may prove misleading. The statements of the patient as to bowel functioning must not be relied on; there may be coprostasis even with diarrhea. The oil enemas soften the feces and then mild laxatives are able to push them along. He does not approve of strong purgatives in these cases.

151. Practically the same article was published in THE JOURNAL, Dec. 11, page 1978.

153. **Connection between Idiocy and Syphilis.**—Lippmann states that examination of 121 children in the asylum for mentally defective at Uchtspringe revealed signs of syphilis in 33.8 per cent. The seroreaction proved an important aid in the diagnosis, and he urges the unfailing application of the Wassermann test in all lying-in and gynecologic hospitals in order to detect the presence of syphilis and institute prophylactic measures. Baisch found that syphilis in women had escaped clinical recognition in fully three-fourths of all cases—not the slightest clinical sign being apparent in this large proportion in which the Wassermann test elicited a

positive response, and spirochetes were found in the placenta and the children showed signs of syphilis. The necessity for prompt specific treatment in such cases is emphasized anew by the discovery of the frequent connection between syphilis and actual idiocy. It also suggests the necessity for mercurial treatment of the mentally defective—astonishing improvements are on record. Even when there is nothing to suggest syphilis, he advises a tentative course of antisyphilitic treatment. This is his routine practice in every case of brain tumor.

154. Chloral in Local Therapeutics.—Heller says that autopsy of a number of children who had been treated with potassium chlorate revealed the blood so brown, especially in the lungs and skull, that the question arose in his mind whether the potassium chlorate might not have been responsible for the fatality. In any event, he declares that the same and better therapeutic effects in acute and chronic laryngeal catarrh can be obtained by having the patient take a thimbleful of a 2.5 per cent. solution of chloral into his mouth, throw the head back and roll the fluid around in the mouth, making chewing movements the while but not gargling, and spitting out the fluid when it cannot be retained in the mouth any longer. The head is then thrown back again to let the traces of fluid still remaining find their way back into the throat. This is repeated every half hour and it has a marked curative effect, checking bacterial growth, inducing local hyperemia and transudation while its anesthetic action reduces the tendency to inflammation. Quinke also advocated the use of a 2 per cent. chloral solution in the form of a spray in treatment of throat and mouth inflammatory processes. In tonsillitis he applied it as a powerful cold jet alone or combined with mercuric chlorid, preferring the latter alone only in syphilis, diphtheria and Vincent's angina.

155. Treatment of Impending Gangrene of the Fingers.—Noesske reports the further successful application of his method of cutting down to the bone at the tip of the finger parallel to and just below the nail, in treatment of conditions threatening gangrene. It was described in THE JOURNAL, Nov. 6, 1909, page 1605. He places the hand afterward in a suction cupping apparatus, and by this means was able to restore vitality to the fingers recently in a case of Reynaud's disease. The benefit in this affection suggests the possibility that the trouble is the result of local peripheral disturbance in the vascularization instead of the central origin hitherto assumed.

157. Bolus Alba in Treatment of Coryza.—Trumpp has applied bolus alba in his own person and in his family and practice with brilliant success as a means of aborting and curing rhinitis, the extreme fineness of the particles sucking up by capillary attraction the bacteria and the secretions and thus drying out the parts while killing the bacteria. He uses an ordinary powder insufflator; success depends on applying a layer of the powder over the entire inflamed surface, repeating the insufflation three or four times in 15 minute intervals at first and later at hour intervals. If there is much swelling a little adrenalin opens a way for the powder. Three or four insufflations the second day generally complete the cure. He applied this bolus treatment also in 4 cases of primary diphtheria of the nose, refraining from serum treatment. In all recovery was complete by the fourth or sixth day, without complications. Prompt recovery was also observed in a case of ozena of a few weeks' duration; the cure has persisted for two months to date. The powder comes away readily when the nose is blown and does no harm if it is swallowed. The best results are attained when the nasal passages are wide and readily accessible.

Virchows Archiv, Berlin

November, CXCIII, No. 2, pp. 193-384

- 158 Unusual Findings in Appendicitis. G. Cagnetto.
- 159 Bacterial Embolism of the Lung. N. Struëff.
- 160 Action of Animal Albumin on Rabbits. (Wirkung des tierischen Eiweisses auf die Aorta und die parenchymatösen Organe der Kaninchen.) A. Ignatowski.
- 161 Calcification of Dura. (Ueber Verkalkung der Pachymeninx bei Usura cranii.) K. Nunokawa.
- 162 Plasma Cells in Progressive Paralysis. (Zur Plasmazellenfrage bei der progressiven allgemeinen Paralyse.) Rheindorf.
- 163 Patches of Sclerosis in the Spleen. (Induratio lienis fibrosa circumscripta.) I. Poscharissky.
- 164 Obliterating Mastitis. A. Ingier

- 165 Phagocytosis not a Factor in Defense against Infectious Disease. (Ueber die Spirochaete pallida und Spirillum Obermeieri, ihre intrazelluläre Lagerung und deren Bedeutung.) M. Rabinowitsch.

Wiener klinische Wochenschrift, Vienna

November 25, XXII, No. 47, pp. 1623-1662

- 166 Production of Antibodies. (Theorien der Antikörperbildung.) K. Landsteiner.
 - 167 *Serodiagnosis of Syphilis. (Beobachtungen über die Diagnose der Syphilis vermittle der Wassermannschen Reaktion.) J. Stopezanski.
 - 168 Toxie and Non-Toxic Putrefaction in the Intestines. (Studien über Darmfäulnis.) A. Rodella.
 - 169 Phototherapy applied to Rectum and Vagina. (Lichtbehandlung auf rektalem und vaginalem Wege.) A. Foges and A. Jungmann.
 - 170 Disinfection of the Skin. (Zur Technik der Hautdesinfektion.) J. Kratochvil.
 - 171 *Roentgen-Ray Treatment of Goiter. (Zur Röntgenbehandlung des Kropfes.) G. Schwarz.
- December 2, No. 48, pp. 1663-1696
- 172 Climacteric Functional Disturbances of Glands with an Internal Secretion. (Zum klinischen Bilde des Klimakteriums.) A. Gluzinski.
 - 173 Symptomatology of Cardiac Neuroses. (Zur Symptomatologie der Herzneurosen.) L. Braun and A. Fuchs.
 - 174 The Problem of Anaphylaxis. G. Salus.
 - 175 Prophylaxis of Measles in Hospitals. (Schutz der Kinder-spitäler gegen Maserninfektion.) N. Berend.
 - 176 Symptoms of Exophthalmic Goiter with Neoplasms in the Thyroid. (Ueber Basedowsymptome bei Schilddrüsenneoplasmen.) I. Löwy.

167. Serodiagnosis of Syphilis.—This article gives the experience at Cracow with the Wassermann test applied in 103 cases of various dermatologic affections. It was found that more intense specific treatment was necessary to transform a positive into a negative reaction than was required to banish the manifest symptoms. The question is now to determine whether tabes and paralysis will develop later in persons given treatment on the basis of the seroreaction.

171. Roentgen Treatment of Goiter.—Schwarz is director of the Roentgen institute connected with v. Noorden's clinic at Vienna and his experience has taught that ordinary goiter contraindicates Roentgen treatment as a rule, and operative measures should be considered. With exophthalmic goiter, Roentgen treatment should be given a trial for a time, with operative treatment in case it fails to relieve. With severe goiter causing stenosis complicated with exophthalmic goiter, he advises an operation at once, followed by Roentgen exposures.

Zentralblatt für Chirurgie, Leipsic

November 27, XXXV, No. 48, pp. 1641-1680

- 177 Experimental Occlusion of Mesenteric Blood Vessels and Intestinal Stenosis. (Die experimentelle Verschlussung der Mesenterialblutgefäße und die Ursache einiger Darmstenosen.) G. Bolognesi.

Zentralblatt für Gynäkologie, Leipsic

November 13, XXXIII, No. 47, pp. 1609-1632

- 178 Extraperitoneal or Transperitoneal Cesarean Section. (Extraperitonealer oder transperitonealer Kaiserschnitt?) P. Mathes.
 - 179 Disinfection of Parturients. (Zur Disinfektion Kreissender.) S. Goitschalk.
 - 180 *Application of the Alexander-Adams Operation during Pregnancy and Puerperium. (Anwendung der Alexander-Adams'schen Operation in der Schwangerschaft und im Wochenbett.) P. Bröse.
- November 27, No. 48, pp. 1634-1664
- 181 *Retrouterine Fixation of the Round Ligaments. (Neue Methode der intraperitonealen Verkürzung der Ligamenta rotunda.) F. Franke.
 - 182 Cervico-Vaginal Fistula from Abortion. (Zwei Fälle von Mutterhals-Scheidenfisteln bei Abortus.) A. N. Pawlow.
- December 4, No. 49, pp. 1665-1696
- 183 Unfavorable Experiences with Obstetric Epidural Injections. (Wert der epiduralen Injektionen bei den Gebärenden.) M. Tobiaszek.
 - 184 *Gynecologic Examination. (Zur gynäkologischen Untersuchung.) P. Bröse.

180. Alexander-Adams Operation during Pregnancy.—Bröse reports three cases in which the retroflexed gravid uterus caused such disturbances that he was compelled to interfere. He shortened the round ligaments by the Alexander-Adams technic without interrupting the pregnancy which continued to natural delivery. In two other cases he performed this operation not long after an abortion, with equally favorable results.

181. Retrouterine Fixation of the Round Ligaments.—Franke sutures a loop of the round ligament on each side of the rear uterine wall, drawing it through a slit in the broad

ligament from 1.5 to 3 cm. apart from the uterine and 1 or 2 cm. below the round ligament. He has applied this method in seventeen cases of retroflexion and has entirely abandoned for it the Alexander-Adams technic.

184. Gynecologic Examination.—Bröse insists on the necessity for careful examination of the external genitalia as a preliminary to investigation of the internal. By this means he has been able to detect gonorrheal infection in the urethra which otherwise he would have overlooked. He emphasizes further the necessity for protecting the hand with a rubber glove to avoid possible infection of self and of other patients afterward. He further declares that if a gonorrheal process is discovered in the urethra or surrounding glands and there is a probability that the infection has not reached the cervix, it is important to refrain from internal examination unless there are compelling reasons for it as otherwise the gonococci may be carried to the cervix.

Gazzetta degli Ospedali e delle Cliniche, Milan

November 9, XXX, No. 134, pp. 1417-1424

185 *Mice in Transmission of Certain Infectious Diseases. (Il topolino e la trasmissione di alcune malattie infettive.) P. Barabaschi.

186 *Experimental Research on Neuroses of the Sympathetic System. S. Licciardi.

November 11, No. 135, pp. 1425-1432

187 *Differentiation of Effusions of Mechanical Origin. (Nuova reazione dei versamenti sierosi d'origine meccanica.) G. Breccia.

188 Galvanism in Treatment of Heart Disease. (La galvanizzazione spino-precordiale nelle cardiopatie.) C. Colombo.

November 14, No. 136, pp. 1433-1448

189 Heart Stimulants. (L'uso dei cardio-cinetici.) F. Battistini.

November 16, No. 137, pp. 1449-1456

190 Maxillary and Frontal Sinusitis. (Studio delle sinusiti mascellari e frontali.) G. Bianchera.

191 *Diaphoresis in Treatment of Nephritis. (La diaforesi termica nella terapia delle nefriti.) C. Colombo.

November 21, No. 139, pp. 1465-1480

192 Operative Treatment by Menge's Method of Retrodisplacement of Uterus. (L'operazione del "Menge" nel trattamento delle retrodeviazioni dell'utero per via laparatomica.) L. A. Oliva.

November 23, No. 140, pp. 1481-1488

193 Significance and Pathogenesis of Glycosuria. N. Dominici.

194 Glass Bell and Air Pump in Local Treatment of Neurasthenic Sexual Impotency. (La erezione pneumatica del pene nella cura della nevrastenia sessuale.) C. Colombo.

185. Mice in Transmission of Disease.—Barabaschi states that he found the pneumococcus, the anthrax bacillus, streptococcus and staphylococcus, alone or associated, in the intestines of a number of mice caught in various private houses, showing that rats and mice are liable to transmit various infections besides the plague. The *Bacillus subtilis* and the *mesentericus* were also found in large numbers, and although the latter is generally regarded as a harmless saprophyte yet the *subtilis* was found in pure culture in a chronic glandular affection reported by Ferrarini. The excreta of the mice, drying and scattering in dust, may transmit infection even without more direct contact. The mice with the pneumococci were caught in houses where there had recently been pneumonia. The gravest danger from this source is incurred by persons working in granaries, etc., where mice abound and their dejecta are scattered over the substances handled.

186. Neuroses in Sympathetic System.—Licciardi reports experiments on dogs which confirm his assumption that there is always some organic basis for the alleged neuroses of the sympathetic system.

187. Differentiating Reaction of Effusions.—Breccia states that effusions of mechanical origin, that is, resulting from disturbance in the circulation, possess the property of precipitating a silver salt in solution, while in pleuritic and peritonitic effusions there is no precipitation. The technic is similar to that of Axenfeld's reaction.

191. Diaphoresis by Heat in Treatment of Nephritis.—Colombo ascribes the benefit from thermic diaphoresis not only to the diversion of the toxins from the kidneys to the skin but to the rest for the kidneys permitted by the vicarious action of the skin. Both in the acute and chronic forms he has always witnessed great relief follow diaphoresis. The patient does not sweat in a hot bath, the water closes the pores, but sweating follows afterward, as the patient lies

wrapped in blankets with a cold cloth on his brow. Light baths and Roman baths are especially useful in heart affections and valvular defects. The edema is absorbed and the vasodilatation relieves the high blood pressure.

Policlinico, Rome

November 28, XVI, No. 48, pp. 1509-1540

195 Surgery of the Common Bile Duct. (Contributo alla chirurgia del coledoco.) V. Gaudiani. Commenced in No. 47.

November, Medical Section, No. 11, pp. 477-524

196 Syndromes Induced by Lesions in Lower Spinal Cord. (Le sindromi dell'epicorno midollare, del cono terminale, della coda equina.) N. Sforza.

197 Syphilitic Meningoencephalitis. (Le iniezioni endovenose di sublimato nella sifilide cerebrale.) A. Treroroli.

198 Sudden Thymus Deaths in Adults. (Contributo allo studio delle morti improvvise timiche in adulti.) B. Carlo.

November, Surgical Section, No. 11, pp. 477-520

199 Elastic Fibers in the Bladder and Seminal Vesicles with Prostatic Enlargement. (Ricerche anatomico-patologiche sul comportamento delle fibre elastiche nella vescica e nelle vescichette seminali dei prostatici.) G. Razzaboni.

200 Histopathology of Hypertrophied Prostate. E. Savagnone.

201 Surgery of the Ureter. (Sulla ureterocistostomia nelle ferite chirurgiche dell'uretere.) S. Solieri.

202 Tolerance for Various Kinds of Sugars in Normal and Splenectomized Animals. (Tolleranza per varie specie di zuccheri in animali sani e poi smilzati.) G. Quarta. Commenced in No. 10.

Riforma Medica, Naples

November 15, XXV, No. 46, pp. 1261-1288

203 *Hematologic Diagnosis in Fevers. (Sul valore della emodiagnosi nelle diverse forme di febbri.) A. Cantani.

204 Skin Tuberculin Reaction in Acute Serofibrinous Pleurisy. (La cutirazione alla tubercolina nei malati di pleurite acuta sierofibrinosa.) V. Barbieri.

November 22, No. 47, pp. 1289-1316

205 *Experimental and Clinical Study of Radical Treatment of Inguinal Hernia. (Un particolare nella cura radicale dell'ernia inguinale.) C. Mantelli.

206 Syphilitic Jaundice. (L'ittero sifilitico del periodo secondario.) E. Fenoglio.

November 29, No. 48, pp. 1317-1344

207 Chemical and Physiologic Research on Extrapulmonary Injection of Oxygen. (Ossidazione e sovrossigenazione extrapulmonare.) F. Sicuriani.

203. Serodiagnosis in Various Fevers.—Cantani here reports his experiences and the conclusions therefrom in 300 cases of various fevers in which the blood was subjected to different tests. The agglutinating test proved extremely important for recognition of Malta fever. In 32 febrile tuberculous cases the agglutination for Malta fever proved positive once and it was learned that the patient had had an attack of Malta fever the year before. Examination of the blood will give the clue to many puzzling cases previously differentiated as typhoid or Malta fever. He remarks that it is hard to refrain from accepting without question the diagnosis previously made when the symptoms seem to confirm it, but the discovery of leucocytosis with predominant polymorphs should suggest pus fever. Cultivation of a staphylococcus from the blood, with agglutination of this germ by the patient's own serum, 1 to 1,000, led to the discovery of a small abscess in the prostate in one case of this kind in his experience in which the patient was being treated for typhoid. In one case a slight suppurative process had been determined by the Malta fever germ in the course of Malta fever, which obscured the blood findings. He does not decide in favor of the diagnosis of fever from auto-intoxication until examination of the blood by every means and other tests has excluded all the other known possible causes.

205. The Nerves in the Radical Operation for Hernia.—Mantelli thinks that surgeons are inclined to neglect the nerves in treatment of hernia; they strive to refrain from injuring them but otherwise pay no attention to them. He is convinced that the pains and disturbances sometimes following a herniotomy are due to unsuspected injury of the nerves or neuritis. Examination of 50 patients with bilateral inguinal hernia for which the radical operation was done during 1908 has shown that in every instance in which one or more even of the smaller branches of the nerves were involved in the deep suture neuritis followed, sometimes rapidly healing, in other cases lingering for a time and in others becoming chronic. In one case an ascending neuritis developed, the pain and tenderness in the paravertebral, kidney, inguinal and crural region on that side incapacitating the woman for a year to date. He adds that inclusion of the

nerves, even the minute ones, in the suture might lead to paresis of the muscles innervated by them, and thus explain the tendency to recurrence in certain cases. In conclusion he reviews the anatomic course of the nerves in the region of the most common hernias and the means to refrain from injuring them.

Hospitalstidende, Copenhagen

October 6, LII, No. 40, pp. 1249-1288

208 Treatment of Prolapse of the Uterine Cervix and Pouch of Douglas. (Om Behandling af Prolaps af Collum uteri og Fossa Douglasii.) J. Kaarsberg.

209 *Treatment of Placenta Prævia. E. Hauch. Commenced in No. 39.

October 13, No. 41, pp. 1289-1320

210 *Seroreaction with Human Milk. (Wassermann-Reaktion med Mælk.) O. Thomsen.

October 20, No. 42, pp. 1321-1360

211 Serotherapy in Cerebrospinal Meningitis. C. E. Bloch.

October 27, No. 43, pp. 1361-1392

212 Illusions in Estimating Passage of Time. (Illusioner med Hensyn til Bedømmelsen af Tidsafstande.) K. Pontoppidan.

November 3, No. 44, pp. 1393-1432

213 Gastrointestinal Disturbances from Habitual Swallowing of Air: Aerophagia. F. Vogelius.

November 10, No. 45, pp. 1433-1472

214 Kraurosis Vulvæ. I. P. Hartmann.

215 Inflammation of the Eyes Due to the Toxins of the Gonococcus. (Subconjunctivitis epibulbaris gonorrhoeica.) C. F. Heerfordt. Commenced in No. 43.

209. Treatment of Placenta Prævia.—Hauch analyzes the experiences at Leopold Meyer's maternity at Copenhagen, comparing the outcome with that of other clinics. The verdict in regard to the various obstetric operative measures is in favor of the inflatable bag in the clinic as being the safest for the child, while exposing the mother to no more danger than with other methods. In general practice version should be given the preference, especially when the child is viable. The bag must be introduced into the ovum or at least into the chorion. The bag must be large enough to insure the passage of the fetus; it is not generally necessary to weight it. The details of the various cases are tabulated for comparison. The presentation did not seem to have much influence. The bag was used in 144 cases with a mortality from anemia of 5.2 per cent.

210. Serodiagnosis of Syphilis with Milk.—Thomsen has been applying the Wassermann test to fresh breast milk and has found that positive findings were obtained soon after delivery but then the reaction became negative in many cases. Comparison of the findings in 17 syphilitic and 82 non-syphilitic mothers showed that a positive reaction was obtained from the milk in some of the non-syphilitic women but it was very much weaker than the reaction obtained from the milk of syphilitic parturients.

Ugeskrift for Læger, Copenhagen

October 14, LXXI, No. 41, pp. 1117-1142

216 *Importance of Continuous and Digestive Hypersecretion and Microscopic Retention for Diagnosis of Gastric Ulcer. (Om Betydningen af kontinuerlig og digestiv Hypersekretion og mikroskopisk Retention for Diagnosen af Ulcus ventriculi.) G. Jørgensen.

October 21, No. 42, pp. 1143-1170

217 Internal Ear Disease as Consequence of Middle-Ear Lesions. (Om Labyrinthitis som Følge af Mellemørebetændelse.) Schousboe.

November 4, No. 44, pp. 1201-1226

218 *Twenty-six Cases of Cancer in the Chest. (Kliniske Bidrag til Kundskaben om maligne Tumorer i Brysthulen.) Israel Rosenthal. Commenced in No. 43.

216. Clinical Importance of Gastric Hypersecretion and Microscopic Retention.—Jørgensen has studied this subject with 68 patients, including 36 with symptoms of gastric ulcer and 14 with mild symptoms on the part of the stomach, frequently accompanied with constipation, and 13 with almost intractable chronic constipation. The finding of a small continuous hypersecretion—10 c.c. secretion at least in the fasting stomach—has no differential import as it is a frequent discovery in patients with symptoms on the part of the digestive tract of various origins. At the same time the discovery of a more or less continuous hypersecretion of constantly more than 30 c.c. is a strong argument in favor of the diagnosis of gastric ulcer, while 100 c.c. of stomach content with an acidity of 80 one hour after a test breakfast

speaks in favor of ulcer. If the stomach content is about 65 c.c., with an acidity of 80, this is somewhat of an argument in favor of gastric ulcer but not to be depended on implicitly. Continuous hypersecretion was observed in 83 per cent. of his ulcer cases, 93 per cent. in the second group and in 33 per cent. of the third group. Hypersecretion was thus manifest in 54 of the 68 patients, that is, in 79 per cent. Microscopic retention has no differential import but even slight macroscopic retention indicates some organic gastric derangement. Digestive hypersecretion was evident in 42 per cent. of his 36 cases of ulcer; in 29 per cent. of the 14 cases in the second group, and in 11 per cent. of the 18 in the third group.

218. Twenty-six Cases of Cancer in the Chest.—Operative removal was not attempted in any case. Three of the cancers were in children between 5 and 12, and 3 others between the ages of 30 and 40. Among the 17 primary tumors all were sarcomas except 1 and 5 of the 9 secondary cancers. The duration of the affection after the first symptoms was less than six weeks in all the primary cases; the secondary cancers usually proved fatal in one or two months. The temperature was normal throughout in 9 of the 26 cases. He does not include cancers of the esophagus in this review. Seven of the 17 primary and one of the 9 secondary cancers were in well-to-do patients. In one 5-year old boy a mediastinal sarcoma developed with an acute onset and ran its course in five weeks after a trauma, but a cough had been observed a week before the latter. In another case a widow of 42 noticed the first symptoms of secondary malignant pleuritis three weeks after a blow in the back. Among the 12 cases with autopsy there were 2 primary sarcomas in the pleura, 3 in the lungs, 3 in the mediastinum and 3 in the thymus, with 1 primary carcinoma in the mediastinum. The abdominal organs were the seat of metastases in nearly every case, especially the liver. In the 9 secondary cases with autopsy the primary cancer was in the ovary, testicle or breast.

Books Received

All books received are acknowledged in this column and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender. A selection will be made for review in the interests of our readers and as space permits.

JAHRESBERICHT ÜBER DIE FORTSCHRITTE DER INNEREN MEDIZIN IM IN- UND AUSLANDE. Von Dr. Schreiber in Magdeburg und Dr. Rigler in Leipzig. Bericht über die Jahre 1902 und 1903. II. Band. Pp. 1571. Price, 30 marks. Leipzig: Verlag von Dr. Werner Klinkhardt, 1909.

JAHRESBERICHT ÜBER DIE FORTSCHRITTE DER INNEREN MEDIZIN IM IN- UND AUSLANDE. Von Dr. Schreiber in Magdeburg und Dr. Rigler in Leipzig. Bericht über das Jahr 1908. II. Band. Pp. 938. Price, 20 marks. Leipzig: Verlag von Dr. Werner Klinkhardt, 1909.

HANDBUCH DER BIOCHEMIE DES MENSCHEN UND DER TIERE. Von Prof. Dr. Phil. et med. Carl Oppenheimer in Berlin. Twenty-second and Twenty-third Instalments (in one pamphlet). Pp. 1032. Price 10 marks. Jena: Verlag von Gustav Fischer, 1909.

MANUAL OF THE DISEASES OF THE EYE. Japanese Translation of Sixth Edition. By Charles H. May, M.D., Chief of Clinic and Instructor in Ophthalmology, College of Physicians and Surgeons, Medical Department. Cloth.

THOUGHTS ON FRATERNITY. A collection of writings which have appeared from time to time. By Lloyd A. Clary, M.D. Paper. Pp. 55. Price, 60 cents. Kansas City, Mo.: J. W. Smith, 25 Live Stock Exchange Bldg., 1909.

DISEASES OF CHILDREN. Edited by Abraham Jacobi, M.D., LL.D., Consulting Physician Mt. Sinai, Bellevue and German Hospitals, etc. Pp. 828, with 34 illustrations. New York: D. Appleton & Co., 1910.

DISEASES OF THE STOMACH. By S. H. Habershon, M.A., M.D., F.R.G.P. Pp. 565, with 8 colored and 11 black-and-white plates. Price, \$2.50. Chicago: Chicago Medical Book Co., 1909.

A TEXT-BOOK OF THE DISEASES OF THE EAR. By Macleod Yearsley, Senior Surgeon to the Royal Ear Hospital. Pp. 452. Price, \$4. Chicago: Chicago Medical Book Co., 1908.

DIE PATHOLOGIE UND THERAPIE DER LEFRA. Von Wilhelm Ebstein, Dr. und o. ö. Professor der Medizin. Pp. 112. Price, 3.50 marks. Leipzig: Verlag von Dr. Werner Klinkhardt, 1909.

AMERICAN MEN OF SCIENCE. A Biographical Directory. Edited by J. McKeen Cattell. Pp. 364. Price, \$5. New York: The Science Press, Substation 84, 1906.

REPORT OF THE PRESIDENT OF THE BOARD OF HEALTH OF THE TERRITORY OF HAWAII. 1909. Paper. Pp. 224. Honolulu, 1909.

THIRD REPORT OF THE BABIES' DISPENSARY AND HOSPITAL OF CLEVELAND. 1909. Paper. Pp. 41.

REPORT AND APPEAL OF THE GOVERNORS OF THE ALBANY (N. Y.) HOSPITAL, 1909. Paper. Pp. 42.

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SOME PROBLEMS OF PHARMACOPEIAL REVISION

CHAIRMAN'S ADDRESS BEFORE THE SECTION ON PHARMA-
COLOGY AND THERAPEUTICS AT THE SIXTIETH
ANNUAL SESSION OF THE AMERICAN MEDICAL
ASSOCIATION, 1909

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In considering any phase of this subject, it should be remembered that never before have so many and in some respects such diverse interests been involved in the contents of the Pharmacopeia as at present. This has become the standard for importers of drugs, for manufacturers of not only the preparations used in medicine, but for all kinds of specialties, and proprietary medicines, chemicals, and flavoring extracts, for wholesale and retail druggists, and for officials engaged in the enforcement of pure food, drug, and pharmacy laws. It is assuming the character of a great commercial standard and a text-book of analytical chemistry combined, and has already expanded into a work very different from what its founders anticipated.

The purpose of a pharmacopeia and the parts the physician and pharmacist should take in its preparation was formulated as follows more than a hundred years ago by Drs. James Jackson and J. C. Warren in their report to the Massachusetts Medical Society:

As it is the business of the physician to prescribe, and of the apothecary to prepare medicines, the physicians as a body ought to point out those articles of medicine which they shall ordinarily employ, and the standard preparations of them.¹

In the course of time the positions have, in some respects, almost changed so that in recent years pharmacists have largely determined what shall go into the Pharmacopeia and are now inclined to criticize the physician, with much justice it must be admitted, for not adhering more closely to it. But in the extensive discussion of this subject the question of how far the Pharmacopeia meets the real present-day needs of the physician has not received much attention. This is the phase of the subject which physicians should be considering at the present time, and especial attention should be given to the means by which they can make their needs and wishes known; for the last few decades they have been very remiss in this respect.

With a large number of the problems involved in the revision of the Pharmacopeia, physicians have but little

direct interest and are not qualified even to express an opinion; among these are many relating to chemical and pharmaceutical details. There is little danger that their interests in most of these cases will not be safeguarded in the future as they have been in the past.

There are, however, certain chemical problems in the solution of which medical opinion should prevail. Thus, many of the problems in regard to chloroform and ether, and the requirements as to the optical activity of a few drugs, such as scopolamin, are questions which chemists and pharmacists are not competent to decide. Whether the value of the fluidextract or the tinctures of nux vomica should be judged by the percentage of strychnin or by that of the total alkaloids is largely a medical problem. There is also an increasing demand for physiologically standardized drugs, and for a fuller recognition of antitoxins and vaccines. Unless some of these facts are fully taken into consideration in the revision of the Pharmacopeia, there will inevitably be, in the next few years, a rapid increase in that class of proprietary articles, already on the market, which, although pharmacopeial, are claimed, sometimes with truth, to be better standardized for the physician's use than the Pharmacopeia requires.

It is, however, in the question of the scope of the Pharmacopeia, what it shall and what it shall not contain, that the medical profession is most interested; and, considering the origin and real purpose of the work, physicians should have a very important, even the leading, part in its determination. In the present rapid evolution of the Pharmacopeia as a commercial standard there is danger that the very purpose for which the work was founded and for which it exists will be obscured. The medical profession will probably, sooner or later, insist that only those articles extensively used in the treatment or prevention of disease and the solvents, reagents, or other chemicals absolutely necessary for their preparation or testing, be admitted. There is a belief that some of the solvents and other reagents already contained in the body of the book should be transferred to the appendix or that, inasmuch as the Pharmacopeia never can be made entirely to supplant works on chemistry and other books of standards, some of the information at present given in considerable detail in it could be left for dispensaries, works on pharmacy and foods, encyclopedias, etc. Among the articles with somewhat elaborate descriptions which it has been suggested could be disposed of in some such manner are acetone, benzoin, rubber, honey, ordinary water, sugar, several coloring and flavoring agents, as well as some crude drugs not employed as such in medicine. It is argued that if a number of such articles were either left to other standards or transferred to the appendix, with less elaborate descriptions, and if, furthermore, a number of admittedly rarely used drugs were dropped altogether, there would be space, without making the book unwieldy, for many of the

1. Wilbert, M. I.: The Coming Revision of the Pharmacopeia of the United States, THE JOURNAL A. M. A., Dec 15, 1906, xlvii, 1989.

more important new drugs. With a certain amount of elimination there would be time for the Committee on Revision to consider more fully the standards for really important articles, and it might be possible to complete the revision in a shorter time; the determination of standards for what are, for the physician, articles of minor importance (such as whisky) often requires as much time and work as does that for drugs which are of the utmost value, or more. Although it is very desirable, or necessary, to have commercial standards for many such articles, these could be provided for in works other than the Pharmacopeia; physicians must look elsewhere for standards for milk, starch-free flour and many other things of far more importance to them than most drugs.

Still, the question of eliminations is one which should be approached with much caution by the medical profession; that of additions, however, should receive its early and serious consideration. It is entirely unnecessary to point out why it is desirable that all non-secret drugs used by any considerable number of physicians should be included in the Pharmacopeia. Although it may be necessary, for the ultimate good, to exclude some of them for the present, it should not be forgotten the value of the work as a standard is lessened by every such drug excluded. The manner in which a drug is admitted (and especially the name under which it is admitted) is scarcely less important than the admission itself.

These considerations suggest three lines of inquiry which are especially pertinent at the present time: (1) what general classes of drugs, in more or less general use, are not at present in the Pharmacopeia? (2) by what means the more important of these can best be brought to the attention of the Committee on Revision; (3) what general considerations should govern the form and especially the nomenclature under which they are admitted?

In speaking of the drugs in somewhat general use by physicians it is, of course, necessary to exclude entirely from consideration those about which there is the least secrecy. The present condition as regards new drugs is more complex than any with which the Pharmacopeia has ever hitherto had to deal. Most of the drugs which have come into use in the last decade are either patented or have been introduced under proprietary names. To exclude entirely articles of these classes would be to make the Pharmacopeia still less representative of the actual needs of the physician; their inclusion, however, would involve very difficult problems. Many of the recently introduced drugs claimed by the manufacturers or their agents to be definite compounds have been found to be simply mixtures. In a great many other cases new names have been applied to more or less well-known chemical compounds; as a rule these names are objectionable not only because they are proprietary, but because they are frequently unscientific and often misleading.

Nevertheless, many valuable preparations have been introduced and have come into general use under such circumstances. This Association, through the Council on Pharmacy and Chemistry, has examined large numbers of the newer drugs and included in New and Non-official Remedies those which are believed to be as represented. Different sections of the Association and other medical organizations are selecting from this book those articles which the members believe to be of most value and which should be considered for inclusion in the Pharmacopeia. When these results and the prescription statistics now being collected by the American Pharmaceutical Association are tabulated and classified, the Committee on Revision will be better informed than at any

other time in recent years as to the wishes of the medical profession concerning admissions. No committee desirous of making a Pharmacopeia which will receive the support of the profession could afford to neglect this material. Information collected in this way is a much truer indication of what should be included in the Pharmacopeia, if this is to fulfil the purposes for which it was founded, than would be the statistics of importers and manufacturers, for example, since there is no way of determining what part of the drugs which pass through the hands of the latter is for strictly medicinal and what for technical or purely commercial use. The Pharmacopeia should not become a standard for the latter.

Although, for the reasons already indicated, it may not be feasible to admit all the drugs selected by these medical organizations, the latter are, nevertheless, doing a useful service in calling attention to all the unofficial drugs which they believe to be useful.

The larger number of recently introduced drugs present no inherent difficulties, for the proprietorship applies only to the name. The articles themselves are free and the chief problem is one of nomenclature. Different pharmacopeias have pursued different policies in regard to this. Most have adopted the name under which the drug has become known in medical literature, provided the name has become free; otherwise they have as a rule adopted the true chemical name. Thus we find in most pharmacopeias such names as "phenacetin," "sulphonol," "saccharin," "antipyrin," etc. The United States Pharmacopeia, Eighth Revision, adopted in most cases the true chemical names, or, rather, abbreviations of them; these abbreviated names, however, will readily recall the true name to one somewhat familiar with chemistry. Thus in place of "phenacetin," we find acetphenetidin; instead of "sulphonol," "sulphonmethane"; in place of "saccharin," "benzosulphinid" (but with "saccharin" as a synonym). The name "antipyrin," a name which in no wise suggests the chemical nature of the substance, has been adopted by the United States as well as by most foreign pharmacopeias; the German, however, has adopted the name "pyrazolonum phenyldimethylcum" and the British that of "phenazonum." There is a greater lack of uniformity in the case of many other names. Thus we find for the same substance "trionalum" in the Austrian and Swedish pharmacopeias, "methylsulphonol" in the German, "sulphonethylmethane" in the United States and the full chemical name "diethylsulphonmethylethylmethanum" in the Swiss. What was formerly official in our Pharmacopeia as "salol" has become "phenylis salicylas" in the eighth revision, while it is in the Swedish and Dutch pharmacopeias as "salicylas phenylicus," as "salolum" in the Swiss and "phenylum salicylicum" in the German, Austrian and Belgian, and so on.

In some cases this lack of uniformity in the naming of the same substance may be the almost inevitable result of differences in the laws of the various countries, but in most cases it is simply the result of each country trying to work out pharmacopeial problems independently. It is a survival of that provincialism in pharmacopeial matters which formerly found its expression in Boston having one and New York another pharmacopeia; or, up to recently, of Great Britain having the London, Dublin, and Edinburgh pharmacopeias. This atmosphere of provincialism pervades not only the nomenclature of new drugs, but that of the entire pharmacopeias, including the strengths of preparations as well as standards for purity, etc.

In marked contrast to this is the condition of the science of medicine as a whole, which the Pharmacopeia is supposed to serve; this has become truly international. Important medical discoveries soon become known throughout the civilized world; the leading medical journals of each country are read in all other countries. A new drug introduced in one country becomes known in a few weeks throughout the world; for a time, as a rule, but a single name is applied to it, and this enters into the permanent medical literature. Then after a few years the pharmacopeias of the various countries adopt, each for itself, a name; these names are often totally unlike, and the state of confusion which ensues is as great as that which occurs when different manufacturers apply different names to the same substance. Some of these specially devised pharmacopeial names may acquire a limited acceptance in their own countries, but they rarely enter the world's literature; most will probably remain literary curiosities. Thus, for instance, "phenazonum" and "pyrazolonum phenyldimethylicum," the British and German official names for antipyrin, do not occur up to the present in the *Index Medicus*.

Although sound arguments may be advanced for all of the new names recently introduced into the United States Pharmacopeia, including, for example, the very important one, that they are the true or close approximations to the true chemical names, and that really well-educated physicians should learn, even at the cost of a little effort, the true names of the drugs they use, yet there is little likelihood that some of them will ever come into general use.

The difficulties involved in making reforms in the present pharmacopeial nomenclature or of preventing confusion in the future are too great for any country to undertake alone successfully; the only possibility of success lies in a comprehensive international agreement. In these days of international congresses and conferences, when medical men from different nations come together to make, for example, international agreements concerning mortality statistics, or to formulate treaties concerning the control of contagious diseases—when botanists, zoologists, anatomists and chemists have established international systems of nomenclature in their sciences—why should not similar action be taken in regard to the Pharmacopeia? It is true that seven years ago there was a conference in Brussels for the unification of the formulas for a few heroic medicines; this was an important step, but unfortunately it has as yet not been followed by another.

Until the pharmacopeias of the world assume a more international character, corresponding to the present international character of medicine, they will fail more and more to represent truly the needs of the medical profession, and there is probably no phase of pharmacopeial revision in which this profession is more vitally interested than this.

That there has been a demand, largely from a commercial or pharmaceutical standpoint, for knowledge concerning foreign pharmacopeias is evidenced by the fact that a number of pharmacopeias have been translated into foreign languages. Thus, as I learned from Dr. Wilbert, the United States Pharmacopeia of 1840 was translated into German; editions of the German Pharmacopeia were translated into English and Spanish. The Japanese Pharmacopeia has been translated into both German and English. The eighth revision of the United States Pharmacopeia has just been translated

into Spanish—an action which should aid materially in bringing about cooperation in pharmacopeial matters between the countries of the western hemisphere.

There are numerous other problems of pharmacopeia revision in which the physician is interested. One, for example, is whether the present basis of representation for medical organizations in the convention should not be changed so as to allow of a fuller participation by the different sections of this Association as well as of other organizations of specialists. Other problems would relate to the formation of a permanently active Committee or Commission on Revision, with centrally located headquarters, so that the Pharmacopeia could be revised at more frequent intervals; much of the work now done by the Council on Pharmacy and Chemistry could be done by such a commission. But time does not permit even a brief discussion of such questions.

Hygienic Laboratory, Twenty-fifth and E Streets, N. W.

Original Articles

THE RADICAL TREATMENT OF EPITHELIOMA OF THE LIP *

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Operative treatment of cancer in any form or location must, in order to obtain the best possible results, be based on certain well-known incidents in the life-history of this form of neoplasm. Since cancer first disseminates by local extension and then usually by infection of the lymphatics before becoming generalized, any successful operative treatment must remove the whole probable field of local extension before the lymphatics are involved, or must include the latter in its scope before generalization has taken place. There being no clinical symptoms which point to the beginning of lymphatic infection, the only safe course is always to include the whole lymphatic system adjacent to any cancer in its operative removal.

Hence the ideal radical operation against cancer must include, first, extensive local removal of the tissues adjacent to the new growth; second, the removal of the associated lymph nodes with the lymph channels connecting them to the tumor; third, the avoidance of any cutting into the removed tissue, and, last, the closure of the operative wound so as to secure immediate union.

These principles have been embodied in the various operations against cancer in different parts of the body with strikingly successful results, but unfortunately have been disregarded by many operators.

In cancer of the breast there are certainly very few surgeons who will admit ever doing a simple amputation except for mere palliation, but I fear that there are still many operators who even during the past year have been guilty of this act of malpractice, and have thus probably condemned their unfortunate patients to a horrible death.

In cancer of the lip proper operative standards have been more slowly recognized even by the best among the profession, and it is only of late years that the necessity of a truly radical operation has been admitted. The reason for this is paradoxical. The argument seems to

* Read in the Section on Surgery of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

have been that because cancer of the lip is generally prickle-celled epithelioma, which is slower of growth locally, and even slower in its involvement of the lymphatics, and because on account of these facts some cures resulted from any form of local destruction of the tumor, therefore anything more than local removal or destruction was unnecessary. Because all the conditions were present which would ensure ideal results from radical treatment, the profession said, "What's the use?" and stuck to the old V operation and condemned at least 25 per cent. of the patients to recurrence and death.

Such an attitude among thinking men can be explained only by the facts that the percentages of non-recurrence after the V operation compared quite favorably with those after more radical procedures in other regions, this being dependent entirely on the life-history of epithelioma with its late lymphatic involvement. Among another class of the profession scepticism as to the operative cure of cancer in general, ignorance of the exact facts, combined with the simplicity and ease of the V operation to an inexperienced or occasional operator,

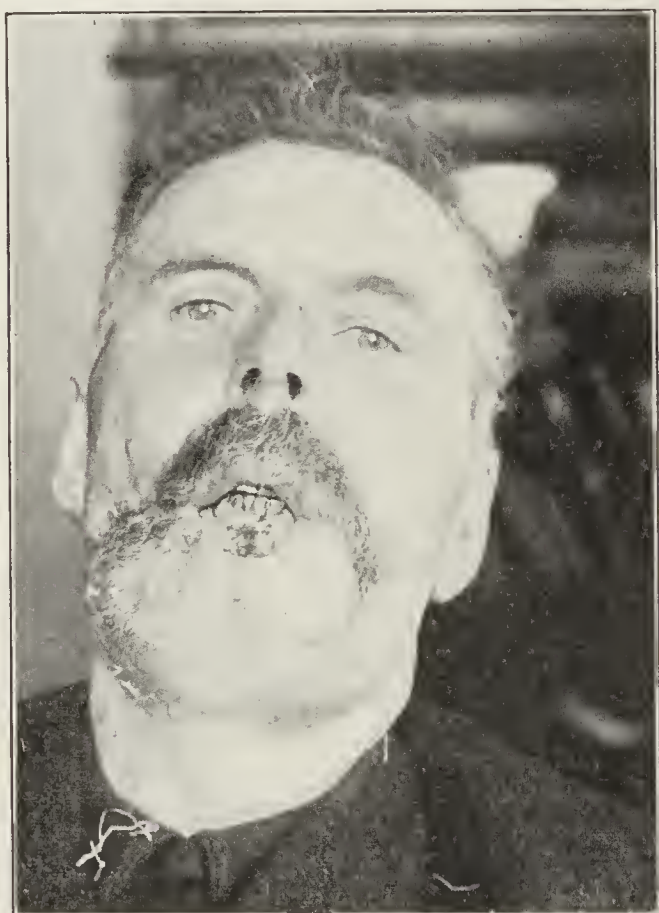


Fig. 1.—A case of typical local and lymphatic recurrence after the V operation.



Fig. 2.—Recurrence after V operation in man of 25, showing extreme malignancy at this age.

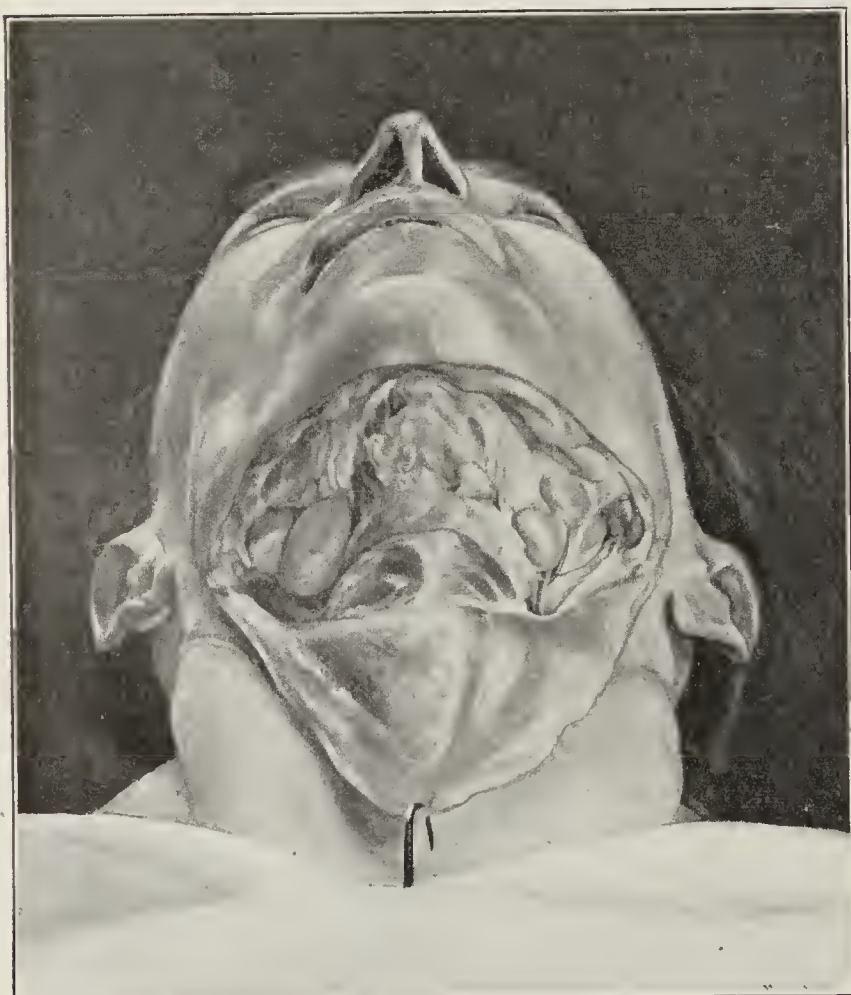


Fig. 3.—Operation for epithelioma of the lip. The preliminary and superficial dissection.

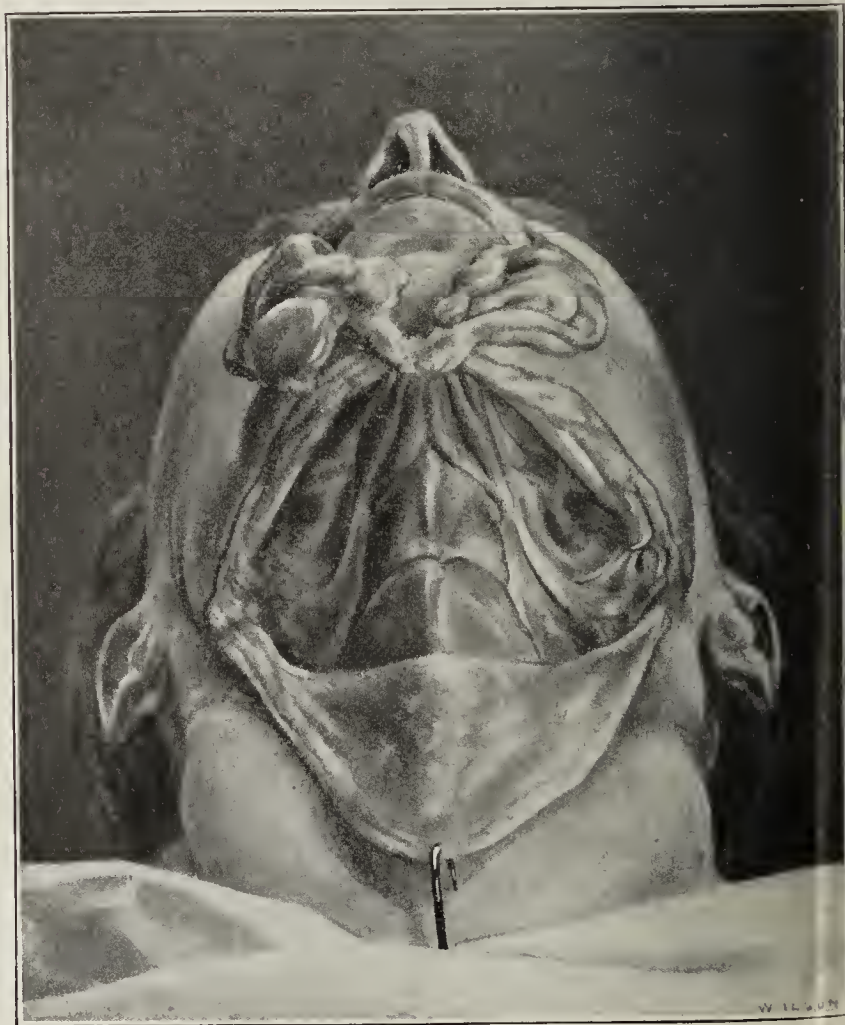


Fig. 4.—Complete dissection of lymphatic and submaxillary glands *en bloc*.

prevented radical treatment. Am I exaggerating when I estimate that nine-tenths of the cancers of the lip treated in this country in the past year have been subjected to purely local treatment of some kind? Am I mistaken in again estimating that not one-third of the members of this representative surgical body regularly do a radical operation in every early case of epithelioma of the lip

At our last meeting in this place I was discussing this question with a prominent member of this Section and he demurred strongly from my plea for radicalism, saying that my views were extreme. Another prominent surgeon said that he had always done the V operation and did not think that he had had 25 per cent. recurrence. Had the 25 per cent. no rights?

Our surgical text-books are a unit in not describing any radical operation for cancer of the lip, and only of late years have added to their description of the V operation the statement that "when the glands are involved they should be removed." Now this is certainly all wrong. No reasonable medical man can deny that the results of a radical operation must be far better than those of simple removal of the tumor, and that his pa-



Fig. 5.—Incisions on each side of a small growth, showing the fan-shaped mass of subcutaneous tissue which included lymphatics leading from tumor.



Fig. 6.—The method employed for the enlarging of the mouth by the utilization of a flap of mucous membrane together with the corrective triangle.



Fig. 7.—Suture of the wound with the provision for drainage of the submaxillary fossæ.



Fig. 8.—Result after removal of one inch of vermillion. Photograph taken immediately after removal of stitches.

tients are entitled to such better results. Certainly surgery against cancer should avail itself of every favorable field to improve its generally discouraging results. I believe thoroughly that every epithelioma of the lip, no matter how small or how apparently early it is seen, should be subjected to radical operation for its removal.

I am unable to give exact statistics in regard to the final results of radical operations for lip cancer, but I believe that recurrences will be less than 10 per cent., and most of these in reasonably early cases will be local and not in the neck, and thus admit of successful operation. I have never known of recurrence after any radical operation done by me in the past eleven years, although some cases are untraceable and may have recurred. Of the very large number of hopeless recurrences which I see, none have given a history of an early radical operation.

My plea is that our patients with cancer are entitled to the very best chance that surgical skill can afford them, and that a radical operation in lip cancer done before extensive lymphatic infection has occurred will have a very low recurrence rate and do much to increase public confidence in the operative cure for cancer.

The exact method and technic of the radical operation is not important as long as the principles already stated are observed, and a number of differing methods are in use by various surgeons, all of which attain the desired results. The operation which I have used for about eleven years is shown in Figures 3 to 7. (These drawings are from the cadaver, the subject fortunately having enlarged lymph nodes from unknown causes. The beauty of the drawings is due to the skill of Mr. Wilson, artist to the anatomic department of the University of Minnesota.) It avoids mouth infection of the neck wound by completing all dissection of the neck before entering the mouth. The first incision extends just below the jaw from one angle to the other and cuts the skin and the platysma muscle, which are then carefully dissected down to the level of the thyroid cartilage. All tissues down to the muscles are then sectioned at this line and a clean dissection is made elevating all loose connective tissue, lymph nodes, etc., in a flap which extends laterally to the great vessels on each side. The facial artery and vein are ligated and the submaxillary glands are loosened and raised in the flap on each side. Incisions are now made at each side of the epithelioma far enough away to include all infiltrated tissue, and these are carried down to the cross section already made. The lateral flaps are now dissected free from the jaw, keeping close to the skin at the lower part to avoid lymphatics, and finally the intervening central mass is loosened from the jaw and removed. This contains the tumor and a fan-shaped mass of skin and the deeper tissues attached to the lymph nodes of the neck, and the submaxillary gland by a loose flap of tissue which contains the connecting lymphatics.

The submaxillary glands should always be removed, not because they are infected in early cases, but because there is regularly a lymph node attached to each which is one of the first to be involved. In cases in which not over three-fourths of an inch of the vermilion edge of the lip has been removed, simple suture of the wound with drainage of the submaxillary fossæ completes the operation. In cases in which the mouth must be extended on account of more extensive removal of the lower lip, the procedure shown in the drawings is convenient. The mouth is broadened by a straight incision outward at either or both angles, and this incision is carried down to but not through the mucous membrane;

stitched to the raw surface of the new lip. To avoid the latter is then cut one-half an inch higher and puckering of the upper lip a triangle of skin is taken out of the cheek to allow of the smooth drawing together of the lower lip. The new chin should be sutured to the soft tissues over the lower jaw to exclude mouth fluids from the neck wound. This sometimes fails and there is an offensive suppuration in the wound; and the same accident may occur with a closed mouth, apparently from infection by mouth germs through the cut duct of the submaxillary gland. Final union is always good, and cosmetic results remarkable considering the amount of lower lip often removed. There should be no mortality after this operation, except from accidents due to anesthesia, embolism, etc.

The same operation can be adapted to cases recurrent after V operations or caustic, and when thoroughly done will avoid in many cases further neck involvement.

In these late cases subsequent recurrence is apt to be local, and while it is often entirely inoperable the patient is saved much of the extreme suffering incurred by those dying from lymph node involvement.

I have never seen occasion to attack the lymph nodes along the great vessels as advised by Crile, as the observed cases extending to this field have also had such extensive local involvement as to preclude operation.

There are a few rare cases of cancer of the lip which negate the comparative chronicity of this disease. Such cases are either epithelioma in very young subjects, or carcinoma proper in men up to forty. All such cases personally observed have recurred after V operations or caustic. No opportunity has been afforded to observe the effect of a proper radical operation in such cases.

SUMMARY

1. Local removal of lip cancer should never be done because it is impossible to exclude lymphatic involvement in any case.
2. Radical operation embodying the principles laid down is the only sure way to obtain the best results for our patients, our own reputations, and the credit of the surgical treatment of cancer.
3. Even in recurrent cases much can be done, and these patients should, when the extensive involvement of irremovable soft parts does not preclude, be given the benefit of a carefully executed operation on the same lines.

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RADICAL OPERATION IN MAMMARY CANCER *

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In December, 1905, I presented to the Western Surgical and Gynecological Association a new technic for breast amputation in mammary cancer.¹ This technic, after having been previously worked out in the dissecting-room, was first employed clinically in May, 1905. My personal experience, therefore, at the time of its presentation to the surgical public, was limited to but eight cases. In the three years and a half intervening my experience has been increased by a considerable number of further cases in which I have put the method

* Read in the Section on Surgery of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

1. THE JOURNAL A. M. A., March 3, 1906, xlv, 627.

to the fullest possible tests. My own experience has been supplemented by the voluntary testimonials of a very large number of surgeons all over the country. Particularly do I wish to express my indebtedness to Dr. Charles Mayo, whose very kindly endorsement and employment of the technic in his wonderful surgical clinic has introduced the method by demonstration to so many surgeons. My added experience, together with these contributions, has led me to believe it possibly worth while to present this technic again to the surgical profession for further consideration, embodying some modifications of slight character which add to its virtue, and accompanied by a revised set of drawings rather more accurate than the original.

Before proceeding with the operation itself I find it a great advantage first to mark off with a slight scratch stroke of the knife the complete plan of skin incision. This ensures greater certainty in the artistic accuracy of the plastic result, and at the same time warns one against encroachment on dangerous infected tissue in the stress of operative work. I would emphasize at the outset that the portion of the incision which surrounds the breast is always carried beyond the bounds of the

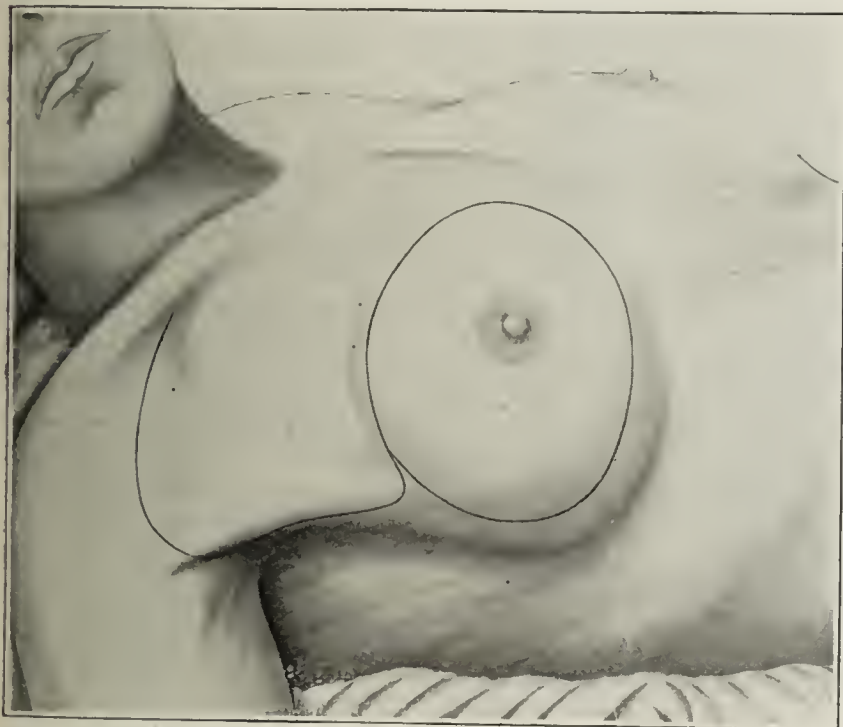


Fig. 1.—Outline of incision, marked with a scratch stroke of the knife. (These drawings are by A. S. Cleaveland.)

breast itself so that all premammary skin is removed with the tumor.

The skin incision is begun at a point about one and a half inches below the middle of the clavicle in the natural depression marking the interval between the clavicular origins of the deltoid and pectoralis major muscles. Since to this point in later closure the skin from the floor of the axilla must be brought it can be accurately estimated in advance by pressing the index-finger up beneath the pectoralis major muscle in the axilla and feeling the point in front to which it will reach without undue tension.

From this initial point the incision is carried outward and downward with a slight curvature whose convexity is outward, overlapping the inner margin of the deltoid muscle, to the outer edge of the lower border of the pectoral fold. (I have found that when desired to increase the breadth of the flap, as in cases in which the growth is quite in the outer circumference of the breast, this incision can be carried from two to three fingers' breadth beyond the margin of the deltoid, and yet with the great laxity of the axillary skin the closure on this

line is effected with practically no tension.) The incision is now curved around the outer edge of the pectoralis insertion and reaches slightly under the edge of the pectoral fold. Along the under margin of this fold it is carried to the chest wall, where it meets the outer circumference of the breast near its lower border. The re-



Fig. 2.—Exposure and division of the pectoralis major.

maining portion of the incision is made in the form of an ellipse about the breast with its long axis somewhat from above downward and outward, so the outer portion of its circumference practically parallels the descending first incision. In operating, this ascending portion alone is made at the beginning of the operation.

With the incision thus far carried I have fashioned a quadrilateral flap with its base upward toward the clavicle and free below. This incision is carried through skin and superficial fascia down to the underlying muscles. This flap is now dissected upward from below,

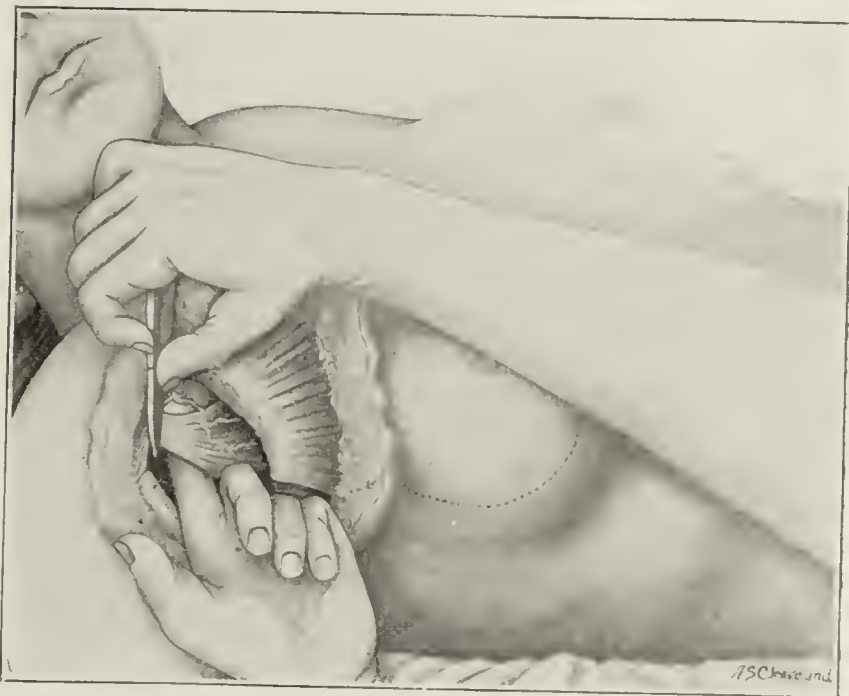


Fig. 3.—Isolation and division of the pectoralis minor.

and above its base the skin is undermined well up to the clavicle. The flap is then rolled up in a large gauze pad wrung out of hot salt solution to protect it from possible contamination or implantation of cancer cells in the subsequent stages of the operation. With this flap lifted the pectoralis major muscle is exposed with its fibers

converging to its tendinous insertion in the humerus. The index-finger of one hand is now shoved up underneath the pectoralis major muscle and brought out again at its upper border, so that the entire pectoralis muscle is thus booked up on the index-finger, and by blunt dissection separated out to its tendinous insertion.

If one wishes to leave the clavicular portion of the pectoralis muscle, this can easily be accomplished by bringing the finger up through the interval, usually well marked, between the clavicular and sternal portions of the muscle, and thus the clavicular portion can be separated and left in place. With the tendon of the pectoralis muscle thus lifted up, as shown in Figure 2, it is now divided by the scalpel very close to its insertion into the humerus. The muscle immediately retracts toward the chest and exposes, underneath, the pectoralis minor muscle invested in its fascia, which above runs to the clavicle and below spreads out over the chest walls.

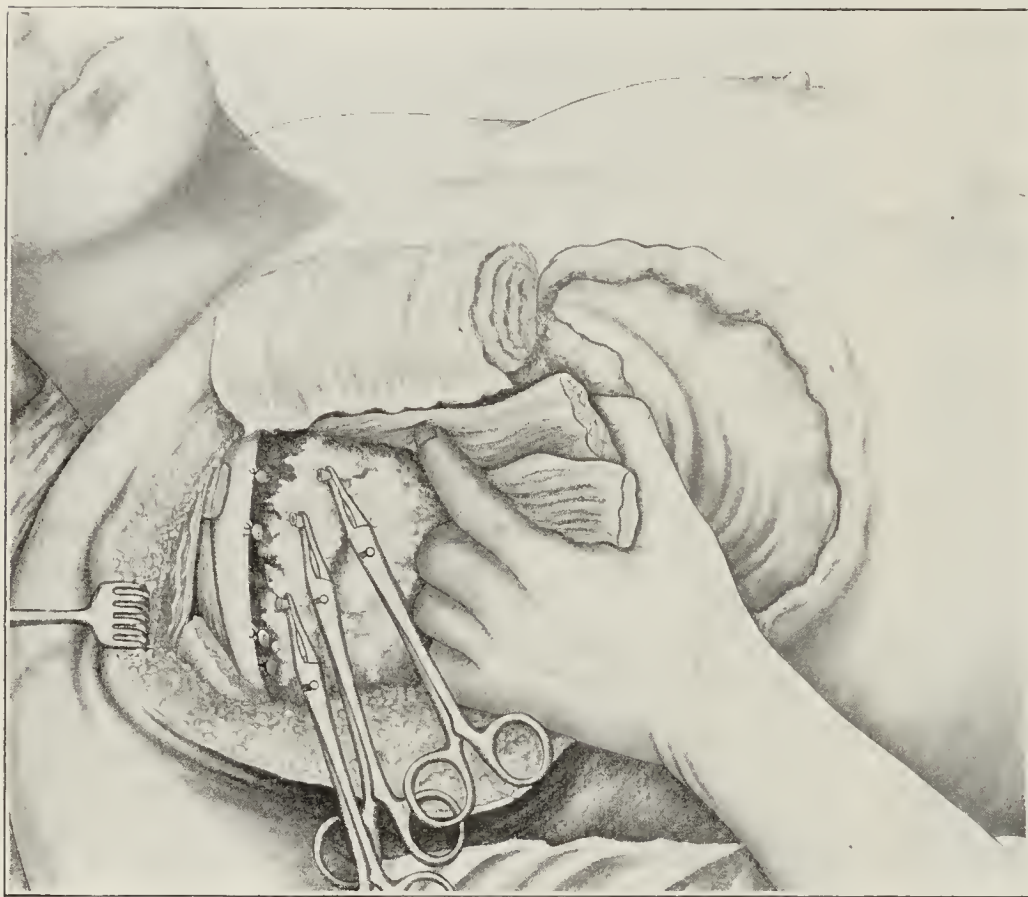


Fig. 4.—Dissection up under the breast and toward the chest.

This can easily be exposed by blunt dissection by the finger, which is now likewise inserted under the fibers of this muscle, and it is isolated as was the pectoralis major. It is also divided (Fig. 3) close to its attachment to the coracoid process of the scapula. As the pectoralis minor, like the pectoralis major, retracts toward the chest, the wound is held apart by retractors or by the fingers of an assistant, and the axillary space is now widely exposed to view from the front. As a rule this exposure can be made without encountering any bleeding vessels which will require clamp or ligature. Likewise we now have a wide exposure of the axilla for thorough dissection, without in any way having touched the breast or made any extensive division of tissues.

The axillary vein is now in view, and to its outer side, and parallel to it, an incision is made with the scissors of the fascia which surrounds the vessels. The fascia is now stripped off, usually by blunt dissection and gauze, supplemented by an occasional snipping with scissors. The operator works steadily from without and above downward and inward toward the chest, and clearing fascia, glands, etc., as he goes. In this way the axillary vein and artery are isolated, and the branches supply-

ing the axilla and going on to the chest are made plainly apparent. These vessels are at once double-clamped and divided between clamps. I have usually found it necessary thus to ligate about three or four sets of vessels. Time is saved by immediately ligating these vessels and then removing the clamps. Thereafter there will be no trouble with hemorrhage from the axilla, except occasionally from little veins in the cellular tissue further back toward the scapula or toward the chest. These incidental vessels, as a rule, will not be more than three or four in number and are usually ligated immediately after clamping. Beginning thus at the apex and outer border of the axilla, the fascia and glands are completely cleared by gauze and scissors dissection, working from the vessels inward toward the chest. This dissection should clear the subscapular, serratus magnus and intercostal muscles of all connective tissue and fat cells. As the dissection proceeds the raw surfaces left are covered progressively with hot salt packs both

on the proximal and distal wound surfaces, thus carefully guarding against wound contamination. The dissection is now continued usually with gauze, up underneath the pectoralis muscles under the breast and toward the chest. The point of attachment of the pectoralis minor to the ribs is cut from underneath, flush with the ribs and the costal muscles. From underneath the operator now loosens up the pectoralis major to its fixed points of origin from clavicle and sternum. While this is being done the breast is forcibly pulled back so as to expose the deep cavity of the wound. The pectoralis muscle is now severed from beneath, close to its lines of bony attachment, and the perforating branches of the internal mammary which supply the vascularity of the breast are caught as soon as divided as they come through the chest wall (Fig. 5). Usually two or three of these vessels will spurt, but they can be immediately caught with forceps and later tied. After the pectoralis major muscle has been entirely severed from beneath, the breast is allowed to drop back into its normal position, the skin incision is completed, dissected widely in every

direction, and the breast and the pectoral muscles underneath are finally clearly removed. Branches of the mammary artery which are clamped are now tied and the forceps removed.

Under these circumstances the skin incision practically does not bleed at all, and it will be noticed that at no time during the operation were there more than a dozen clamps on the wound. As a matter of fact, the operation could easily be completed with from one-half dozen to one dozen clamps at the outside. This is made possible by the fact that all vessels are ligated as trunks at their points of origin, instead of dealing with a large number of peripheral branches, as is usual in other operations. The extent of fascia dissected in this operation is the same as in any other thoroughly radical breast amputation. If one wishes to increase the extent of radical removal in accordance with the suggestion of Handley, as we now generally do, this can readily be accomplished by adding a vertical incision from the lowest point of that circumscribing the breast. From this vertical incision the skin and superficial fascia are dissected in all directions, and the deep fascia over the rectus, external oblique, and latissimus dorsi, bounded

by the midline internally, the latissimus externally, and a line on the level of the umbilicus below, are removed *en bloc*, together with the glands, breast, etc., embraced in the usual Halstead technic.

The removal of infected tissue now being complete and the wound dry, the next step is the replacing of the flap and the closure of the wound, these also presenting points of distinct originality. The quadrilateral flap of skin and superficial fascia which originally formed the anterior covering of the axilla are now stretched out by tenaculum forceps and transferred inward to cover the defect of the chest wall created by the removal of the skin of the breast (Fig. 6). This flap, which is one of the distinctive features of the operation, will always contract after it has been entirely loosened and will look as though it could be of but little service. A couple of tenaculum forceps at the angles, with probably another pair on either side, will spread it out until it covers a surprising amount of space.

As the flap is now drawn over on to the chest, I usually fix it by attachment to the corresponding points of skin margin, as shown in Figures 6 and 7. Another distinctive point now consists in catching up, with the tenaculum, the margin of the lower portion of the pectoral fold, which represents the integument which formed the original floor of the axilla. The tenaculum on this margin is placed at such a distance from the lowest point of the first vertical line that when drawn upward it will bring this skin point up to the original beginning of the first incision beneath the clavicle. This maneuver brings the loose skin from the floor of the axilla closely up around the axillary vessels and does away entirely with the axilla as a cavity in the subsequent anatomy of the individual. These tenacula likewise are usually clamped and mark these fixed points of coaptation, as seen in Figure 7.

I now place figure-of-eight tension-approximation sutures of silkworm gut at these points to steady our subsequent suturing. These figure-of-eight tension-approximation sutures were first introduced to me by Dr. Charles Mayo and are admirable for such purposes. The remaining portion of the incision may be closed either with interrupted or continuous sutures, as desired; or, as I have frequently done, by the use of subcuticular sutures of silkworm gut. It is most surprising, after this flap has been spread out and approximation properly made, how little tension there will be on the suture line. Should the skin show any pallor suggestive of tension, a number of superficial short incisions through skin alone are made paralleling the wound on flap and outside, allowing escape of venous oozing and thus preventing that venous stasis which more than any other cause may be responsible for gangrene of skin or flap. A stab puncture in the lowest recesses of the wound space behind furnishes opportunity for drainage. In many cases I dispense with drainage entirely.

The wound is now covered by large square pads of gauze wrung dry out of hot salt solution, and finally strapped tightly. Separate gauze pads cover the arm portion of the wound and are strapped separately so as to permit free mobility of the arm unrestrained by fixation to the chest. The moist gauze starts capillarity as dry would not, so that the oozing blood and serum are at once taken up by the gauze and carried to the superficial layers. The wound surface is thus kept dry and clean. The strapping also holds the flap close to the chest and obliterates dead spaces.

When the operation is completed (Fig. 8) it will be observed that there is an appearance which has been likened to that of a dipper, with its handle running vertically along the inner border of the arm, paralleling the deltoid, the bowl of the cup being represented by three lines, each at right angles to the other, on the

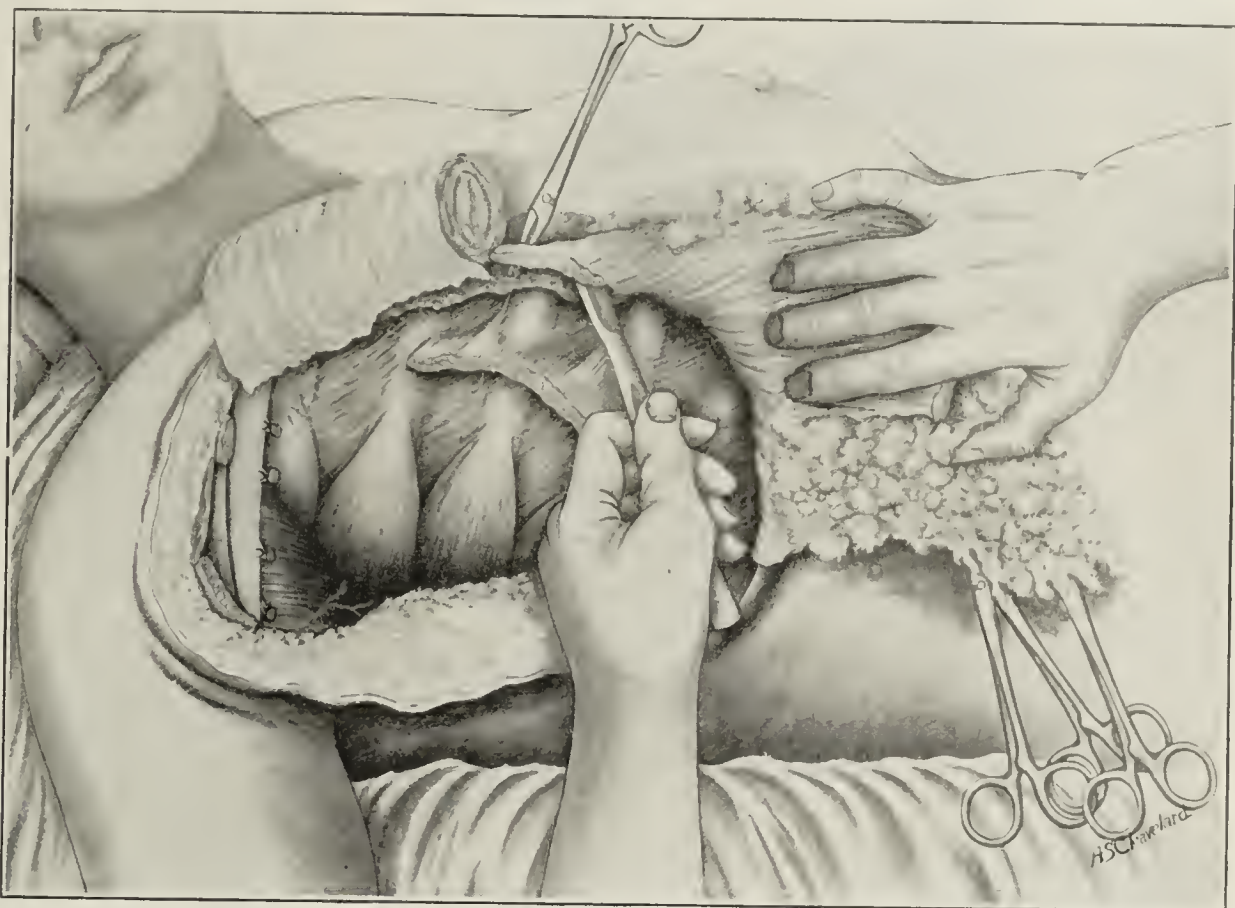


Fig. 5.—Pectoralis muscle severed from beneath, and perforating branch of the internal mammary caught with forceps.

chest wall. There is thus no opportunity for linear contraction interfering with the function or utility of the arm.

This operation will be much better understood by reference to the illustrations which are presented herewith, and its advantages will be much more appreciated on practical trial.

In conclusion, I believe that this method has the following advantages:

1. The drawing of the skin from the floor of the axilla up to the arm does away with the axillary fossa, and thus with the large space which Nature would have to obliterate by formation of scar tissue, with the resultant pressure on the axillary vessels and nerves. In fact, it was in the endeavor to produce this result that the flap was incidentally developed. I had been impressed, as doubtless has every surgeon, with the difficulty in managing the empty fossa axillaris left behind in the older operations. On thin subjects in whom the axillary fat disappears, I had often been impressed with the fact that the pectoral muscle was covered behind as well as in front by skin, and that there was here practically no subcutaneous axillary space. On fleshy patients even it

is easy to push the skin of the axillary floor well up beneath the clavicle. It thus appeared that with a vertical skin incision in front and the skin from the axilla behind brought forward to meet it, I would closely surround the axillary vessels with no waste space for drainage or extensive fibrous tissue obliteration. When this

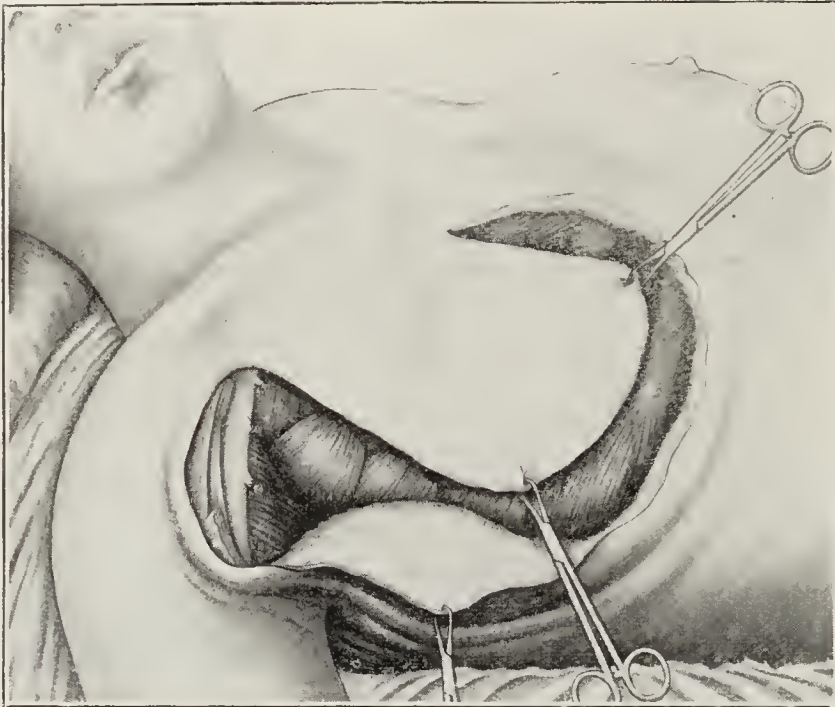


Fig. 6.—Quadrilateral flap of skin and superficial fascia stretched out by tenaculum forceps and transferred inward to cover defect created by removal of skin of breast.

was tried on the cadaver and the axillary skin was drawn up to meet the outer side of my vertical incision in front I found that the original skin covering the pectoralis major muscle at its outer portion was not needed there. Then came the suggestion to slide it inward to the chest where it was needed, and thus the flap. I am, therefore, of the opinion that this method of obliterating the axillary space is possibly the most important point in my entire technic. Its significance, however, has been apparently entirely overlooked by many



Fig. 7.—Method of insertion of figure-of-eight coaptation sutures.

whose attention has been attracted only by the more obvious and picturesque flap. I have seen not a single case of edema of the arm in my patients since using this technic and none of pain in the distribution of the axillary nerves. Furthermore, there is no possibility of any

contraction of skin, which fixes the arm to the chest, and the early and complete restoration of the function of the arm is striking. I therefore put no restraining bandage or splint on the arm at all, but from the outset have it carried simply in a sling and encourage use of the hand and arm as much as possible from the beginning.

2. The flap forms a covering for the chest defect, as a rule without any tension, and this almost entirely obviates the necessity of grafting, which is so frequent in other methods. In fact, I have not found any patient operated on by my method who required grafting. It is a curious thing to me to observe that some men seem on general principles to object to any plastic attempt to close a breast wound. Their argument is based on the presumption that in an effort to secure primary closure thoroughness of excision is sacrificed. In my method the entire breast skin is removed. Can any more be required? Handley's argument would even indicate that much less skin sacrifice is necessary. There is certainly no pathologic argument for more. On the other hand, I have found myself and observed others removing more skin than ever before, for the simple reason that it can be

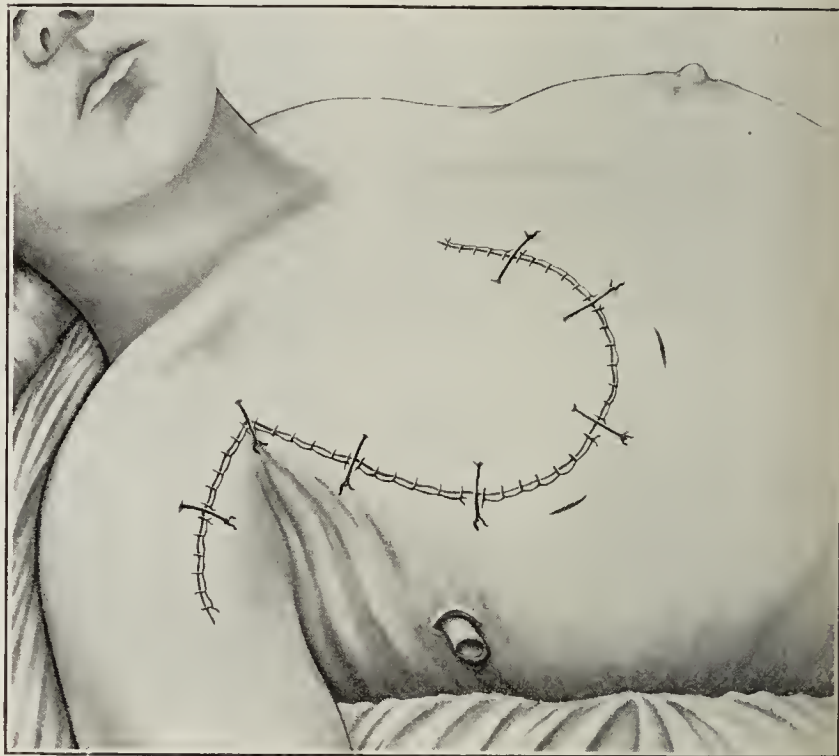


Fig. 8.—Flap sutured in place, with drainage-tube inserted.

removed, and yet the resultant defect can be covered by this flap without the necessity of grafting. I have even removed and seen removed by my surgical colleague in secondary operations on patients previously operated on by others, areas of skin five inches in diameter, and yet covered with primary union by this method and this in cases in which the primary operation had sacrificed at least an ordinary amount of skin. I certainly would not argue any compromise with completeness and thoroughness of removal of infected tissue in cancer cases. There doubtless will be found isolated cases in which neither this or any other one certain method may be applicable, but I do believe that it will prove a distinct advantage in over 95 per cent. of all cases, if operable at all.

Again, Dr. Rodman, in his excellent monograph on "Cancer of the Breast," while most kindly portraying my method in full, has mildly attributed to it two cases of skin recurrence in his hands. In answer to this I would simply remark that in no technic as yet suggested, not excepting the extremely radical one of Dr. Rodman himself, is the skin sacrificed from which my flap is

obtained. No one has removed the skin of the original axillary fold. Skin recurrences will occasionally occur after any cancer operation. I have thus far seen but two apparent skin recurrences. In one, reoperation proved it to have really begun in the intercostal fascia and the skin became secondarily involved by contact. Furthermore, while the assumption is not susceptible of exact proof, I am deeply impressed with the view that many of my cases of local recurrence are really cases of implantation recurrence, or local cancer grafts from cancer cells which escaped from cancer tissue during operation, and, becoming implanted in the healthy tissues of a patient susceptible to cancer and obtaining therefrom necessary nutrition and environment, have reproduced themselves. With this belief I strongly urge the painstaking protection of the wound surfaces remaining from the possible implantation of cancer cells, as was indicated in my description of my technic. With this same object I thoroughly flush out and mechanically cleanse all my wounds in cancer cases before closure—the only wounds I do irrigate.

3. The ligation of all vessels at their nearest point of origin does away with the use of a large number of hemostatic forceps, which cause loss of time, to say nothing of the inconvenience of having a large number of instruments in one's way. I have in few instances used more than one dozen forceps in this operation, and can usually do the work with about six. The operation is thus shortened, so that, as a rule, I find that it requires from forty minutes to one hour or thereabouts to complete it. In fact, I have never run beyond an hour, even doing the operation slowly, as I have in most cases, for the purpose of demonstrating this new technic, and I have done the operation in forty minutes.

The most noticeable feature to the onlooker, when the operation is done in the manner described, probably is the marked absence of hemorrhage, so that it can almost be called a bloodless operation.

4. The entire technical portion of the operation is completed before the chest is exposed by removal of the breast; therefore, long exposure of an enormous area of raw chest surface, with the attendant shock, is done away with. As soon, in fact, as the breast is removed the wound is ready to be closed.

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ABSTRACT OF DISCUSSION

ON PAPERS BY DRS. STEWART AND JACKSON

DR. H. S. WIEDER, Philadelphia: I believe that the work of Handley on the breast and that of Watson-Cheyne have shown that there is local permeation of the cancer downward to the chin in a radial direction and outward toward the borders of the lip, and that, therefore, the V-shaped operation is absolutely contraindicated. If the surgeon is going to take out a V he should turn it in the opposite direction, the base of the V being down and not up. In practically all cases the V-shaped operation is contraindicated unless it includes the radical removal of all the glands in the neck. Like Dr. Stewart, I have never found the submaxillary glands to be involved, but they should be removed, nevertheless, because we frequently find imbedded within these glands small lymph glands which may become carcinomatous, but which cannot be detected by sight or touch.

The early diagnosis of carcinoma does not depend on the diagnosis of the tumor itself, but the detection of abnormal involution, which is the key to the whole situation. As Warren and others have pointed out, in the proliferative type of abnormal involution we have an excessively high percentage of cases of malignant degeneration. It is to this type of abnormal involution that we must devote particular attention, and the microscopist must examine his gross specimen in all directions

carefully until he finds slightly indurated portions and these he must examine most painstakingly. In making frozen sections one cannot examine all parts of the tissue, but only a small portion, so that five minutes spent in searching for suspicious portions is five minutes well spent, often avoiding the necessity for a secondary operation. It is a good practice when making general physical examinations of female patients to examine the breasts carefully and by so doing you will be surprised at the number of cases in which you will detect unsuspected abnormal involution. These are the cases which must be watched in order to detect carcinoma in its very earliest stages.

DR. W. H. WELCH, Baltimore: I think that pathologists nowadays have more to learn from the surgeon than they can teach him. I think that there is nothing much more remarkable than the contributions which have been made to surgery by the observations on living human beings as contrasted with those to which we are limited, as a rule, on dead material. Pathologists, I think, are much impressed with the risks of cutting out fragments of tumors for microscopic diagnosis. I have received not a few specimens of this character, small pieces of tissue which have been cut off from growths and are said to be for diagnosis. All that material comes from a distance, and I never have any opportunity of examining such pieces of tissue in Baltimore at our hospitals. In this excision there is a great risk of tumor cells being transplanted. In my opinion the cases about which there is doubt in the opinion of the pathologist, as a rule, are not malignant. My experience has been that if a case is one of true malignancy there is not much difficulty in the diagnosis, and I am rather impressed with the view that on the whole the errors are made on the other side, of making a diagnosis of malignancy when it is not justified by the findings. It is of the utmost importance that the pathologist familiarize himself with all the deviations that can occur in normal material within the physiologic limits. In the uterus, particularly, there is a very wide range of deviation from the normal in the utricular glands, which is not, however, in any way significant of malignancy. In the breast, too, there are not a few deviations from the normal which have no significance at all so far as tendency to malignancy is concerned. I would urge all who make these examinations that they acquaint themselves with these deviations from the normal within physiologic limits and also with those conditions which in any way indicate any tendency toward a malignant growth. I think that this is worth emphasizing.

Then, again, the diagnoses which surgeons receive from pathologists in whom they have confidence are often misinterpreted—small matters of misinterpretation of the growth or of nomenclature. When specimens are sent me for diagnosis that have been diagnosed wrongly I generally point out that good pathologists may differ in their nomenclature, and one man may choose to call a specimen an endothelioma that I might prefer to call a carcinoma. That is a matter of difference of opinion entirely, and I would not consider that as an accusation against the value of a microscopic diagnosis in these cases.

DR. W. W. GRANT, Denver: In a paper presented before this section in regard to the radical operation for epithelioma of the mouth or either lip in 1903-4, which was my second contribution to this subject, I spoke of a new method of operating which I know has been adopted by many of the best surgeons of the country who have made themselves familiar with it and prefer it to the older methods of operating. No surgeon who is familiar with the progress of surgery in reference to malignant disease of the lip will to-day use the old V-shaped method, unless, as stated in my paper, the mouth of the patient is very large and the growth very small. I have found that it is infinitely better to take the flap from the cheek and this operation is well illustrated in the latest edition of Dr. Da Costa's work on surgery. I find that it is infinitely better never to take a flap from the chin or the front of the neck.

One thing which has been overlooked by many surgeons is this: One surgeon said to me that he had improved my operation by making incisions from the corners of the mouth if the lip is totally removed. I told him that in this operation as originally described he would find that this was fully and

abundantly described so that the mucous membrane would cover the lips entirely and not a single raw surface be left to heal by granulation.

I always remove the glands in the submental triangle and under the jaw whether seemingly involved or not. I always insert a little T-drain (through the submental space) so that the wounds will heal rapidly without soiling. The parts, too, are so vascular that the cutting of large vessels need not be feared. There is never any destruction from sloughing. Dr. Jackson's operation is a beautiful one. I have used it for some time, but all surgeons know that in any radical operation for carcinoma of the breast it is impossible to apply any one method to all cases. In other words, the surgeon is called on and must be ready to apply any modification of an operation in any case of this kind. He must adapt the operation to suit the case and not the case to the operation.

DR. GEORGE W. GUTHRIE, Wilkesbarre, Pa.: I agree that ordinarily the radical operation on the lip is justifiable and consistent with good surgery. Occasionally, however, there are exceptional cases—for example, if the patient be an old man. I happened to have such a case five years ago, the patient was 84 years of age, with a small ulcer of the lip, of comparatively recent origin. Here I did a V-shaped operation under local anesthesia. The man lived over four years without recurrence and died from some intercurrent affection. In exceptional cases in which the mouth is large or the ulcer small and the patient old and decrepit, the V-shaped operation is justifiable.

I learned the Jackson flap method for operations on the breast from Dr. C. H. Mayo and I have used it with gratifying results. Before that I did the Halsted operation, but since using the Jackson method my results have been very gratifying. I have been spared the hard contracted cicatrix and the patient has had a useful arm.

DR. E. S. JUDD, Rochester, Minn.: I want to commend the Jackson operation in cancer of the breast. Almost since Dr. Jackson's early work, after he had done but two of these operations he came to Rochester and demonstrated the technic to us, and ever since that time we have followed it almost to the letter. We believe, however, that one or two modifications which we have made make the operation more simple. Instead of removing the entire pectoralis major muscle we save the upper third, which has a separate blood and nerve supply, so that this portion will functionate as a separate muscle and we get earlier and better use of the arm. At the same time, we do not make the operation any the less radical because the axilla can be exposed just as well with the upper third of the pectoralis major muscle *in situ* as when it is removed. Another point is in the removal of the pectoralis minor muscle. We sever that in the middle and then save the upper half by attaching a number of hemostats to the cut surface and then turn the piece of muscle up over the pectoralis major and use it as a retractor while cleaning out the axilla. We use the Jackson flap incision almost entirely and have often been spared the necessity of skin grafting, and the obliteration of the axillary fold seemed very important. As yet we have not closed the wounds without drainage, but have always drained through two separate points.

In cancer of the lip we agree with Dr. Guthrie in not removing the glands or in doing a very radical operation in very old men who have a very small and a recent epithelioma of the lip, but that would be the only instance in which we would not remove the lymphatics just as early as we remove the axillary glands in cancer of the breast. We would always remove the submaxillary salivary glands simply to make the operation more radical because we do not feel that we can remove all the lymphatics without removing the salivary glands.

DR. MILES F. PORTER, Fort Wayne, Ind.: Regarding carcinoma of the lip, most of us will agree to the composite picture that has been given us by Dr. Stewart and by Drs. Guthrie and Judd. What we are to do with these cases of carcinoma of the breast without tumors? That is: What shall be the method of procedure in a woman of carcinoma age who consults us without a demonstrable tumor, but with a bloody discharge from the breast and the complaint that she has a little pain? This is a serious question with me and I am not sure

but that the safest thing to do in these cases would be to do what we do in the cases that present small tumors, namely, take the breast out and have it examined and if it is found to be malignant then do a radical operation. In operation for tumors of the breast it seems to me that the details of no particular technic are so important as are certain principles which should govern us in all operations. In the first place, the removal should be complete, whether one method or another is adopted; second, the operation should not leave the patient crippled, with an arm that she cannot use; and, third, the operation should be done with the least possible degree of shock. Furthermore, there should be relatively no hemorrhage. We accomplish this latter, and that, it seems to me, is one of the most important things in Jackson's technic, by securing the vessels at their origin, and I can confirm his assertion that by doing this operation is practically a bloodless one. My objection to the Jackson operation as it was originally described—and I see that it has been changed materially—was that it left sharp angles in the flap. Sharp angles wherever they occur have a tendency to slough. Now Dr. Jackson has done away with these angles. He has done another thing in the way of applying one of the principles referred to above and that is he puts the flap in close apposition to the hinge in order that the hinge may be free to move. He says that he has avoided the lack of motion which follows so many of these operations. I am impressed with the drawing up of the flap and making it hug the joint. Formerly two or three subcuticular sutures were inserted to hold the axillary tissues and skin in close apposition to the shoulder joint. There is no inhibition in the subsequent movement of the arm. In other words, the securing of the vessels at their origin, the avoidance of angles and the removal of all the diseased tissues are the chief advantages of this operation.

I want to emphasize Dr. Jackson's remark regarding the necessity of skin-grafting. I do not believe that there is one case in twenty that requires skin-grafting, if certain principles are followed in the way of undermining the flaps and in the location of the incisions. In these cases it is not necessary to make an inefficient operation by removing less skin than should be removed if we will plan our incisions and extend the undermining as it should be in order to get proper coaptation. I have sought to do away with drainage. I believe that in the vast majority of cases drainage is entirely unnecessary.

DR. JOHN F. BINNIE, Kansas City, Mo.: In epithelioma of the lip and carcinoma of the breast is a principle underlying both operations and a difference between the two operations required. Every tissue in the body almost seems to adapt itself to a certain extent to its duties. Epithelium which has to do with filth and insults, for example, the epithelium of the tongue and lip and more especially the lymphatics which drain that epithelium become modified so that irritants which would otherwise cause an immense amount of trouble become practically harmless. The tubes leading from that epithelium to the lymph nodes or filters next in order become impervious to a large extent to the poison passing through them. In these cases one need only excise with moderate thoroughness the local disease, because local recurrence is very uncommon. Then remove the lymph nodes next in order which are affected; then the lymph nodes apparently not affected and there is good prospect for recovery. There is no need to pay any attention to the lymph vessels leading from the primary disease to the nodes. How different in the case of the breast! The breast must be excised most thoroughly; every lymph node, all the accessible fat, the lymphatics next in order and the lymph tubes between the primary disease and the lymph nodes must be removed. I believe that it is actually a law that in operating on cancer of the lip or tongue it is absolutely essential to remove the submaxillary glands, because, as Ogston pointed out long ago, that without removing these salivary glands it is impossible to remove all the lymph glands. Since I first heard Jackson describe his operation two years ago I have used no other.

DR. OLIVER C. SMITH, Hartford, Conn.: At the Hartford Hospital, in operating on cancers of breast, throat, mouth or tongue we place the upper part of the body at an elevation of from 45 to 60 degrees, thus diminishing the amount of circulation in

the field. We segregate the blood still further by binding the lower extremities at the groin with Martin's elastic bandages applied tight enough to prevent the return circulation. We record the blood-pressure, taken in the arm, at intervals during the operation, and find that it falls usually from 20 to 40 mm. This position and segregation minimizes the hemorrhage, gives nearly a dry field and brings the patient up nearer to the operator. In relation to extending the incision to the mouth in an upward curve, as has been suggested by one speaker, one needs to be careful not to carry this curve too far. In an instance of which I have knowledge the patient wore a goatee following the operation. These upward curves may have affected his disposition pleasantly, as in the speaker's case, but he certainly looked like the devil.

DR. W. LEMOYNE WILLS, Los Angeles, Cal.: If there is anything that the surgeon needs to have drilled into him it is anatomy. Surgeons are more apt to ignore the anatomy than their knowledge justifies. We all know how uncomfortable an ill fitting armhole of a coat is and so is a scarred axilla holding the arm down to the chest. We should give this matter considerably more attention. Therefore, Dr. Jackson's paper is a most timely one, and future officers of this section should encourage the presentation of such papers.

DR. JOHN C. MUNRO, Boston: Dr. Jackson's principle we have used with the greatest satisfaction. Even though we are extending it as he suggested in his remarks to the modification that Handley suggested yet the principle still lies there in his flap and it has been of great help in carrying out our work.

DR. MARCELL HARTWIG, Buffalo, N. Y.: I do not believe that a man will look like the devil if the surgeon transfers a good chunk of the upper lip. In my experience there is no more perfect and beautiful mouth to be made than if the mucocutaneous edge of the upper lip be used, of course, including the supplying artery. If much of the lower lip or all of it has been lost one can make a very nice mouth by cutting horizontally one-half of the side of the upper lip and stretching it toward the center of the lower lip, doing the same on the other side. That gives the patient a good mouth and there is no trouble with hair growing inside the mouth, as I saw in a case in which the late Dr. Post had used the skin of the chin. Has Dr. Jackson ever operated in a case in which the arm was swollen? I would urge pathologists to examine every case of death from other diseases and see whether infection is transmissible through the lymph nodes. We ought to know exactly when the first infection of the glands occurs. I am inclined to believe that it occurs almost instantaneously.

DR. J. C. STEWART, Minneapolis: In operations for cancer of the breast has it been observed that recurrences have changed their position since the adoption of the Willy Meyer, Jackson and other operations in the axilla? It seems to me that when we did the Halsted operation there were more recurrences in the axilla and that since we began to operate from the axilla there have been more recurrences over the lower portion of the field of operation. That may be a mistaken observation, but it appears to be true, and, if so, it demonstrates that the handling and manipulation of the breast and other cancer tissues during the operation drives the cancer material toward the lymphatics in the direction where the structure was last severed from its connection with the body. It seems to me that there is more danger from the dissemination of cancers by rough handling than by transplantation. Dr. Binnie's observations on the lymphatics would seem of rather theoretical value, as he must admit the passage of cancer cells through them on their way to the nodes and his inability to specify any tissues when the lymph channels are surely free from such cancer cells.

DR. J. N. JACKSON, Kansas City, Mo.: Some years ago in reading a paper on traumatic surgery I said that true conservatism is that which puts life first, then function and then form. That rule should be observed particularly in such conditions as cancer of the breast. The first aim in the diagnosis or treatment of suspicious cases is to know whether the disease is cancer as early as possible, and if it is, beyond any question, get right after it. When we recall that 90 per cent of tumors of the breast are malignant or ultimately become so, there is no excuse for delay in operation. I believe that in

doubtful cases the immediate diagnosis by operation should be insisted on in every instance. I further believe, however, that knowing the statistics of the general probabilities, if we are unable to make an absolute diagnosis, the patient should be given the benefit of the doubt as to life and a radical operation should be done. In nine cases out of ten the patient's life is jeopardized by waiting. I know of cases in which conservative work was done and the patient came to me later with a malignant disease which terminated fatally even after radical operation. I would not advocate any operation for cancer which in any way restricts the field of radicalism that gives the patient the best chance for an ultimate recovery. My one argument is that in this operation the removal is as extensive as can be suggested by any operation. If we can preserve life and function we have two elements of conservative surgery, and I believe that my operation gives better function than any other. And, finally, if we can preserve life, form and function this should be done. Thoroughness of surgery should not be sacrificed for the art of surgery, but where art and science can be combined this should be done. I fear that we have gone too much to the scientific side and have overlooked art.

Dr. Grant's method of operation for cancer of the lip escaped my attention until about six months ago and since then I have had two cases in which I have been able to carry out the method. It certainly does what he claims for it, so far as complete removal of the growth and the lymph glands is concerned, and it also gives a beautiful cosmetic effect. It far surpasses any operation for cancer of the lip in thoroughness and final results. An important feature of the operation is the fact that the chin, which is not involved in the disease, is left as a base on which the new lip is reconstructed. It gives a lip which is natural in appearance and does not draw down. Dr. Stewart makes his incision upward when there is opportunity to enlarge the mouth. Dr. Grant says to make the incision downward, and my observation coincides with this. At one operation I had a dispute with a friend as to which direction the incision should take. I did it downward on one side and upward on the other. If the levator muscle is left unopposed it draws the lip up and our patient had a mouth which was rather ludicrous. When the incision is made slightly downward there is equalization of opposing muscles and the mouth is straight and it has a normal contour. That is an important point to bear in mind.

PALATOPHARYNGEAL ADHESIONS

METHODS ADOPTED FOR THEIR RELIEF, WITH THE REPORT
OF A NEW OPERATION *

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There is no one malady, not immediately dangerous to life, that so seriously afflicts the person possessing it as adherence of the palate to the pharyngeal wall. When we consider its baneful effects on nearly all the functions of the upper air passages, on respiration, vocalization, hearing, smell, taste and deglutition, and the very disappointing results so frequently attending the attempts at its relief, it is remarkable that operative measures have not long since been devised affording a reasonable certainty of success in such unsatisfactory cases.

Adhesions of the palate or pillars to the posterior pharyngeal wall present a variety of conditions, which may be differentiated as follows:

1. Adhesion of the normal palate or pillar, or both, to an ulcerated pharynx.
2. Adhesion of an ulcerated palate or pillar, or both to a normal pharynx.

*Read in the Section on Laryngology and Otology of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909. Considerations of space compel the abbreviation of this article in THE JOURNAL by omitting part of the case reports. The complete article may be found in the Transactions of the Section and in the author's reprints.

3. Adhesions of both an ulcerated palate or pillar, or both, to an ulcerated pharynx.
4. Adhesion of one pillar and one side of the palate to the pharynx.
5. Adhesion of the border of the palate to the pharynx except a small opening in the center.
6. Adhesion of the entire soft palate to the pharynx, the one merging imperceptibly into the other.
7. Adhesion with marked cicatricial thickening, contraction, distortion and narrowing of the entire pharynx, or of the entire palate or of both.
8. Association of the latter condition with cicatricial adhesions to the base of the tongue or to the larynx, or both.

Numerous cases are reported illustrating the great variety, both as to extent and location, of these adhesions, from the simple attachment of one pillar or a portion of the palate to the pharynx, to the adherence or

viously) in which the palate was destroyed, the remaining stump being firmly adherent to the pharynx. The nose was destroyed to the level of the face. The patient's mouth was so closed by syphilitic adhesions that only two fingers could be passed with great difficulty, by stretching the mouth to its utmost capacity. He was completely aphonic. In this case there was complete separation of the two pharynges by these membranous and cicatricial adhesions.

Lublinski³ and Largreuter⁴ report cases in which the cicatrix so involved the pillars of the fauces, base of the tongue and soft palate as to cause a ring of tissue just above the larynx that so obstructed respiration as to require tracheotomy. Gerhart⁵ reports a case in which a diaphragm formed just above the larynx that would scarcely admit the tip of the finger.

ETIOLOGY

Palatopharyngeal adhesions may be (1) congenital; (2) simple inflammatory—catarrhal; (3) the result of excoriation of the mucous membrane from acrid discharges; (4) local manifestations of the exanthemata; (5) local manifestations of constitutional diseases, as tuberculosis, syphilis, hereditary or acquired, and "so-called" scrofula; (6) traumatism.

Hall⁶ reports the case of two children, aged 6 and 11, who had been sent to him by the medical inspector of schools to be operated on for adenoids. No adenoids were found, but in both cases adhesions of the palate to the pharynx were discovered to be the cause of the trouble, which undoubtedly were congenital. These adhesions on being broken up with the finger gave the sensation like that of an adherent placenta.

In one case, that of a child 18 months old, which came under my observation, in consultation, there was complete adherence of the palate associated with complete bony occlusion of the posterior nares.

Contrary to the opinion of Lieven,⁷ that there must of necessity have been two ulcerated surfaces opposing each other, Ried⁸ observes that simple inflammatory or catarrhal inflammation, in which plastic lymph is thrown out on the surface, may readily cause adherence of the two surfaces. Schech⁹ observes that adhesions may follow the superficial erosion from simple desquamation of the epithelium, and Lavrand¹⁰ mentions a case of catarrhal ulceration of the pharynx which was followed by adhesion. This case, which he speaks of as having a scrofulous basis, was in all probabilityluetie.

The same condition of catarrhal inflammation, however, may be caused by acrid discharges from ulcerated surfaces, from the accessory sinuses, or from other chronic inflammatory conditions. In the case of gummy deposits, which most often take place in the posterior pharyngeal wall, the breaking down of this material and the formation of ulcerated surfaces in this wall with their attendant discharges account for the readiness with which the palate becomes denuded of its epithelium, and, as the ulceration in the pharyngeal wall heals, adherence of the two surfaces takes place. The adherence in these cases is also aided by gravity when the patient is in the recumbent position, and also by the impairment of the action of the pharyngeal dilators, by the inflam-

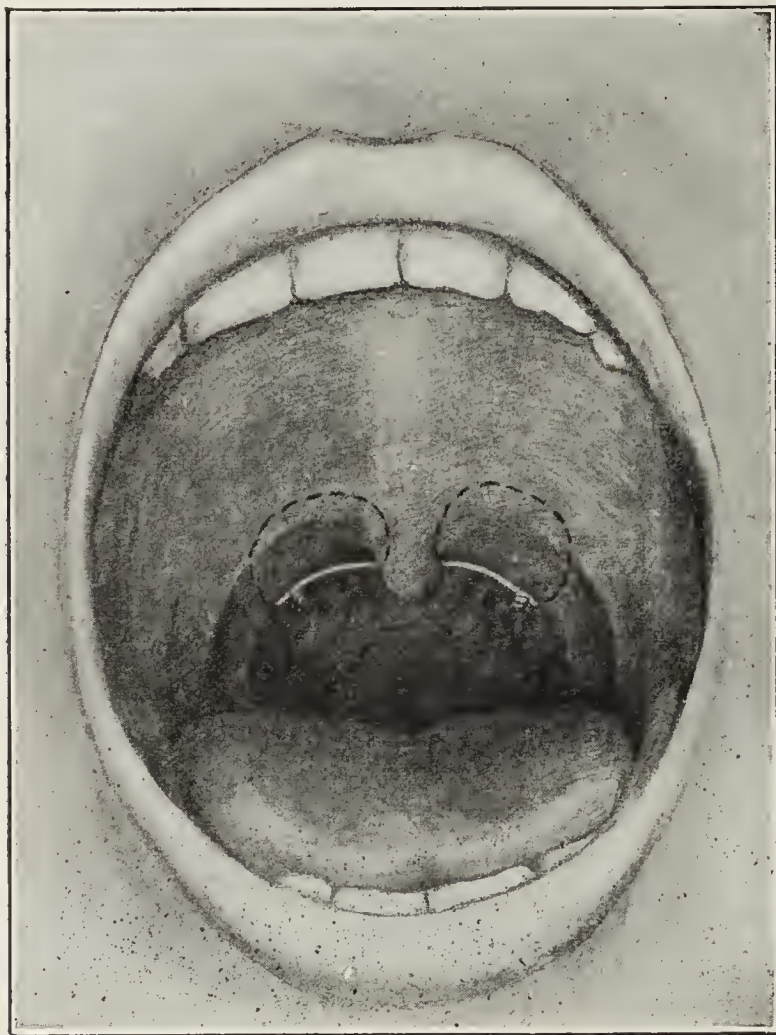


Fig. 1.—Two rings of silver wire, the dotted lines indicating their location, passing out through opening in center under uvula: Cases 1 and 3.

growing together of all the different tissues of the nasopharynx and fauces. Among some of these latter cases illustrating the severity of the disturbance that may be caused thereby I mention the following:

Vansant¹ reports a case of extensive syphilitic cicatricial adhesions of the tongue to the inner surfaces of the gums, to the roof of the mouth, and to the palate and pharyngeal wall. The constriction of the fauces was so great and respiration and deglutition became so extremely difficult that during the years 1889 and 1890 four extensive operations were performed, excising the cicatricial tissue, but to no avail, the cicatricial tissue being replaced and the constriction returning in about six weeks. Tracheotomy was advised but refused, and the patient finally died of inanition and exhaustion.

E. Harrison Griffin² reports a case (the patient, a man, aged 44, who had had syphilis twenty years pre-

1. Vansant: *Med. News*, Philadelphia, 1894, lxxv, 606.

2. Griffin, E. H.: *Med. Rec.*, New York, 1888, xxxiii, 37.

3. Lublinski: *Berl. klin. Wehnschr.*, 1883, xx, 361.

4. Largreuter: *Arch. f. klin. Med.*, 1880, xxvii, 328.

5. Gerhart: *Virchows Arch. f. path. Anat.*, xxi, 40.

6. Hall: *Brit. Med. Jour.*, 1909, i, 18.

7. Lieven: *München. med. Wehnschr.*, 1895, xlii, 489.

8. Ried: *Jenaische Ztschr. f. Med., u Naturu.* Leipzig., 1864, i, 409.

9. Schech: *Deutsch. Arch. f. klin. Med.*, 1875, xviii, 75.

10. Lavrand: *Jour. Soc. méd. de Lille*, 1891, ii, 361.

matory process, or the luetic poison, as was pointed out by Neumann.¹¹

Local manifestations of the exanthemata may in the same manner produce a condition favoring adherence of the parts. Albertin¹² mentions a case of adhesion of the palate to the posterior wall of the pharynx taking place after variola. MacMahon,¹³ Symanowski¹⁴ and Ingals¹⁵ report cases following diphtheria; such a case, presently to be reported, has also come under my observation.

Of the constitutional conditions which may cause palatal adhesions we find cases of lupus and rhinoscleroma reported by Cartaz¹⁶ and Castex;¹⁷ Mikulicz¹⁸ reports cases following leprosy; Dieffenbach¹⁹ and Paul²⁰ report cases following scrofulous ulceration, and Volkmann²¹ has observed it following tuberculous ulceration of the pharynx. This must be rare, as tuberculous ulcerations of the pharynx show but little inclination to heal.

Among the traumatic causes we may mention gunshot wounds, substances accidentally driven through the mouth, laceration of the fauces during surgical operations, and the use of caustics and the galvanocautery. Walb²² reports the occurrence of marked stenosis of the throat and adhesions of the soft palate in several cases resulting from a too vigorous and unskilful use of the galvanic and Paquelin cautery in the hands of surgeons and throat specialists. Hamilton²³ mentioned a case which came under his observation in which the excessive use of the galvanic cautery caused adhesions of the posterior pillars to the pharyngeal wall.

An interesting case of adhesion of the palate to the pharynx following laceration during a surgical operation came under my observation recently and will presently be described.

By far the largest number of cases, however, are caused by tertiary syphilis. Paul,²⁰ of Breslau, observed 30 cases of adherent palate; 26 of them were caused by tertiary syphilis and 4 by scrofula. Cartaz¹⁶ is of the opinion that all cases of total adhesion resulting from ulcerative processes are due to syphilis. He collected reports of 39 cases, 32 of which were ascribed to syphilis and 5 to malignant scrofula, which Cartaz believed to be syphilis, and to which all doubtful cases are to be ascribed. According to Schwebisch,²⁴ syphilitic adhesions are more frequent among men, while those resulting from scrofula are more frequent among women.

CHARACTERISTICS AND RESULTS OF THE LESIONS

The distinctive difference between adhesions due to syphilis and the other causes mentioned is that the former is usually characterized by marked cicatricial contraction, the result of the extensive destruction of tissue; while the adhesions resulting from other conditions are usually of a simple character, as if the parts were glued or had grown together, and are unattended with marked distortion. In all syphilitic cases the central point of the stricture is located where there has been the largest deposit of gummy material, and consequently the greatest

amount of ulceration, as shown by the direction of the contraction or distortions of the palate and uvula, when the latter has not been destroyed. When the uvula has been destroyed, the palate coalescing with the pharynx, the former must have been the seat of the primary deposit associated with that in the pharynx. This latter condition, as Scheek²⁵ observes, is frequently associated with perforation of the palate, which drops back and unites with the pharynx as soon as the opening occurs.

Ulceration followed by adhesions frequently takes place in tissues hidden from view behind the velum; and, as it usually is not attended with a great degree of pain or soreness, the onset of the trouble is often overlooked and the mischief produced before the ulceration has been suspected. Hamilton and Lichtwetz²⁶ report cases in which the adhesion was revealed only by the rhinoscope and digital examination.

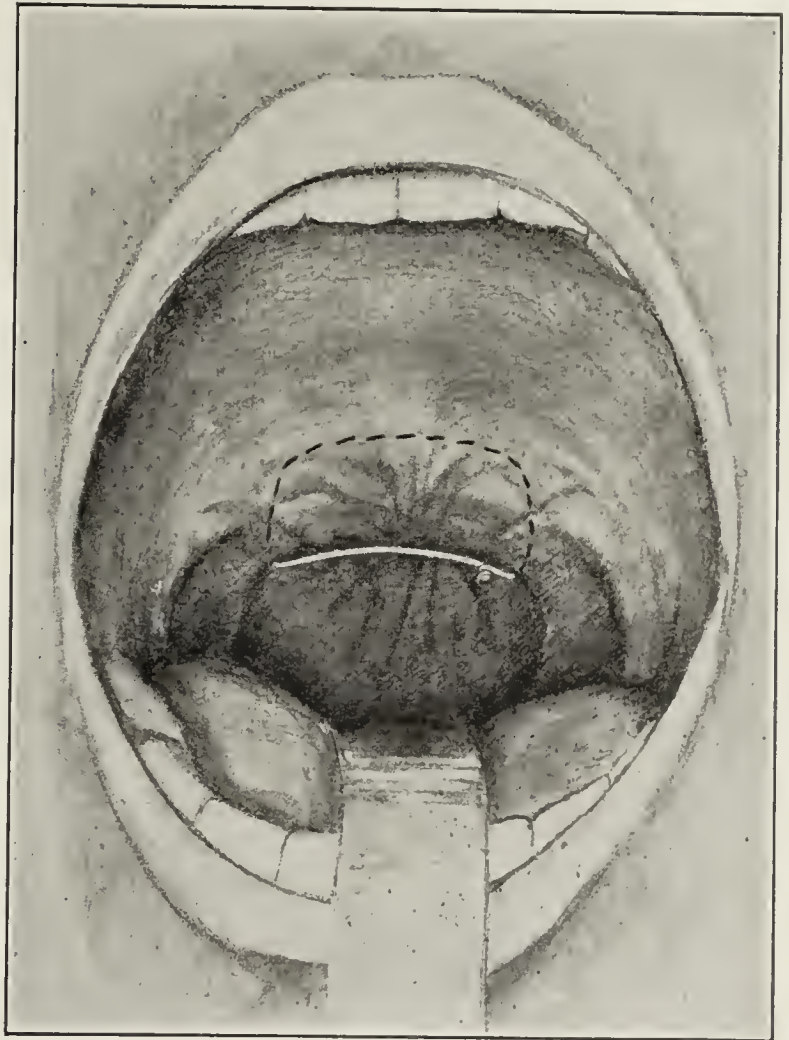


Fig. 2.—Single ring of silver wire, the dotted line indicating its passage above the adhesion behind the palate; Case 2.

Considering the frequency of such erosion, adhesion of the palate would doubtless be of much more frequent occurrence were it not for the movements of the muscles and the motions of the parts during the act of swallowing, speaking, breathing, and more or less the motions of the body, and also the separation of the parts by the mucus discharging from the posterior nares. Paul²⁰ called attention to this fact and also to the readiness and rapidity with which the adhesions take place when perforation of the palate occurs, doing away with these hindrances to union to a large extent. It is rare that ulceration of both the palate and pharynx take place at the same time, the gummy deposit being located in one or the other of these parts. The location of the deformity and the direction of the contraction, therefore, indicate the primary location of the deposit and

11. Neumann: Berl. klin. Wehnschr., February 8, 1892.

12. Albertin: Monatschr. f. Ohrenh., 1894, p. 196.

13. MacMahon: Internat. Centralbl. f. Laryngol., 1891, No. 5; Canadian Pract., February 16, 1891.

14. Symanowski: Vrtljschr. f. d. prakt. Heilk., 1864, lxxxii, 142.

15. Ingals: Tr. Am. Laryngol. Assn., 1883, p. 188.

16. Cartaz: Arch. internat. de laryngol., 1893, vi, No. 2.

17. Castex: Rev. de laryngol., 1892.

18. Mikulicz and Michelson: Atlas der Krankheiten der Mund- und Rachenhöhle.

19. Dieffenbach: Operative Chirurgie, Vol. i.

20. Paul: Arch. f. klin. Chir., vii, 195.

21. Volkmann: München. med. Wehnschr., 1895, xlii, 489.

22. Walb: Ztschr. f. Ohrenh., 1889-90, xx, 60.

23. Hamilton: Montreal Med. Jour., 1895, xxiii, 193.

24. Schwebisch: Thèse de Paris, 1880.

25. Scheek: Arch. f. klin. Med., 1876, xvii, 59.

26. Hamilton: Montreal Med. Jour., 1895, xxiii, 191; Lichtwetz: Ann. d. mal. de l'oreille et du larynx, 1894, xx, 815.

the site of the greatest destruction of tissue as observed by Bosworth.²⁷

Dr. Andrew H. Smith²⁸ has appropriately likened the process of palatal adhesions to that of burns between fingers. In such cases reunion is certain to take place after liberation and even after cicatrization, if a small granulating space is left at the point where they join, as it will creep along each finger, destroying the newly-formed cicatrix, while adhesion of the opposed raw surfaces will advance at a corresponding pace. The same process is also to be observed after the liberation of webbed fingers.

In some cases the adherence of the velum to the pharynx takes place at many and different points, as described by Homolle,²⁹ instead of being progressive from the sides, as is usually the case, leaving a small opening in the center. In other cases, however, the adherence of

vealed a small opening. Of the 30 cases reported by Paul,³⁰ there was total adherence of the palate in 3 only. Bosworth²⁷ collected reports of 45 cases, of which 19 were reported as being total, while 26 were partial adhesion of the palate.

Regarding the local disturbances caused by these adhesions Hajek³¹ very truly says:

While the partial adhesion of the soft palate and the back wall of the throat seldom give much trouble, the total closing of the space between the throat and the nose is accompanied by grave consequences. The impossibility of breathing through the nose, necessitating therefore continual opening of the mouth and the subsequent dryness of the throat, the inability to blow the nose, the accumulation of secretions in the nasal passages, often becoming fetid; the frequently associated ear troubles and consequent deafness, the sleeplessness and marked effect on the general health make this condition well-nigh

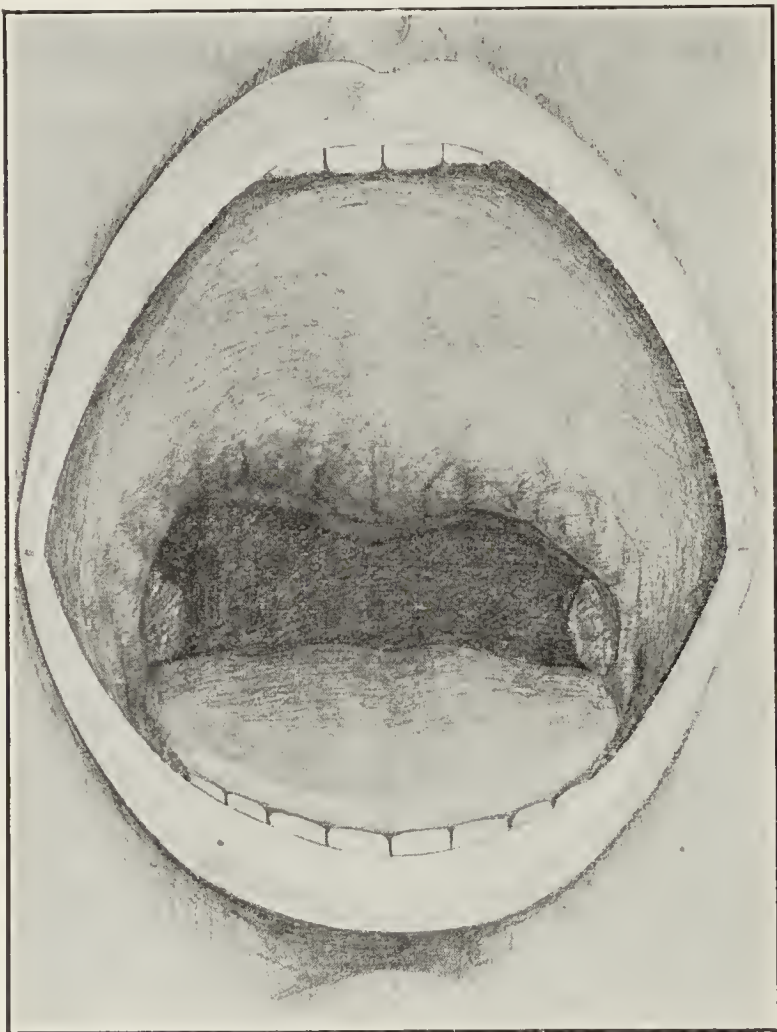


Fig. 3.—Indurated condition of fauces with adhesion of palate to pharynx—tonsils unremoved; Case 4.

the entire palate seems to take place simultaneously when there is an extensive ulceration resulting from the deposits of gummy material in the different structures and breaking down at the same time.

The rapidity with which the adhesion takes place toward the close of the healing of the ulceration is sometimes truly surprising, often two or three days only elapsing from the time a free opening is observed until it is found closed.

Complete union of the palate to the pharynx is the exception rather than the rule, for it is rare that a small opening can not be found through which a slender probe can be passed. This coincides with the experience of Bosworth, Rice, Cartaz and some others, and, judging from the imperfect reports of many cases, it seems quite probable that a more careful examination would have re-

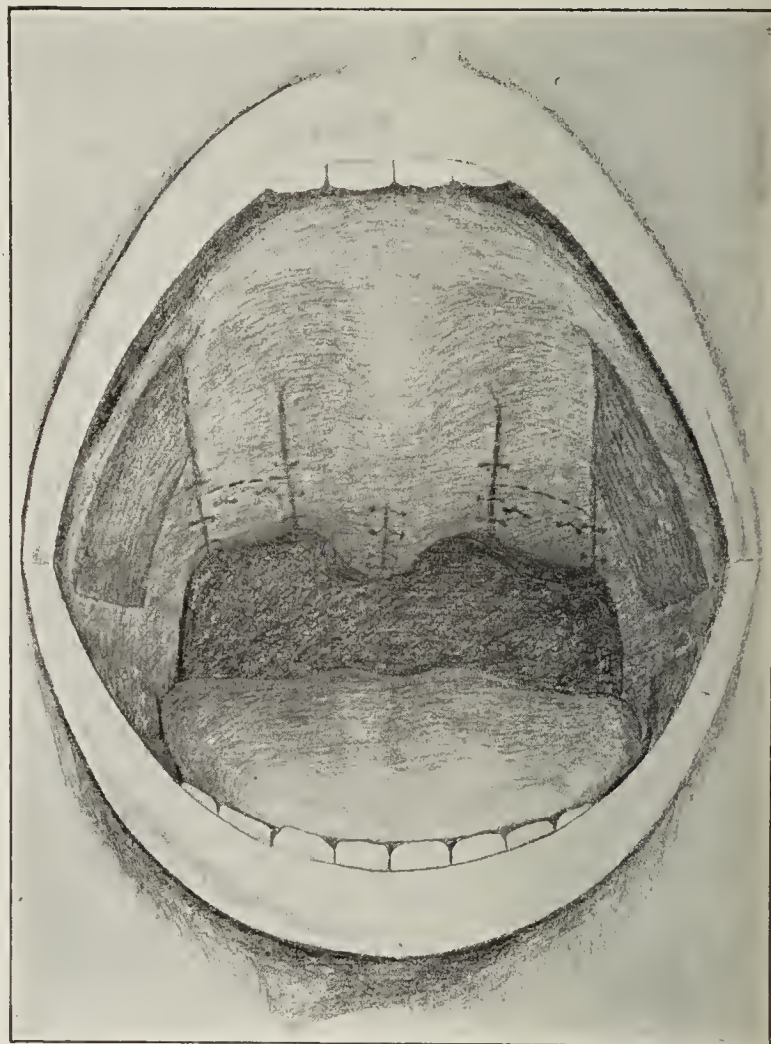


Fig. 4.—Flaps stitched after liberation of palate. Location at sides from which flaps were taken, tonsils removed; Case 4.

unbearable and make on the surgeon the most urgent demands for its relief.

When the closure of the postnasal opening, however, is sufficient to prevent the passage of air and the drainage of the postnasal space, the symptoms are the same as when the closure is complete, the existence of a small opening being, as Bosworth²⁷ and Cartaz¹⁶ observe, of no practical importance.

The degree to which the ears and hearing become affected depends largely on the extent to which the tubal orifice or the tubal muscles become involved, and is entirely independent of the closure of the postnasal space below. Dunbar Roy³² reports a case of complete syphilitic occlusion of the postnasal opening in a man 65 years of age, in which the hearing was unaffected, being quite acute for a man of his age. Barbon³³ reports a

27. Bosworth: Diseases of the Nose and Throat, New York, 1892, ii, 280.

28. Smith, A. H.: Tr. Am. Laryngol. Assn., 1883, p. 187.

29. Homolle: Thèse de Paris, 1875.

30. Paul: Arch. f. klin. Chir., vii, 199.

31. Hajek: Internat. klin. Rundschau, 1892, vi, 1385.

32. Roy, Dunbar: Alabama Med. Jour., 1903, p. 556.

33. Arch. internat. de laryngol., 1893, vi, 70.

patient almost totally deaf, in whom the hearing was restored by the liberation of the adhesion and re-establishment of nasal respiration; but on the re-formation of the adhesions and closure of the postnasal opening deafness immediately returned. This Barbon ascribed to the rarefaction of the air in the middle ear. In a similar case Martin³³ overcame this rarefaction of the air in the middle ear and restored the hearing by establishing an opening through the membrana tympani.

These cases are accounted for by the fact that the infiltration has caused no obstruction of the Eustachian tube or paralysis of the tubal dilators, as mentioned by Bosworth.²⁷ In other cases deafness results from the simple closure of the postnasal space and cutting off nasal respiration.

The voice, which is nasal in tone and sometimes almost unintelligible, may occasionally be comparatively unaffected, as in cases reported by Hartmann,³⁴ Cartaz³⁵ and Mauriac.³⁶

The characteristics of the adhesions differ according to the various causes. Those resulting from syphilitic ulcerations are dense and fibrous, the vascular structures being almost entirely destroyed; while those resulting from purely inflammatory conditions are mainly muscular, containing very little fibrous tissue, or there may be simply an adherence of the mucous surfaces. The adhesions are very variable in thickness and extent, from a simple web or band-like union to a complete union of the entire parts, often extending to the vault and including both nasal passages. In some cases the contraction of the postnasal passage above the adhesion forms a serious barrier to nasal breathing after the adhesions of the palate have been liberated. Rice³⁷ mentions this fact and also the formation of new connective tissue to replace the destroyed tissue, amounting in some cases to actual hypertrophy, which diminishes the diameter of the pharynx in all directions. This condition, he very truly says, compromises the success of operative measures to a very large degree.

The extent to which the deep muscular structures are altered in these cases of destructive ulceration is illustrated by the results of postmortem examinations which were conducted by Dr. William Turner,³⁸ of Edinburgh. In these cases he found the deep muscular structures of the postpharyngeal wall almost wholly altered; the muscular fibers of the superior and the upper portion of the middle constrictor muscles were entirely replaced by connective tissue, while the muscles of the palate remained unchanged.

TREATMENT

In the treatment of these conditions it is important, as Lieven³⁹ states, to delay any operative procedures for the relief of the adhesion until all ulceration or inflammation has completely subsided. Much can be done, however, by timely recognition of the conditions that may cause adhesions by means of both local and constitutional treatment. It is, however, only in the early stages of syphilitic manifestations in the nose and throat, before the tissues have broken down, that constitutional treatment is of avail. In these cases this treatment should be pushed most vigorously. The iodids should at once be given in the largest doses, diminished if necessary rather than to be obliged to increase them, in order

to overwhelm and head off the activity of the virus before breaking down of the tissues has taken place. After ulceration has occurred they can only arrest it, and, as Schadle⁴⁰ says, "so far as the synechia is concerned, total closure is the result regardless of antisyphilitic treatment."

Previous to the days of laryngoscopy and the rhinoscopic mirror so little was known regarding lesions of the throat that these conditions were little understood; but since that time the etiology and characteristic conditions attending palatal adhesions have been generally well known, although it has been only during the past two decades that any real progress has been made in their successful treatment. The chief difficulty, however, does not reside in the operation of liberating the palate, but in maintaining the opening during the process of healing. Verneuil⁴¹ very aptly says, "Nothing is easier than the liberation of the adhesions, but nothing more difficult than to prevent their reproduction." So discouraging have been the results that Cartaz⁴² has questioned the advisability of attempting the unsatisfactory task required in most of these cases.

The various methods employed for dealing with this condition are by (1) mechanical dilators; (2) caustics; (3) permanent obturators; (4) suturing; (5) plastic operations.

The usual method of liberating these adhesions is with the rectangular knife or scissors, a sound or probe being introduced through the nose and the incision made at the point where the palate is made to belly by the pressure of the sound. Dieffenbach⁴³ used curved scissors and maintained the opening with gauze strips. Later he used charpie tampons as a packing. Hajek⁴⁴ adopted a method of repeated incisions and repeated stretching by packing the wound with gauze. The complete liberation of the palate he prolonged over several sittings. Hajek⁴⁵ has since (in 1897) constructed a dilator similar to Frankel's nasal speculum, having two blades turned up at the ends for inserting behind the uvula and palate. It is dilated by turning a screw until the opening is stretched to its fullest capacity and the patient is taught to use it himself. Moritz Schmidt⁴⁶ used Hajek's method of making incisions on each side of the uvula and stretched the openings with the lead sounds of Lublinski, held in place for one hour daily.

Elsberg⁴⁷ separated the parts by means of a blunt staphylorrhaphy knife, then forcibly dilated with the finger, and had the patient use daily a hard rubber palate-retractor to prevent readhesion. Schadle⁴⁸ employed a strip of iodoform gauze two inches wide and fifteen inches long, divided throughout, excepting a short portion in the center. The upper ends were passed through the nostrils, respectively, until the crotch came against the posterior extremity of the septum narium; the other ends were brought out through the mouth and tied separately over the upper lip to the upper ends of the tape, sufficiently tight to pull the palate forcibly forward. This was changed daily and worn for several weeks until healing had taken place. The use of rubber bands and ligatures, passed out through the nose and mouth and tied over the jaw, has been adopted by many.

40. Schadle: St. Paul Med. Jour., 1906, viii, 129.

41. Verneuil: Bull. et mém. soc. de chir., 1876, n. s. II, 310.

42. Cartaz: Arch. internat. de laryngol., vi, 66.

43. Dieffenbach: Operative Chirurgie, I.

44. Hajek: Internat. klin. Rundschau, 1892, vi, 1386.

45. Hajek: Allg. Wien. med. Ztg., 1897, xlii, 13.

46. Schmidt, M.: Krankheiten der oberen Luftwege, 1894.

47. Rice: Tr. Am. Laryngol. Assn., 1885, p. 112.

48. Schadle, J. E.: Total Adherent Soft Palate, THE JOURNAL A. M. A., 1894, xxiii, 457.

34. Hartmann: Versamml. nord-deutsch. Ohrenärzte in Berlin, April 22, 1889.

35. Cartaz: Arch. internat. de laryngol., 1893, vi, 81.

36. Mauriac: La syphilis pharyngo-nasale, Paris, 1877, p. 21.

37. Rice: Tr. Am. Laryngol. Assn., 1895, p. 110.

38. Turner, W.: Edinburgh Med. Jour., January, 1860, p. 612.

39. Lieven: München. med. Wchnschr., 1895, xlii, 489.

The readiness with which cicatricial tissue reunites when separated and the persistence with which this scar tissue contracts led Coulson,⁴⁹ in 1862, to dissect out the cicatrix, a method which was also employed by Ried⁸ in 1864 and Rothenberg⁵¹ in 1876. He first separated the palate above the line of the scar and dissected out the cicatrix with forceps and scalpel. This plan was successfully adopted by Hamilton⁵² in the case of a woman aged 32. There had been obstruction of the nose since she was 14 years of age, following ulcerated throat at 12, due to hereditary syphilis. There were no signs of adhesions until by the use of the rhinoscope and by digital examination it was found that about half an inch up, the posterior surface of the palate was completely adherent to the posterior pharyngeal wall. The uvula was first freed and later on the cicatricial tissue was removed *en masse*. The opening was dilated with the finger and with Griffin's dilator and remained patent. The patient's health was immediately greatly improved.

One of the principal things that discouraged free liberation of the adherent palate was the fear of hemorrhage, for the control of which von Dionisio⁵³ used a rubber ball inflated like a Barnes dilator. To obviate the danger that may attend such hemorrhage T. Gilbert Smith,⁵⁴ of London, advised that a preliminary tracheotomy be performed, and even as late as 1903 Tilley⁵⁵ reports a case in which he performed tracheotomy before liberating the palate. The small amount of bleeding, however, convinced him of the folly of the procedure, which he said he would not undertake again.

The introduction of the galvanic cautery by Voltolini promised to add an important method in the treatment of these cases, as it not only obviated the danger of hemorrhage but gave hope that contraction would not readily take place after the burning. These hopes, however, proved groundless, for it was found that contraction took place more readily and more firmly after cauterization than after cutting, or, more particularly, after tearing the parts away, as was practiced by Verneuil.⁴¹

In 1883 Drs. Smith and Delavan⁵⁶ brought forward the use of monochloroacetic acid in the treatment of this condition. Two years before, Dr. Smith called attention to the peculiarity of the caustic action of monochloroacetic acid, in that the eschar remained attached until cicatrization had taken place beneath it. On account of this peculiar action Dr. Delavan applied it to the cut surfaces after the adherent velum had been liberated, and, although the surfaces remained in contact afterward, the healing took place beneath before the eschar separated and the operation proved a success. Schadle⁴⁸ also reports the successful use of the acid in a similar case. While the immediate result in these cases was most excellent, the ultimate result of the cases is not stated. In one of the cases which I have to relate the immediate result was most encouraging, but subsequently contraction gradually took place from the sides and progressed toward the center until the opening was finally closed, excepting a small passage in the center.

The uncertainty of all known measures to maintain a free opening after liberation of the palate led different operators to adopt the method of suturing the parts.

Dieffenbach⁴³ passed ligatures through the soft palate, drew it forward as far as possible and held it away from the pharyngeal wall by passing the ligatures out of the mouth and fastening them around the ears. Later he sutured the edges of the incision together after division, but found it an exceedingly difficult procedure, and, as Kummel⁵⁷ remarks, for less skilful operators this suturing would hardly be possible. He also turned the cut surface backward on itself and stitched it there to still further prevent adhesions.

A more complicated method of suturing the palate was devised by von Lesser,⁵⁸ of Leipsic, in 1879. By his method the free portion of the palate was split parallel to its surface, and the posterior flap, being thus entirely denuded, was brought forward and rolled up under the anterior flap. The anterior flap was then split in the center, and also liberated at the sides, and was turned back over the rolled up posterior flap, so as to cover the denuded membrane; in this way reunion of the velum to the posterior pharyngeal wall was to be prevented.

These methods of suturing together the mucous surfaces of the palate are feasible only in those cases in which the attachment of the palate is confined to its free border, for in cases of more extensive attachment sufficient mucous membrane is not available to cover the denuded surface.

The failure of all these different methods to maintain a permanently free opening in a very large majority of cases, no matter in what manner the palate was liberated, led to the adoption of a permanent mechanical obturator to be worn continuously or held in the opening for a long time until healing was complete and the tendency to contraction overcome by the absorption of the cicatrix or of the plastic exudate.

In order to accomplish this result Cook,⁵⁹ in 1873, devised the original plan of suspending a lead plate, made of a suitable size to fit the aperture after the palate had been liberated, behind the veil of the palate, by two strings passed through the nostrils. This the patient wore continuously for six weeks or more, as the case might require, without interfering with deglutition, and it successfully prevented readhesion. Later on hard rubber was substituted for the lead plates by different operators, as von Beregszaszy,⁶⁰ Hajek,⁶¹ Barajas,⁶² the plates being made to completely fill the aperture and suspended by string passed through the nose and tied in front of the nostrils.

The principal objection to the permanent obturator in the posterior nares was found to be the cutting off of nasal respiration. This objection was obviated by Lucas-Championnière⁶³ in 1876, who inserted a silver tube, held in place with gold wire fastened to the teeth. Kuhn,⁶⁴ in 1892, constructed a fenestrated obturator or tube made of hard rubber, which was held in place by being attached to a dental plate, the plate and tube being constructed of one piece. This method was also successfully adopted by Couetoux⁶⁵ in 1893. Kollbrunner,⁶⁶ of Strassburg, in 1896, and later on McDou-

49. Coulson: Lancet, London, 1862, ii, 529.

51. Rothenberg: Wiener med. Presse, 1876, No. 33.

52. Hamilton: Montreal Med. Jour., 1895, xxiii, 191.

53. Von Dionisio: Monatschr. f. Ohrenh., 1892, p. 210.

54. Smith, T. G.: Brit. Med. Jour., 1880, ii, 588.

55. Tilley: Jour. Laryngol., Rhinol. and Otol., 1903, n. s. xviii, 271.

56. Smith and Delavan: Tr. Am. Laryngol. Assn., 1883, p. 187.

57. Kummel: von Bergman's System of Surgery, i, 902.

58. Von Lesser: Berl. klin. Wchnschr., No. 23, 1879.

59. Cook: Med. and Surg. Reporter, Philadelphia, 1873, xxviii, 203.

60. Von Beregszaszy: Internat. klin. Rundschau, 1888, No. 23.

61. Hajek: Internat. klin. Rundschau, 1892, vi, 1387.

62. Barajas: Rev. hebdom. de laryngol., 1907, ii, xxvii, 459.

63. Lucas-Championnière: Ann. d. mal. de l'oreille et du larynx, 1876, p. 88.

64. Kuhn: Monatschr. f. Ohrenh., 1892, xxvi, 189.

65. Couetoux: Ann. d. mal. de l'oreille et du larynx., 1893, xix, 856.

66. Kollbrunner: Strassburg, C. Goeller, 1896.

gall,⁶⁷ in 1903, described the same method as "a new method of dealing with adherent soft palates," without apparently knowing that it had been employed and published before. The only difference in McDougall's device was that he used a metal tube and plate soldered at one end to the patient's tooth-plate.

It is interesting to note that Schadle⁶⁸ in 1906, without knowing of the existence of these previous devices, constructed one of hard rubber, the tube and tooth-plate being made of one piece, the same as the one devised by Kuhn.

The permanent relief this device afforded and the little discomfort caused by it is, in many cases, highly gratifying. The only drawbacks are the nasal tone it gives to the voice and, in some cases, the fact that, on swallowing, the food is sometimes forced into the posterior nares, owing to the inability of the patient to close the epipharyngeal space.

The most decided step in advance in the treatment of palatopharyngeal adhesions, however, was taken by Nichols⁶⁹ when, in a paper before the New York Academy of Medicine on "A Method of Correcting Adhesions Between the Soft Palate and the Pharyngeal Wall," he proposed the plan of introducing silk sutures at the side of the palate and allowing the sutures to remain *in situ* until a healed channel had taken place around them. The palate is then liberated between these two channels, great care being taken not to wound the outer wall of the channel.

In the discussion following Nicholl's paper, Rice⁷ of New York remarked: "I do not think Dr. Nichols is overestimating the value of his method, for it is the first scientifically useful operation yet devised to cover the special requirements."

This method is similar to that proposed by Rudtorffer for the treatment of webbed fingers by securing a healed opening at the base or angle of the adhesion before the fingers are liberated. For this Rudtorffer used lead buttons, and afterward silver or gold rings.

This operation of Nichols is especially adapted to cases in which the adhesions are limited to the border of the velum, it being inapplicable to adhesions high up behind the palate. In three cases I have employed his method with most gratifying results, modifying it only by substituting silver wire for the silk. Figures 1 and 2 illustrate the particular methods I adopted in introducing the silver wire in the different cases. In two cases a double ring or loop was used, one on each side, each one passing out through the central opening, as shown in Figure 1. In the third case but one ring or loop of wire was used, which was so introduced as to pass entirely around the adherent portion in the center, as shown in Figure 2. In a fourth case this method failed, owing to the thickness of the adhesions. In this case I devised a plan of covering the raw surfaces at the outer angles with flaps of mucous membrane taken from the neighboring parts at the sides. These flaps were made of sufficient length to cover the entire extent, vertically, of the liberated surfaces and were stitched in place with sutures passed directly through the palate.

The details are more fully described in the report of the case which follows.

CASE 4.—*History.*—A woman, aged 24, was referred to me in May, 1908, for an operation on an adherent palate. The occlusion was complete except for a small opening in the center through which a slender silver probe could be passed.

This condition was the result of traumatism that had been produced in an attempt to excise the tonsils one year before. The operation had been done under ether, which the patient took very badly. There had also been much bleeding which so obscured the field of operation that the posterior pharyngeal wall was extensively lacerated and the posterior pillars of the fauces, the uvula, and much of the border of the soft palate were cut away.

Treatment.—There was much thickening and induration of the tissues and the adhesion was quite broad. I succeeded, however, with some difficulty in introducing the sutures at the sides, employing two as in the previous cases. At the time I decided to liberate the adhesion I thought I had succeeded in obtaining a healed opening around the wire all the way through, but on operating it proved that, owing to the inflammatory thickening resulting from the operation, the healing had extended but little beyond the mucous membrane. This method was therefore certain to prove a failure and accordingly some other expedient must be resorted to. It was also certain that attempts to prevent reunion of the parts by plates held *in situ* would be futile and that a successful result must be obtained in some other manner. My previous experience in plastic work, however, came to my rescue by suggesting the covering of this raw surface with mucous membrane. This proved in every way successful.

Operation.—As it was necessary to cover but one surface of this opening the anterior or palatal side was most available. In order to secure the mucous membrane for this purpose a broad flap was taken from the side of the palate and inside of the cheek, including sufficient submucous connective tissue to assure its vitality. This flap was then brought down and turned backward and upward around the outer and lower border of the soft palate, and stitched at the sides and the free border through it to the palate along the upper end of the flap that had been turned up behind the palate was stitched to the latter with sutures passed directly through the palate. Complete union of this flap took place and on healing there was no undue contraction at the site of these flaps, nor was there the slightest tendency for the readherence of the soft palate to the pharynx at any point, all of which was very gratifying. I did not attempt to cover the center of the soft palate with mucous membrane, being so free from the pharynx that adhesion of the two surfaces could not readily take place. I should also mention that the surfaces from which the flaps had been taken were speedily covered with mucous membrane and soon all traces of them disappeared. The central portion of the palate was much thickened, and this thickened tissue was utilized, by cutting and stitching it into shape, to form a very satisfactory uvula. The levator palati muscles had not been sufficiently injured to impair their function so that by the construction of this new uvula the action of the soft palate, in closing the posterior nares during deglutition and phonation, was completely restored. Figure 3 represents the fauces before the operation. Figure 4 shows the flaps *in situ*.

Postoperative History.—At the time the patient came under my observation the voice was completely nasal and on account of the necessary mouth-breathing, she was gradually losing flesh and strength and had become exceedingly nervous. After the liberation of the palate and complete restoration of nasal respiration, however, she gained rapidly in flesh and strength, and at the end of three months had completely regained the thirty pounds she had lost during the period above described. A recent report from the patient's husband stated that she had had no trouble with the throat since the operation and that she was very well.

This method of dealing with faucial and palatal adhesion is, I believe, entirely new, since I have found no record of its having been done before, and it is radically different from those proposed by Dieffenbach and von Lesser. It is also a method that cannot fail to be successful in all these cases if the operation is carefully and properly done. While the silver suture method is quite satisfactory in many cases, particularly those in which the adhesion is thin and confined to the border of the palate, still it is slow, tedious, and causes the

67. McDougall: Liverpool Med.-Chir. Jour., 1903, xxiii, 295.

68. Schadle: St. Paul Med. Jour., 1906, viii, 127.

69. Nichols: New York Med. Jour., 1890, ii, 219.

70. Rice: New York Med. Jour., 1890, ii, 220.

patient some discomfort. It is also lacking in immediate results, so desirable in all surgical operations and in adaptation to all conditions that may be found. On the contrary, with this flap method, no matter how thick or extensive the adhesions may be, it is necessary only to make the flaps of the required size to cover the raw or denuded surface and stitch them carefully in place in order to make the operation in every instance a complete success.

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ABSTRACT OF DISCUSSION

DR. W. E. CASSELBERRY, Chicago: Palato-pharyngeal adhesions may vary in extent from a slight distortion devoid of symptoms to a state of fusion into a densely cicatricial mass of the edges and fragments of the soft palate, faucial pillars and pharyngeal wall, which have chanced to survive a preceding destructive ulceration. The nasopharynx is all but closed, ending in a conically contracted cul-de-sac from which ribs of scar tissue taper downward to merge into the twisted boundary of the pharynx. It happens that most of my cases have been of this aggravated type, syphilitic in origin, and apparently far worse than those described. These patients constitute an unfortunate class, devoid of nasal drainage and ventilation, defective in speech, smell and taste, and go the rounds, seeking whom they can trust to relieve them and again losing confidence before the usual method of treatment by repeated forcible divulsion, could possibly culminate in permanent relief. To encourage persistency in the divulsion treatment, having first made or enlarged the opening by incision, I have taught the patients to make self-divulsion by the insertion and expansion of a small adenoid forceps, and I recall one case in particular in which, after many months' persistence in self-treatment, a serviceable, permanent opening seemed assured. Dr. Roe merits our gratitude for elaborating the suture method and for the first report of a case successfully treated by an original flap operation. I have been familiar with the suture method for some time, but in my cases, it seemed too unpromising to attempt, the parts being so distorted that one could not tell where to place a suture so that it would be likely to accomplish the desired effect. But, in the class of cases Dr. Roe has illustrated, it certainly is the best operation. With respect to the flap method, Dr. Roe's case having been traumatic and not syphilitic in origin, it scarcely indicates that the flap method will be found generally applicable, although certainly of value whenever tissue from which to form a flap is available nearby.

DR. W. S. ANDERSON, Detroit: The only successful method I have ever used, and that was very satisfactory in one serious case in which there was membrane all across the nasopharynx, except one small opening, consisted in passing a suture from the throat up into the nasopharynx and cutting off a pillar of tissue; tying that and waiting until a cicatrix had formed around it and then cutting through. Then I put in another ligature and waited, and again cut off that pillar of tissue. By this method in two months I had separated the membranous portion until I had a good-sized opening into the throat, which has remained permanently open for four or five years. The attempts I have made with other methods have failed.

DR. C. F. WELTY, San Francisco: Six years ago I saw Dr. Jansen do an operation which I will attempt to describe. There was but a small opening left in the naso-pharynx. The attachment below and above was severed by a curved knife on either side; the mucous membrane from the soft palate, posteriorly and anteriorly, was brought together on either side; the denuded portion of the pharyngeal wall was cut so that it could approximate very well. In this particular case there was a very happy result.

DR. ROY P. SCHOLZ, St. Louis: Does Dr. Roe cover the wound, on the posterior pharyngeal wall, produced in the operation? In giving the causes for palato-pharyngeal stricture, there was no mention made of that form resulting from malignant growths; possibly for the reason that these forms are rarely dealt with except by radical means. In cases in

which the tumor has been excised, or in which it still exists, but for some reason or other, radical removal of the tumor can not be undertaken, this method appears to be applicable. Recently a case came under my care, carcinoma of the palate (far advanced) with much infiltration of the connective tissues surrounding it, leading to almost complete separation of the oral from the nasopharynx. The disturbance made by this stricture was so great that relief had to be given, and for this and similar cases I believe this form of operation very suitable. This form of stenosis is not the result of ulceration or adhesion, but of contraction of the connective tissues deposited in the structure of the pharyngeal wall.

DR. DUNBAR ROY, Atlanta: I have had three of these cases of palato-pharyngeal adhesions and my experience agrees with that of Dr. Casselberry. It is almost impossible to get a flap from anywhere with such an amount of cicatricial tissue.

DR. W. W. CARTER, New York: Does Dr. Roe depend entirely on these rings of silver ulcerating through? Is it possible for them to ulcerate through the portion of tissue included within the ring and what reason would he give that this doesn't reunite with the posterior pharyngeal wall?

DR. G. W. MITCHELL, Baltimore: I had a case which gave satisfactory results so far as restoration of the function of hearing was concerned. The patient, a young woman of 20, had complete occlusion of the nasopharynx so that there was no entrance of air through the nose. She had been operated on when nine years old by a New York surgeon who opened the space, and according to her recollection, removed some bone from the back of the nose. The uvula was bound down and adherent on the posterior wall. This was dissected free and then an angular tonsil separator was pushed up behind the velum and rotated from side to side. The opening was then enlarged by divulsion with a curved tonsil scissors. Large rubber drainage tubes were passed through both nostrils into the oropharynx to keep the surfaces separated during healing. Ulceration of septum necessitated its removal, but not before a fairly satisfactory restoration of breathing and hearing.

DR. J. O. ROE, Rochester: The various causes of palato-pharyngeal adhesions are detailed in my paper but were omitted in the reading because of the time limit. In cases in which there is extensive destruction of tissue and a proportionate amount of contraction of the passages, so long as there is a free opening from the nares down to the adhesion, a suture can be introduced from below, it can be passed from above downward. I have devised a needle for that purpose, mounted on a long slender flexible shaft. The eye of the needle is near the point and is guarded by a shield for protecting the point when the needle is introduced. When the needle is passed down to the adhesion, the shield is drawn back and the needle forced through into the mouth, when the thread is caught and the needle withdrawn, leaving the thread *in situ*. This is repeated on the other side, after which the silver wire is substituted for the thread.

Regarding the plastic flap operation, no matter how much induration there is, if an opening down through the nares can be found for the introduction of a sound to act as a guide for the liberation of the adhesion from below upward, this operation can be performed and is far preferable to the silver wire method in such cases, the latter method being only adapted to cases in which the adhesion is narrow and confined to the border of the palate. When the adhesions are very extensive, forming a mass of cicatricial tissue, I liberate them very freely and sometimes it is advisable to cut away a considerable amount of this cicatricial tissue. Then by making the flap amply large to cover the raw surface and stitching it carefully in place, there need be no fear of not having complete union of the flap in all cases. The flap should be made wide enough to cover about one-half of the surface on each side. The place in the side of the cheek or jaw where it has been found most available for supplying the flap very quickly heals over and is so readily covered by mucous membrane that in a short time scarcely any mark is left, even though the denuded surfaces may have been quite large. The wire does not ulcerate through and there is nothing to cause it to do so. It simply hangs loose in the tissues where introduced until healing has taken place around it. If it should ulcerate through, the operation would be a failure.

SOME GENERAL PRINCIPLES OF DIETETICS,
WITH SPECIAL REMARKS ON PRO-
PRIETARY FOODS *

DAVID L. EDSALL, M.D.

PHILADELPHIA

Since the subject which I have been asked to discuss, the general principles of dietetics, is one that, if considered comprehensively, would necessitate an extremely extensive paper, I shall be obliged to confine myself to a few points which seem to me particularly important, especially to teachers, for I know that the latter comprise a large proportion of those present in this Section.

Contrary to the conditions that existed not long ago, when this would have been considered to be well-nigh heresy, it has come in recent years to be an evidence of open-mindedness to dwell on the frequency with which drugs are abused, and as a contrast to the common empiricism in drug therapy to point with gratification to the increasing extent to which the latter is being superseded by rational hygiene and dietetics. The strictures on the use of drugs are occasionally unfair and irrationally sweeping, but I agree that the general trend of this movement is admirable and correct.

Before we adopt too optimistic an attitude in regard to the extent to which the poor use of drugs has been replaced by good methods in diet and hygiene, however, I think that we may do well to determine how largely and how well these latter are actually employed. As a matter of fact, while public hygiene has made great advances and while many valuable details have been added to our knowledge of individual case hygiene and of dietetics, there are many things still to be wished for in the practice of these subjects, some of which, in regard to hygiene, I indicated in a paper that I read before this Section last year. One important reason for the looseness with which they are employed is the fact that the information that we possess in regard to them exists, from a practical standpoint, in very large part in a form that makes it laborious to acquire, so that practitioners can get very little useful working acquaintance with it unless they come gradually to formulate a system for themselves through experience and prolonged study. This means that those who make frequent and confident use of these measures belong to that comparatively small number who have done sufficient study and work in reference to them to permit them to bring into somewhat orderly shape the scattered and fragmentary details learned from various sources and particularly from scattered literature, especially the current literature of the past few years. This is not so true of drugs. It certainly cannot be said that the frequent and confident use of the latter is confined to a few. I need not go into the question whether their less frequent use might not be an advantage, but I may seriously say that many practitioners do actually make skilful use of drugs and that among earnest and intelligent men the distinctions as to skill in this regard are chiefly dependent on differences in personal wisdom and breadth of knowledge rather than on differences in the principles that they apply in using drugs. Be the errors in the customary use of drugs what they may, I think that the intelligent man either possesses or knows how to obtain logical reasons for making his choice in drugs, and the errors that are made with them are dependent more frequently on a widespread habit of using empirical faith than on a

lack of means of reaching a rational decision. With hygiene and diet, however, there is very commonly an actual inability to reach a rational preliminary decision as to what general line should be followed.

I have had some interest in learning with what degree of freedom and ease a large number of practitioners, especially recent graduates who have modern training, make use of dietetic measures. I think I am right in saying that a large majority of them believe—and I imagine, believe rightly—that so far as they are themselves concerned they can accomplish much more with drugs than with diet even in those cases in which they recognize the especial suitability of dietetics. The reason for this is, I think, apparent. They have the means of forming an intelligent judgment in a large proportion of instances regarding the use of any particular drug, while in dietetics, aside from a few conditions such as diabetes, in which specific things can be stated, their knowledge usually consists, on the one hand, of some physiologic facts which have not been presented to them in such a way as to adjust them very clearly to clinical procedures, and, on the other hand, of a more or less considerable mass of practical details which have usually been presented to them almost purely as arbitrary measures and their trend not very well adjusted to the physiologic facts. A decision regarding diet is, therefore, in actual practice usually made in a much more empirical manner than is one in regard to drugs, and it is correspondingly the more likely to be incorrect. Indeed, in dealing with advanced students or even with practitioners who have had no special training in dietetics, I find that they are likely to be unable to give any regulations that could not be equally well or better given by a wise housewife; and the reasons for the regulations that they do give are generally not at all clear, while on the other hand they do very frequently know why they order any particular drug.

The first point to get fixed in our minds, it appears to me, is that, except in rare instances, of which a conspicuous example is diabetes, we do not diet any particular disease by specific means, but we diet disturbances of function which are common to many diseases; that is we employ diet just as we do most drugs. We may often, for example, wisely use precisely the same diet in gastritis, in some stages of gastric ulcer, in some nervous disturbances of the stomach and in various other disorders, since our principle of action here is simply to choose foods that are mechanically, chemically and physiologically unirritating and that do not stimulate the functional activity of the stomach. A common method of writing text-books is simply to describe a special list of articles as especially suitable in each of these conditions. This is, to my mind, quite as irrational a method of teaching as to recommend a particular set of drugs in a particular disease as if they had some especial specific effect in that disease. The rational way of prescribing a diet in these conditions, it appears to me, is to decide through common sense and common knowledge of the physical characters of foods which would be mechanically irritating and which would probably be unirritating in the case at hand and what manner of preparation, if any, would help to avoid this; and to determine which are chemically and physiologically suitable through direct application of the very valuable investigations, such as those done by the Pawlow school particularly, and by Cannon in this country, which have so largely aided rational dietetics; those investigations, that is, that have taught us the influence of protein, fat and carbohydrate

* Read in the Section on Pharmacology and Therapeutics of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

and of some special members of these classes of nutritive substances on gastric secretion and motility.

In our dietetic regulations in most diseases we start with precisely the same point of view as that just indicated. For instance, we do not diet nephritis as nephritis; we diet simply irritation of the kidney and inadequacy in its excretory function, and we do this by cutting down as far as we can, without damaging general nutrition, those foods that are most irritating to the kidneys through their excretory products, and that demand the greatest amount of functional activity on the part of the kidney; and these, again, we can adjust partly through common sense and partly through physiologic knowledge and without depending on any set list that may be right or may be simply the product of an author's personal idiosyncrasy.

In the second place, we need to look on a very large proportion of patients as needing less a special diet for some particular disorder than instructions as to what a normal diet is. Many persons, of course, damage their health by overindulging themselves at table, in quantity or quality, without producing, for a long time at least, any particular form of disease, and many persons also damage themselves by little or big peculiarities, rather than indulgences, in the use of food or drink, and generally without any comprehension of the harm resident in their peculiarities.

Many undernourished and consequently sickly persons need simply to eat more of the highly nutritious forms of food and less of the innutritious kinds; but they do not know how to choose these themselves successfully, nor does the physician unless he has accurate knowledge of the value of foods. Again, large numbers, particularly of young women of the working classes, but also those of higher station, need, for instance, to eat more breakfast, instead of working the first half of the day during practically an eighteen hours' fast; and there are any number of other peculiarities of eating of all sorts. The only way to discover and correct them is to inquire exactly and in detail into the dietetic habits of the individual, and preferably to get a written statement from him covering several days to a week, and including just what he has eaten and drunk, and how much and at what period of the day.

The third point I would touch on is that we should hold in mind in most instances as the key-note of our success with patients kept on a special diet for any considerable length of time the influence that the diet is having, not simply on the most conspicuous local disorder that the patient exhibits, but on his general nutrition. Many persons improve rapidly as to their local trouble, only to discover soon that the most seriously disordered organ has been relieved at the expense of the general organism, unless this point is carefully watched and guarded against. Indeed, a very large proportion of persons need no special attention paid to particular organs, even though they superficially may seem to, but rather need to be dieted simply for their general undernutrition or overnutrition. This point always demands attention in deciding on the line of diet to be pursued in the beginning and also at each subsequent visit, and it must be determined first by learning whether the individual's weight and general vigor seem normal for him, aside from any disease that may be uncontrollably affecting these, and then subsequently by watching carefully the effect of the diet on weight and vigor. This, simple and patent as it seems, is often not done, and I believe more readily avoidable dietetic errors are made in regard to this point than in any other, many persons complain-

ing that they were made thin and weak and half ill by a diet, while others, though in smaller numbers, are made uncomfortably fat and occasionally seriously obese.

This brings up the next point that I would speak of, namely, that we must have more accurate knowledge than is common in regard to the value of foods and hence in regard to the value of any diet that we are using. Many doctors, if you mention calories to them, indulge in sad lamentation and complaint, or vigorously deny that calories can help any sick person to get well. This is quite as irrational as to deny that there can be any good in knowing and using a suitable dose of strychnin or atropin instead of employing them haphazard in infinitesimal amounts or by the handful, as fancy might happen to dictate. Many and gross errors are committed through not knowing what amount of food is being given; not such serious errors as would result from a wholly unlicensed dosage of poisonous drugs, for foods are not usually directly poisonous, but very serious and very common errors nevertheless, and errors that are very often overlooked because the human organism will stand, and frequently for a long time, very marked degrees of starvation or overfeeding without exhibiting superficially any results that are evidently due to this. I think that most persons who are especially interested in dietetics will say that they have very frequently seen persons starved to a dangerous degree or greatly overfed, especially the former, without its having been recognized that this was being done; and I feel sure that I have several times seen persons unknowingly starved to death under such circumstances, chiefly while under treatment for serious acute disease. Some effort is necessary in order to acquire knowledge of food-values and facility in using them in practice, but most important things in medicine are acquired only through effort. In certain groups of cases it is, to my mind, wholly inexcusable to proceed without precise knowledge of what we are doing, for in these cases at times the patient's life, or at least his health depend more on what we do in diet than on anything else; and we need in such instances not a mere general knowledge that this food is nutritious, that one less so.

If we are to accomplish safe and successful results, we need to know just what we are doing with the same accuracy that we would demand to know whether we were using $1/12$ or $1/6$ of a grain of morphin with a desperately sick patient. These cases are chiefly those chronic cases in which we must use a diet that differs very largely from the normal cases—that is, of such diseases as diabetes and obesity, and some nephritic and gastrointestinal cases, and various others; also all cases such as those of any severe acute infectious disease, in which the diet is necessarily extremely limited in character and usually fluid and in which unless we choose wisely we may readily order what is essentially starvation.

In most walking cases in which the diet is only moderately regulated, we can trust to the patient's appetite and to observations of his general weight and vigor to see that he gets what he needs, and not much more. In the other types of cases we need to order with clear knowledge and appreciation of food-values if we are to avoid starving him through too great restriction or overfeeding him through too great generosity. A very large proportion of diabetics, for example, are greatly damaged by being told what they must not eat, while no attempt is made to see that their nutritional demands are met by ordering accurately sufficient amounts of the foods that they may take; and the common feeling that obesity is a

very discouraging condition to treat is dependent chiefly on the fact that the diet for the obese is commonly ordered with so little knowledge of its actual value that the result is a mere question of luck, with the odds against success, and the patient is usually given enough to keep him obese or so little that he is made more or less seriously weak or ill and has to relinquish the diet.

The commonest bad results are in the severe acute diseases, and it is in these that I have most frequently seen serious underfeeding, on the one hand, or serious disturbances of digestion and general nutrition, on the other hand, produced by the use of an irrationally large or small amount of total food or of one type of food. Too much fat especially is very frequently given in such cases, though protein and carbohydrate are not uncommonly ordered in too large or too small amounts.

Such errors can be very readily avoided after acquiring a little facility through practice, and with the tables of food-values that are now available in text-books and government publications there is no justification for the old excuse that food-values can be determined only with great difficulty.

It is in cases of the type last under discussion in which great care in diet is needed that proprietary foods have come most largely into use and in which, therefore, their value and limitations in value need most careful consideration. I have no hesitation in saying that proprietary goods have in most particulars depended for whatever success they have had on the fact that so little attention is given to acquiring skill in the use of natural and home-prepared foods. I have even less hesitation in saying that proprietary foods have done much more harm than good, all told; and this is not because they are wholly devoid of value, but is due to the fact that almost all of them have been exploited in such a manner as to exaggerate greatly the worth that they may have, so that instead of their being used rationally and in suitable ways and suitable cases they are ordinarily employed with a grossly hypertrophied idea of their total nutritive qualities, without any clear idea as to what amounts of the different classes of nutritive materials they contain, and, furthermore, often without the slightest notion that nearly all of them have some more or less decided disadvantages, such as a high alcohol content, associated with their use. In many cases these disadvantages are sufficient to make their use wholly undesirable. Personally, while I gladly employ anything as food that I think most suitable, I practically never find it necessary to depend on any proprietary foods and rarely find it desirable to use them at all—and for these reasons:

First, not one of them can be used in amounts sufficient to supply all the nutritive demands of the organism even of a person absolutely at rest. With the liquid foods this is impossible, first, because the alcohol content is, as was shown in an admirable report in *THE JOURNAL*,¹ so high that if an amount sufficient to meet the nutritive demands were given, almost any patient would be made continuously drunk. Furthermore, it would be only very rarely that a patient could take such an amount of these prepared foods without their becoming quickly repulsive and disturbing to the digestion. In the amounts usually given and in the quantities ordinarily recommended by their exploiters, they provide only a small fraction of the quantity necessary to preserve nutrition. This statement of their limited usefulness and value in nutrition has been vigorously denied

by the manufacturers of some of them since the above-mentioned report was published, and beguiling counter-statements regarding their value, that superficially seem somewhat convincing, have been published in advertisements. Any one who has some knowledge of such questions can very quickly see, through a little analysis of these replies, that the counter-arguments are wholly specious and inaccurate.

My second reason for not using them is that, even when they are employed in feasible amounts, they are most unduly expensive and I do not consider it proper to make a patient pay what is in some instances even as much as twenty or more times the amount that he needs to pay in order to get a given quantity of food, unless there is some very good reason for it.

Finally, my third and most important reason is that I do not find patients who cannot take ordinary foods quite as well or better if they are properly prepared and properly chosen. It has been my fortune to treat in the past few years in hospitals an exceptional number of patients with acute infectious disease and I have been especially interested in their diet. I have tried a variety of proprietary foods, and I have never seen that I could not do better with some much cheaper and more natural food, which has usually been milk—sometimes whole milk, sometimes skimmed or diluted or otherwise modified milk, but always, when I employ milk, a milk free from harmful kinds and numbers of bacteria. With an experience of well over a thousand cases of typhoid fever in that time, I am wholly unable to comprehend what physicians mean when they say that typhoid patients cannot take milk without its causing distention or other abdominal disturbance. This usually is undoubtedly due to the fact that those who have had difficulty in employing milk have used an infected milk. If this is avoided it is practically always possible to use milk freely except for very transitory periods during sharp acute digestive disturbances, and in the latter instances digestion needs rest from any except very dilute foods.

The dry proprietary foods I use very little indeed, because I find these also unnecessary, because they likewise are often relatively very expensive; because in amounts that are of much value they tend to disturb digestion; and, finally, because many of them, especially many of the foods for diabetics and dyspeptics, are not by any means what they are advertised to be and are frequently, as may be seen from Winton's analyses, simply frauds. The gross exaggeration in some advertisements of such foods may be seen in the fact that I simply weighed a specimen of a food substitute that is, in advertisements, most energetically lauded for its nutritive value, and found that if all its weight were considered nutritive material (and this, of course, is very generous) it was so light that it would cost \$1.25 to \$1.50 to buy an amount equal in food value to a five-cent loaf of bread. I frequently find gluten and other similar foods being used under the impression that they are nearly or quite carbohydrate-free. It should become generally known that all but two or three of these are shameful frauds in this particular and most important point. The greater credit, therefore, is due to the few that are honest preparations.

Many of these foods, both the liquid and the solid, have some value. They can be used in certain cases in small amounts to increase somewhat the quantity of food that a patient is getting, thus adding a small proportion more than the patient would otherwise take. In difficult cases it is sometimes valuable and helpful to secure such small increments and especially to increase

1. Medicinal Foods: Report of the Council on Pharmacy and Chemistry of the American Medical Association, *THE JOURNAL A. M. A.*, May 11, 1907, xlviii, 1612.

variety, but even this is in most cases unnecessary—and more than this these foods do not accomplish.

So-called beef extracts and the like I need not touch on further than to point out that, as was shown in a recent bulletin of the Department of Agriculture, most of them have scarcely any food-value. Many of them are essentially devoid of all food-value and practically all are not "beef extracts" or "meat juice" at all. These, more than the other proprietary foods even, have been used with an enormously exaggerated idea of their value, and have done a corresponding amount of harm.

Some manufacturers of these and of the other preparations mentioned evidently believe the statements that they put forth in advertisements. Others quite as clearly know better, but make the statements purely to acquire money. It is a sad commentary on the knowledge of dietetics possessed by many members of our profession that they have so freely accepted these statements and then, with their minds fixed in favor of some of these substances, believe that they have seen clinical results that are absolutely impossible. When one attempts to point out to them facts that are as simple as that two and two make four and not forty, one often meets with the reply, quoted from the exploiters, that because of the peculiar manner of preparation or some peculiar composition or what not of the foods, they are especially nutritious and not to be judged by ordinary standards. This is a mere play on either ignorance or unscientific fancy. There is no basis at all for such statements in many instances; and while at most the manner of preparation and the like may give them a very small fraction of superiority over an equal amount of unprepared food, it is only a small fraction. On the basis of this very slight advantage, it is claimed usually that they have anywhere from two to a thousand times their nutritive value; sometimes even more than a thousand—an infinite number, indeed, for some of them are, so far as we know, devoid of any nutritive value. And yet some of the latter have been used quite as freely as some that have value, simply because they have been well advertised.

1432 Pine Street.

PROPRIETARY AND PREDIGESTED FOODS FROM THE STANDPOINT OF THE PEDIATRIST *

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The name of the proprietary infants' foods is legion. They are like the rats in Bishop Hatto's tower; "by thousands they come and by myriads and more." No one can remember the names of more than a fraction of them. Many are widely used throughout the civilized world; others have merely a local vogue. We may well seek an answer to the question, What has brought about the general employment of these substances?

Undoubtedly many factors have been operative. One of the chief of these has been the ignorance of the great bulk of the medical profession in regard to the artificial feeding of infants. It was for years and by many considered as a subject little deserving of the serious attention of a trained physician, and the amount of exact knowledge, until comparatively recent years, was pitifully small.

With time came enlightenment but bewildering complexity. With the development of the percentage method of infant-feeding appeared a great number of complicated algebraic formulas by means of which the required amount of the various ingredients, cream, milk and sugar, were to be calculated, a separate formula for each ingredient. Well might the busy general practitioner shrink from the task of puzzling over them. He stood before them as Boussard stood before the trilingual Rosetta stone, realizing that it was the key to much knowledge, but appalled at the task of deciphering it. Especially would a physician in a community where most of the children are breast-fed be apt to turn to a printed direction which relieved him of future responsibility. And, indeed, it might seem not only the easiest but the wisest thing to do, for the extravagant claims attractively presented by the agent who personally seeks him out may be backed up, be it regretfully acknowledged, by the quasi-scientific articles of eminent men, who have sullied their professional reputation that gain might follow.

Another potent cause has been the difficulty in obtaining clean milk fit for an infant's use. Until recent years this has, in the majority of places, been nearly impossible, and a permanent sterile food "guaranteed to contain all the necessary elements of milk" is attractive. The ease of preparation and the fact that ice could be dispensed with have appealed to many as arguments for the employment of proprietary foods. It must not be denied that for use where ice and fresh milk are not obtainable, food unalterable in dried form is a necessity.

The very low fat content of these foods, that which renders them totally unfit for permanent use, has undoubtedly made them of temporary value. The most frequent mistake in artificial feeding with cow's milk is probably overfeeding with fat, and the change to a fat-free prepared food brings about a prompt improvement and also a firm conviction that cow's milk cannot be digested and that this particular food is henceforth necessary.

The laxative maltose which many of the foods contain and which aids in overcoming the constipation troublesome with artificial feeding commends them to many.

These are the factors that have chiefly contributed to the demand for proprietary foods.

Before considering arguments against their use, let us look for a moment at their composition.

They may be roughly divided into those with and those without dried milk; in each of these classes there are some with much unchanged starch, some with the starch partially converted by malt into dextrins and maltose, and some with the starch almost completely converted. In addition, certain other variations have been brought about by adding lactose or cane-sugar or white of egg. One and all, they are very deficient in fat, low in proteins and salts, and they contain large amounts of insoluble and soluble carbohydrates, starch, dextrins, maltose, lactose and saccharose.

There are two chief arguments against their permanent employment: used without milk they fail absolutely; used with milk they are unnecessary. Their composition shows plainly why they are impossible without milk; they are hopelessly deficient in fat and many are so low in proteins as probably to furnish less than the minimum amount of nitrogen required. The mineral content also is unduly low. Rickets is to be expected with them. Absolutely lacking in that very essential but vague quality of freshness, their use is followed in a

* Read in the Section on Pharmacology and Therapeutics of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

considerable proportion of cases by scurvy. The instance of the two manufacturers of different foods, advertised to be used without milk, who fed their own infants on their products with resultant scurvy, after which the infants were promptly cured by fresh cow's milk, is known to many. Since that time these foods are advertised to be used only with fresh cow's milk.

As permanent foods with milk they are unnecessary. There can be no doubt that many of them can be used with benefit with cow's milk, but just as satisfactory results can be obtained without them. There is no evidence whatever that they increase in any way the digestibility of cow's milk, and there is no reason why they should. The ingredients that they furnish can be furnished just as satisfactorily by much simpler and more economical means.

In ordinary modified milk the only food element requiring augmentation is the carbohydrate. Whether the addition be made by milk-sugar alone or by milk-sugar and starch, it requires no prepared food to do this. We can obtain any variety of flour and lactose just as easily and far more cheaply.

Many of the proprietary foods (the so-called malted foods) contain a large percentage of maltose. There can be no doubt that maltose is an exceedingly valuable sugar at certain times, and by its use results can be obtained which are almost impossible by other means. Why it acts satisfactorily when other sugars fail is another question to which no one has given a satisfactory answer. The verdict of clinical opinion both here and abroad is that under certain circumstances it accomplishes much, but no one claims that it is to be used permanently or except for clear indication. The pure maltose itself is so expensive as practically to debar it from use, but in solution with dextrins it is a by-product of breweries and may be obtained in a sufficiently pure form for use from many different dealers for an absurdly small sum, about 15 cents a pound.

We should also remember that it is not pure maltose that the proprietary foods contain, but a mixture of dextrins and maltose obtained in the same way by malting starches. Nor do we owe to the manufacturers the knowledge that maltose is valuable or its method of manufacture. Justus von Liebig deserves the credit for this; the manufacturers only appreciated the commercial possibilities.

There is no ground for the supposition that drying and powdering the protein of milk or of egg increases its digestibility or that of the various starches and sugars contained in the food. As to the value of the proteolytic and diastatic ferments, which it is claimed some of the foods contain, something will be said later. It is enough to assert here that the majority do not contain any. In order to preserve these ferments it is necessary to evaporate *in vacuo*. The process is expensive and whether the attempt is actually made or not by actual experiment it is found that there is often no ferment action whatever.

This brings us to a consideration of another of their disadvantages, namely, unreliability. They do not contain what they claim to contain, and their composition varies greatly from time to time, as shown by chemical analysis. A food which one year contained but a small amount of maltose and was, therefore, constipating and was used by numerous physicians after diarrhea for this very constipating action, the next year contained a large amount of maltose and so produced the very effect which it was supposed to correct.

That the manufacturers themselves realize that their products are uneven in composition is shown by the preface to a small pamphlet issued by one of the food companies. I quote from it verbatim:

The accompanying tables have been compiled from various authorities, much time and trouble having been expended in the search of authorities on the various subjects. The results are published mainly with the view of showing what an unlimited amount of variation may exist in the standards published by different scientists. Some of these variations, such as the discrepancies existing in the table of analysis of infants' foods are incomprehensible and only aid in proving that chemistry is *not* infallible and that practical results go ahead of theoretical indications.

Surely comment on this is unnecessary.

Liebig complained, in 1866, that the manufacturers did not grasp the very kernel of his ideas and gave wrong directions with their foods; and more than thirty years later Keller, who expanded the teaching of Liebig and has done a great service in showing the value of maltose and large quantities of carbohydrates in certain conditions, has complained of his inability to have his malt soup properly prepared.

For temporary use it is difficult to see how these foods are superior in any way to various modifications that can easily be made in any house, and if fresh milk is not obtainable they offer no real advantages over the best brands of condensed milk.

That these foods are harmful or unnecessary is not an isolated personal opinion. It is the almost unanimous belief of those who have studied and written on the subject in this country and in England, and this belief is shared by Czerny and Keller, who, as writers on infants' dietetics, speak with the greatest authority. These latter especially lay stress on the fact that in health or disease proprietary foods are unnecessary.

It is very doubtful if in disease anything more can be accomplished by these foods than by the skilful use of the ordinary foodstuffs. We can obtain at any time practically fat-free milk, gruels of various kinds, all kinds of sugars, mixtures of dextrins and maltose and white of egg; and again be it emphasized, there is no reason why, when clean, these should be more digestible because they have been evaporated, dried and powdered.

I said "skilful use of ordinary foodstuffs," but a certain amount of knowledge and skill is required to use even proprietary foods properly, on account of the great differences in their composition. The man without accurate knowledge of dietetics cannot feed correctly either proprietary or ordinary foods. This subject has been greatly neglected in the past and is only now beginning to receive the attention that it deserves; but it must receive it, for the demand is great. When the medical profession at large acquires a working knowledge of dietetics we may confidently expect that the use of proprietary foods will greatly diminish.

PREDIGESTED MEDICINAL FOODS

There is very little possibility for argument in regard to the predigested medicinal foods, the evidence is so overwhelmingly against their use. They contain peptones and proteoses, cane-sugar, maltose, dextrins and invert sugar in small quantities preserved in alcohol of 14 to 22 per cent. strength.

Let us give these foods the full benefit and consider that all the alcohol and all the extractives that they contain can be utilized by the organism, a hypothesis which is certainly very doubtful. By calculation it is readily shown that, measure for measure, two of the most representative and widely used of these foods have only a

little more than twice the nutritive value of whole milk and less than an equivalent amount of gravity cream—without the alcohol, they contain the same amount of nourishment as milk. The dose of these foods advised for a child of six months is a teaspoonful every four hours. This corresponds in nutritive value to slightly more than two ounces of milk, or slightly less than one ounce of cream in twenty-four hours, and when we consider that this six-months-old infant requires fifteen times as much milk or twelve times as much cream to maintain his body weight one readily sees how far they fall short of furnishing even a minimum amount of food.

Their method of production also consumes time and money worthy of being expended in a better cause. Assuming that such a food could be ingested without grave gastric, intestinal or other disturbance in sufficient quantity to nourish the six-months-old infant, it would cost about a dollar a day and would, moreover, require the child to take in twenty-four hours alcohol equivalent to six ounces of brandy, enough to terminate his short life or keep him in a continuous state of alcoholic coma. No! I think we may avoid without loss the predigested medicinal foods.

FERMENTS IN INFANT-FEEDING

The use of ferments in infant-feeding is confined almost entirely to two, a peptonizing ferment obtained from the pancreas and a diastatic ferment obtained from grain. They have their warm and their lukewarm adherents. There are, I think, no positive opponents except those who hold that their temporary use is unnecessary and their prolonged use apt to lower the infant's digestive power.

Were digestion a simple process and confined to a single ferment for each variety of food, there would be more ground for furnishing this ferment on the supposition that in gastrointestinal disturbance there is a diminution of the enzymes of the alimentary tract. But the process is not a simple one. It involves the interaction of several ferments with the requisite acidity or alkalinity best suited to each one and a proper physical condition in the stomach and intestines. Sufficient time for the action of each enzyme is also necessary.

With proteins it is no doubt true that stomach digestion can almost entirely fail and trypsin digestion be sufficient, but this digestion probably only goes to a certain point and the final breaking down into the amino-acids capable of absorption and utilization appears to be accomplished largely by the erepsin. To be logical we should supply this ferment also. It is doubtful, however, whether there is much of a reduction of the ferments in gastrointestinal disease and whether they are not almost always present in sufficient quantity to accomplish their work, provided other conditions are suitable. Dr. T. Wood Clarke, whose admirable investigation on the gastric digestion of infants in health and disease has just been published, tells me that with infants in whom there was no gastric digestion whatever this was due not to the absence of pepsin, but to the lack of hydrochloric acid, and that if this were supplied to the stomach contents peptic digestion was, in his experience, always prompt.

It is very likely that with intestinal digestion it is the conditions that are at fault and not the enzymes that are deficient. Certainly it is a fact that infants with gastro-enteritis absorb nitrogen from the food to an astonishing degree, almost if not quite as well as those in health. Thus Keller found that from 80 to 95 per

cent. of the nitrogen of cow's milk was absorbed by infants with gastrointestinal disease, while healthy breast-fed ones absorbed from 83 to 95 per cent. of the nitrogen. Adler found only a slight increase in the albumins and albumoses of the stools of infants with intestinal disease. There would seem, therefore, very little ground for believing that the proteolytic ferments are much diminished in disease or for supplying more.

Conditions are similar in regard to the amylolytic enzymes, though evidence of the absorption of the products of digestion is more difficult to bring forward.

Jacobowitsch has shown that the sugar-forming enzyme of the intestine is but little interfered with by illness, and Steinitz and Langstein demonstrated that lactase is present in the feces of infants acutely ill, even when there is lactosuria. This would indicate an abnormality of absorption of sugar or some interference with the action of the enzyme, which normally transforms milk-sugar into dextrose, rather than its deficiency. All the proof that we have, therefore, seems to show that ferments are present in sufficient quantity in disease to perform their ordinary functions, but that conditions are not favorable for their activity. The altering of conditions so that ferments may work to their best advantage is quite another matter. I do not wish in any way to deny that in exceptional circumstances, which there is not sufficient time to discuss, ferments may be of value. In the great majority of instances, however, I believe them to be unnecessary.

It is not, I think, a narrow view to take that predigested medicinal foods have no reason for existence, that proprietary infants' foods are unnecessary, and that in pediatrics we can almost entirely dispense with ferments. The propositions are well supported by fact.

49 East Fifty-third Street.

ABSTRACT OF DISCUSSION

ON PAPERS OF DRs. EDSALL AND HOWLAND

DR. A. JACOBI, New York City: These papers will stand for themselves and will not only be read but should do good work; but from personal experience I know they will not do so much good as they ought to. A good many times similar things have been told the profession and it has not minded them at all. Physicians will lean on the proprietary food and will swallow, singly and wholesale, the manufacturer's statements. That is my experience and there has been no sadder proof to me in my life of the gluttony, mental gluttony, displayed by many physicians, than by their eagerness to believe the men who are not medical men, who are not professional men, who have absolutely no reason for going into that kind of business, except to swell their bank account. I said that thirty years ago and forty years ago and I am at it still, and I do not believe I have made the slightest impression on my good brethren of the medical profession. Yesterday I passed a baby-food store and the man asked me, "Won't you take a specimen?" I said, "I will not take any specimen unless I pay for it." "Won't you take a little memorandum book?" I said, "I have one in my pocket." Then the man said, "Don't you like ours?" I said, "I have been writing against 'baby food' for forty years." With a sort of sheepish friendliness, he said: "Won't you write for us now?" I said, "It will take forty years more."

I believe that some more, and many more, will have to write against proprietary foods for forty years and still some will prescribe them or permit their patients to use them. Many manufacturers know they are robbing the people constantly. The people pay twenty or forty times as much for a proprietary food as it is worth, and although they know the same food can be had as that in the proprietary form at almost no expense. I believe I can only repeat what I said years ago on the same subject. I am sorry that it has to be repeated all

the time, but I am not sorry that men like Edsall and Howland should take the matter up and speak of it in the forcible and scientific way that they have this morning. There is one little point that I might speak about: that is the importance of supplying hydrochloric acid in a great many instances. It is easy enough to do it when necessary. The amount of acid in the stomach in a child and in an adult may be very large and still hydrochloric acid may be required. The acid in the stomach is not always equal. What appears to be hyperacidity credited to hydrochloric acid may consist of fat acids and even in such cases the introduction of hydrochloric acid is required. As a practical measure, it will be advisable to counteract the presence of the fat acids in the stomach by giving an alkali. Either before a meal in order to do away with the fat acid and afterward give hydrochloric acid during or after a meal. The hydrochloric acid may be given in the medicinal way or it may be given in the food, and I still recommend in a number of instances the preparation which I have advised over thirty years ago and which was given to me by my then assistant, who is a good chemist, Dr. Rudisch. That means additional hydrochloric acid to milk in our fat: One part of dilute hydrochloric acid; mix with 250 parts of water; mix with 500 parts of good milk; boil gently. This gives a good preparation, which contains hydrochloric acid and casein in solution. There is never any coagulation. It is digestible, and milk may be given in this way when hydrochloric acid is needed. This mixed milk may be treated as common milk, mixed with cereals. In many children, and in adults, I have given magnesia when there was constipation; giving prepared chalk when the bowels were loose. There is only a single reason why proprietary foods should be given, that is to enrich men who want to be enriched. There is no other reason for putting these preparations on the market. Still we are always repeating the same thing, always giving the money of our poor patients, or rich patients, as the case may be. So far as the latter are concerned, I do not see why their infants should not share in simple and less expensive and more salubrious foods.

DR. G. C. SMITH, Boston: About thirty years ago I heard Dr. Jacobi's teaching and have watched with a great deal of curiosity the development of the dietetic problem as regards children. It is interesting, as well as lamentable, to see that, in face of the fact that so much valuable work has been done by Drs. Edsall, Holt, Rotch and others on the dietetic problems in children, absolutely nothing has been done practically in the matter of the dietetics of adults. Now, it is well known that the two great periods of life in which we do most for our patients are, first, the infectious period, in youth, and, second, the period after 50, in which there are diseases which are often the result of early intoxications and the diseases of infancy, together with luxurious living. At this second period we do nothing in the way of dieting, and we can do much more in that way than by all other means. The chief reason why we have not done more in the matter of dietetics late in life is because the subject has not been taught in medical schools. It seems to me that we should try and give pupils in the undergraduate schools such a training in dietetics that they may go out and treat patients properly, and the postgraduate schools should give to the general practitioners, at least, such a knowledge of dietetics as would guarantee their patients better treatment than they receive with the aid of drugs. During the past twelve or fifteen years I have seen much good accomplished with dietetic treatment, especially in the care of the cardiorenal and the gastrointestinal diseases of late adult life, and I can emphasize particularly one point made by Dr. Edsall, namely, the importance of teaching practitioners and undergraduates the necessity of knowing the value of the different kinds of food which they give, because of the common statement, which I hear made by practitioners, that they can let their patients by letting them take a little of everything which they desire and they can reduce flesh in that way. That is a very dangerous method. I have often heard physicians say they were reducing their own flesh by slightly diminishing the amount of food they take. This is often harmful also. The physician must know food values. The importance of this knowledge will be illustrated in the first case in which it is applied in active practice. After treating a good many hun-

dred cases of chronic affections, I must say that I have obtained much more satisfaction by adhering strictly to dietetic therapy than by drug treatment.

DR. F. E. STEWART, Philadelphia: Those of us who were interested in the early work of this Section know how difficult it was to get a baker's dozen to meet, but, thanks to the work done by the Council on Pharmacy and Chemistry and the government, we are getting to know more and the membership of the Section is growing. I agree with Dr. Smith that teaching of undergraduates, and especially postgraduates, will solve this problem more than anything else, and this Section can take an active part as it contains a number of the teachers engaged in such work.

DR. C. S. N. HALLBERG, Chicago: While we may agree that the use of digestive ferments *per se* is of little, if any, therapeutic value, they have a great use as pharmaceutical agents in the preparation of predigested food when required. For example, in the administration of peptone, it may be desired to give peptonized beef by rectum, and in that way digestive ferments would be useful. Nurses, for example, should be familiar with the action of the digestive ferments in the preparation of peptonized beef or egg peptone and its use in the preparation of milk. It is well enough to condemn these proprietary infant foods, but what is to take their place? There is a desire for a semiconverted wheat, dextrinated. Now what is to take the place of this? The old Philadelphia salt-bag product is the only thing that I know of and a great many people will not take eight or ten hours to prepare that, and so far as I know there is nothing really to take the place of these preparations which are desired in infant feeding. If preparations similar to this dextrinated flour as made by boiling it for a long time in a salt-bag could be had it would perhaps solve the problem of the expense of infant foods.

DR. GEORGE DOCK, New Orleans: Even in giving food by rectum one can get along without using digestive ferments. I think it is entirely unnecessary to teach nurses to predigest milk in order to use it by enema. For years I have given milk and egg without any predigestion. I am positively certain that as a general thing they are absorbed almost or quite as quickly as peptonized milk, or peptonized beef, and I feel sure, though not scientifically convinced, that a milk and egg mixture or milk alone given by enema is not so irritating as peptonized milk. Dr. Edsall referred several times to diabetes, and I would like to speak of that as a striking example of the slowness which Dr. Jacobi has so touchingly referred to in the assimilation of therapeutic knowledge. Dr. Jacobi is too pessimistic in regard to his teaching. He seems to think that no one has profited by his writings and his teachings. We all know this is not true, that he has many enthusiastic followers. In regard to diabetes, there is a striking example of forgetfulness or indifference, although we have accurate information in regard to underfeeding and the production of acidity, we see a large number of diabetics who have been permitted to go until they are absolutely starved, they have been kept on a carbohydrate free diet so long that they develop toxic symptoms and actually die. An exceedingly sad result of that sort of treatment has repeatedly fallen under my observation. A patient is put on rigid diet and fails visibly. He then puts himself under the care of an osteopath, or some one of that kind, and is told to eat anything he pleases. After a while his improvement is obvious and especially in appearance. The rapid improvement under the quack strikes people; they don't see the later developments of the case, they don't see how the patient again begins to go down and don't see how after the patient is put under rational treatment he makes a much greater improvement, which the quack doctor could never have attained, or at least only by chance. So it seems to me that the absurdity of putting patients on strict diet should be reiterated often. It is easy to demonstrate that the flours for which patients pay anywhere from 50 cents to \$1.00 a pound, contain as much starch as ordinary flour, and it is a simple matter to show such patients that they can take just as much flour or potato or other carbohydrate.

DR. B. FANTUS, Chicago: I am sure that we all agree on the necessity of more teaching in dietetics, but it is a very remarkable fact that the recent report on curriculum of the Council on Medical Education of the American Medical Associa-

tion allots only twelve or fourteen hours to the teaching of non-pharmacologic therapeutics, including, as it does, dietetics, hydrotherapy, electrotherapeutics, climatology and a number of other branches. That allowance of time is necessary for the teaching of dietetics alone, and as a great deal of stress is laid on this report, I herewith wish to protest emphatically against this portion of it. I believe the time allotted to non-medicinal therapeutics ought to be, at least, multiplied by five. I have one use for the proprietary foods, and that is when I wish to prescribe no diet. As it happens in the practice of all of us, there are conditions in serious diseases, for instance, in pneumonia, when the patient's digestive power is at the lowest possible ebb, when it is desirable to withhold food; but if the physician does that the patient's relatives will not stand it. They will protest, they will call in consultation, they will do everything under the sun to get this very sick patient fed. In such cases, if they pay \$1.00 a bottle for one of the proprietary foods and the patient is fed by the teaspoonful it will have the effect of giving no diet and the relatives will have the satisfaction of thinking that the sick one is getting food.

DR. S. SOLIS COHEN, Philadelphia: The tendency in therapeutics, as in pathology, seems to be to go from one to another extreme of the swing of a very long pendulum. At about the time that I entered on the practice of medicine, the enthusiasm over predigested foods was great. The teaching began in the laboratory and extended to the bedside. Predigested foods were prescribed for anything and everything and were recommended in addresses and articles by some of the same investigators who now find nothing too harsh to say of those who use them. Every one was expected to recover from everything, typhoid, cancer, diabetes and tuberculosis included, if only he got a teaspoonful of predigested food often enough and over a long enough period. Of course, such a mistake corrects itself; but it is equally illogical to go to the other extreme and say that predigested foods are always inapplicable. The fact that digestive ferments cannot climb trees is no reason for saying that the digestive ferments are not, under certain conditions, useful crutches, which can help the lame stomach or intestine over the rough places of the way, and be thrown aside when the necessity for their aid is past. I am convinced by long experience of the usefulness of what I am in the habit of terming pancreatized milk, rather than peptonized milk, that is, diluted milk with soda and pancreatin added before it is given to typhoid patients. This method greatly reduces the size and quantity of the curd passing into the ileum and by that much diminishes the liability to hemorrhage. I am also satisfied that there is less fermentation in the intestine, at least less distention, and thereby also a reduction of the liability to hemorrhage. And so there are many other conditions in which for a definite purpose and for a limited time the predigested food or the administration of a digestive ferment may be useful. My experience has been a little different from Dr. Dock's with predigested milk in rectal feeding. Fully pancreatized predigested milk beaten up with a whole egg and a few grains of pepsin has served me best. Dr. Dock, however, must be aware that in advocating rectal feeding of any kind, he is treading on dangerous ground, imperiling his reputation as a man of science. Certain able investigators have asserted that no food is absorbed from the rectum. Now that statement is, of course, as extreme and as definitely contradicted by the world-wide clinical experience of competent observers as the assertion that digestive ferments are never useful. There are certain times and conditions in which these measures are helpful and others in which they are futile, or even harmful. It is our function as artists in therapeutics, and I always lay stress on the fact that it is our function as practitioners of the art, as well as students of the science of medicine, to determine when they contraindicate the practice under discussion. In that determination we have to be guided by clinical phenomena; interpreting these in the light of all the exact information that laboratory investigations in chemistry and pharmacology, physiology and pathology may give us. I thoroughly agree with Dr. Fantus that there are a number of proprietary foods whose chief value is in feeding the family; and especially so in the case of children with so-called "summer complaints," when it seems to be absolutely impossible otherwise to avoid harmful interference in the nursing. Under such con-

ditions a few drops of a colored fluid called beef juice, given in sterilized water, or whatever medium one chooses to employ, saves trouble and gives the patient a chance to recover. In conclusion, I am very glad to learn that the college in which I have the honor to teach has been so far ahead in medical education. It is more than twenty-three years since I began lecturing in that college, at that time on extra-medicinal or, as I now term it, physiologic therapeutics, and I had a term even then of more than twelve hours. As I no longer hold that position I may add that the work is still done and done well as a part of the regular curriculum of the fourth year class.

DR. WILLIAM H. MERCER, Pittsburg, Pa.: One point that Dr. Smith made is, I think, of great value. He maintained that the general practitioner—I speak from the standpoint of the general practitioner—did not give enough attention to dietetics. The pediatricist does so. I can fully subscribe to this. In this connection I would mention a procedure which for the last four or five years has stood me in very good stead. Every patient who comes to my office is asked to tell me briefly what he eats. I put down his breakfast, his lunch and his dinner. Having this information, and I would like to lay stress on its value, I prescribe a diet. The trouble is not with the patients, they are always asking for dietetic instructions. If the physician knows what they usually eat then he can prescribe a rational diet.

DR. DAVID L. EDSALL, Philadelphia: I consider Dr. Mercer's suggestion an extremely important one. As I said in my paper, I think it still better to put down precisely what the patient eats and the time at which he eats it. Unless this is done the physician forgets many important details. I am strongly in favor of using temporary starvation in bad cases of alimentary disturbance and in cases associated with severe toxemia, such as Bright's disease. But starvation must be employed with full realization that it may be a very dangerous measure unless carefully watched, and I would protest strongly against some of the things that have appeared in the medical literature in recent years, such, for example, as the recommendation that typhoid patients be starved for even as long as ten or twelve days—most pernicious advice, and extremely dangerous. The cases I referred to in which fatal starvation occurred were not diabetes. A qualitative starvation death, so to speak, does occur in diabetes unquestionably, but I referred to direct starvation and was thinking particularly of two typhoid patients who were at death's door from inanition when I first saw them, and who died of this cause, having been fed for weeks on liquid foods that were essentially without any nutritive value. The danger of producing grave acidosis in diabetes is, however, very important. I have repeatedly seen patients become toxic with great rapidity and go quickly into coma because of sudden change of diet. As to ferments in their relation to predigestion of foods, I would note that I have been particularly interested in this question and have done some work on it, but my more mature judgment has led me to such a point that I have not for years ordered peptonized milk or pancreatized milk except in most unusual circumstances and then without any feeling that I could not have accomplished the same purpose in other ways. In regard to rectal alimentation, I would say that I do believe in figures, and I have done some work myself in regard to absorption in rectal alimentation. Many others have also worked on it, and I think it is clear that rectal alimentation accomplishes very little, only from one-fourth to one-sixth the amount necessary to maintain nutritive equilibrium being ordinarily absorbed. The work that has been done on this question has been chiefly when the patients were using predigested food by rectum. It would appear to be reasonably clear that predigestion accomplishes very little in rectal alimentation, because at most very little can be accomplished by this or any other means. Dr. Dock is right, of course, in his statement that if the predigestion is carried far the products will irritate the bowel. As to predigestion in typhoid fever, I can state that simple dietetic measures accomplish just as good results with much less trouble. I had an exceptional opportunity to observe this disease in Philadelphia, and have studied a series of over 4,000 cases of typhoid in about five years in the Episcopal Hospital; of this number I saw personally over one-fourth. Predigested food was used in scarcely any of these cases and yet the num-

ber of hemorrhages and perforations was well below the average of cases as generally reported from hospitals, and the only digestive disturbances that had any relation to milk were due to infected milk. When clean milk was used digestive disorder disappeared. I have been wholly unable to see that predigestion is either necessary or desirable in typhoid fever or similar cases, and the large series of records that I have just spoken of certainly did not indicate any necessity for it.

THE ETHICS OF ANIMAL EXPERIMENTATION*

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Is man morally justified in causing animals pain, and, if so, under what conditions? This is the moral issue raised by the practice of animal experimentation. The attitude of the average person on this question is no doubt more likely to be determined by temperamental bias and accidental prejudice than by any clear vision of fundamental principles. Nevertheless, it seems worth while in this day of increasingly bitter controversy over the experimental use of animals to inquire somewhat closely into the ethics of the case.

Historically, we find two fundamentally divergent views entertained on the general subject. Most widely prevalent—and sanctioned at one time or another by religious practices among all peoples—is the view that man is the overlord of the animals and may use them for his pleasure and profit, even to the point of robbing them of life. This view undergoes much softening and is hedged about with humanitarian restrictions among the more highly civilized races. Over against this is the belief that man has no right to take animal life or cause animal suffering. Buddhism, with its belief in the transmigration of souls, is the great religious embodiment of this view, although it has perhaps seldom gained a strictly consistent execution in practice. In estimating the import of this radical discrepancy in moral principles, one naturally looks to the origin of moral belief as possibly affording illumination.

Moral principles have generally derived their power over human action from one or more of three distinct sources: (1) They have been accepted as embodying divine law implanted in the consciousness of each individual, or revealed through the inspiration of holy men. This is the intuitive view of morals. (2) They have rested on custom, law, or social and political usage. This is the traditional view. (3) They have been justified by the happiness and social welfare which it is believed follow on obedience to them. This is the scientific view.

Under no one of these conceptions of the origin of morality do we find immediate and unambiguous guidance in the problem of animal experimentation. Religious teaching is equivocal. Certainly most of it sanctions the taking of animal life, and the consciences of primitive people at least seem to cause them no distress, even when they torture dumb creatures. Custom has varied among different races, but, in the main, has undoubtedly favored the treatment of animals in accordance with the unbridled wishes of man. Even among civilized peoples,

gelding, dehorning and other mutilations of animals are countenanced under conditions which unquestionably occasion much suffering. At the present time controversy is carried on almost wholly under the ruling conceptions of the third division—i. e., the issue is argued as one of fact concerning the consequences of animal experimentation. In any event, this is the only point at which argument may hope to convince the open-minded, one way or the other. Obviously, the argument from custom proves nothing and convinces nobody. The man who believes in the transmigration of souls between human and animal forms cannot be dealt with in the limits of this paper, but in the Anglo-Saxon world, at least, he is to all intents and purposes non-existent. Certainly the great mass of modern critics of experiments on animals do not rest their case on any such foundation. They assert that needless pain is an unmitigated evil, and that its gratuitous and intentional causation is a sin and a crime. They allege that animal experimentation is (1) not justified by any results it has yet attained and (2) that it is demoralizing and brutalizing in its influence, both on those who conduct it and those who observe it.

Certain more conservative critics urge that, although its occasional employment has resulted in justifying benefits both to man and the animals, it is done far too extensively, is done when the results cannot possibly justify it, and done carelessly and with indecent disregard of all the humanities. Clearly, this is an indictment drawn on alleged facts, and no verdict can be rendered without an examination of the facts.

If it be granted, however, that the experimental procedure is ever justified by its results, the basal ethical issue is closed. It only remains to make sure that in a given case the warrant is certainly adequate, that the minimum of pain is caused the creatures used, and that the indirect effects on the public and on students are not such as to augment the spirit of cruelty or insensitiveness to suffering.

Fortunately, or otherwise, we have no calculus by which we can estimate the amount of pain caused an animal by a given experimental operation, or the amount of suffering saved to other creatures as a possible result of its sacrifice. But with the literally inestimable benefits which are daily being reaped in the prevention of smallpox and in the amelioration or prevention of diphtheria—to mention only these two cases, out of a rapidly lengthening list—it is difficult to understand how any one can honestly frame a sweeping indictment of operations on animals to which these victories and others like them are unquestionably due.

As a matter of fact, the case is somewhat complicated in the public mind by the appearance among the extremer critics of not a few gentlemen who sign themselves M.D., and who claim a professional knowledge of the details of the case. To be sure, the overwhelming majority of medical men, including all the great leaders of the profession and all the great medical organizations, are staunch defenders of animal experimentation.

It would be ridiculous to pretend that all operations on animals have such striking justification, either in purpose or in result, as those which led to the discovery and perfection of vaccine or antitoxin. Many of them frankly fail to result in immediate scientific progress, and many are done for purposes of instruction, the beneficent results of which are always uncertain and frequently long deferred. But, as has been said above, the fundamental ethical issue is closed, once it be granted that there are *any* conditions under which ani-

* This article is one of a series issued in pamphlet form by the Council on Defense of Medical Research of the American Medical Association for circulation among the public. Six of these pamphlets are now ready, taking up the questions of ethics, diagnosis, cancer, vaccination, the live stock industry, tuberculosis, etc. An editorial survey of the series appeared in THE JOURNAL January 1 and a list of the pamphlets, with prices, was given on advertising page 8 of that issue.

mal experimentation is justified. The problem which remains is simply that of determining the circumstances and conditions which warrant particular forms of the method.

Just at this juncture arises a peril which medical men justly fear. Who shall determine what precautions are to be thrown around animal experimentation, who shall be allowed to undertake it, and what circumstances shall be held to justify it? At this point the opportunity opens for unintelligent and officious interference such as might well jeopardize medical advance for a generation to come. It is sincerely to be hoped that sentimental considerations, however honestly intended, will not be allowed to rob those most able to judge wisely and fairly of these matters, of the power of control, which should be in their hands.

When we inquire what, in a practical way, honest and humane people would consider sufficient justification for experimental operations on animals we meet all the vagaries of personal idiosyncrasy. For one, only the saving of human or animal life in large numbers would justify the procedure. For another, adequate reason would be found in a mere lessening of pain, even though the question of death were not involved. For still another, any advance in scientific knowledge which might in the future conceivably conduce to human or animal welfare would afford sufficient justification. Evidently we are here plunged in the waters of casuistry, where it is hopeless to follow. Biologic scientists generally hold the third view mentioned. Probably the rank and file of the lay public would espouse the second view; while a few sensitive souls, especially those of vegetarian proclivities, hold the first view. Finally, in a still smaller group, are those extremists who will hear of nothing but the absolute prevention of animal experimentation.

Those who approve animal experimentation at all, except perhaps men of science, are no doubt moved by the same general motives which lead us to approve whatever is customary and familiar. We harness the horse and force him to work for us, whether he likes it or not. We rob the cow of her calf that we may ourselves enjoy her milk. In like manner we rob the hen of her eggs and think no worse of ourselves for the larceny; and, finally, we wind up our tale of coercion by a ruthless slaughter, for food or sport, of both bird and beast, wild and domesticated alike. With such customs in vogue about us, it is not strange that most persons should lend a willing ear to the defenders of properly controlled experiments on animals. The only wonder is that so many persons have been willing, on imperfect and misleading evidence, to countenance and even endorse the advocacy of repressive measures of the most drastic sort—measures entirely unwarranted when judged by the prevalent practices in the treatment of animals in every other human relation. Not that one would wish to justify a bad practice because other worse ones were in operation. But when one takes a sensational account of the torturing of animals in some surgical laboratory, and judges the case without any regard to an examination of the precautions taken to secure anesthesia for the animal, and without any regard to the prevalent ethical sense concerning the extent to which animals may be sacrificed for human welfare, one obtains a morally distorted and unbalanced point of view, from which no sane judgment can be expected to emanate.

In the main, modern opinion cannot be made to take seriously the view that all animal life should be sacred. As soon as the mosquito was convicted of responsibility for yellow fever and malaria his days among civilized

men were numbered. He was always a nuisance. Now he is a homicidal criminal. It may take some time to exterminate him, but he can no longer find any intelligent human defender. Let us hope that the fly will similarly be put under an everlasting ban. Assuredly his responsibility in the matter of typhoid and other filth diseases has been abundantly demonstrated. Poisonous serpents and vermin of all sort have long ceased to enjoy any considerable immunity from slaughter. In a practical way, insects are apt to be thought of as being outside the pale of ordinary humanitarian consideration; but if one is going to inquire seriously into the ethics of our human relations to animal forms, one must recognize that the justification for protecting insect life is neither greater nor less than that for protecting the higher animals, provided any of them menace human welfare. And if interference with their lives be permitted on the ground of human welfare, the avenues are at once open, so far as morality is concerned, to the various forms of operations on animals.

The trend of modern opinion among civilized people is unquestionably toward a more drastic application of the principle of the right of society to protect itself. The criminal is punished not primarily in retribution, but in order that society may not suffer further his evil doings. Temperance legislation, whether wise or not, is designed not only to help the drunkard, but particularly to remove temptation from the path of the innocent. Quarantine is possibly the best illustration of protective social interference with individual freedom. Often the isolation of a patient suffering with contagious disease may operate to endanger his life. But the danger to the community arising from failure to isolate him is commonly adjudged a greater evil. And so at the risk of harm to the patient the community protects itself. How much more, then, for people who assent to the logic of this principle and to its moral justification, should the use of animals seem warranted, when such use can be made widely contributory to the decrease of suffering, both human and animal? Of course, if one entertains the "Christian Scientist" view of the illusive character of pain and disease, all these conclusions fall to the ground. But, on the same principle, there would be no justification for doing away with the mad dog and the venomous serpent. And, in any case, the "Christian Scientist" is not likely to be influenced by any ordinary considerations on this matter, either one way or the other.

Not only is the right of society to protect itself against crime and disease gaining daily a wider recognition, it is also true that the public is coming to a juster appreciation of the relation of science to social welfare. Science has too long masqueraded in the popular mind as a realm of impractical theory, touching the life of the common man only in the most remote way. The contemporary world appreciates increasingly the fallacious character of this view. In industry, in commerce, in medicine, and even in government itself, the scientific knowledge of yesterday is the basis of the practical device of to-day. Science is simply the intellectual aspect of social progress, and, when this conception is still more familiar than it is at present, we shall hear less of the *merely* scientific interest in animal experimentation, as though there were any genuinely scientific interest which could escape contribution to social advance. Certainly, biologic science, quite as well as pure medicine, ought to be given freedom to pursue its researches in the general interests of mankind, with such methods as may commend themselves to investiga-

tors. To obstruct biologic science by a general prohibition of experiments on animals, or to obstruct any other science by proscribing approved methods, is to sin against the light and to turn back the hands of progress. No thoughtful person is likely seriously to commend such a course.

The question as to the moral effect of the practice of animal experimentation on persons who engage in it or observe it is difficult to dispose of effectively. Undoubtedly most persons feel a squeamishness about their first operation on an animal, which later on they lose, and the critic of the practice is likely to interpret this fact as meaning that the practitioner has become callous and indifferent to suffering. I see no reason to deny that this result may occasionally occur. But in every reputable laboratory the usages are as humane as the circumstances will permit, anesthesia is the universal practice, and it is perfectly certain that the total amount of suffering which the animals undergo is negligible in comparison with that which confronts most of them in a state of nature. Moreover, a loss of the original squeamishness is by no means synonymous with a loss of practical tender-heartedness. It may act simply to insure a steadier and prompter hand, with a corresponding decrease in the length of time occupied by the operation and an increased chance of a favorable outcome. It should be remembered, too, that the selfish interests of the operator almost inevitably and invariably make it to his advantage that the animal should suffer as little as possible, in order that its vigor and vitality may be at the maximum. It should also be added that, just as many surgeons are most tender-hearted, despite their apparent indifference to the suffering of their patients, so many men who do a large amount of operating on animals are keenly alive to the welfare of their animals. But even if all experimenters were hardened by their work into a disregard of animal pain, society might still pronounce the value of their results to outweigh this drawback. In the larger view which looks to the ultimate welfare of society as a whole, such men are among its most valuable humanitarian members, whatever their personal attitude toward the animals with which they work.

In conclusion, then, it may be said that we find no obstacle to the practice of animal experimentation in any intuitive moral convictions, nor in the traditional morality of our own race. When we try to estimate its justification in terms of its results, we find that it has precisely the same kind of warrant as that which attaches to all our great social enterprises, in each of which we are ready to sacrifice a lesser good for a greater good, and are willing to encounter a moderate evil in order to escape a greater evil. For the sentimentalist, to whom all thought of gratuitous suffering is abhorrent, probably no argument can ever avail to justify certain forms of experimental procedure. On the other hand, to the man familiar with the revolutionary advances in science and medicine which have originated in the experimental use of animals its condemnation seems the last word of a pernicious insanity. To the great public, representing the intermediary between these extremes, it is to be hoped that a calm and discriminating judgment may be vouchsafed, and one which takes into account all angles of the case. In the long run we have confidence in the integrity of our public judgments on moral issues. In a case so serious as this, we need the highest degree of deliberation, sobriety, and intelligence.

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THE FUNCTIONAL ACTIVITIES OF THE KIDNEYS *

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This article consists of a report of the amount of work which I have done, tending to show the value or the lack of value of the tests which are being used at the present time to show the permeability of the kidney.

My attention was originally called to the value of this work by Dr. Robert Holmes Greene, in 1904. The result of some of the work done by me at that time and for some time subsequent was published in his text-book.¹

I need hardly mention the various procedures which have been attempted in the past and by which it has been sought to determine the functional activity of the kidney, such as the estimation of the amount of urea, phosphates, chlorides, quantity of urine, cryoscopy, or the presence or absence of casts and albumin.

OLDER TESTS OF RENAL FUNCTION

Thirty-three grams of urea was estimated to be excreted by a healthy individual in twenty-four hours, or about 2 per cent. of the quantity of urine passed, and this has been considered an index of the normal renal function. Urea in the urine is dependent largely on the proteid element of the diet. As is well known, meat diet will increase the elimination of urea and a non-proteid diet will diminish it, but at no time will a non-proteid diet result in the total absence of urea, as a certain quantity of urea is indirectly derived from tissue metabolism. Munzer and Kaufman in 1894 proved that urea was also formed in the liver and to a small extent in other organs. It also seems evident that renal disease may indirectly produce a variable output of urea by increasing or diminishing metabolism or interfering with assimilation. Fever in any renal disease will cause increased metabolism with a corresponding increase in the quantity of urea excreted. Licci² states that diminished quantity of urea in renal diseases is entirely due to disturbances of the nitrogenous metabolism, and that renal permeability to urea is increased rather than diminished. The same is corroborated by Maragliano.³ From such observations as these it is evident that the quantity of urea which comes to the kidney for removal must be a variable one, depending on absorption, tissue metabolism, diet, hepatic and other glandular action, and any of these processes may be affected by disease. All this tends to show that we cannot rely on the inconstant supply of urea to the kidney for elimination in estimating its functional activity.

Neither can we determine the functional activity of the kidneys by the quantitative estimation of chlorids excreted by the kidneys, as it is a well-known fact that a constant content of sodium chlorid is maintained in the tissues and fluids of the body and that its principal supply comes from the food; but we also know that the absorption of sodium chlorid stimulates metabolism whether the kidneys are healthy or diseased. Chlorids are diminished in the urine in fevers to a large extent and increased in the urine when the temperature falls.

* Read before the American Urological Association, Atlantic City, June 7, 1909.

1. Greene, R. H., and Brooks, H.: Diseases of the Genitourinary Organs and the Kidney, Saunders, New York, 1908.

2. Licci: Policlinico, 1901, p. 400.

3. Maragliano: Clin. med. Ital., 1902, p. 437.

Mohr⁴ has demonstrated that there is an excess of chlorids in the urine in chronic nephritis and that there is a marked decrease of chlorid in acute nephritis. Researches of Albarran⁵ tend to show that the quantity of chlorids passed in twenty-four hours does not furnish any indication of the functional activity of the kidney.

The amount of uric acid and phosphates in the urine does not give any reliable information as to the functional activity of the kidney.

When we consider how many factors influence it, the quantity of urine in itself would not be considered as a valuable index to kidney permeability. Work done by Albarran recently, however, has shown that studies of the renal function by the ingestion of large quantities of fluid may be, in certain cases, an index to kidney permeability. At some future time I hope to have the pleasure of presenting my own work recently carried on along this line. I do consider, however, for a rough test, the twenty-four-hour urine with the specific gravity in order to estimate the quantity of solids as of some value in determining chronic kidney disease.

Cryoscopy is determination of the molecular concentration of the urine. This method of von Karonyi is a very ingenious one of determining the functional activity of the kidneys, but von Karonyi himself says that large quantities of water consumed by patients will have a great effect on the freezing-point of the urine, even to diminish it to 1 per cent. or less. Also a very low molecular concentration of the urine will be found in the various forms of anemia. In order to get the best results from this method it is necessary to cryoscope blood and urine both, and, as it takes three drams of blood, it is a test which, while it can be carried out under certain conditions, it will be found impracticable for general use.

It is hardly necessary for me to point out how rapidly the older methods of urinary examinations are passing into disuse. While the presence or absence of casts and albumin may in certain cases bear some relation to the state of the kidney or kidneys, we feel that no such correlation exists at present, as was formerly the generally accepted opinion. That this is true has been very well demonstrated by the work of such able observers as Richard Cabot⁶ of Boston, Kapsammer⁷ and many others. To be sure, while such factors as albumin and casts may not always be indicative of a diseased state of the kidney, their constant presence in large amounts might indicate some abnormal state of the body.

TECHNIC AND RESULTS OF ELIMINATION TESTS

Having briefly mentioned some of the various methods of estimating the functional activity of the kidney, let us now consider some of those which are being used at the present time in connection with ureter catheterization, and with which I have been experimenting for more than five years. The principle of these methods consists in introducing foreign substances into the human body and noting the time of their elimination by the kidneys. The principle is by no means a new one, as Dr. Hahn in 1820 noticed the odor of violets in the urine after the ingestion of turpentine, and also the absence of the characteristic odor in the urine after eating asparagus in patients suffering from nephritis. My first experiments were with methylene blue and phloridzin; then, three years later, I used indigo carmine. The methylene blue

test was introduced by Achard in 1893, in the diagnosis of kidney diseases. Klemperer⁸ was the first to apply phloridzin in clinical medicine, in 1896. Achard and Delamere used phloridzin for testing renal function in 1899.

The following is the technic of the tests:

Methylene Blue.—Catheterization of both ureters and intramuscular injection into the gluteal region of 15 minims of a 5 per cent. solution.

Phloridzin.—Catheterization of ureters and subcutaneous injection of 15 minims (1 to 200) freshly prepared.

Indigo Carmine.—Catheterization of ureters and intramuscular injection of 20 c.c of 4 per cent. solution.

I began my experiments with phloridzin and methylene blue in twenty-five perfectly healthy subjects, the experiments being conducted very thoroughly, with the results that the phloridzin gave the sugar reaction in eighteen to twenty-two minutes and the methylene blue tinged the urine in twenty-six to thirty minutes after the injection. After having a standard time for the appearance of the blue and the sugar in the urine in healthy kidneys, I began to apply the same tests to diseased kidneys, and noted the variations in time. The following is a list of kidney diseases in which the tests were conducted:

Interstitial Nephritis.—Twenty-eight cases. Delayed excretion was noticed in twenty-three cases, the two kidneys being alike. In two cases there was a delay in the time limit on the right side; normal time limit on the left. In three cases there was a delay in the time limit on the left side, normal time limit on the right.

Parenchymatous Nephritis.—Nineteen cases. There was a time delay in both kidneys.

Tuberculous Kidneys.—Eight cases. In two there was delay on the right side; normal on the left. In six there was delay on both sides.

Malignant Nephritis.—Four cases. In three cases there was delay on the left side; normal on the right. In one there was delay on the right side; normal on the left.

Calculous Nephritis.—Twenty-one cases. In twelve there was unilateral delay; in nine, delay from both sides.

Hydronephrosis.—Five cases. In four there was a delay from left side and in one from the right kidney.

Pyonephrosis.—Nine cases. In six cases there was delay from the left side; right side normal. In three cases there was delay from the right side; left side normal.

Most of the above cases came with a clinical diagnosis from other physicians.

In applying these tests I found phloridzin to be the most reliable; the time delay of the glycosuria represented the degree of renal inactivity or the degree of structural changes in the kidney.

The methylene blue test, although good in most cases, failed to tinge the urine in three cases after four hours' observation and in two cases of parenchymatous nephritis it tinged the urine in twelve minutes after injection.

I continued my investigations in twenty cases of diseased kidney with indigo carmine and verified it with phloridzin, and while the phloridzin gave the sugar reaction in the proper time, the indigo carmine acted like methylene blue. The indigo carmine usually tinges the urine in about five minutes, which time I take as a standard in testing the functional activity of the kidney, but, as indigo carmine is decolorized by alkaline puru-

4. Mohr: Ztschr. klin. Med., 1904, p. 331.

5. Albarran: Exploration des fonctions rénales, 1905.

6. Cabot, Richard C.: Clinical Examination of Urine: A Critical Study of Common Methods, THE JOURNAL A. M. A., 1905, xlv, 837.

7. Kapsammer: Erkrankungen der Niere, Vienna and Leipzig, 1907, p. 28.

8. Klemperer: Verhandl. d. ver. f. inn. Med. zu Berlin, 1896.

lent urine, we may be misled in the application of this test.

I will not attempt to enumerate the above cases with their histories, but will say that most of them were under observation of skillful physicians who based their diagnosis on the clinical symptoms in connection with urine analysis made in the best laboratories.

Despite the diagnosis, I found by these tests nine subjects of supposed interstitial nephritis, who responded perfectly to the standard time limit of excretion of sugar and also the methylene blue test, and four subjects of supposed parenchymatous nephritis who showed perfect functional activity of the kidneys.

Autopsies were performed in five of the last named cases; ten microscopic sections of each kidney were made and studied carefully. No structural changes of the kidneys were evident, although three of the cases had been diagnosed as parenchymatous nephritis and two as interstitial nephritis during life.

All of the five cases showed by the phloridzin and methylene blue perfect renal activity, in spite of the clinical symptoms and urine analysis.

One of the three patients supposed to have parenchymatous nephritis died from large gumma in the fourth ventricle of the brain, one of pneumonia and one of tetanus.

Of the two patients with supposed interstitial nephritis, one died of pneumonia and the other of abscess of liver. From these facts we can see that we should not place too much reliance on the clinical symptoms and urine analysis in diagnosing kidney diseases.

I have had other cases in which albumin and casts were present in the urine. One very old man, who had been refused life insurance forty-two years before, was examined, with the result that both specimens of urine had the same specific gravity and the same amount of albumin and casts and both tests showed perfect functional activity of the kidneys. In these cases, however, outside the evidence furnished by the urine, there were no clinical manifestations of disease.

I have within the past four years, with the aid of my colleague, Dr. H. J. Friedman, examined 2,200 specimens of urine; the patients had not consulted me as to their kidney condition, but were being treated for various ailments, with the following results: Albumin was found in 85 cases; albumin and casts, in 62 cases; transient diabetes, in 12 cases, and true diabetes, in 9 cases.

Of these 85 patients having albumin only, I tested 40, 38 of whom showed perfect renal function and 2 imperfect. Of the 62 patients with albumin and casts, I tested 20, 12 showed perfect renal function; 8 imperfect.

Very curiously, in four cases of transient diabetes, on catheterization of both ureters I found sugar coming from one kidney, and when the temporary glycosuria had disappeared I tested the kidneys with indigo carmine and phloridzin and found imperfect renal function in the kidney which gave the glycosuria. The explanation of this curious phenomenon I am unable to give.

All nine patients with permanent diabetes were tested. Sugar was found coming from both kidneys and the functional activity of both kidneys was greatly diminished. In one case of permanent diabetes the indigo carmine tinged the urine in one hour and a quarter and the methylene blue in two hours and twelve minutes.

CONCLUSIONS

My studies lead me to the following conclusions:

1. They confirm the views of those who believe that little value can be placed in the presence of casts and

albumin alone, as evidence of kidney disease, for my statistics show that one in every fifteen persons walking the streets has albumin or albumin and casts in the urine.

2. The most accurate test for permeability of the kidneys is phloridzin in connection with ureter catheterization, although it is sometimes a very tedious process. Next of importance is the indigo carmine, which is a very quick test, and last, methylene blue.

3. The relationship of transient glycosuria to impaired kidney function when found in one kidney is deserving of study and investigation.

4. These investigations tend to show that the diagnosis of kidney disease by chemical tests and clinical symptoms in most instances is not borne out by the examination with phloridzin, methylene blue and indigo carmine.

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ACQUIRED INTESTINAL DIVERTICULA

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Diverticula of the intestines are without doubt more frequent in occurrence and more important from a clinical standpoint than is generally realized. Although statistics on this matter do not exist to any extent, yet it is evident from the few figures available that this condition is by no means rare.

By diverticula are understood localized dilatations of the intestinal wall. These are naturally subdivided into two varieties, the congenital and the acquired, the former being particularly well recognized. Meckel's diverticulum and the appendix (if it be so regarded) have been studied for many years; their embryology, anatomy, physiology and pathology have been dealt with voluminously. Consequently they will not be discussed here.

It is the acquired variety, however, that is at present attracting much attention, its importance having been understood only within the past few years. This type is supposed to occur toward adult life, as it has not been described as having been found in childhood.

These acquired diverticula might again be subdivided into the true and false, according to whether or not all the layers of the intestinal wall are present. This division does not seem, however, to be of any special value. If any tissue is lacking it is that of the muscular coat, and, as will be shown, this is largely the result of mechanical conditions.

The diverticula are as a rule numerous, varying in number from three or four to several dozen. In size there are the greatest differences, from those of almost microscopic dimensions to others several centimeters in diameter. In the majority of instances they are flask-shaped, the opening into the intestine being less than the diameter of the expanded portion. This construction has a very distinct bearing on the clinical importance of the condition.

The favorite site is at the mesenteric attachment, the dilatation lying between the layers of the mesentery. They do not, however, always occur at that point, as cases have been reported in which they were found along the free border of the intestine.

Although found most commonly in and adjacent to the sigmoid flexure, yet they may occur anywhere along the alimentary tract, beginning with the duodenum.

The walls of these expansions are quite thin and transparent as a result of the stretching of the intestinal coats. Large blood vessels are frequently found coursing over their surfaces, and as a rule the diverticula are filled with intestinal contents, the contents varying according to the portion of the canal involved.

When examined microscopically, it will be seen that the wall of the diverticulum is composed of the same coats as is the intestine. The mucosa, although present, is somewhat thinned and shows no folds. The submucosa is present as a narrow zone, while the muscularis will be found to vary greatly in thickness according to the portion examined. Close to the opening into the intestine the muscular coat will be found of practically normal width. It nevertheless rapidly decreases in thickness until the farthest point of the diverticulum is reached, at which locality the muscle, particularly the outer longitudinal layer, almost disappears. In some instances distinct fenestra have been described as being present in the muscularis.

As to the causation of these diverticula various theories have been advanced. One of these, first mentioned by Grasser,¹ is that there is a distinct area of lessened resistance at that point where the blood vessels pass from the mesentery to the intestine. As the internal pressure increases there is a constant tendency of the wall to give at the above-mentioned area, particularly as the vessels are surrounded by a certain amount of fat-bearing connective tissue. In this way the local dilatations occur. There are though some marked weaknesses in this theory, inasmuch that diverticula are found on the convexity of the intestine; also that, if the above were the explanation, muscular tissue would not be found in the wall, which we would expect to consist of mucosa, submucosa and serosa. If diverticula were due to an increase of the internal pressure in the intestine they should be found more frequently, especially in those cases in which there had been a history of long-continued constipation. Such is not the case. In an article by Beer² the question of internal pressure is very fully discussed and it is there shown that such conditions have in all probability very little to do with the matter.

Gordinier and Sampson³ report one case in which during operative procedure thirteen diverticula were found in the small intestine, all on the mesenteric border. These bore a very definite relation to the larger blood vessels passing from the mesentery to the intestine, as in every instance a large blood vessel extended over the surface of the diverticulum. Apparently, they all consisted of serosa, submucosa and mucosa, the musculature being absent. They were therefore considered as hernial protrusions of the mucosa and submucosa through a weakened spot in the wall of the intestine and beneath the serosa of the mesentery.

The objection to the above case is that there was no microscopic examination made and consequently no proof that the muscularis was absent, it not being possible to detect the presence or absence of the muscle by the naked eye.

Leube, quoted by Brewer,⁴ also considers diverticula to be hernias of mucous membranes and says they occur most frequently along the mesenteric border of the bowel.

Another view is that they are due to an abnormal congenital arrangement of the muscular layers of such a character as to weaken the intestinal wall, thus allowing the localized dilatations to occur. The argument against this is that such conditions have been found in adult life only. It seems hardly probable that such a status could exist for so many years without giving some evidence that would be discovered at autopsies held on the young.

Both Telling⁵ and Beer² believe this condition to be due to pathologic changes occurring late in life rather than to an abnormal congenital malformation of the muscularis. Schreiber, quoted by Beer, considers them due to a weakness or a deficiency of the muscular tissue. In this relation two cases cited by Thomson⁶ are of interest. In these the diverticula were the result of localized disease of the ileum, tuberculosis in the one and possibly cancer in the other.

The clinical importance of this condition, as already stated, is gradually being appreciated and at present there are a number of instances reported in which diverticula have caused serious symptoms.

As has been noted, the diverticula are as a rule flask-shaped, the small end being at the opening into the intestine. This in itself allows the intestinal contents not only to gain access readily but also renders it a matter of difficulty for them to escape after having once entered.

The retention of the materials is encouraged by the fact that the muscular coat, weakened to begin with, has gradually become more atrophic as a result of the entrance of the intestinal contents into the sac, this slight but constant pressure tending further to stretch the muscular wall and consequently to diminish its ability to empty the diverticulum. As the contents remain they tend to become more and more solid until the dilatation is filled with a mass of fecal matter acting in the nature of a foreign body.

This stagnation naturally tends to bring about inflammatory changes of greater or less degree. In the great majority of instances nothing serious ensues, but, as can readily be appreciated, the possibility of dangerous lesions is not remote. As the walls of these diverticula are very thin it is not a matter of difficulty for the inflammatory processes to extend, these changes causing trouble in various ways. Neighboring structures may be involved, adhesions may be formed with consequent obstruction of the intestine or perforation may occur with its concomitant symptoms. These, however, belong more to the realm of surgery and will not be entered into.

The case in connection with these remarks was one in which multiple diverticula of the small intestine were accidentally found at autopsy. The patient was a white woman, seventy years old, suffering from a very extensive epithelioma of the face. When the intestines were examined there were found in the upper part of the ileum, about three feet from the pylorus, about twelve diverticula extending between the layers of the mesentery. These varied greatly in size, from less than 1 cm., to the largest, which was 2 cm. in thickness, 4 cm. in length and protruded 3 cm. beyond the intestinal wall. In all instances the diameter of the opening into the intestine was considerably less than the greatest dimension of the diverticulum. Large blood vessels passed over some portion of the dilatations but the im-

1. Grasser : München. med. Wchnschr., 1899, No. 22.

2. Beer, E. : Am. Jour. Med. Sc., 1904, cxxviii, 135.

3. Gordinier, H. C., and Sampson, J. A. : Diverticulitis (Not Meckel's) Causing Intestinal Obstruction, THE JOURNAL A. M. A., May 26, 1906, xvi, 158.

4. Brewer, G. E. : Am. Jour. Med. Sc., 1907, cxxxiv, 482.

5. Telling, W. H. M. : Brit. Med. Jour., 1908, ii, 1346.

6. Thomson : Brit. Med. Jour., 1908, i, 623.

pression given was that there was no causal relation. All the diverticula were distended with semisolid fecal matter.

The microscopic examination of one of the smaller diverticula showed that the cavity communicated with the intestinal canal by means of a small opening. The inner lining was composed of very thin layer of mucosa which in no place presented any folds. The submucosa was almost completely obliterated, the major part of the wall being formed of circular muscle fibers covered by serosa. The bundles of longitudinal muscle were absent except at the very base of the diverticulum.

The blood vessels in the wall were numerous but small and flattened to a considerable extent. They were all filled with blood.

A few scattered small round cells were visible in the submucosa but not in sufficient numbers to indicate any inflammatory reaction.

The general appearances were such as would suggest that the dilatation was due to the presence of an area in the muscular tissue that was unable to perform its duties. As a result there occurred a gradual distention with the disappearance of the longitudinal muscle and a thinning of the circular fibers, this becoming more marked the larger the localized dilatation.

The conclusions drawn from the examination of the case described above and a review of literature are that acquired diverticula of the intestine appear in late life as a result of localized weakened areas in the muscular tissue.

There does not appear to be sufficient evidence to warrant the assumption that they are due to congenital abnormalities of the muscularis. Such conditions, moreover, have never been reported as having occurred in childhood.

The theory that they are the result of a relaxation of the intestinal wall at the point where the blood vessels enter also does not seem warranted, particularly as they have been found on the convex surface of the bowel and also as their walls contain muscular tissue. This latter should not be present if the diverticula were merely hernial protrusions of the mucosa and the submucosa.

The weakening of the muscular coat in adult life, the theory advocated by Beer and Telling, seems therefore the most reasonable.

THE SYSTEMATIC EXAMINATION OF THE URINE FOR THE RARER ALBUMINOID BODIES

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A number of bodies more or less closely resembling serum albumin are at times to be found in the urine, and, while albumin is, of course, always looked for, and the rarer substances resembling it (with the possible exception of nucleo-albumin) are seldom present, yet there can be little question but that even when they are, they are as often overlooked as noted. Of late years the reactions pertaining to this class of rarer bodies have been rendered easily available through collection in standard works, but it would seem that more attention might have been given to plans for a systematic examination of urine for all albuminoid bodies. Great ingenuity has been displayed in devising "tests" by which, if anything but the substance sought is present, the analyst

will not find it. The systematic covering of ground that will show something out of the ordinary when such exists, however, has been neglected. This lack of system is unscientific and the methods more complicated than necessary, as it is only requisite to use—in proper order—reactions already well known, to classify on a working basis all recognized albumin-like bodies to be found in the urine.

I have used the following scheme of analysis in the main for the past six years as a matter of routine. No claim for originality is made for any single step; there is nothing but a grouping of well-known reactions, by which the presence of urinary proteins will be detected. It is in no sense a complete scheme of analysis and aims only to classify broadly, leaving the final identification of the substance a matter for full study based on some standard work or works on clinical diagnosis.

Any examination for bodies of this class presupposes chemically pure acetic acid and clear urine; if the urine is turbid and the matter in suspension passes through the filter-paper, it will be well to mix with the urine a small quantity of magnesium carbonate in fine powder, allow the mixture to stand for a few minutes, and then filter; this, with possibly one or more repetitions, will give a clear specimen.

No. 1.—A portion of the clear urine in a test-tube is acidified with acetic acid; a clouding indicates nucleo-albumin. If a precipitate forms, it should be filtered.

No. 2.—A. A portion of the filtrate from No. 1 (or if No. 1 be negative, the clear acidified urine) is added slowly to a portion of a saturated solution of common salt, a precipitate may be any of the following—any albumose (except deutero-albumose), histon or globin.

B. If a precipitate is not formed, the addition of urine is continued until it is in excess of the salt solution; the upper third is shaken and boiled; a clouding indicates serum albumin.

C. If a precipitate is formed, it should be filtered, care being taken that the urine has not been added beyond the point at which it is saturated by the salt solution. The filtrate should be boiled. A clouding indicates serum albumin.

D. If a positive reaction is had in A, it is my practice first to saturate a portion of the original urine with saturated salt solution without adding acetic acid, to determine whether a precipitate is formed in neutral solution, and, second, to determine whether the body present is one of which loosely combined sulphur is a characteristic, using Boston's method.¹ (By this method equal parts of urine and saturated solution of salt, rendered strongly alkaline with potassium hydrate, are boiled in the upper third, and 10 per cent. lead acetate added, drop by drop, while the boiling continues, a heavy black precipitate showing loosely combined sulphur.)

No. 3.—A few drops of the original urine are added, a drop at a time, to a considerable quantity of clear water. Milky streaks in the track of the drops indicate globulin (Roberts' method).

No. 4.—A. A portion of the original urine is acidified with acetic acid and filtered; the filtrate is then rendered faintly alkaline with ammonium hydrate and boiled for a few minutes, then filtered. The filtrate may contain peptone or deutero-albumose.

B. The second filtrate from A is saturated with ammonium sulphate and boiled. A white precipitate indicates deutero-albumose (yellow or brownish ammonium urate).

1. Boston: A Rapid Reaction for Bence-Jones Albumose, *Am. Jour. Med. Sc.*, April, 1903.

C. B is filtered and filtrate examined for peptone; if deuterio-albumose has been found, the saturation with ammonium sulphate must be complete and the boiling decided to assure its separation.

The reasons for the steps outlined are:

Of the class of bodies under consideration nucleo-albumin alone is precipitated by acetic acid; hence the step in No. 1.

The remainder of the class with the exception of serum albumin, globulin, deuterio-albumose and peptone, are, in the presence of acetic acid, precipitated by the addition of sodium chlorid to saturation. It will be noted that one has as a result of step No. 1 a clear acidified urine, and if this is added slowly to a saturated solution of salt it follows that the conditions of the above proposition are fulfilled, as the salt is present to saturation until urine is added to excess. Among the bodies reacting to this step (No. 2, A) will be found the rarest and most interesting of the entire class.

Saturation with neutral salt precipitates a part of the group only; hence the step in No. 2, D, by which a further subdivision is effected.

Among the bodies giving the sulphur reaction is found the interesting Bence-Jones albumose.

Of the four bodies that may remain in solution after saturating the urine with sodium chlorid in the presence of acetic acid, peptone and deuterio-albumose are soluble in hot or cold solution, irrespective of the presence of sodium chlorid or acetic acid. Globulin is held in solution by acetic acid; therefore only serum albumin can be precipitated by heat in No. 2, B and C.

Of the bodies that may be in solution in the original urine, globulin alone will be thrown down by diluting with water; hence the Roberts test.

In No. 4, A, the urine is cleared of possible nucleo-albumin by acetic acid and filtering, neutralized that globulin, if present, may not be carried over, and boiled; deuterio-albumose and peptone remain in the filtrate, the deuterio-albumose is thrown down by saturating with ammonium sulphate (if present), and removed by filtering, when any remaining protein must be peptone.

The foregoing, no doubt, sounds complicated, but in reality it is not, as in the vast majority of cases nothing, unless it be serum albumin, will be found. Even nucleo-albumin in appreciable amounts is a rarity. In the average case one acidifies a little urine in a test-tube, adds it slowly to some saturated salt solution in another tube (with a negative result in both cases), continues the addition of the urine until it is in excess, shakes and boils in the upper portion, demonstrating serum albumin if present. It takes but a moment more to add a few drops of the filtered urine (original) to water in order to test for globulin, and the analyst has demonstrated that with the possible exception of deuterio-albumose or peptone (which he may look for or not, as he sees fit) no albumin-like bodies are present.

On the contrary, if some one of the rarer albuminoids is present, particularly if among the albumoses, it may require considerable work to identify these. The details of such examinations are beyond the scope of the present paper, and must be worked out for the case in hand.

It will be noted that the scheme of analysis proposed is little else than a modification of Purdy's² salt and acetic acid test for albumin, but with the order in which the reagents are added reversed, thereby inviting the reactions the original method seeks to obscure.

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Therapeutics

SUGGESTIONS FOR THE PHARMACOPEIA OF 1910

USEFUL DRUGS OF THE PHARMACOPEIA OF 1900

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MINERAL ASTRINGENTS (CONTINUED)

Cerium oxalate is a much over-lauded and over-estimated gastric sedative. It is an insoluble salt, and the powdered drug often contains hard crystals. It is possible that irritation from it may stimulate to normal secretion an anemic stomach. In other words, slight irritation from it would be the only possible reason of its doing any good whatsoever in reflex vomiting in which the mucous membrane of the stomach was anemic. Any other mechanical irritation would do as well. It is a prolonged and perpetuated fallacy to believe that it is a specific in vomiting of pregnancy. Other drugs that are used with it, or the inherent tendency to improve later in the day, or in a few weeks to get over such nausea, is the reason that it has so long been believed to be of value.

As an astringent in inflamed conditions of the mucous membrane of the stomach it is vastly inferior to bismuth preparations, and to be of any value it must be used in doses as large as those used of bismuth preparations, viz., 0.50 to 1.0 gram (7½ to 15 grains). The dose of 0.05 to 0.20 gram (1 to 3 grains) generally prescribed is really absurd, and can only do good psychologically. This drug is not needed in the next Pharmacopeia.

There is no use for lead internally, except possibly as an astringent for the intestines in chronic inflammation, but it is the general belief that other astringents are much better and safer. In other words, probably lead should not be used at all internally. If it is used, acetate of lead is the only preparation given internally, and the dose is 0.065 gram (1 grain). Externally the liquor plumbi subacetatis, well diluted, may be used as a sedative astringent lotion to an inflamed, irritated skin where there are no raw surfaces for absorption. The official liquor plumbi subacetatis dilutus is too weak to be of any value, and should be omitted from the Pharmacopeia, as the liquor plumbi subacetatis may be diluted to meet any strength desired. This is a 25 per cent. solution of lead acetate, and should be diluted, depending on the part to which it is applied, to from 5 to 10 per cent. of it, in water.

There is no need for the iodid of lead, and it should be omitted from the Pharmacopeia. The same is true of lead nitrate and lead oxid.

STOMACHICS

The drugs used to increase the appetite are mostly bitters. While any bitter will cause such stimulation, whether the drug is an alkaloid or one with strong systemic activities, the pure stomachics are generally selected for this purpose, and are what is termed the "simple vegetable bitters." There are too many of such in the Pharmacopeia. Small doses of much-used and well-known drugs are entirely sufficient for the purpose desired.

One of the best of these is the compound tincture of cinchona, in teaspoonful doses, taken with a little water, before meals. If a larger quantity of the bitter is desired, it is well to select an elixir of calisaya, in table-

2. Purdy: Practical Urinalysis and Urinary Diagnosis.

spoonful doses, in water, before meals. Large quantities of any bitter are not advisable, as it has been shown that, while they stimulate the taking of food, they really inhibit digestion.

Another excellent stomachic is the compound tincture of gentian, in teaspoonful doses, before meals.

Another simple bitter tonic is the tincture of *nux vomica*, in doses of from 1 to 3 drops, in a wineglass of water, taken before meals. There will be no strychnia stimulation from this small dose of *nux vomica*, but the bitter is as effective as that of any other stomachic.

Salicin, in small doses, from 0.25 to 0.30 gram (4 or 5 grains), taken before meals, has been considered a good bitter tonic. This has also been supposed to have some slight antirheumatic powers; but, if rheumatism is really present, stronger antirheumatics are needed.

The frequent tonic combination of a capsule containing arsenic, strychnia, iron, and quinin is of value as a bitter tonic, because the quinin is excreted more or less in the saliva, and, by the time for the next meal, food, and especially water drunk, will give a bitter taste in the mouth, and will have all the desired effects of a bitter tonic. The whole four, or any two or three of these drugs in combination, makes a valuable simple tonic, as:

R.	gm.	
Arseni trioxidi	04	
Strychnine sulphatis	04	āā, gr. 2/3
Ferri reducti	1	or gr. xv
Quinine sulphatis	2	gr. xxx

M. et fac capsulas siccas 20.

Sig.: A capsule three times a day, after meals.

It should be remembered that, because a patient has no appetite, is not a positive indication that a bitter tonic before meals is needed, or advisable. If a patient has gastritis, bitter tonics before meals are inadvisable, as such will increase his aversion to food. The inflammation must be first subdued, and he will do better with bismuth and soda before meals as a stomach sedative than with a bitter tonic before meals.

Not a small part of the good effects of the bitter tonic taken before meals is probably due to the stimulation of the alcohol which they contain. In other words, a patient takes, or is given, a cocktail. This little amount of alcohol is probably often of benefit and can do no harm, but to advise a patient, except in rare instances, to take a little whiskey or other alcohol before meals as a stomachic is reprehensible. In the first place, the good that it does is only temporary, and the harm that it may do may be permanent. In the next place, even the amount of alcohol thus taken may be sufficient to inhibit the digestion for hours, although a little alcohol may make the digestion more rapid. A little bitter sipped through a meal, as a little port or stout (and this means a small glass of each), may be in some instances advisable, but the advisability of such treatment should be carefully decided on.

When it is considered that something to stimulate the appetite is needed, as above stated, the presence or absence of gastritis must be determined, and, if present, the loss of appetite must be very differently treated from loss of appetite from an anemic condition of the stomach. It should also be determined whether there is an increase of hydrochloric acid in the stomach or a diminution of it. In the first instance, a regulation of the diet with a more or less complete withdrawal of salt from the food, the administration of plenty of water, and the taking of more oils and fats (cream, butter and olive oil) will improve the condition. If there is a diminished secretion of hydrochloric acid (and many times an increase or diminution may be determined

without recourse to the test breakfast), the administration of 5 drops of dilute hydrochloric acid, in one-third of a glass of water, three times a day, after meals, will markedly increase the appetite.

There are a number of other simple bitters which are not needed in the Pharmacopeia. No one of them can do anything in the stomachic line that cannot be done by the drugs and preparations above named. Berberis is not needed; nor is its fluidextract. Calumbo may be omitted as well as its fluidextract and its tincture. Chirata and its fluidextract should not be in the Pharmacopeia.

The multiplicity of useless and needless preparations should be omitted. There is no need of fluidextract of cinchona; and, while speaking of this, it may be stated that there is no need for cinchonin sulphate, and, since quinin has become so cheap, probably cinchonidia is not needed, as it is probably doubtful that when there is idiosyncrasy against quinin there is no idiosyncrasy against cinchonidia.

Eucalyptus and its fluidextract are not needed. The oil of eucalyptus and eucalyptol will do all, medicinally, that eucalyptus can do either as stomachic, antiseptic, or expectorant.

It seems unnecessary to standardize and load up the Pharmacopeia with crude drugs that are never assayed in drug stores, are rarely found there, and are probably not assayed by pharmaceutical firms. The main object is to have the preparation, the oil of eucalyptus for instance, up to the standard required by the Pharmacopeia, and this is the preparation generally that is found in drug shops. These remarks about eucalyptus are equally true of a large number of the Galenic drugs.

The only use for quassia to-day is as a rectal injection of a fresh infusion when pinworms are present. There is no necessity for the fluidextract of quassia, the tincture of quassia, or the extract of quassia. In fact, the extract of any bitter tonic, for internal administration, defeats the object for which it is administered, as unless the pill or capsule is dissolved in the mouth, the bitter taste is lost, and in the stomach it is inactive. This would render the extract of gentian unnecessary in the Pharmacopeia.

Serpentaria and its fluidextract are not needed. Taraxacum (dandelion) and its extract and fluidextract are certainly not needed. It has no peculiar properties different from any other bitter, and it is probably much inferior to the bitters above recommended.

Hydrastis has no wonderful peculiar healing properties to the mucous membrane of the stomach. It is disagreeable to take, and has nothing to recommend it over other simpler and pleasanter treatments. Externally, on mucous membranes, its fluidextract and its decolorized fluidextract have been used as injections for the urethra, vagina, etc., but its value is doubtful. There is no need for the tincture.

(To be continued)

The Humanity of Animal Experimentation.—Millions of animals, birds, and fishes are tortured and slain every year to provide food, clothing, and mere sport for mankind, and the zoophilists say nothing; but when a few hundred or a thousand animals are sacrificed for the sake of knowledge that will save the lives of countless children and avert destructive epidemics, a cry of pain goes up, and the lawmakers are prayed to arrest the progress of medical science. They will not do it, of course, they cannot do it, for the great mass of humanity is sane, but the periodical agitation against animal experimentation is none the less distressing to the lovers of their kind.—*New York Medical Journal*.

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THE WASSERMANN REACTION IN PROSTITUTES

The wide-spread influence of syphilis on human pathology was well appreciated before we had the help of serologic methods of diagnosis; but with the added ability to diagnose masked and latent syphilis conferred by the Wassermann method and its modifications, we find that our views of the importance of syphilis were under the mark more often than ever.

A somewhat unusual application of the serum reaction is in the study of the occurrence of syphilis in prostitutes, and the results are of much significance. Of one hundred registered prostitutes in Cologne investigated by Dreyer and Meirowsky¹ the presence of syphilis could be established by the history in fifty-six, of whom but one showed manifest lesions at the time of the examination. Among the forty-three remaining who gave neither history nor clinical evidences of syphilis, no less than thirty-two gave a positive serum reaction for syphilis, while forty-five of the fifty-six women known to be infected reacted positively. From this it would seem that, although a very small proportion of prostitutes will show active syphilitic lesions when examined, yet in reality from 83 to 89 per cent. are or have been infected. Furthermore, in this series, of the few that were not syphilitic, none had been registered more than three years, and all but three had been registered for less than a year; this agrees with the experience of Sperr with the registered women of St. Petersburg, that scarcely any of the prostitutes of that city escape syphilis. It would seem doubtful, therefore, if a natural immunity to syphilis often, if ever, exists, since practically every prostitute acquires the disease within the first three years of her exposure.

These observations also emphasize the frequency of lues ignorata, which is known to be especially common in women, since in thirty-two of the eighty-nine positive cases of syphilis no history of its manifestations could be obtained. It is well known that a time comes for each syphilitic when spirochetes are still present which may do the host harm, but which seldom are transmitted to others; and by thousands of observations it has been established that this infectious stage has an average duration of three or four years. This fact must be taken into account in considering the results of syphilis in

prostitutes, for it is certain that not all of them transmit infection all the time that they give positive serum reactions. On the other hand, the absence of manifest lesions of syphilis certainly does not prove inability to infect, since but two of the eighty-nine syphilitic women in this group showed lesions on examination. Those physicians who are responsible for examination of prostitutes in communities where legal regulation of prostitution is established have a difficult task to find the limits of the region of safety in view of such wide boundaries as are offered by the 2 per cent. of women with active lesions and the 83 to 89 per cent. with positive serum reactions; while anyone who is called on to decide the question of fitness of a syphilitic for marriage will find food for reflection in these statistics.

A NEW TREATMENT OF SPASTIC PALSIES

Nowhere in neurologic medicine has the physician felt himself more helpless in alleviating human ailments than in the treatment of spastic palsies, especially of children. Once the severe brain injury is induced at birth, rigidity and deformity, and perhaps idiocy, result with more or less certainty. To remedy these effects the general surgeon has endeavored to remove brain clots in infants at the time of meningeal hemorrhage; the pediatricist has striven unequally by hygienic training to ward off the blight of subsequent non-development; and the orthopedist employs various ingenious devices and operations against segmental deformity and palsy. Their efforts have been followed by a measure of success but no great relief, and spasticity especially has always been least relieved. Further, while cutting the motor part of the reflex arc relieves contraction temporarily, it produces complete paralysis of muscles involved. Section of peripheral nerves cuts off both motor and sensory impulses. Even injection of alcohol into isolated nerves (as suggested by Schwab) is found inadequate for the permanent relief of spasticity. The desideratum was a measure which would afford cortical rest and spastic release at the same time.

A new method of treating spastic conditions has recently been devised, namely, resection of the posterior spinal nerve roots. This bids fair to mark a decided advance in neural surgery and is worthy of more than passing notice. It is generally admitted that the degree of muscle tone in an extremity is determined by the sensory impressions from the parts and especially from the muscle spindles. Tonic spasm in a muscle or limb may be regarded as an augmented degree of this state due to various causes. In the cerebral palsies of children there is, as a result of damage and destruction of the superior pyramidal tracts, a twofold motor disturbance in the extremities, namely, both a contraction and a weakness of various muscles. Most of the operations thus far devised for relief of this have been undertaken to restore the proper balance in the lower spinal reflex arc. That there is present in these cases a diminished motor

1. Dreyer and Meirowsky: Deutsch. med. Wchnschr., 1909, xxxv, 1698.

supply to the muscles and a full sensory influx to the cord seems to be obvious. But why surgeons should have addressed themselves so unanimously to the motor side is not so easily understood. Muscle stretching and fixation, muscle and tendon cutting, muscle transplantation and even neuroplastic operations have all been employed with the object of either weakening the peripheral or heightening the energy of the cortical motor neuron, and never addressed to the sensory side. The long-known fact that the reflexes are lost when tabes supervenes on a pyramidal tract lesion should have paved the way earlier, perhaps, for a solution of the spastic problem in cerebral palsies. It was really pointed out several years ago, by Fraenkel and others, that relief from spasticity was possible from the sensory side. Fraenkel noted that the moderate injection of stovain in the spinal canal in a helpless diplegic boy enabled the patient to walk about for a few minutes during the action of the drug.

Foerster and Tietze¹ of Breslau, however, were the first to add a sensory disorder to an existent motor disease, in order to restore the balance in the lower spinal reflex arc in spastic palsies. Two years ago they resected posterior spinal nerve-roots in five cases of spastic paraplegia. Their work was closely followed by Gottstein² in two cases, by Clark and Taylor³ of New York in three cases, and later by Spiller and Frazier⁴ of Philadelphia. The results thus far from these operations have been surprisingly good. Foerster and Tietze, and Gottstein, removing alternate sensory roots in the lumbar enlargement, obtained a lessening of spasticity. Apparently their after-treatment was poor and inefficient for various reasons. In conjunction with the Clark-Taylor operations, Taylor used a unique method of approach to the spinal cord roots, devised by him, namely, unilateral laminectomy. This is a quick and comparatively bloodless operation and affords a good view of the nerve roots and cord. Even the nerve-roots of the opposite side can be easily reached in this operation. Several consecutive roots were cut either in the cervical or lumbar enlargements, depending on the part to be relieved. Data are at hand to show that this operation permanently relieves spasticity. Isolated movements, such as adduction and flexion of the foot, are again possible, and neither atony nor loss of reflexes supervenes. There is evidently need of careful selection of patients for this operation. The relation of spastic and parietic elements should be carefully noted in each case; also the degree of cooperation which the patient can provide, for the important after-treatment of reeducation of muscle movements, hygienic training, etc.

The considerable overlapping in the skin of the segmental supply of individual nerves is shown in a case of

Clark and Taylor's in which, after resection of the twelfth dorsal to the fifth lumbar roots, inclusive, no loss in sensation could be detected. It will be interesting to note the effect of sensory root resection in those hemiplegics in whom epilepsy has been superadded. The latter disease ought to undergo modification if the old conception that hemiplegic epilepsies are due to an excess of sensory influx from the periphery is accepted.

All the workers in this special field of neurologic surgery insist on the importance of after-care and training. Myotomies and tenotomies may still be required for contractures, which, of course, are not relieved by removing spasticity. The whole work is novel and unique in neurologic surgery. And while it is hardly beyond the experimental stage, it merits our earnest attention and support, as being the most comprehensive and fundamental conception of spastic palsies and their surgical betterment which has been brought forward in recent years.

ELECTRIC SLEEP

From time to time articles have appeared in the lay press on the application of electricity for general anesthesia; and the idea has been so novel that naturally it has attracted attention. Though highly colored, these reports have had some basis in the experiments of Stéphane Leduc, professor of physiology in the medical school at Nantes, described more fully in *THE JOURNAL*, April 6, 1907, page 1221.

Before Leduc's work it had been demonstrated by Erb in 1867 that electric currents could be made to pass into the brain-substance. Erb's work was done on the cadaver, the skull being opened and a small galvanometer placed within the brain; passage of the current invariably deflected the galvanometer. Fritsch and Hitzig later showed the regional excitability of the brain to the current, but it remained for Leduc to demonstrate in 1902 the possibility of the electric penetration of the intact cranial vault. He accomplished this result by means of a wheel interrupter so arranged that it delivered a series of successive shocks, each of one one-thousandth of a second duration, a passive period intervening of nine one-thousandths of a second. In the lower animals he produced with this current an inhibition of the activities of the cerebral centers, leaving the respiratory and circulatory centers intact, thus causing a condition characterized by loss of voluntary movements and the presence of general anesthesia, to which he gave the name "electric sleep."

If a general anesthesia could be safely and readily induced in the human being by the electric current it would seem to have certain advantages over drug narcosis. If the Leduc current could produce readily and invariably a safe general anesthesia, if it could be accurately regulated as to dosage, and if it left no unpleasant sequelae, it would, indeed, be welcomed in the operating-room.

1. Foerster and Tietze: *Ztschr. f. orthop. Chir.*, Oct. 22, 1908.

2. Gottstein: *Berl. klin. Wchnschr.*, 1909, No. 17.

3. Clark and Taylor: Paper read at the New York Neurological Society and at the New York Pediatric Society, October, 1909.

4. Spiller and Frazier: Paper read at a joint meeting of the Philadelphia and New York Neurological Societies, December, 1909.

It was with the purpose of applying the current, if possible, to practical surgical work that Dudley Tait and Raymond Russ¹ began a series of experiments a year ago at the University of California Hospital. Prior to their work the problem had been studied principally from the physiologic point of view by Leduc, whose experiments were subsequently repeated by Robinovitch of New York. Tait and Russ found that in certain instances they could obtain a satisfactory anesthesia in the lower animals, but that the difficulties of manipulation were so many that they did not allow the application of the method in animal experimentation. In dogs they were able to produce, by means of this current, a general analgesia without loss of consciousness; this they tested many times by cutting down on the large nerve trunks and clamping them with hemostatic forceps—the supreme test for analgesia. The method was not without its dangers, and they found that respiration could be easily stopped by a sudden change in current strength or by certain positions of the terminal electrodes.

After trying the action of the current on themselves, they carried out their experiments on others, but in none of the twenty-four trials on man were they able to obtain any phenomena suggestive of sleep. In one man they obtained a general cutaneous analgesia with a very low strength of current. Many experiments were performed to rule out the psychic element which was thought to be present. On one occasion, analgesia having been established, an extensive incision was made for a phlegmon of the hand.

While the applications of this peculiar current as yet have but little practical value, they are not without scientific interest.

MEDICAL EDUCATION IN BRAZIL

It has been generally known that in Spanish-American countries the necessity for maintaining a high standard of professional education in both law and medicine was early appreciated, and that the laws regulating these questions were carefully drawn up. A good preliminary education, sometimes even a university degree, was required for admission to the medical department of universities and five years of the study of medicine demanded, though this was afterward increased in some of the countries to six and even seven years of required medical study. We have known less about the Portuguese portions of America because the language is less familiar to Americans of English descent, as a rule, than Spanish. Some interesting information on this subject has been supplied by the sketch of "The Evolution of Medicine in Brazil," which was read before the Fourth Latin-American Medical Congress, held in Rio de Janeiro last August.²

As everywhere else in South America and in Mexico, the first colonists from Europe found a much higher state of medical knowledge among the natives than they expected. It was not long before the educated men who came to Brazil found that the Indians possessed knowledge of drugs, efficient for the cure of the special diseases of the country, which were unknown in Europe. A careful study by missionaries of the various remedies employed by the Indians led to the discovery of several important drugs, including cinchona. Some of the missionary letters and histories contain details as interesting as any we have with regard to corresponding matters in Mexico and other portions of Spanish America. In Rio de Janeiro for several centuries, practical lessons in the care of patients were given in a hospital located on the site now occupied by the Misericordia Hospital.

During the eighteenth century there was very close intercourse between Brazil and the mother country and most of the physicians of Brazil were graduates of the University of Coimbra in Portugal. At the beginning of the nineteenth century a school of surgery was founded at Bahia; and in 1808, with the transfer of the capital from Bahia to Rio Janeiro, a school of anatomy, surgery and medicine was founded in the latter city. The decree of foundation declared that it was for surgeons who did not know anatomy, physiology and medicine, as well as for those who proposed to become physicians. At this time five years of medical studies were required and the candidate had to have a definite amount of preliminary education. Each twenty years thereafter an increase of the required studies was made. In 1832 a law was passed requiring that medical students should know Latin, French or English, philosophy (under which term physics was then included), arithmetic and geometry, and that there should be six years of medical studies. During the first year medical physics, botany and the elements of zoology were studied; during the second year, general and descriptive anatomy, medical chemistry and mineralogy; during the third year, anatomy and physiology; during the fourth year, external and internal pathology, materia medica and pharmacy; during the fifth year, operative medicine, the use of instruments in labor and the diseases of women and of the new-born; and during the sixth year, legal medicine, hygiene and the history of medicine. Clinical surgery and clinical medicine occupied a good many hours during the last three years of the course. In 1854 the departments of the medical school were increased from fourteen to eighteen and in 1882 to twenty-six. In 1891 toxicology and clinical teaching were required by law.

In a word, the medical teaching in Brazil throughout the course of the nineteenth century has maintained a high standard of professional knowledge and has made the Brazilian physicians, as a rule, men of scholarly attainments and thorough training. Dr. Senn noted this high standard in all parts of South America, and particularly in Brazil. From a lack of legal regulation

1. Tait and Russ: Electric Sleep, THE JOURNAL A. M. A., Nov. 13, 1909, p. 1611.

2. Esboço Sobre a Evolução da Medicina no Brazil, Rio de Janeiro, Imprensa Nacional, 1909.

we missed a corresponding development in the United States and have had to crowd into a short quarter of a century most of our advance. Now that the work has been taken up, however, the reports of what was accomplished in other countries, and American countries particularly, must prove a valuable incentive.

Medical News

DISTRICT OF COLUMBIA

Bust Presented to Smithsonian.—As a memorial of the introduction of anesthetics in surgery, Dr. William James Morton has presented to the Smithsonian Institution a bronze bust of Dr. William T. C. Morton.

Personal.—Dr. W. P. H. Habel, resident physician of Casually Hospital, has resigned and will locate in West Virginia, and has been succeeded by Dr. Charles J. Boehs.—Dr. Thomas Morgan, Washington, was knocked down by a street car, January 2, sustaining concussion of the brain and lacerations of the scalp.

Tuberculosis League Meets.—At the annual meeting of the District of Columbia Association for the Prevention of Tuberculosis, the following officers were reelected: Brigadier General George M. Sternberg, M. C., U. S. Army, retired, president; Brigadier General William H. Forwood, M. C., U. S. Army, retired, vice-president; and Drs. William C. Rives, E. C. Schroeder, and James D. Morgan, directors.

ILLINOIS

Fire in Hospital.—A fire, December 19, at the Watertown State Hospital, totally destroyed the amusement hall of that institution, causing a loss of about \$10,000. No casualties to patients resulted.

Local Medical Society Organized.—The physicians of Cuba have formed an organization and elected Dr. David S. Ray, president, and Dr. Veda C. Murphy, secretary. All of the practitioners of the city have enrolled as members.

Ready to Turn Hospital Over.—The trustees of the Illinois Western Hospital for the Insane, Watertown, met December 30, and made their final reports and arranged details for turning the hospital over to the State Board of Administration.

To Honor Dr. Webster.—A medical science room in the Evanston Public Library has been established by friends of Dr. Edward H. Webster, in his honor. The room will contain the Christopher Library, the Brayton Collection, and the new endowment provides \$3,000 for the support of a library on general medicine, and not less than \$1,500, the income of which is to be used for the maintenance of the room.

State Hospital Physicians Dismissed.—The State Board of Administration, on January 4, ordered the discharge of Dr. George W. Mitchell, first assistant physician, and Dr. J. G. Oosterbeck, second assistant physician of the Peoria State Hospital, who were charged with negligence in the performance of duty, and who failed to respond to the request of the state civil service commission for their resignation.

New Charities Commission.—The governor on December 31, reappointed Drs. Frank Billings, Chicago, and John T. McAnally, Carbondale, Rev. Emil G. Hirsch, Chicago, and Messrs. John M. Rapp, Fairfield, and John D. Harris, Champaign, members of the State Board of Charities as the new State Charities Commission. At the first meeting of the commission, held January 8, Dr. Frank Billings, Chicago, was elected president, and Mr. William C. Graves, secretary of the old commission, was appointed executive secretary. The secretary was instructed to map out a plan whereby the work of the commission may reach not only the seventeen state charitable institutions, but beyond to every county poor house and jail in the state.

Reappointments.—Under the new board of administration of charities, the following superintendents of charitable institutions have been reappointed: Dr. Vaclav H. Podstata, Elgin State Hospital; Dr. Frank P. Norbury, Kankakee State Hospital; Dr. Henry B. Carriel, Jacksonville State Hospital; Dr. William L. Athon, Anna State Hospital; Dr. Warren E. Taylor, Watertown State Hospital; Dr. George A. Zeller, Peoria State Hospital; Dr. C. P. Henderson, Chester State Hospital, and Dr. Harry G. Hardt, Lincoln School and Colony.

Personal.—Dr. Percy E. Hofmann, Jacksonville, was accidentally shot through the right foot, January 3, while hunting, the injury necessitating amputation.—Dr. W. P. Short, Mason City, ninety-two years of age, is reported to be seriously ill at St. Clara's Hospital, Lincoln.—Dr. Emil Lofgren has been elected president, Dr. Don A. Vanderhoof, vice-president, and Dr. George P. Gill, secretary-treasurer of the staff of St. Anthony's Hospital, Rockford.—Dr. and Mrs. Walter Ryan, Springfield, have left for the east, and will sail in June for Europe, where they expect to remain a year.—Dr. Thomas M. Aderhold, Ziegler, has decided to locate in El Reno, Okla.

New Factory Law in Force.—The new factory law which requires employers to promote the health, comfort, and safety of their employees, went into effect January 1. The law provides for the protection of employees against machine injury, by enclosed hatchways, elevators, etc.; the keeping of premises in clean sanitary condition, of equal temperature; and with toilet facilities, and prohibits the taking of food into rooms where poisonous substances are present; prescribes the removal of poisonous or noxious fumes as far as practicable, and a report to the state factory inspector of all accidents or injuries resulting in death. Failure to comply with any provision of this act is punishable by a fine of from \$10 to \$50 for the first offense, and from \$25 to \$200 for the second.

LOUISIANA

Projected School of Tropical Medicine.—A movement is on foot among physicians of New Orleans to establish a school of tropical medicine at Tulane University. The project has as yet taken no definite form, but is said to be endorsed by the president and members of the faculty generally.

Medical Staff Appointed.—At the recent meeting of the board of managers of Touro Infirmary, New Orleans, the following medical staff was appointed: Department of surgery, Dr. Rudolph Matas, senior; and Drs. Albert J. Mayer, Abraham Nelken, Herman B. Gessner, and Lucien H. Landry, juniors; department of gynecology, Dr. William Kohlmann, senior, and Drs. Milton Shlenker, Jacob W. Newman, and Joseph Conn, juniors; department of medicine, Dr. Joseph D. Weis, senior, and Drs. Isaac I. Lemann, Sidney K. Simon, and Charles L. Eshleman, juniors; department of eye, Dr. Marcus Feingold, senior; department of ear, nose and throat, Dr. Charles J. Landfried, senior, and Dr. Arthur I. Weil, junior; department of skin, Dr. Joseph N. Roussel, senior; department of neurology, Dr. Roy M. Van Wart, senior, and Dr. J. T. O'Ferrall, junior; department of pediatrics, Dr. William W. Butterworth, senior, and Dr. L. R. DuBuys, junior; department of radiology, Dr. James B. Guthrie, senior; department of orthopedics, Dr. Paul A. McIlhenny, junior; and department of pathology, Dr. Frazer B. Gurd, junior.

MAINE

Antituberculosis Association Organized.—Bangor has recently formed the Bangor Tuberculosis Association for the prevention of tuberculosis. The president is Henry L. Griffin, and the consulting board of physicians consists of Drs. Galen M. Woodcock, Daniel A. Robinson, William E. Fellows, William C. Mason, Bertram L. Bryant, William C. Peters, Jarvis B. Woods and Harold H. Crane.

Will Pay Part of Debt.—At a special meeting of the trustees of the Maine State Sanatorium, held in Portland, December 29, an offer was made by a gentleman residing out of the state to pay one-fourth of the entire debt of the sanatorium, provided friends of the institution will pay up the balance on or before March 1, 1910. He furthermore offers provided this debt is paid, to place in the hands of the trustees a large endowment fund for the benefit of the sanatorium. The offer was accepted by the trustees and steps are being taken to raise the desired amount.

MARYLAND

Large Bequest to Hospital.—By the will of the late William E. Watts, Funkstown, who died recently in Baltimore, the Washington County Hospital receives an immediate bequest of \$20,000 and a residuary legacy of about \$40,000.

The Jewish Home for Consumptives.—The Jewish Home for Consumptives, Reisterstown, now has forty beds, all of which are occupied, and a cottage is to be added in the near future which will increase the accommodation to fifty patients.

Personal.—Dr. J. McPherson Scott was elected president of the Hagerstown Fair Association, January 1, and Drs. W. Preston Miller and Richard H. Smith were elected directors.—Dr. George Wells, clerk of Anne Arundel County Circuit Court, is ill with pneumonia at Annapolis.—Dr. R. A. Shankwiler, assistant resident physician at Endowment San-

atorium, near Baltimore, has resigned to take a similar post at the Antituberculosis Association Sanatorium, Louisville, Ky., and will be succeeded by Dr. Frederick H. Vincup.

Baltimore .

Personal.—Dr. Pierce B. Wilson has returned from Europe. —Dr. Alexander Spear fell from a car January 1, injuring his side and leg. —Dr. C. Hampson Jones, assistant health commissioner, fell on the ice January 5, fracturing a rib.

Additional Accommodation at University Hospital.—The large wing formerly used for a nurses' training school at the University Hospital has been converted into private rooms and wards for maternity patients. One floor is reserved for patients of the Baltimore and Ohio Railroad. By these changes the capacity of the hospital has been increased by about one hundred.

Tuberculosis Nurses at Work.—The nurses authorized by the city council to take up the work against tuberculosis in the health department began their work January 3. The city is divided into fourteen districts and each nurse is given authority to enter houses and enforce the regulations of the health department for the prevention and spread of tuberculosis. Each nurse is equipped with sputum cups, paper napkins, etc., and every physician is required to report cases of tuberculosis that the patients may be visited by the nurses.

MISSOURI

Personal.—Dr. Edward H. Skinner, Kansas City, will return from Europe about the first of next month, and will open his x-ray laboratory. —Dr. Kearan C. Cummins, Maryville, was seriously injured by a fall from the roof of his residence, December 24. —Dr. B. Clark Hyde, Kansas City, is ill with typhoid fever. —Dr. Harvey E. Moss, Kansas City, suffered the loss of his office furniture and fixtures in a fire which consumed the Rialto Building, December 23.

Society Meeting.—Andrain County Medical Society, at its annual meeting, December 18, in Mexico, elected Dr. Paul T. Coil, president; Dr. Edwin S. Cave, vice-president; Dr. Robert C. Strode, secretary-treasurer; and Dr. Josiah G. Moore, delegate to the state association, all of Mexico. —At the annual meeting of Greene County Medical Society, held in Springfield, Dr. Thomas Doolin, Ash Grove, was elected president; Dr. David U. Sherman, Springfield, vice-president; Dr. Thomas O. Klinger, Springfield, secretary; and Dr. Dexter B. Farnsworth, Springfield, treasurer. —At the annual meeting of Grand River Medical Society, held in Carrollton, December 15, Dr. John L. Burke, Laeledge, was elected president; Dr. Rezin C. Shawhan Hale, vice-president; and Dr. Reuben Barney, Chillicothe, secretary-treasurer.

NEW JERSEY

Health Board Elections.—Dr. Clinton D. Mendenhall has been elected city physician of Bordentown. —Dr. James A. Exton has been reappointed health officer of Kearny. —Dr. G. Herbert Richards has been reelected president of the Orange Board of Health, and Selskar M. Gunn, health officer.

Tuberculosis Report.—The managers of the New Jersey Sanitarium for Tuberculous Disease, at Glen Gardner, submitted a report to the governor, December 30. Cures were effected in 30 per cent. of the cases treated, the disease was arrested in 44 per cent., an improvement was shown in 15, and in only 6 per cent. no progress was made. During the year but one patient died.

Fight to Maintain Preventorium.—Nathan Strans, who established a tuberculosis preventorium at Lakewood, against which bitter warfare has been waged, offered, January 9, to give the preventorium \$100,000 cash if it would reestablish the preventorium near Lakewood. He also has declared his intention of continuing at the Cleveland Cottage at Lakewood, at his own expense, the work of saving tenement children from tuberculosis.

NEW YORK

Personal.—Dr. Edward H. Pershing, Lawrence, has succeeded Dr. Louis N. Lanchart, Hempstead, resigned, as a member of the medical board of Nassau Hospital. —Dr. Alexander J. Dallas, said to be the oldest physician in Syracuse, celebrated his ninety-first birthday anniversary, December 31. —Dr. Samuel R. Olliphant, Mount Vernon, has been chosen president of the local board of health.

State Medical Society Meeting.—The one hundred and third annual meeting of the Medical Society of the State of New York will be held in Albany, January 26 and 27, under the presidency of Dr. Arthur G. Root, Albany. The address on "Modern Hippocrates" will be made by Dr. Abraham Jacobi,

New York City. On the evening of the first day a symposium will be held on "Infections of the Middle Ear of Interest to the General Practitioner." On the afternoon of the second day a symposium on fractures will be held, and the annual banquet will occur on the evening of the second day.

Medical Expert Testimony.—The leading medical organizations of this state and many prominent members of the bar have undertaken to have incorporated into the laws of the state a bill to regulate the introduction of medical expert testimony. This same bill was introduced into the assembly in March, 1909, but there was not sufficient time left to give it due consideration and it failed passage at that session. The bill provides that the justices of the supreme court assigned to the appellate division in the several departments should designate a list of physicians and surgeons in each judicial district who may be called as medical expert witnesses by the trial court or by any party to a civil action in any of the courts of this state, and when so called, shall testify and be subject to full cross-examination as other witnesses are. The bill also provides that when so called experts shall receive for their services and attendance such sums as the presiding judge may allow, to be paid at once by the treasurer or other fiscal officer of the county in which the trial is held. It is stated in the bill that nothing in it shall be construed as limiting the right of parties to call other expert witnesses as hitherto. The proposed measure is intended only to regulate testimony in criminal, not in civil suits.

New York City

For the Italian Hospital.—Enrico Caruso has sent \$2,000 to the Italian Benevolent Institute and Hospital in West Houston street. The benefit performance given at the Metropolitan Opera House January 4 for this hospital cleared \$6,500.

Harvey Society Lecture.—The fifth lecture of the Harvey Society course delivered by Dr. Ludvig Hektoen of the University of Chicago, January 15, at the New York Academy of Medicine, is on "Certain Phases of the Formation of Antibodies."

New Tuberculosis Exhibit.—The Charity Organization Society has spent both time and money in enlarging and improving the tuberculosis exhibit which won first prize at the International Tuberculosis Congress at Washington and plans to display this exhibit in every district of the city. It has already been shown in the heart of the East Side, in the financial district and on Fifth avenue near Fifty-fifth street. Lectures and demonstrations are given at stated times and the exhibit is open all day.

Personal.—Dr. William H. Nammack, Far Rockaway, and Walter G. Frey, Long Island City, have been appointed coroners physicians of the Queens Board of Coroners. —Dr. Israel L. Feinberg has been appointed president of the board of coroners and Drs. Philip F. O'Hanlon, Albert T. Weston, Otto H. Schultze, and Timothy D. Lahane have been appointed coroners physicians. —Dr. Charles Phelps has retired as police surgeon and with his wife has sailed for Europe. —The emperor of Germany has bestowed the Order of the Prussian Crown on Dr. Otto G. T. Kilian and the medal and ribbon of the Order of the Red Eagle on Drs. Rudolph C. Denig and Louis Peiser, of the staff of the German Hospital.

Buffalo

Still No Contagious Disease Hospital.—Although the Buffalo Academy of Medicine and the Erie County Medical Society have repeatedly called the attention of the civic authorities to the inadequacy of the facilities for the treatment of contagious diseases, no site has as yet been provided for the hospital, for the construction of which \$200,000 was voted by the common council fourteen months ago.

Personal.—Drs. Herbert H. Glosser and James H. Carr have returned from Europe. —Drs. Irving M. Snow and Lesser Kauffman have been appointed a committee by the Buffalo Academy of Medicine to inquire into the prevalence of anterior poliomyelitis. —Dr. George A. Sloan has been appointed attending neurologist of the Erie County Hospital, vice Dr. William C. Krauss, deceased. —Drs. James H. Carr, Thew Wright, and Francis M. McGuire have succeeded Drs. Verner Kenerson, Edward M. Dooley, and Joseph Burke, resigned as attending surgeons at the Emergency Hospital. —Dr. John A. Rafter has been appointed associate editor of the *Buffalo Medical Journal*, vice Dr. William C. Krauss, deceased.

NORTH CAROLINA

Banquet to Dr. Russell.—The medical profession of Charlotte gave an elaborate banquet, December 21, in honor of Dr. E. Reid Russell, who moved from Charlotte to Asheville, January 1.

Society Meetings.—The annual meeting and banquet of Buncombe County Medical Society was held in Asheville, December 21, and the following officers elected: Dr. Charles S. Jordan, president; Dr. Henry H. Briggs, vice-president; Dr. Cailard S. Teiment, secretary (reelected); Dr. Thomas E. W. Brown, treasurer (reelected); Drs. Lewis B. McBrayer and Eugene R. Morris, delegates to the state medical society; Drs. Marshall H. Fletcher and Martin L. Stevens, alternates; and Dr. M. L. Stevens, censor, all of Asheville.—Wake County Medical Society, at its annual meeting, elected the following officers: President, Dr. Richard H. Lewis, Raleigh; vice-president, Dr. Solomon P. Holding, Wake Forest; secretary, Dr. William C. Horton, Raleigh, treasurer; Dr. Kemp P. Battle, Jr., Raleigh; and delegates to the state society, Drs. Albert Anderson, Raleigh, and James J. L. McCullers, McCullers.—Forsyth County Medical Society, at its meeting held in Winston-Salem, December 14, elected Dr. John Bynum, president; Dr. Aaron Y. Linville, vice-president, and Dr. Eugene P. Gray, secretary-treasurer, all of Winston-Salem.—Davidson County Medical Association, at its annual meeting, held in Lexington, elected the following officers: Dr. Willis J. Vestal, Lexington, president; Dr. Charles M. Clodfelter, Lexington, vice-president; Dr. David J. Hill, Lexington, secretary-treasurer; Drs. Charles M. Clodfelter, Lexington, Charles A. Julian, Thomasville, and William Lee Hill, Lexington, censors, and Drs. Joel Hill, Lexington, Eli J. Buchanan, Lexington, and Robert U. Zimmerman, Enterprise, committee on legislation and public health.

OHIO

Food Preservatives.—The Canton Medical Society at a recent meeting, endorsed the action of the American Medical Association in opposing the use of benzoate of soda or other similar chemicals as food preservatives, and adopted a resolution that the Secretary of Agriculture, the Secretary of the Treasury, the Secretary of Commerce and Labor, Dr. Harvey W. Wiley, Food Commissioner Dunlap, the chairman of the Committee on Legislation of the American Medical Association, and Dr. Charles A. L. Reed, Cincinnati, be severally petitioned to cooperate under the law so to amend food inspection decision No. 104 as to prohibit the use of benzoate of soda in any quantity as a food preservative and to declare all foods so preserved as deleterious and fraudulent under the Food and Drugs Act.

Society Meetings.—The sixty-fifth meeting of the Northwestern Ohio District Medical Association was held at Bellefontaine, December 8 and 9, under the presidency of Dr. Thomas Hubbard, Toledo, and the following officers were elected: Dr. Dana O. Weeks, Marion, president; Drs. Don C. Hughes, Findlay, and George M. Todd, Toledo, vice-presidents; Dr. Edwin A. Murbach, Archbold, secretary (reelected), and Dr. Sidney D. Foster, Toledo, assistant secretary and treasurer. The next meeting will be held at Bryan. The association adopted resolutions favoring a national bureau of health.—At the annual meeting of the Eighth District Medical Association, held in New Lexington, December 2, Dr. William A. Melick, Zanesville, was elected president, and Dr. William E. Wright, Newark, secretary.—Butler County Medical Society, at its annual meeting held in Hamilton, elected the following officers: Dr. George M. Cummins, Hamilton, president; Drs. George D. Lummis, Middletown, William S. Alexander, Oxford, and Clarence C. Wasson, Hamilton, vice-presidents; Dr. Corliss R. Keller, Hamilton, secretary, and Dr. Edward Cook, Hamilton, treasurer.

Personal.—Dr. Charles E. Stadler, West Cairo, was struck by an electric traction car near that town, thrown from his buggy, and painfully injured.—Dr. George R. Love, Toledo, has been reelected superintendent of the Toledo State Hospital.—Dr. W. J. Murphy, Dayton, has been appointed assistant surgeon of the National Soldiers' Home, Leavenworth, Kan.—Dr. Henry Baldwin has resigned from the staff of the Springfield Hospital.—Dr. Joseph H. Huntley, Lima, who recently had his leg amputated as the result of injuries received when his automobile was struck by a train, has recovered.—Dr. Arthur D. Traul, North Robinson, was accidentally shot in the foot while hunting December 4, the injury necessitating amputation of a portion of the foot.—Dr. Bernhard F. C. Becker has been elected health officer of Toledo, vice Dr. James C. Reinhart, resigned.—Dr. Clarence S. Ramsey has been elected president, Dr. James M. Austin, vice-president, and Dr. Emory F. Davis, secretary-treasurer of the staff of the Springfield Hospital.—Dr. William S. Lakman, Ironton, was thrown from his buggy December 28, and seriously injured.—Dr. Charles F. Gilliam, Columbus, has been appointed superintendent of the Columbus State

Hospital.—Dr. Frederick V. Dotterweich, Ashland, has been appointed a member of the local board of pension examiners, vice Dr. David S. Sampsell, deceased.

Cincinnati

New Chair Established.—The Joseph Eichberg chair of physiology in the Ohio-Miami Medical College of the University of Cincinnati was formally established December 11, at a meeting of the board of trustees of the Academy of Medicine. An endowment of \$45,000 was raised for this chair by the academy and a few friends of the late Dr. Eichberg, and this sum was duly transferred to the university for the establishment of the professorship.

Personal.—Dr. Mark A. Brown has resigned as health officer of Cincinnati, and has been succeeded by Dr. John H. Landis, formerly in charge of food supplies. Dr. Otis L. Cameron has succeeded Dr. Landis in that position.—Dr. Derrick T. Vail has returned after a trip around the world.—Dr. Stephen B. Marvin has been reelected president and Dr. J. Corliss Evans has been elected a member of the board of education, vice Dr. W. Wilson Barber, deceased.

Post-Graduate School Election.—The Cincinnati Polyclinic and Post-Graduate School, at its annual meeting, December 14, decided to reorganize and enlarge its faculty. The election of officers resulted as follows: Dean, Dr. Charles M. Paul; secretary, Dr. Otto Juettner; treasurer, Dr. Louis J. Kronse; registrar and secretary of the board of trustees, Dr. Stark; director of clinics, Dr. Albert E. Hussey, and president of the board of trustees, Dr. Charles T. Souther.

PENNSYLVANIA

Tuberculosis Work.—The Association for the Study of Tuberculosis distributed 251,300 pieces of literature and treated 24,410 patients at a cost to the state of \$1,515,664. The state legislature has appropriated \$4,000,000 for the work.

School Medical Inspection.—The State Department of Health has authorized medical inspection of the public schools throughout the rural districts of the state. Hookworm, pellagra and infantile paralysis have been placed on the list of diseases to be reported to the health authorities and public funerals of individuals who have died from measles or whooping cough are prohibited until the house is disinfected.

Philadelphia

Personal.—J. Percy Keating was elected trustee of Jefferson Medical College to fill the vacancy caused by the death of Samuel Thompson last September.—Dr. John McCormack was thrown from his carriage when it collided with a trolley car on January 5, but suffered no serious injury.

University May Take Polyclinic.—A committee has been appointed to prepare plans for a merger of the Polyclinic and the University of Pennsylvania. Dr. John B. Roberts, a member of the board of managers of the Polyclinic Hospital, has been appointed chairman of the new committee. In case that the merger is consummated, the university will use the Polyclinic as a graduate school.

Low Death Rate.—According to the health report for the year 1909, issued January 4, there was a decrease of 1,490 deaths from 1908, despite the increase in population, and more than half of this decrease was in the mortality of children under 5 years. The death rate for the year was 15.87 per 1,000 of population. This is the lowest death rate that the city has ever had and shows an appreciable decrease from 1908 (17.16 per 1,000) though the record of that year was also low. Perhaps the best gain was in the decrease of mortality from typhoid fever. In 1908, the death rate from this fever was 35.5 per 100,000 population, the actual deaths being 533. In 1909 there were but 331 deaths, the rate being 21.1.

College of Physicians Election.—The College of Physicians, January 5, elected the following officers for 1910: President, Dr. George E. de Schweinitz; vice-president, Dr. Wharton Sinkler; censors, Drs. Richard A. Cleeman, S. Weir Mitchell, Louis Starr and Arthur V. Meigs; secretary, Dr. Thomas R. Neilson; treasurer, Dr. Richard H. Harte; honorary librarian, Dr. Frederick P. Henry; councilors, Drs. David L. Edsall and Charles W. Burr; committee on publication, Drs. Gwilym G. Davis, Thompson S. Westcott and William Zentmayer; library committee, Drs. Francis X. Derenn, William J. Taylor, S. Weir Mitchell, Francis R. Packard and George W. Norris; committee on Mutter museum, Drs. George McClellan, Henry Morris and Joseph P. Tnnis; hall committee, Drs. John K. Mitchell, Thomas H. Fenton, B. Alexander Randall, E. Hollinsworth Siter and Aloysius O. J. Kelly; and committee on directory of nurses, Drs. James C. Wilson, Wharton Sink-

ler and Thomas G. Ashton.—During the transaction of private business, Dr. S. Weir Mitchell made the following presentations: On behalf of Mrs. Henry C. Chapman, a portrait by Sully of the late Dr. Nathaniel Chapman; on behalf of Hampton L. Carson, Esq., silhouettes of Dr. John Redman, Dr. Samuel Powel Griffiths and Dr. Abraham Chovet; and on behalf of Dr. Henry D. Jump, a gold watch formerly belonging to the late Dr. D. Hayes Agnew.—The Section on Otology and Laryngology of the College of Physicians of Philadelphia, at its last meeting, reelected Dr. Arthur W. Watson, chairman, and Dr. Ralph Butler, clerk.

VIRGINIA

Postgraduate School.—Drs. J. Shelton Horsley, William A. Shepherd, and Emmett H. Terrell have arranged to establish a postgraduate surgical school in Richmond, the courses in which will include clinical and experimental surgery and surgical pathology. The course will begin about the middle of February, and each class will be limited to four students.

Personal.—Captain Lawrence T. Price, Richmond, battalion surgeon of the First Battalion, First Infantry, N. G. Va., has been elected major.—Dr. Leroy L. Sawyer, Great Bridge, has been reelected physician to the Norfolk County almshouse, and Dr. Robert L. Corbell, Port Norfolk, health officer. Dr. Herbert R. Drewry, Norfolk, has been appointed assistant health officer.—Dr. William J. Chewning, Fredericksburg, is reported to be ill at his home.—Dr. Thomas O. Jones, Harrisonburg, was stricken with cerebral hemorrhage recently.

State Board Notes.—Enough antitoxin for 400 cases of diphtheria was dispensed through the state health department to the physicians of the state during November.—Arrangements have recently been perfected which will render available the diagnosis and treatment of rabies at a nominal expense to the people of the state. The director of the Pasteur Institute of Virginia will examine for rabies dogs' heads sent by physicians of the state free of charge. The hygienic laboratory of the U. S. P. H. and M.-H. Service, Washington, will also make examinations gratis.

College of Medicine Destroyed by Fire.—On the morning of January 6, while the city was covered with ice, the building of the University College of Medicine, Richmond, was completely destroyed by fire, the origin of which is unknown, with a loss estimated at \$130,000. Fortunately the fire did not reach the office of the institution and its records were preserved. The Virginia Hospital immediately adjoining, was saved, the only damage being that occasioned by smoke and water on the east wing, known as the Hunter McGuire Annex, nearest the burning building. Pending this renovation the clinical amphitheater and its accessories are put out of commission for a period of about a week only. The part of the building occupied by private patients was in no way damaged, and the work of the hospital with its private operating rooms has not been interrupted. Lectures were regularly resumed in 24 hours in neighboring halls generously tendered by other collegiate institutions. Through the kindness of the Medical College of Virginia its laboratories are being used, and thus only an interruption of two or three days has been occasioned in this part of the course.

WISCONSIN

Tuberculosis Dispensary Opened.—The third dispensary for tuberculosis was opened by the Milwaukee Society for the Care of the Sick, December 15. It is located in the College of Physicians and Surgeons, and is to be opened Wednesday evenings and Monday mornings.

To Guard Health of Students.—In addition to Dr. Joseph Evans, Philadelphia, who has been made supervisor of medical attendants of all students at the University of Wisconsin, Madison, two other physicians are engaged in this duty. Dr. James C. Elsom, medical examiner of the men's gymnasium, and Dr. J. Helen Dobson, who holds a similar position in the woman's gymnasium.

Graduate Study.—At the meeting of Marathon County Medical Society, in Warsaw, December 27, the postgraduate plan of study suggested by the American Medical Association was adopted.—The Outagamie County Medical Society, at its meeting in Kaukauna, January 4, decided to prepare at once for the holding of meetings for postgraduate study along standard lines.—Janesville Postgraduate Medical Society was organized January 3 in Janesville.

Societies Elect Officers.—The Milwaukee County Medical Society, at its annual meeting, December 10, elected the following officers: President, Dr. Louis F. Jermain; vice-president, Dr. William A. Batchelor; secretary, Dr. Daniel Hopkinson; treasurer, Dr. Joseph Kahn (reelected), and censor,

Dr. Alfred W. Gray.—At a meeting of physicians of Neenah and Menasha, held December 28, in Neenah, the Twin City Medical Club was organized with Dr. James R. Barnett, Neenah, as president.

Personal.—Dr. John B. Trowbridge, Hayward, was operated on in Rochester, Minn., December 15, for tumor of abdomen.—Dr. Charles H. Sutherland, Janesville, has been appointed a member of the State Board of Health, vice Dr. Quincy O. Sutherland, deceased.—Dr. Chester M. Echols has succeeded Dr. Thomas Fitzgibbon as professor of gynecology in the Medical Department of Marquette University. Dr. Fitzgibbon has been made emeritus professor.—Dr. Mazyck P. Ravenel served as one of the twelve members of the International Commission for the Control of Bovine Tuberculosis, which held its first meeting, December 13, in Buffalo.

GENERAL NEWS AND COMMENT

Diploma Stolen.—The State Board of Health of Illinois has sent out a notification that about Dec. 20, 1909, a thief stole the diploma of Dr. Daniel Lichty, Rockford, Ill. It is assumed that the thief intended to use or to sell the diploma and that Dr. Lichty's name will be erased. The diploma was issued by the Chicago Medical College, March 14, 1871.

New Dress for Lancet-Clinic.—The *Lancet-Clinic*, Cincinnati, begins the new year in an enlarged form and entirely new style and dress. It now conforms in size to the other weekly medical journals. Its new form is attractive. The arrangement of the matter is also changed, and the editorials, weekly news and comments are in front of the contributed articles and miscellaneous matter. The first number of the year is an especially interesting one. The new and enlarged form should please its readers and help to extend its already wide field of usefulness. The *Lancet-Clinic* is to be congratulated on its prosperity, and it has the best wishes of THE JOURNAL for continued success.

Meeting of the Far-Eastern Association of Tropical Medicine.—The first biennial meeting of this association is to be held in Manila, March 5-14, 1910. The association was established with the idea of bringing together workers in tropical medicine in that part of the world, and is important in that it brings English-speaking scientific workers together for mutual social and scientific improvement. The sessions in Manila will be held in the new building of the Philippine Medical School near the Bureau of Science and the new Government Hospital. The sessions in Baguio will be held in one of the government buildings. The government has appropriated a liberal sum for entertainment of guests during the meeting. Visits have been arranged to points of interest in the neighborhood. The museums of the Bureau of Science and of the Philippine Medical School will be thrown open and demonstrations of the specimens will be given. There will be a commercial exhibit of remedial agents, appliances and medical equipment appropriate for use in the tropics.

A Labordinized Pharmacopeia.—Congressman H. M. Coudrey of Missouri has introduced a bill whose alleged purpose is to have the United States Government edit and publish the Pharmacopeia. We have not succeeded in getting a copy of the bill so that it is not possible to discuss it in detail. This is not necessary, however. Readers of THE JOURNAL may remember that the Hon. H. M. Coudrey has previously been referred to in his capacity as president of the Labordine Pharmacal Company of St. Louis. Labordine, it will be further remembered, was, previous to the Food and Drugs Act, a "purely vegetable cardiac stimulant" which should be given preference over other antipyretics so as to "avoid acetanilid poisoning." Examination in the Association's laboratory showed Labordine to contain nearly 40 per cent. acetanilid—a result which the makers of the nostrum had to acknowledge after the Food and Drugs Act made it expensive to lie on the label. Those interested will find our writeup of the matter in THE JOURNAL of March 30, 1907. What the particular "joker" is in the bill thus introduced by a man whose various activities as an insurance agent, politician and "patent medicine" promoter so peculiarly fit him to pass on such an intricate subject as the revision of the Pharmacopeia, we cannot say. That there is a "joker"—or many of them—we do not doubt, any more than we think that revision of the Pharmacopeia by the "patent medicine" interests or their tools would further the best interests of the public, of the medical profession, or of scientific pharmacy.

FOREIGN

Spanish Congress for Laryngology.—The third national congress for laryngology will be held next April at Seville and will be the occasion for an ovation to the leading Spanish

laryngologist, Prof. Don Ramon de la Sota y Lastra on the fiftieth anniversary of his professional career.

Antialcohol Work in Sweden.—In 1908 it was decreed that one-tenth of the government revenue from the liquor trade should be devoted to antialcohol agitation. The sum amounted in 1909 to nearly \$50,000, part of which was appropriated for lectures for teachers on the evils of alcohol, and part was given to the Swedish Total Abstinence Medical Society for its special work in this line.

LONDON LETTER

(From Our Regular Correspondent)

LONDON, Dec. 24, 1909.

Munificent Gift for Medical Research

The late Mr. Alfred Beit, a South African millionaire, left \$250,000 to the University of London to found an "Institute of the Medical Sciences." As the formation of this institute has for various reasons become impossible, his brother, Mr. Otto Beit, has decided to increase the sum to \$1,075,000, so as to yield an annual income of \$37,500 for "The Beit Memorial Fellowships for Medical Research." A sum of \$1,250 a year for three years is to be granted to "any man or woman of European descent, graduate of any approved university within the British Empire, who is elected to a fellowship." The first election of fellows will take place on or before March 1, 1910. Not more than ten will be elected. The object is to promote the advancement by means of research, of medicine and the allied sciences in their relation to medicine. The fund will be administered by a board of trustees who in turn will be assisted by an advisory board of some of the most eminent physicians and physiologists in this country—Professors Clifford Allbutt, Osler, Rose Bradford, Martin and Starling. In the election of fellows the board will take into account not only the personal record of the candidates but also the importance of the research work proposed by them. Those who are elected fellows are expected to devote the whole of their time at an authorized laboratory. The list of authorized institutions where the research may be carried on covers a wide range. Provision is made for every branch of medicine, general and special, and for all the preliminary and auxiliary sciences. Thus chemistry, physics and general biology may be studied, taken up in the laboratories of the University and King's College, as well as anatomy, physiology, pharmacology and hygiene. Among the advanced and specialized studies for which provision is made are the following: Cancer, at the laboratories of the Imperial Cancer Research and Middlesex Hospitals; tuberculosis, at the laboratories of the royal commission and King Edward Sanatorium; tropical medicine, at the London and Liverpool schools; preventive medicine, at the Lister Institute and the Royal Institute of Public Health; mental disease, at the London county council laboratories at Claybury; naval medicine, at Haslar; military medicine, at the Army College, Millbank. Fellows must furnish a detailed statement of their work at the end of each year and their tenure may be cut short if their work does not justify their retention; on the other hand in suitable cases the tenure may be extended to 4 years.

Research scholarships are of course well-known in this country but this scheme for the promotion of medical research is unique in its magnitude. In recent years large endowments have been devoted to the erection and equipment of institutions and the maintenance of professorships. It seems that Mr. Beit and his advisers have determined to strike out a new line of endowment and provide for the devotion of picked students to medical research. The scheme is excellent in its object and the rules, on the whole, are good. But there is room for some criticism. The true researcher is born rather than made and a man capable of original work may for some reason not have a university degree, while the man who has attained the highest university honors is often wanting in originality. Again, it seems strange in this enlightened age, in this empire which includes so many Asiatic and other races, and in this metropolis to which men of every color come for purposes of study to exclude those who are not of European descent. Science has no frontiers and should not tolerate such a narrow-minded restriction.

Government Ceasing to Maintain Hospitals in Australia

Until the present year the whole of the hospitals in Australia have been supported by the government. The annual expenditure amounts to \$500,000. It is now proposed that the management of hospitals shall be vested in local committees and that the government will only partly support them

by annual subsidies. Thus to the Perth Hospital, which costs \$90,000 to maintain, they will grant \$65,000. The public will have to find the balance or the hospital will be reduced so as to work within the limits of the grant.

Curious Case of Chloroform Poisoning

In cases of death from drinking chloroform it has been contended that this substance is such a pungent liquid that it is extremely improbable that any one would drink it accidentally. A case is reported from Sheffield in which a child, aged 5 years, lost its life in this way. The wife of a collier procured for the relief of toothache a bottle of chloroform which she left on a mantelpiece. Early in the morning two children managed to obtain the bottle. The elder, a boy aged 8, drank some of the contents and also gave some to the younger, a girl aged 5 years, who cried for it. The girl became drowsy some hours later and a doctor was called too late.

A Physician's Bravery

The medal of the Royal Humane Society has been conferred on Dr. Leonard W. Oliver of Hampshire for an act of bravery. A man descended into a large cesspit which was being cleared out and was at once overcome by the gases at the bottom. Another man descended to help him and was similarly overcome and fell. An alarm was raised and the physician was called. He burned straw in order to get rid of the gases and then prepared to descend, when a policeman intervened and said the medical man would be of more use at the top. The policeman was roped and went down to the bottom but found the weight of the disabled men greater than he could lift. Dr. Oliver then went to his assistance and together they succeeded in bringing the men to the surface. The physician was able to resuscitate one but the other died. Medals of the Royal Humane Society (a distinction instituted for the recognition of acts of bravery in the saving of life) have been conferred on both Dr. Oliver and the policeman.

PARIS LETTER

(From Our Regular Correspondent)

PARIS, Dec. 24, 1909.

Death of Edouard Brissaud

French medical science has just experienced an irreparable loss. Dr. Edouard Brissaud, professor of medical pathology at the Paris medical school, has just died, aged 57, after a surgical operation for tumor of the head. Brissaud was born at Besançon in 1852, and studied at Paris, where his principal teachers were Féréol, Fournier and Charcot. He was laboratory assistant to Charcot in the laboratory of pathologic anatomy in 1878; he became physician of the hospitals in 1884 and *agrégé* in 1886. In 1899 Brissaud was appointed professor of the history of medicine to fill the place of Laboulbène, who had recently died. The next year he became professor of medical pathology. On May 18, 1909, he was elected a member of the Academy of Medicine.

Brissaud owed his celebrity chiefly to his works on the diseases of the nervous system. Under the direct influence of Charcot he had formed a taste for neurology, into which he introduced a whole series of new and original conceptions, especially in regard to Parkinson's disease, tabes, the interpretation of disturbances of sensibility in syringomyelia, etc. His studies on cerebral localizations, on hemiplegic contractures, on ophthalmoplegia, etc., were highly appreciated. While manifesting this decided predilection for neuropathology, however, Brissaud succeeded in avoiding narrow specialization, and none of the great problems of medical pathology were strangers to him. Thus, from 1879, he was engaged in demonstrating, in collaboration with Josias, the tuberculous nature of serofulous gummas. Later he published a series of researches on local tuberculosis of the joints, etc. He described dysthyroidian infantilism, which is to-day designated under the name of infantilism of Brissaud. The clinical studies of Brissaud are founded, moreover, on a profound knowledge of pathologic anatomy, to which his works on cystic disease of the nipple, on the transformation of hepatic adenoma into cancer, etc., bear witness. In 1893 Brissaud with his colleague, Dr. Pierre Marie, founded the *Revue Neurologique*. He was also one of the directors of the second edition of the "Treatise on Medicine," the first edition of which was prepared under the direction of Charcot and Bouehard. More recently, with Professors Pinard and Reclus, he assumed the direction of the *Pratique médico-chirurgicale*, a kind of a compendium giving in alphabetic order a succinct account of the most important questions in modern practice.

Dedication of the Monument to Péan

A few days ago the monument to the memory of Dr. Péan was dedicated. It stands not far from the hospital which the illustrious surgeon built at his own expense, and which bears his name. It is a statue in bronze representing Péan standing in frock coat, his broad shoulders and energetic features being well rendered. On the stone pedestal is the figure of a patient raising herself on her bed and holding up toward the surgeon a bunch of flowers. M. Fallières, president of the republic, presided at the ceremony of dedication. Several speeches were made. Professor Pozzi, in the name of the Academy of Medicine, described the important work accomplished by Péan. Having arrived while still young, at the summit of his profession, during more than thirty years Péan held one of the highest places in French surgery; and in foreign countries, his name like that of Charcot, enjoyed an unrivaled celebrity. He was the introducer of several operative methods of great importance, and the inventor of a great number of ingenious processes. It may be said that, directly or indirectly, he had a formative influence on all the contemporary masters of abdominal surgery. Péan was the first one to practice (in 1864) in Paris, the operation of oophorectomy, in which the great Nélaton himself had always failed. Péan's second title to the gratitude of surgeons is the substitution of forceps for ligatures to stop hemorrhage. Péan attached great importance to this part of his work, and accordingly M. Gauguier, the sculptor, has represented the master holding a hemostatic forceps in his hand. According to Professor Pozzi, Péan was neither a savant in the actual sense of the word, nor a learned man, nor yet an orator, but he was in the highest degree a clinician, an operator, a healer.

Testimonial of Respect to Professor Teissier

A few days ago at the Hôtel-Dieu of Lyons, in the presence of a great number of professors who came to Lyons on the occasion of this ceremony, a medal was given to Dr. Joseph Teissier, professor for twenty-five years at the Lyons medical school, by his pupils in France. Among those present were Professors Maragliano of Genoa, Grasset and Rodet of Montpellier, Bard of Geneva, Drs. Hallopeau and Pierre Teissier of Paris, and Frenkel of Toulouse.

Death of Dr. L. Malassez

Dr. L. Malassez, assistant director of the School of Higher Studies, president of the Society of Biology, and a member of the Academy of Medicine, died December 22, aged 67. Malassez had published a great number of works on normal and pathologic histology. His researches on the blood were particularly well-known. He invented many pieces of laboratory apparatus, especially a hemocytometer with a graduated chamber and a hemochromometer, which is considered the most precise, and at the same time the most simple apparatus for determining directly the quantity of hemoglobin contained in the blood.

Reorganization of the Morgue

The general council of the department of the Seine has just decided that the morgue should be torn down and rebuilt to form, not merely a mortuary depository, but a medicolegal institution, the creation of which has been demanded for a long time by the scientific professions. The expense will be \$200,000 (1,000,000 francs) and the general government will be asked to bear half the expense.

BERLIN LETTER

(From Our Regular Correspondent)

BERLIN, Dec. 22, 1909.

Personals

Professor Hertel of Jena has been appointed successor to Professor Schirmer as director of the eye clinic at Strasburg.

Professor Hoche, director of the psychiatric clinic, has been chosen rector of the University of Freiburg for the year 1910-11.

Sickness Insurance in 1908

The number of sickness societies formed on the basis of the social legislation in the German empire according to the official statistics just published was increased only by 8. The entire membership increased about 200,000, so that at the end of the year it amounted to 12,500,000. The local societies include the greatest number of these. The number of cases of illness amounted to over 5,000,000. For every member there were 0.42 cases of sickness as opposed to 0.41 for 1907 and 0.38 for 1906. The number of days of illness amounted to 104,000,000, opposed to 97,000,000 in 1907. For every member there were 8.43 days of sickness, which is a consid-

erable increase over the former year. The regular receipts amounted to \$80,000,000 (333,000,000 marks) as opposed to \$75,000,000 for 1907. The regular expenses have increased more markedly than the income, \$6,240,000 (26,000,000 marks), from about \$72,000,000 to \$78,000,000. Of this amount about \$71,280,000 were expended for sickness. Medical treatment required \$16,448,000 as compared with \$15,192,000 for the previous year. The expense of management rose from \$4,028,000 to \$4,344,000 and amounted to 34.28 cents (1.47 marks) per member as compared with 32.16 cents for the previous year.

German Medical Statistics

In the last number of the *Deutsche medizinische Wochenschrift*, the well-known medical statistician Prinzing of Ulm gives an interesting review of the statistics of physicians in Germany in 1909 based on the "Imperial Medical Calendar" for 1910, published by Professor Schwalbe. The number of physicians in Germany for this year amounts to 31,969, an increase of only 329 over the previous year. As the population of Germany in 1909 was 63,886,000 we have 5 physicians for 10,000 inhabitants, showing a continuous decrease since 1906 when the number was 5.06. Comparing this with other European countries, we find that for 10,000 inhabitants, England has 7.1 physicians; France, 4.9; Italy, 6.3; Austria, 4.1; Denmark, 5.2; Norway, 4.5; Sweden, 2.4; Russia, 1.8. The rise in the number of physicians in the last five years is slight because of the increase in the length of medical study which took effect a few years ago and especially on account of the addition of the so-called practical year. A marked increase in the number of physicians is to be expected soon as the number of medical students in the last few years has continually increased. This amounted to 6,080 for the winter semester of 1905, 7,219 for 1906, 7,773 for 1907, 8,879 for 1908, and 9,239 for the summer semester of 1909. In the different divisions of Germany the distribution of physicians is very different. In Eastern Prussia with greater Berlin the total number amounted to 9,347, a proportion of 4.93 per 10,000 inhabitants, in West Prussia it is 9,947, or 4.8 per 10,000, in Southern Germany 6,672, or 5.26 per 10,000 inhabitants. Naturally the greatest concentration of physicians is found in the large cities. Wiesbaden instead of Berlin has first place with 22.9 per 10,000 inhabitants, then follow Munich with 16.2, Strasburg with 14.6, Kiel 12.6; then comes greater Berlin with 12.4 and Frankfurt a.M. with 12.3. In the lowest place among the large cities stands Duisburg with 3 per 10,000. Of the large cities, Munich has experienced the greatest increase during the last year, as the number of physicians there has risen from 15.8 to 16.2 per 10,000 inhabitants. The still greater increase from 9.7 to 16.2 in Cologne is explained by the great influx of physicians who were attracted thither by the strike against the Krankenkassen. There are 381 places in Germany without a physician. In the majority a physician would not have a sufficient support.

The number of women physicians increases very slowly in Germany, being from 55 in the previous year to 69 in 1908. They settle almost altogether in the large cities. The tendency to specialism has apparently passed its high point. In the last year there were in the large cities 4,441 specialists and 8,491 general practitioners. For each 100 physicians there were 34.3 specialists as compared with 34.6 for the previous year. Frankfurt a.M. has the largest number of specialists as compared with other physicians, viz., 42.6 per 100; then follows Stuttgart, 42.4; greater Berlin, 31.7; and Kiel with the smallest number, 18.4. The representation of the individual specialties in the large cities has not materially altered as compared with the previous year; only a few show a slight increase.

VIENNA LETTER

(From Our Regular Correspondent)

VIENNA, Dec. 27, 1909.

Physical Culture of Our School Children

The results of investigations in schools, conducted by a number of school physicians, have revealed such unsatisfactory sanitary conditions among the children that a special advisory committee on the subject has been appointed by the ministry of the interior to consist of presidents of school boards, teachers of gymnastics and athletics, physicians and other experts. The program of the transactions of this committee will comprise the following subjects: How shall school children be taught to pay special attention to physical culture? How shall school gymnastics be supplemented by home gymnastics? What kind of physical culture is fit for children of elementary classes (age 6-14 years), and what is fit for the higher schools (14-18 years)? Gymnastic training as a

preliminary measure for military education. Advisability of teaching rifle-firing. Organization of "boy scouts" after the English fashion. A special part of the transactions will deal with the care of the children with mental or physical defects. Thus, blind children as well as deaf-mutes will have to be educated in special institutes, and one of the questions bearing on this point is whether this education in homes shall be compulsory or shall it be left to the discretion of the parents. Likewise, the education and care of feeble-minded children is to be made a matter of the state, not a private one. The meetings of the committee will take place in January, 1910.

Personal News

Docent Dr. Alexander of Vienna has been appointed professor of otology by the emperor. Alexander's career is a singularly brilliant one. He is only 36 years of age, and already as a student he achieved much fame by his anatomic researches on the pathology of the ear. His ear-clinic in the Vienna polyclinic, of which he is the head since two years, is much frequented by numerous doctors from America.

The vacant post of director of the second gynecologic clinic of the university has been offered to Professor Hofmeister in Ratte, and he has consented to succeed the much-lamented von Rosthorn, whose tragic death caused much confusion. The eye-clinic, which is still vacant after Schnabel's death, will in spite of all obstacles be taken over by Hess, about whom I have written previously (Nov. 20, 1909, liii, 753).

Consumption of Alcohol Among the Various Races in Austria

A statistical study of the amount of alcohol consumed by the various nations who form this empire has been published recently. It appears that the lower the standard of general culture, the more alcohol is consumed. There are altogether eight different nationalities here, Germans, Czechs, Italians, Hungarians, Roumanians, Ruthenians, Slovenians and Poles. Among the Germans and Italians mostly wine and beer is consumed, the Hungarians drink only wine, while the other nations drink mostly gin, whisky or brandy. One of the worst features is drinking by women and children, which is quite common among the Slavie races. Even babies are given some diluted spirit to "soothe" them. The religious and ethical institutions favor drinking in a high degree, and the state gets a large amount of its revenues from the alcohol tax, wherefore the official antialcohol campaign is really hypocritical. It has been shown that a peasant's family will spend 10 to 15 per cent. of their income on drinking. The average consumption of alcohol in German countries is constantly falling (being at present about 32 liters or 8 gallons per head per year, while in the poorer agricultural Slavie districts the amount is trebled easily. The antialcohol movement has practically no influence up till now among the uneducated classes, whilst the intelligent classes have responded little to its call. The attempts to raise the price of alcohol to a nearly prohibitive figure have resulted only in an increase of the revenue. The medical effects of the present conditions are seen in a very clear way during the recruiting, when the young men of various nationalities are called to military service. While 60 per cent. of the Germans, Italians and Hungarians are fit, only 35 per cent. of the poorer Slav youths can be admitted.

Pharmacology

CURARE

Report to the Council on Pharmacy and Chemistry

Physiologically, curare is an exceedingly active drug; its therapeutic value, however, in the opinion of the Council, is largely hypothetical. Added to this is the impossibility of obtaining pure material of definite action and the confusion that exists in regard to the names of the alkaloid obtained from different kinds of curare. For these reasons, the Council has voted that curare and curarin be not described in New and Nonofficial Remedies, but in view of the fact that these drugs are often referred to in medical literature it is thought advisable to publish the following general article.

W. A. PUCKNER, Secretary.

CURARE

Under the name curare several varieties of native extracts used as arrow poisons are known. These are commonly indi-

cated by the kind of container in which they come into commerce, and are called calabash curare, tube curare (coming in bamboo), and pot or jar curare (German Topf).

The calabash curare is obtained principally from *Strychnos toxifera*, and contains the alkaloid curarin; the tube curare, or tubocurarin, is from an undetermined source, it yields the alkaloids, tubocurarin and curin; the third variety of curare coming in jars is obtainable chiefly from *Strychnos Castelnaui* and *Cocculus toriferus* and contains the alkaloids protocurarin and protocurin. Curare is variously called urari, woorari and woorall.

The method of preparation is not known. The various curares are found in brown masses of an intensely bitter taste not wholly soluble in water but much more soluble in dilute acid.

Action and Uses.—Curare paralyzes the endings of motor nerves in striped muscles in the following order: (a) short muscles of the toes, ears and eyes; (b) limbs, head, and neck; (c) respiration; (d) the heart, which is not affected except with very large doses. The paralysis does not affect the sensory nerves. In warm-blooded animals death occurs from paralysis of the respiration, convulsive movements sometimes occur and glycosuria is occasionally produced. In man little or no effect is produced when it is administered by the mouth.

Small hypodermic doses increase the force and the frequency of the pulse, raise the temperature slightly and cause perspiration and an increase in quantity of the urine. From larger quantities of the poison violent febrile phenomena occur, commencing with the characteristic symptoms of a severe chill.

Paralysis of the lower extremities comes on and may last from a few minutes to an hour. The fever may continue for 5 or 6 days if the dose is larger. Curare has been used but with little success in the treatment of tetanus and other conditions in which convulsions are prominent, and for this purpose it may be injected subcutaneously.

Curare should be used only after the specimen has been tested and the dose should be calculated as follows: The fatal dose per kilogram of dog is determined and one-tenth of this amount is administered for each kilogram of weight of the patient. This dose may be cautiously increased until there is some interference with respiration if care be taken not to induce total paralysis of respiration and if preparation has been made to carry on efficient respiration if it should become necessary.

Dosage.—The exact dose cannot be stated, as will be understood from what has been said, but the crude extract is somewhat variable in activity, and it would seem to be much better to use only the pure alkaloid curarin for therapeutic purposes. Physostigmin is the physiologic antidote—but artificial respiration must be the main dependence.

CURARIN

Curarin ($C_{15}H_{24}N_2O$), is the alkaloid prepared from calabash curare.¹

1. This is prepared from calabash curare as follows: The finely powdered curare is macerated for some days with successive portions of water and then with diluted sulphuric acid. The mixed filtrates are treated with platinum chlorid so long as any precipitation occurs, the voluminous clay-colored residue is filtered through hard filter paper with pressure and washed with alcohol. The residue is transferred to absolute alcohol, heated on a water bath and decomposed by a stream of hydrogen sulphid, adding alcoholic ammonia from time to time to neutralize the liberated hydrochloric acid. Decomposition is complete in half an hour usually if the temperature is maintained sufficiently high, but the reaction does not take place in the cold. The mixture is filtered and the residue washed with absolute alcohol. Ether is added to the dark, red-brown filtrate to precipitate the curarin. The voluminous, flesh-colored, flaky, precipitated alkaloid is quickly collected on a filter, washed with ether and transferred to a desiccator wherein it becomes a slightly colored powder.

This impure product containing sulphur and inorganic salts is purified by treating it with a mixture of chloroform and absolute alcohol and filtering. The residue is dissolved in absolute alcohol and again precipitated with ether and the residue treated as before. This must be repeated until 0.34 milligrammes of the product will kill one kilogramme of rabbit, but this degree of toxicity is often attained after the first drying. (Boellm. Arch. der. Pharm., cxxxv, 660.)

Tubocurarin ($C_{15}H_{24}NO_4$) from tubo-curare, is given as a synonym for curarin by Merck, although the action of the two is not the same. Tubocurarin is prepared as follows: An aqueous or slightly acid solution of curare is made slightly alkaline by ammonia causing a precipitate to be formed. This is separated from the solution which is now free from curin, another principle of curare. The solution is evaporated to a thin syrupy consistence and mixed with 2 volumes of alcohol and the clear solution precipitated with alcoholic solution of mercuric chlorid. The yellow flocculent precipitate thus formed is suspended in alcohol and treated with hydrogen sulphid to liberate the base from the mercury. The filtrate from this operation is treated with 3 volumes of ether, thereby precipitating the hydrochlorid of tubocurarin. This product is washed and dissolved in 96 per cent. alcohol and precipitated by the addition of 5 volumes of ether. From the hydrochlorid the free base can be prepared.

Curarin is a deliquescent powder soluble in water and alcohol (Merck). Oxidized by potassium permanganate it yields amines and oxalic acid. In general it has the properties of a quaternary base. It has a bitter taste.

Action and Uses.—The pharmacologic action of curarin has been described under curare, but mention should be made of certain differences between the several alkaloids found in the different varieties of curare. Curarin first paralyzes the motor nerve endings without affecting the heart and blood pressure to an important degree.

Tubocurarin has a very much weaker action on the motor nerve endings than has curarin. It first stimulates the reflex excitability of the cord which it later depresses. It also has a much greater effect on the heart, increasing the rate. The increased reflex irritability may persist with small doses. Curarin does not participate in the action of curarin on the motor nerve endings but acts directly on the heart, first increasing the systole then depressing it; the heart finally stops in diastole after fatal doses.

Protocurarin acts qualitatively like curarin, but it is more active. Curarin is used for the same purposes as curare, but it has the advantage of being more constant in its action.

Dosage.—Curarin is used therapeutically only for its action on the motor nerve-endings and the dose must be very carefully regulated by the effects. From one to twelve milligrammes are injected for a man. The dose should be cautiously pushed until the extremities are motionless. The means for carrying on artificial respiration must be at hand, and if the respiration is seriously impaired artificial respiration must be carried on. The drug is very rapidly excreted by the kidneys and natural respiration is soon restored if the dose has not been excessive. The heart must also be carefully watched.

Owing to the differences in physiologic action between the curarins of different origin it is unfortunate that a manufacturer should give tubocurarin as a synonym for curarin.

CONCLUSIONS

1. Curare is a powerful and dangerous respiratory and cardiac depressant and paralyzant of motor nerve endings in striped muscle.
2. The value of curare either in tetanus or in any other disease is questionable.
3. No dose can be stated. The antidote, physostigmin, must be at hand and one must be ready to perform artificial respiration after each administration.
4. Each of the several alkaloids from the three varieties of curare has a different strength and a somewhat different action.
5. These alkaloids are not at present sufficiently differentiated in commerce to enable a physician to know which one he is using.

THE CHAMLEE CANCER CURE

Express Companies as an Aid to Quackery

No more valuable work is being done than that performed by the post-office authorities in denying use of the United States mails to those scoundrels who prey on the credulous and ignorant sick. So numerous and powerful has this class of human parasites become, however, that they have attempted to bring pressure to bear at Washington in order to secure what practically amounts to immunity for their cruel and fraudulent practices. To the honor of those in authority be it said they have so far been unsuccessful.

THE JOURNAL has published during the last year reports of several cases in which the "cancer cure" quacks have been put out of business by the activity of the postal authorities. One individual who conducts a particularly cruel fake is S. R. Chamlee who apparently is legally entitled to attach the letters M.D. to his name. Nearly four years ago Mr. Adams in his Great American Fraud series in referring to this man wrote:

"I can do no more than mention, by way of warning, a scoundrel who endeavors to frighten women into taking his treatment by advertising in the papers, 'In woman's breast any lump is cancer.'"

Chamlee sends out the usual "form" letters common to his ilk, each succeeding letter heaping on the "agony" and attempting to frighten the prospective victim into parting with her money and neglecting proper treatment. To quote:

"Our treatment is the only one that positively eradicates cancer from the blood, destroys cancer germs, heals the cancer sore, if any, and cures perfectly and permanently."

Then as if to terrorize the patient the letter closes:

"We keep a complete record of every case and know that sudden and unexpected death occurs in many advanced cases."

The amount asked for the "treatment" is \$25 which is reduced to \$10 if the first few letters fail to secure a victim.

Now comes the sequel. Evidently the over-worked fraud-investigation department of the post-office finally reached this particular humbug for persons on the mailing list of his concern have received the following printed slip:

NOTICE

We have leased Dr. Chamlee's place and business for one year and have employed Dr. S. R. Chamlee himself and his force of assistants. He makes all the medicine and treats all patients that come at *any price they can pay*. Dr. Chamlee has no time to ever answer any letters. Address all letters to

The St. Louis Sanitarium Co.,
P. O. Lock Box 843, St. Louis, Mo.

Accompanying this was the following letter which will be read with interest by those who have given any thought to the question of the moral and legal responsibility of common carriers. The italics are ours:

THE ST. LOUIS SANITARIUM CO.

St. Louis, Mo., Jan. 1st, 1910.

The Government has just decided that Physicians cannot diagnose cancer through the mails, and have consequently stopped our mail, and have refused to pay any money orders coming through the mail.

This, however, applies to our mail only and does not affect our treatment here in the office in the least. We are still doing business but have to take a new name and address.

The only way to get our valuable medicine is to NOT send a Money Order as we cannot cash them. Send the money through an Express Co., P. O. Lock Box 843, St. Louis, Mo., and address all communications simply The St. Louis Sanitarium Co., P. O. Lock Box 843, St. Louis, Mo.

Upon receipt of your money we will promptly ship your medicine to your nearest Express office. Please mention your nearest Express office and Express Co., handling same. We are using the above named box and name until we can decide on a permanent name and address. If you are coming to St. Louis, we will give you instructions how to reach us.

Yours very truly,

The St. Louis Sanitarium Co.

Whatever may be said about the shortcomings of the United States post-office it is apparent that its moral obligations to the public as a common carrier are heeded to a greater extent than in the case of those privately owned monopolies which control the shipping of packages in the United States.

Bismuth Beta-Naphtholate—A Correction

In the laboratory contribution, "Bismuth beta-naphtholate," published in THE JOURNAL, Dec. 18, 1909, the composition of the bismuth beta-naphtholate tablets of the H. K. Mulford Company was incorrectly stated. In calculating, from the analytical results, the probable composition of the bismuth beta-naphtholate contained in the tablets proper allowance was not made for the diluent (excipient) used in their manufacture.

The report stated that the analytical results indicated that the bismuth beta-naphtholate used in the tablets had the following composition:

BISMUTH BETA-NAPHTHOLATE (H. K. Mulford Co.)	BISMUTH. NAPHTHOL.	SOL. IN	
		"TOTAL"	CHLOROFORM OR ETHER.
Specimen 1 (tablets).....	56.47	6.89	4.89
Specimen 2 (tablets).....	51.27	18.84	3.21

Actually the analysis indicated the bismuth beta-naphtholate to have the following composition:

BISMUTH BETA-NAPHTHOLATE (H. K. Mulford Co.)	BISMUTH. NAPHTHOL.	SOL. IN	
		"TOTAL"	CHLOROFORM OR ETHER.
Specimen I	67.74	8.22	5.82
Specimen II	59.85	21.98	3.74

Thus it is seen that the naphthol compound contained in the tablets was much richer in bismuth and in combined naphthol, and that it also contained more chloroform-soluble matter than was indicated by the published report.

W. A. PUCKNER.

Correspondence

Suggestions for the U. S. Pharmacopeia IX

To the Editor:—I have read with interest the suggestions made by Dr. Oliver T. Osborne in *THE JOURNAL*, January 1, page 50, and trust that his series of five articles will awaken an increased interest in the Pharmacopeia among physicians throughout the entire country.

The U. S. Pharmacopeial Convention adopts general principles to be followed in the revision of the Pharmacopeia, which are mandatory in nature. The convention also passes resolutions which refer subjects either with or without recommendations to the Committee on Revision of the Pharmacopeia. The general principles and the resolutions adopted by the convention of 1900 appear on pages xxx to xxxiii inclusive of the U. S. Pharmacopeia VIII, and should be studied by all who are interested in formulating general principles and resolutions to be presented at the convention of 1910.

Medical societies and medical schools entitled to representation at the convention to be held at Washington, May 10, 1910, should take Dr. Osborne's suggestions as basis for discussion and formulate such additional recommendations as may be deemed best and then instruct their delegates to the convention.

The ten suggestions submitted by Dr. Osborne are timely, but unfortunately, will not meet with the hearty approval of all who are likely to be delegates in attendance at the convention. Recommendation No. 1 proposes to limit the official drugs to those which "are of positive therapeutic value." This is in striking contrast to the Coudrey measure, known as House of Representatives Bill 13,859, now in the hands of the Committee on Interstate and Foreign Commerce which provides that the government shall edit and publish the Pharmacopeia and that the Pharmacopeia shall contain "all drugs and chemicals whether generally used or not."

Such a law, if literally carried out, would produce a pharmacopeia larger in size than any single volume published in the world. The author of the bill (which by the way is not the Hon. H. M. Coudrey) may be a delegate to the 1910 convention and his views are no more extreme than those held by other persons who are likely to take part in the proceedings.

The Pharmacopeial Convention will meet in 1910, but the revised Pharmacopeia will not be published for two or three or more years and will be officially designated as the U. S. Pharmacopeia IX. This name is more appropriate than U. S. Pharmacopeia of 1910. The present Pharmacopeia is officially designated as the U. S. Pharmacopeia VIII. Its compilation was authorized by the convention of 1900, but it was not published until 1905.

The recommendation (No. 5) made by Dr. Osborne that official titles should be made as simple as possible and official abbreviations given when advisable, deserves hearty support. The 1900 convention adopted a similar general principle, but the Committee on Revision failed in its effort to observe the rule, as will be agreed by all who have attempted to write prescriptions calling for such official chemicals as benzosulphinidum, hexamethylenamina, sulphonethylmethanum. I trust that the next revision committee will be more successful in observing this general principle.

The convention should recognize the teaspoon as holding 5 c.c., the dessert-spoon 10 c.c., and the table spoon 15 c.c. M. I. Wilbert (*Proceedings of the Am. Ph. Assn.*, 1905, liii, 301) has shown that these are the average capacities and the American Medical Association has approved of these standards.

The amount of drug in the average dose of very potent preparations should be stated. As an example, the amount of opium in the average dose of tincture of opium, and the amount of strychnin in the average dose of tincture of nuxvomica.

If physicians generally will contribute to *THE JOURNAL* suggestions for the U. S. Pharmacopeia IX, the collection of recommendations will enable medical societies and schools of

medicine to carefully consider and decide on questions which otherwise will come before the convention of 1910 and find delegates unprepared to act intelligently or in cooperation.

HENRY M. WHELPLEY, M.D., St. Louis.

American Druggists Syndicate

To the Editor:—Permit me to congratulate and to thank you for your editorial and your article in the Department of Pharmacology, January 8, on the American Druggists Syndicate. It was high time that attention was called to the matter. I know of no other single agency that has such a demoralizing effect on the profession of pharmacy, that is so degrading the druggists of the country. We thought we were succeeding in diminishing the nostrum evil and we thought that the profession of pharmacy was beginning to become aware of its high mission and of the necessity of its being in cordial relations with the medical profession, but apparently this was a mistake. For an impudent promoter who has no idea of or sympathy with the ethics of either the professions of pharmacy or of medicine, comes along and thousands of druggists follow his lead and proclaim him a Moses.

It is certainly sad, nay, it is discouraging. Let us hope that both the editorial and the article on the A. D. S. in *THE JOURNAL* will be called to the attention of the druggists of the country by the various pharmaceutical journals, and that they, *i. e.*, the druggists, will perceive the folly and the danger of following leaders who have only their personal interests at heart.

WILLIAM J. ROBINSON, M.D., New York.

[COMMENT: Somewhat in line with Dr. Robinson's letter is one from another physician urging that the article and editorial referred to be sent to every retail druggist in the country. We believe, however, that the matter may be brought to the attention of the druggists concerned in a more direct, and therefore effective, way. The article and editorial on the American Druggists Syndicate have been reprinted and will be sent on receipt of a stamp to cover postage. There are doubtless many physicians who are interested in the progress of pharmacy and the propaganda against nostrums and who would like to register a protest to their local druggists against this hybrid "patent medicine" concern. To such this reprint will prove a convenience. That such protests will, when thus made, have a good effect cannot be doubted.—ED.]

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

FORMALDEHYDE GAS POISONING

To the Editor:—Please cite cases and literature on formaldehyde gas poisoning, and inform me as to the effect on the human being of the continuous inhalation of a small amount of gas, as when a room which has been fumigated is used soon afterward as a sleeping-room. What would be the effect on temperature, pulse and respiration? How would it kill?

E. E. WUTKE, Halstead, Kan.

ANSWER.—The gas is very irritating when inhaled and may lead to inflammation of the eyes and of the respiratory organs. It might produce death by causing edema of the larynx or by inducing capillary bronchitis. There seem to be no reports of death or of serious poisoning from the inhalation of small quantities such as would remain after a disinfected room had been well aired. The irritating nature of the gas usually prevents persons from remaining in it long enough to be seriously harmed. It is stated by Humpstone and Lintz (*THE JOURNAL*, Jan 30, 1909, p. 380) that only four cases of formaldehyde poisoning are to be found in the literature. Their case and one since reported by A. J. Bower (*THE JOURNAL*, April 3, 1909, p. 1106) make six in all. In all these the poison was swallowed in the form of a strong solution.

EFFECT OF DENATURED ALCOHOL APPLIED TO THE SKIN

To the Editor:—Please refer me to articles in *THE JOURNAL* concerning denatured alcohol and its effects when applied to the skin?

L. T. A. HOTTELDORF, M.D., Randolph, Utah.

ANSWER.—You will find references to denatured alcohol in *THE JOURNAL*, Dec. 25, 1909, p. 2173, and Jan. 1, 1910, p. 87. We can

find no explicit statement as to the injurious results from applying methyl or wood alcohol to the skin, but as inhalation of the vapor of methyl alcohol has proved injurious and has even produced blindness, it would certainly be imprudent to use alcohol which has been denatured by mixing with methyl alcohol (wood alcohol).

The Public Service

Medical Department of the Army

Changes for the week ended Jan. 8, 1910:

Hughes, Leonard S., 1st lieutenant, M. R. C., granted 3 months' leave of absence, to take effect about Feb. 15, 1910.

O'Connor, R. P., captain, leave of absence extended 30 days.

Williams, Harry B., 1st lieutenant, M. R. C., recently appointed, is ordered to active duty in the service of the United States, and will proceed on Jan. 10, 1910, to Fort Sheridan, Ill., for duty.

Pierson, Robert H., captain, granted 10 days' leave of absence.

In compliance with G. O. 230, War Department, Nov. 12, 1907, the assignment of officers as Inspector for the Medical Department and Hospital Corps, National Guard, State of New York, is announced as follows:

Colonel John Van R. Hoff, Medical Corps, to organizations stationed in New York City.

Major Frank R. Koefer, Medical Corps, to organizations stationed in Albany and Troy.

Major Elbert E. Persons, Medical Corps, to organizations stationed in Brooklyn.

Captain Wm. R. Davis, Medical Corps, to organizations stationed in Buffalo, Rochester and Binghamton.

Hughes, Leonard S., 1st lieutenant, M. R. C., left Fort Worden en route to Fort Casey, Wash., for temporary duty.

Murtagh, John A., captain, leave of absence extended 7 days.

Glennan, James D., major, granted 30 days' leave of absence.

Rafferty, Ogden, lieutenant colonel, January 1, retired from active service by reason of disability incident to the service.

Farr, Charles W., major, January 1, retired from active service by reason of disability incident to the service.

Shillock, Paul, lieutenant colonel, January 1, retired from active service by reason of disability incident to the service.

Gibson, Robert J., lieutenant colonel, January 1, retired from active service by reason of disability incident to the service.

Bloombergh, H. D.; Nelson, Kent, captains; Bartlett, Wm. K., 1st lieutenant, ordered to report in person to Major William E. Purviance, Medical Corps, president of examining board at Manila, for examination for promotion.

Patterson, Robert H., captain, granted leave of absence for 60 days, with permission to apply for an extension of 30 days.

Dolley, Gilman C., 1st lieutenant, M. R. C., ordered to active duty in the service of the United States, and assigned to duty at Fort Leavenworth, Kan.

Davis, O. F., 1st lieutenant, M. R. C., granted 4 months' leave of absence, to take effect on his relief from duty in the Philippines Division, with permission to go beyond sea.

Thorne, James L., 1st lieutenant, M. R. C., ordered on arrival in the United States to proceed to his home, and on expiration of leave of absence will stand relieved from active duty in the Medical Reserve Corps.

Hall, James F., captain, granted leave of absence for 21 days on surgeon's certificate of disability, to take effect on expiration of his present leave of absence.

Wickline William A., captain, relieved from duty at Army General Hospital, San Francisco, and ordered to Fort Niagara, N. Y., for duty in command of Company C, Hospital Corps, relieving Patterson, Robert H., captain, who on being thus relieved will proceed to Fort Banks, Mass., for duty.

Medical Corps of the Navy

Changes for the week ended Jan. 8, 1910:

Ames, H. E., medical director, commissioned medical director from Nov. 20, 1909.

Brister, J. M., surgeon, commissioned surgeon from Jan. 5, 1909.

Cole, H. W., P. A. surgeon, detached from the *Yankton*, and granted leave for 1 month.

Fauntleroy, A. M., P. A. surgeon, ordered to the *New York* and to additional duty in connection with the *Indiana*.

Phelps, J. R., asst.-surgeon, detached from the *New York* and ordered to the *Yankton*.

Public Health and Marine-Hospital Service.

Changes for the week ended Jan. 5, 1910:

Lumsden, L. L., P. A. surgeon, detailed to represent the Service at the annual meeting of municipal health officers of Ohio, to be held in Columbus, Ohio, Jan. 20-21, 1910.

Hobdy, W. C., P. A. surgeon, granted 4 months' leave of absence from Feb. 1, 1910.

Vogel, C. W., P. A. surgeon, granted 5 days' leave of absence from Dec. 25, 1909, under paragraph 191, Service Regulations.

Francis, Edward, P. A. surgeon, granted 2 days' leave of absence from Dec. 28, 1909, under paragraph 191, Service Regulations.

Roberts, Norman, P. A. surgeon, granted 3 days' leave of absence from Dec. 29, 1909, under paragraph 191, Service Regulations.

Bailey, C. W., acting asst.-surgeon, granted 2 days' leave of absence from Jan. 3, 1910.

Goldsborough, B. W., acting asst.-surgeon, granted 30 days' leave of absence from Jan. 5, 1910.

Tappan, J. W., acting asst.-surgeon, granted 2 days' leave of absence from Dec. 9, 1909, on account of sickness.

Book Notices

COLLECTANEA JACOBI. Collected Essays, Addresses, Scientific Papers and Miscellaneous Writings of A. Jacobi, M.D., Professor of Infantile Pathology and Therapeutics, New York Medical College. In Eight Volumes. Edited by William J. Robinson, M.D., New York, 1909. Price, \$15 per set. New York: The Critic and Guide Co., 1909.

Dr. Jacobi has not been classed as a "literary doctor," but rather as a busy practitioner who occasionally contributes to current medical literature. All who know him know him as a great worker, and as one who has done at least his share in the making of medical history in this country during the nearly sixty years he has been in the profession. But even those nearest to him will be astonished at one phase of his work—his "occasional contributions" to medical literature—here printed in this *Collectanea Jacobi* of eight volumes making a total of 3,928 pages. The author's preface is to a certain extent autobiographical, and it is hinted that there may be, some time, a real autobiography. It is certainly hoped that this may be so, for surely an autobiography of a man who has been among the leaders in medicine for so many years as has Dr. Jacobi would be interesting, inspiring, and, in a sense, a history of American medicine since 1853.

The contributions cover a wide variety of subjects, although naturally some phase of pediatrics is most prominent in the titles. In Volume I there are 17 articles, all relating to diseases of children, two being especially important at the present time, namely, "History of Cerebrospinal Meningitis in America" and "Cerebrospinal Meningitis, Symptomatology and Treatment." Volume II contains 25 papers, also on diseases of children. They cover diseases of the respiratory tract, the heart, diarrhea, dysentery, tabes mesenterica, acute rheumatism in infancy, etc.

The first paper in Volume III is "A History of American Pediatrics Before 1800," a most interesting summary occupying 40 pages. Besides this there are 16 other papers, including such subjects as hygiene, rachitis, infant feeding, diphtheria, clinical lectures on pediatrics, besides the report of rare cases. Volume IV is devoted to contributions on therapeutics and contains an article on phases in the development of therapy and 27 other papers, only 3 or 4 of which relate exclusively to diseases of children. Volume V is mainly devoted to pathologic subjects, nearly all referring especially to conditions in children. There are 23 articles in this volume and they cover such subjects as premature closure of the fontanel, cranio-tabes, aneurism, dermoid cysts, monstrosities, and many others.

In Volume VI are found some of the more philosophical studies and papers on sociologic and general medical subjects. There are 16 papers in this volume, and their character may be gathered from such titles as "Specialism and Specialists," "Monism in Medicine," "Brains and Capital Punishment," and "Non Nocere," delivered before the Eleventh International Medical Congress at Rome in 1894.

Volume VII contains 60, and the last volume 50 articles. These are made up of miscellaneous addresses and writings comprising inaugural orations, valedictory and memorial addresses, after-dinner addresses and toasts, and addresses delivered before a variety of societies and associations both here and abroad. At the end of Volume VIII is a general index to the volumes as well as a personal index referring to the individuals mentioned. Both of these indexes are very full and complete, and add materially to the value of the series of volumes.

The preceding outline indicates the general character of the articles here grouped together. Were there space to quote the titles the variety of subjects mentioned would indicate that Dr. Jacobi has been one of the leaders, not only in the making of pediatrics in America, but also of American medicine in the broad sense of the term. Certainly few men have had more influence on our profession than he, and that influence has always been for better things. With slight modification the words on Wren's tablet in Saint Paul's Cathedral are applicable here: "*Si monumentum requiris, circumspice.*" Certainly Dr. Jacobi needs no greater monument than these eight volumes. They are very tangible evidence of a busy and well-spent life.

OTITIC CEREBELLAR ABSCESS. By Heinrich Neumann, Privat-Docent, University of Vienna. Translated by Richard Lake, F.R.C.S. Cloth. Pp. 156. Price, 4 shillings net. London: H. K. Lewis, 136 Gower Street, 1909.

Dr. Neumann, at the clinics of Vienna, has observed as many cases of cerebellar abscess probably, as any one, and puts his experience and observations at our disposal in a clear and concise manner. We are indebted to Dr. Lake for a smooth, fluent translation of the book into English. In the first 72 pages Neumann treats the clinical part of his subject under the following headings: statistics, etiology and pathologic anatomy, symptomatology, initial stage, manifest stage, terminal stage, diagnosis, differential diagnosis, prognosis, operation, after-treatment. The remainder of the book is given to "details of cases." Neumann gathered 140 cases from literature since 1900 and adds 28 cases which he personally observed in Professor Politzer's clinic. All the functional tests of the vestibular apparatus of the labyrinth are carefully considered. Still under the heading of diagnosis he says: "Many of the symptoms of cerebellar abscess are present in every intracranial complication. It shares a few symptoms with temporal lobe abscess and many of the symptoms are common to it and labyrinthine suppuration." Prognosis: "Out of 28 cases there are seven cures." This book is of special interest mainly to otologists, surgeons and neurologists. The absence of an index is to be regretted.

THE PRACTICAL MEDICINE SERIES. Under the General Editorial charge of Gustavus P. Head, M.D., Professor of Laryngology and Rhinology, Chicago Postgraduate Medical School. Vol. VIII., Therapeutics, Preventive Medicine, and Climatology. Edited by George F. Butler, Ph.G., M.D., Henry B. Favill, A.B., M.D., and Norman Bridge, A.M., M.D. Cloth. Pp. 348. Price, \$1.50; or \$10 the series of 10 volumes. Chicago: The Year-Book Publishers, 1909.

This review of the year's literature on therapeutics, preventive medicine and climatology shows the increasing prominence given to measures aside from chemical or botanical drugs. While it is true that new drugs are constantly being produced and new applications and uses of old ones made, as shown in this volume, yet one is impressed with the large amount of study that seems to be given to hydrotherapy, internal and external, electricity, hyperemia, mechanotherapy, light, radium, vaccine and serumtherapy, and even psychotherapy. Preventive medicine occupies a constantly growing prominence in present-day medicine. The literature of the three subjects included in this volume of the "Practical Medicine Series" is well covered and can not fail to prove of value in keeping physicians abreast of therapeutic progress during the year.

VISITING NURSES IN THE UNITED STATES. Containing a Directory of the Organizations Employing Trained Visiting Nurses, with Chapters on the Principles, Organization and Methods of Administration of such Work. By Yssabella Waters, Henry Street (Nurses') Settlement. Cloth. Pp. 367. Price, \$1.25. New York: Charities Publication Committee, 105 East Twenty-second Street.

As the author states in the preface, this book is issued for the purpose of showing what is being done in this country through the services of the trained nurse in what has been known for many years as "district nursing," and the extension of the work into medical inspection of schools, etc. Part 1 commences with a brief history of visiting nursing and then takes up the principle of the work and the methods of organization and administration. Part 2 is devoted to a directory of visiting nurses' associations and to statistical tables.

KLINIK DER MISSBILDUNGEN UND KONGENITALEN ERKRANKUNGEN DES FÖTUS. Von Professor Dr. R. Birnbaum, Oberarzt der Kgl. Universitäts-Frauenklinik zu Göttingen. Paper. Pp. 274, with 49 illustrations. Price, 12 marks. Berlin: Verlag von Julius Springer, 1909.

The author presents in one volume the whole subject of congenital anomalies. As a gynecologist he naturally lays special emphasis on their relation to childbirth. Thus he devotes 19 pages to hydrocephalus alone. This does not, however, make the book one-sided, nor does it affect its value as a scientific treatise on congenital anomalies. The illustrations are nearly all photographs of specimens from the Frauenklinik in Göttingen, and so are realistic and uniformly excellent. It is rather to be regretted that there are not more of them, as no subject lends itself better to such treatment. A final chapter deals with the legal status of monstrosities. The book should find a hearty welcome as a thoroughly scientific and compact exposition of a very scattered subject.

Medical Education and State Boards of Registration

COMING EXAMINATIONS

ILLINOIS: Colliseum Annex, Chicago, January 19-21. Sec., Dr. J. A. Egan, Springfield.
KANSAS: State House, Topeka, February 8. Sec., Dr. F. P. Hatfield, Olathe.
NEBRASKA: State House, Lincoln, February 9. Sec., Dr. E. Arthur Carr, 141 S. 12th Street.
NEW YORK: Albany, February 1-4. Chief of Examinations Division, Dr. Charles F. Wheelock.
WYOMING: State Capitol, Cheyenne, February 16-18. Sec., Dr. S. B. Miller, Laramie.

Arkansas November Report

Dr. F. T. Murphy, secretary of the State Medical Board of the Arkansas Medical Society, reports the written examination held at Little Rock, November 9-10, 1909. The number of subjects examined in was 12; total number of questions asked, 120; percentage required to pass, 75. The total number of candidates examined was 20, of whom 11 passed and 9 failed. Two reciprocal licenses were issued. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
University of Arkansas	(1894)	85.5	75.8
Maryland Medical College	(1902)		75.9
St. Louis University	(1907)		78.3
Barnes Medical College	(1909)		80.8
Memphis Hospital Medical College	(1899)	80.4	84.5
Meharry Medical College	(1909)		77.7
University of Nashville	(1901)		84.5
University of Tennessee	(1909)		82.5
University of Virginia	(1909)		87.2

FAILED

College of Physicians and Surgeons, Little Rock	(1909)	54.6	58
University of Arkansas	(1909)		60.5
Medical College of New Orleans University*	(1898)		63.7
Barnes Medical College	(1908)		68.5
College of Physicians and Surgeons, Memphis	(1909)		72.1
Meharry Medical College	(1907)	63.7	51.2
Memphis Hospital Medical College	(1909)		73.4

LICENSED THROUGH RECIPROCITY

College	Year Grad.	Reciprocity with.
College of Physicians and Surgeons, Chicago	(1903)	Illinois
Jefferson Medical College	(1867)	Missouri

* Became Flint Medical College in 1901.

Florida November Report

Dr. J. D. Fernandez, secretary of the Regular Board of Medical Examiners of Florida, reports the written examination held at Jacksonville, Nov. 10-11, 1909. The number of subjects examined in was 7; total number of questions asked, 70; percentage required to pass, 75. The total number of candidates examined was 37, of whom 30 passed and 7 failed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
University of Alabama	(1909)		78
Yale Medical School	(1902)		92
George Washington University	(1905)		84
Atlanta School of Medicine	(1909)	84	92
Atlanta College of Physicians and Surgeons	(1909)		80
Chicago College of Medicine and Surgery	(1909)	96	97
College of Physicians and Surgeons, Chicago	(1902)		80
University of Louisville	(1909)		77
Kentucky School of Medicine	(1908)		86
Tulane University of Louisiana	(1909)	78	86
University of Maryland	(1899)	91	84
College of Phys. and Surg., Baltimore	(1895)	87	80
University of Michigan, College of Medicine	(1909)		87
Bellevue Hospital Medical College	(1897)		90
Leonard School of Medicine	(1908)	80	77
University of Pennsylvania	(1908)		87
Jefferson Medical College	(1888)	78	77
Meharry Medical College	(1908)		75
Chattanooga Medical College	(1898)		85
University of Tennessee	(1885)		88
University of the South	(1909)		80
University of Virginia	(1906)		87
Queen's University, Kingston, Ontario	(1896)		90

FAILED

Atlanta School of Medicine	(1909)	59
Atlanta College of Physicians and Surgeons	(1907)	70
University of Louisville	(1893)	30
Medical College of South Carolina	(1909)	68
University of West Tennessee	(1909)	72
University of the South	(1909)	66
University of Vermont	(1893)	60

Marriages

WILLIAM R. BAGLEY, M.D., Duluth, to Miss Marian Miller, of Chicago, January 1.

EDWIN L. WOOD, M.D., Dansville, N. Y., to Miss Edith Farnham, of Buffalo, December 30.

GEORGE HARVEY BUCK, M.D., to Miss Lela Kinsall, both of Greensburg, Kan., December 15.

DAVID HEINE LEVY, M.D., to Miss Dorothea G. Leopold, both of New York City, December 28.

RUDOLPH A. MICHELSON, M.D., to Miss Annie Michelson, both of Baltimore, December 26.

NOAH W. CLARK, M.D., Rossville, Ind., to Miss Rosettie C. Cline, of Flora, Ind., December 25.

WALTER R. GEORGE, M.D., to Mrs. Mary Irene Schandorf, both of Indianapolis, December 25.

ERNEST PAUL MURDOCK, JR., M.D., Chicago, to Miss Edythe Wood, of Albany, N. Y., December 27.

MILES U. LIESER, M.D., Vancouver, B. C., to BLANCHE DARROW, M.D., of St. Louis, December 29.

BURTON BOHANNON, M.D., St. Louis, to Miss Elma Estelle Hallett, of Sac City, Iowa, December 22.

ELMER E. EIFERT, M.D., to Miss Irene Black, both of Hillsboro, Ind., at Danville, Ill., December 26.

HENRY B. O'BRIEN, M.D., Pascoe, Wash., to Miss Lillian Neuquist, of Stillwater, Minn., December 28.

GUSTAVUS J. MCINTOSH, M.D., Devil's Lake, N. D., to Miss Mabel Colson, of Minneapolis, December 29.

CLARENCE S. ORDWAY, M.D., Toledo, Ohio, to Miss Marion Frances Sweet, of Green Bay, Wis., December 25.

CHARLES W. BURGESS, M.D., Bethany, Mo., to FRANCES E. RUTLEDGE, M.D., of St. Joseph, Mo., December 30.

FREDERICK WILLIAM TRETBAR, M.D., Hudson, Kan., to Miss Elsa Louise Wendt, of Fairfield, Iowa, December 29.

CHARLES REX KENNEDY, M.D., to Miss Annabel Daggett, both of Omaha, at Plattsmouth, Neb., December 25.

HORACE FAULKNER HOSKINS, M.D., Weyers Cave, Va., to Miss Maria Temple Bird, at Baltimore, December 28.

WILLIAM H. CURTISS, M.D., Frankfort, Ind., to Miss Mabel Hale, of Long Beach, Cal., at Sedalia, Mo., December 19.

Deaths

William Sterling Huselton, M.D. Georgetown University, Washington, D. C., 1865; a member of the American Medical Association; for three years assistant surgeon in the army during the Civil War; one of the organizers and a charter member of the staff of the Allegheny General Hospital, and later consulting surgeon to that institution; chief surgeon to the Pittsburg and Western Railroad, and division surgeon of the Baltimore and Ohio Railroad; for many years a member of the local pension board; for several years treasurer, and later president of the Allegheny County Medical Society; at various times an officer of the municipal government of Pittsburg; died at his home in that city, January 1, aged 69.

James Anthony Burroughs, M.D. Louisville Medical College, 1882; a member of the American Medical Association; president of the Medical Society of the State of North Carolina; formerly president of the Buncombe County (N. C.) Medical Society; and president and honorary member of the Tri-State Medical Society of Virginia and the Carolinas; a prominent member of the Mississippi Valley Medical Association and American Public Health Association; a member of the local board of health and of the State Board of Health; and one of the most noted specialists on tuberculosis of the United States; died at his home in Asheville, December 29, from nephritis, aged 52.

Herbert Charles Wilson, M.D. Trinity Medical College, Toronto, 1882; first speaker of the territorial legislature of Alberta; a practitioner of Edmonton since 1882; a member of the Northwest Council, and delegate to the Ottawa government from that body in 1885; formerly mayor of Edmonton, and in 1907, president of the Alberta Medical Association; died at his home, December 23, aged 50.

John Henry Marsh, M.D. Jefferson Medical College, 1889; a member of the American Medical Association; surgeon to St. Luke's Hospital; and founder of the Marsh-Highsmith

Hospital, Fayetteville, N. C.; formerly president of the Cumberland County Medical Society; and for several years city superintendent of health; died in St. Luke's Hospital, January 2, from nephritis, aged 45.

Joseph Franklin Perry, M.D. Harvard Medical School, 1873; a member of the Massachusetts Medical Society; a veteran of the Civil War; editor and owner of the *Boston Journal of Health*; later medical director of an insurance company; founder of, and physician-in-chief to the Blue Hills Sanatorium, Ashmont, Mass.; died in the Boston City Hospital, December 31, aged 63.

George Edward Woodbury, M.D. Dartmouth Medical School, Hanover, N. H., 1860; a member of the Massachusetts Medical Society; surgeon of the Second District of Columbia volunteer infantry during the Civil War; a trustee of the Nevins Memorial Library; secretary of the Methuen Historical Society; died at his home in Methuen, December 26, from heart disease, aged 71.

George Francis Thomson, M.D. New York University, New York City, 1855; surgeon of the Thirty-eighth Massachusetts Volunteer Infantry, and later of the Twenty-sixth New York Volunteer Cavalry; a member of the Massachusetts Medical Society and assistant medical examiner of Hampshire county; died at his home in Belchertown, December 23, from heart disease, aged 77.

James Henry Stauffer, M.D. Baltimore Medical College, 1904; a member of the American Medical Association; formerly assistant physician in the obstetrical department of the Maryland General Hospital, and later in charge of the department of surgery in the dispensary of that institution; died in Johns Hopkins Hospital, Baltimore, January 3, from leukemia, aged 32.

Don Morrison Waggoner, M.D. Rush Medical College, 1881; Bellevue Hospital Medical College, 1882; president of the pension board of Lewistown, Ill.; one of the most prominent practitioners of Fulton county, who with his wife was making a tour of the world; died on board the steamer *Cleveland*, January 1, near Kobe, Japan, from cancer of the tongue, aged 48.

Henry Rust Parker, M.D. Dartmouth Medical School, Hanover, N. H., 1866; a member of the New Hampshire Medical Society; for two terms mayor of Dover; formerly president of the Dover Medical Society and Strafford District Medical Association; and president of the county pension board; died at his home in Dover, December 29, from pneumonia, aged 73.

Frank M. Warford, M.D. College of Physicians and Surgeons, Keokuk, 1856; assistant surgeon of the Third Iowa and Fourth Arkansas Volunteer Cavalry during the Civil War; also an attorney; for three terms president of the Hamilton County, Ind., Medical Association; died at his home in Cicero, December 17, from uremia, aged 78.

Horatio Walker, M.D. McGill University, Montreal, 1902; a member of the Medical Society of the State of California; formerly of Duluth, Minn.; a member of the faculty of the University of Southern California, Los Angeles; died in the Pasadena Hospital, December 30, two weeks after an operation for tuberculosis of the kidney.

John N. Parr, M.D. Medical College of Ohio, Cincinnati, 1866; a member of the Indiana State Medical Association; a veteran of the Civil War; for three years a clergyman of the Methodist Episcopal church; vice-president of the State Bank of Sheridan; died at his home in Lebanon, December 24, from disease of the liver, aged 72.

Luther I. McLin, M.D. Detroit Homeopathic Medical College, 1873; first mayor of St. Joseph, Mich., holding that office for four terms; for many years a member of the city council, board of public works, and board of education; died at the home of his son in Twin Falls, Idaho, December 14, from heart disease, aged 62.

Eugene Clarke Goodloe, M.D. Vanderbilt University, Nashville, 1897; of Demopolis, Ala.; a member of the Medical Association of the State of Alabama; and Tri-State Medical Society of Alabama, Georgia and Tennessee; local surgeon of the Southern Railway; died in an infirmary in Selma, Ala., December 25.

George Alvin Weida, M.D. New York University, New York City, 1888; of Frederick, Pa.; a member of the American Medical Association; twice a member of the Pennsylvania legislature; died suddenly in a snow drift from heart disease, while making a professional call, December 30, aged 43.

Wallace Erie Edgerton, M.D. State University of Iowa, Iowa City, 1880; a member of the American Medical Association; one of the pioneer practitioners of South Dakota; a member

of the local pension examining board of Salem; died at his home, August 11, from cirrhosis of the liver, aged 56.

George Sintzel, M.D. Missouri Medical College, St. Louis, 1878; for thirteen years president of the village council of Niles Center, Ill.; and formerly a member of the staff of St. Francis Hospital, Evanston, and Cook County Hospital; died at his home January 2, from pneumonia, aged 53.

William Wallace Wickham, M.D. Washington University, St. Louis, 1856; a surgeon in the Federal service during the Civil War; for many years a practitioner of South Bend, Ind.; died at the home of his daughter in Crawfordsville, Ind., December 21, from senile debility, aged 89.

Frank Hosford Watson, M.D. Johns Hopkins Medical School, Baltimore, 1903; lecturer and instructor in clinical medicine in Tulane University, New Orleans, and visiting physician to Charity Hospital; died in a sanitarium in Stevens Point, Wis., December 15, aged 31.

William Luther Nolen, M.D. New York University, New York City, 1891; a member of the Medical Society of Virginia; formerly of Chattanooga, Tenn.; founder of the Nolan Hospital; died at his home in Salem, Va., January 1, from heart disease, aged 44.

Frank Colverd Bruce, M.D. University of Vermont, Burlington, 1885; a member of the Massachusetts Medical Society; for several years chairman of the Easthampton, Mass., board of education; died in Northampton, Mass., November 7, from paresis, aged 49.

John C. Ross, Indiana Eclectic Medical College, Indianapolis, 1880; (license, Ind., 1897, years of practice); an eclectic practitioner of Muncie, Ind.; was run over by a freight train and instantly killed, while making a professional call, December 17, aged 65.

Gaston Puchot, M.D. National Medical College, City of Mexico, 1901; (license, Texas, 1909); of Matamoras, Mex.; died in that place, December 1, from a gunshot wound of the heart, self-inflicted, it is believed with suicidal intent, aged 34.

James Forman Pineo, M.D. Bellevue Hospital Medical College, 1877; formerly of West Chester, N. S., and Bennington and Meriden, N. H.; died at his old home in Lower Wolfville, N. S., December 20, from lung disease, aged 65.

James Yates, M.D. Detroit Medical College, 1874; a member of the American Medical Association; health officer of Erin township, Macomb county, Mich.; died at his home in Roseville, December 27, from heart disease, aged 69.

Abram Mullinix, M.D. College of Physicians and Surgeons, Keokuk, 1874; vice-president of the bank of Willow Springs, Mo.; while making a professional call, died suddenly December 28, from cerebral hemorrhage, aged 72.

Henry K. Main, M.D. University of Nashville, 1872; of Dalton, Ga.; formerly of Atlanta; a Confederate veteran; died at the home of a friend in Atlanta, December 27, from cerebral hemorrhage, aged 65.

William N. Heath (license, Ind.); for more than forty years a practitioner of Indiana; at one time auditor of Madison county; died at the home of his daughter in Kokomo, December 30, from nephritis, aged 65.

William Chester Beaman, M.D. Queens University, Kingston, Ont., 1886; a member of the Ottawa (Ont.) City Council and board of health for four years; died suddenly at his home in Ottawa, December 31, from duodenal ulcer, aged 53.

Joseph James Moore, M.D. University of Michigan, Ann Arbor, 1876; a member of the Michigan State Medical Society; died at his home in Farmington, December 28, from cerebral hemorrhage, aged 75.

Charles P. Geudtner, M.D. Rush Medical College, 1896; a member of the Illinois State Medical Society; a specialist on diseases of the eye; died at his home in Chicago, January 5, from pneumonia, aged 44.

Patrick Freebern Gavin, M.D. Harvard Medical School, 1870; Kings and Queens College of Physicians and Surgeons, Dublin, Ireland, 1871; died at his home in South Boston, December 22, from pneumonia, aged 64.

P. Solomon Cote, M.D. Laval University, 1902; of Montreal; for six months a member of the editorial staff of *Le Canada*; a specialist on nervous diseases; died at his home, December 22, aged 52.

Joseph Gilbert Gray, M.D. Medical College of Ohio, Cincinnati, 1909; who was about to open an office in Springfield, Ill.; died at St. Johns Hospital in that city, December 31, from erysipelas, aged 23.

Walter Alfred Smith, M.D. Cooper Medical College, San Francisco, 1907; resident physician at St. Francis Hospital,

San Francisco; died in that city, August 14, from lobar pneumonia, aged 29.

Edmund Strachan Pendleton, M.D. Jefferson Medical College, 1854; a member of the Medical Society of Virginia; and a Confederate veteran; died at his home in Iron Gate, Va., December 27.

Charles Quick, M.D. Grand Rapids (Mich.) Medical College, 1906; a member of the Michigan State Medical Society; died at his home in Grand Rapids, December 26, from nephritis, aged 50.

James Thomas Kerrigan, M.D. University of Vermont, Burlington, 1899; formerly of Waltham, Boston; died at his old home in Hudson, Mass., December 9, from abscess of the brain, aged 35.

Benjamin F. Mills, M.D. Willoughby (Ohio) University, 1846; a pioneer practitioner of Rock County, Wis.; died at his home in Baraboo, December 19, from senile debility, aged 88.

Jesse L. Stilwell, M.D. College of Physicians and Surgeons, Baltimore, 1905; of Freehold, N. J.; died at the home of his uncle, near that place, December 17, from diabetes, aged 37.

Richard A. Pinkley (license, Ill., years of practice, 1877); for forty years a practitioner of Illinois; died at his home in Bushnell, December 16, from cerebral hemorrhage, aged 76.

William Wilson Barber, M.D. Eclectic Medical Institute, Cincinnati, 1893; a member of the school board of Cumminsville, Cincinnati; died at his home December 20, aged 39.

Walter Crooks Bowers, M.D. Rush Medical College, 1882; a member of the American Medical Association; died at his home in Decatur, Ill., December 31, from pneumonia, aged 52.

Gustavus M. Cowger (license, years of practice, Iowa, 1886); a veteran of the Civil War; died at his home in Agency, Iowa, July 12, from angina pectoris, aged 72.

Charles Eugene Meader, M.D. Harvard Medical School, 1879; a member of the Massachusetts Medical Society; died at his home in Lynn, December 27, from anemia, aged 57.

John Allen Gunn, M.D. Medical College of Ohio, Cincinnati, 1868; a Confederate veteran; died at his home in Hopkinsville, Ky., December 19, from arteriosclerosis, aged 69.

Daniel I. Avery (license, Mo., 1883); for many years a practitioner of Lebanon, Mo.; died at the home of his brother in Whitehall, Ill., January 1, from tuberculosis.

Charles N. Lake, M.D. Harvard Medical School, Boston, 1895; a member of the American Medical Association; died at his home in Detroit, December 26, from pneumonia.

Medical Economics

THIS DEPARTMENT EMBODIES THE SUBJECTS OF ORGANIZATION, POSTGRADUATE WORK, CONTRACT PRACTICE, INSURANCE FEES, LEGISLATION, ETC.

Industrial Insurance in Germany

Mr. Thomas H. Norton, United States Consul at Chemnitz, Germany, has submitted a report on compulsory insurance among the working classes in Germany which is especially interesting on account of his comments on the effect of this system on the medical profession. He states that while compulsory insurance against sickness and accident as well as insurance for old age has done much to raise the level of comfort for working men and their families, yet it has had a decided effect on the medical profession which is attracting considerable attention in Germany at present. The compulsory insurance system has enabled working men to face the uncertainties of employment and the liability to poverty in old age, has freed them from much of the anxiety and actual suffering which is a part of the lot of the laboring classes in other countries, but it has also deprived a large share of the population of the right to select their medical advisers at will. Physicians are engaged by the officials of the insurance organizations on fixed terms, which are usually far below the minimum rate fixed by law for medical services and which are specifically provided for by contract. "The old-time relations between physicians and patients," says Mr. Norton, "are rapidly giving way to a purely business connection in which the personal equation is of constantly diminishing importance."

There is keen competition among physicians to secure appointments as medical officers of the different insurance companies, while the very low fees paid may tend to encourage perfunctory and inadequate services. The necessity of the attending physician doing his best to win the confidence of the patient as well as of the family and friends of the patient, no longer exists, the physician securing his business by virtue of his appointment as a medical officer of the insurance company and not on account of his patient's confidence in him. On the other hand, there is said to be a tendency on the part of those holding insurance policies to abuse their privilege by sending for a physician for trivial ailments, or by calling him at any hour of the day or night. In the pursuance of his duties as a company physician, it is also necessary for the physician to perform, to a certain extent, the work of a detective, since he is required to detect and report any tendency toward malingering, necessarily an important problem in dealing with working men.

Finally, the enforcement of compulsory insurance has brought about a distinct lowering of the average compensation for professional services. While it is true that a large number of persons formerly treated as charity patients are now compelled to carry insurance, and a certain amount of remuneration is therefore paid by them to the attending physician, it is also asserted that a much larger number, especially of the better class of working men, whose modest fees formerly constituted an important part of the doctor's income, are now furnished with free treatment and that this more than compensates for the additional remuneration received from the first-mentioned class. The tendency on the part of the state is to increase the number of those affected by compulsory insurance, and it is now proposed to require insurance among clerks and employees receiving higher salaries than the maximum established by the present law (\$476). Each advance will, of course, increase the number of families affected and will consequently diminish the number of families to which the physician in private practice can look for support.

While the evils pointed out in Mr. Norton's report are undeniable, they are not necessary or essential features of the compulsory insurance plan. That some form of protection for the working man and his family against sickness and old age is desirable and necessary under present economic and sociologic conditions is apparent. That the services of medical men are indispensable in operating such a plan is also evident. This, however, instead of being a disadvantage to the physician, is a distinct advantage, inasmuch as it opens up an entirely new field for his labors, namely, that of examining and rating men who take out insurance or who retire under its provisions. The fact that the medical profession in Germany has allowed itself to be exploited for the sake of the rest of society cannot be charged against the compulsory insurance plan. Had the physicians in Germany been sufficiently alert to see the danger and sufficiently well organized to resist it, the compulsory insurance laws would have proved a benefit to them instead of a disadvantage. The vital point in Mr. Norton's report, as far as it affects the medical profession, is his statement that physicians are engaged by officials of insurance organizations on fixed terms which are "far below the minimum rate usually paid for medical services." It is safe to say that the other employees of the insurance companies do not work for wages or salaries which are "far below the minimum rate" paid for such services and there is no reason why the physician should be made an exception, except that he has allowed himself to be. The fact rather seems to be that the doctor is not used to disposing of his services in bulk. Either as individuals or as a profession, we do not know what price to put on our services and we consequently allow ourselves to be undervalued, except when a personal relation is concerned.

Even if the facts had been recognized in time, however, this exploitation of the German medical profession could probably not have been prevented, since the physicians of Germany were not sufficiently well organized to act in concert and to resist the imposition of inadequate fees. Hence, as has generally been the case in any philanthropic or cooperative scheme, the physician has borne the greater part of the financial burden. Organization, careful investigation, concerted action, and a

united position on the question would have made it necessary to pay adequate and reasonable fees for medical services instead of amounts which were entirely incommensurate with the value of the services rendered.

The lesson to us is obvious. If industrial insurance is needed and is feasible, it will doubtless be put in operation in this country. If we would avoid the evils which have fallen on the German physicians, let us see to it we have effective organization so that we may be able to avoid the evils which have befallen our professional brethren in Germany.

POSTGRADUATE COURSE FOR COUNTY SOCIETIES

DR. JOHN H. BLACKBURN, DIRECTOR
BOWLING GREEN, KENTUCKY

[The Director will be glad to furnish further information and literature to any county society desiring to take up the course.]

Fifth Month—Fourth Weekly Meeting

DISEASES OF THE PANCREAS

- HEMORRHAGE OF THE PANCREAS: Pathology. Symptoms.
- ACUTE PANCREATITIS: Relation to fat-necrosis. Technic and significance of the Cammidge reaction.
- ACUTE HEMORRHAGIC PANCREATITIS: Etiology. Symptoms. Differentiate from perforative peritonitis and acute intestinal obstruction.
- ACUTE SUPPURATIVE PANCREATITIS: -Etiology. Pathology.
- GANGRENOUS PANCREATITIS: Etiology. Diagnosis.
- CHRONIC PANCREATITIS: Pathology. Association with diabetes.
- PANCREATIC CYSTS: Varieties, Pathology. Diagnosis.
- TUMORS OF THE PANCREAS: Varieties, carcinoma, sarcoma, cysts, tubercle, syphiloma. Symptoms. Diagnosis.

Monthly Meeting

- Differential Diagnosis and Treatment of Acute Pancreatitis.
- Medicinal Treatment of Chronic Gastric Catarrh.
- Etiology and Treatment of Chronic Diarrhea.

Society Proceedings

COMING MEETING

Medical Society of State of New York, Albany, January 25.

AMERICAN ASSOCIATION FOR CANCER RESEARCH.

Annual Meeting, held in New York City, Nov. 27, 1909

Significance of Ferments in Tumors, with a Digest of Literature

DR. RICHARD WEIL, New York City, presented a report on the antitryptic reaction of the blood, including some original observations. He described the methods hitherto used, pointing out as a serious defect the fact that they were competent to determine only inexactly either the point of total inhibition or of complete digestion. A much more accurate and flexible method was afforded by the viscosimeter, which he had recently adapted to the study of the reaction. The original assertion of Brieger that an increased antitryptic reaction was characteristic of cancer, and occurred in 90 per cent. of the cases, has been amply confirmed by subsequent observers. On the other hand, the same reaction characterizes many of the acute infections, also Graves' disease, chronic tuberculosis, and diabetes. Diagnostically, therefore, although an increased antitryptic index can no longer be considered as typical of cancer, its presence may become a datum of great clinical importance. In the absence of complicating factors, such as tuberculosis, it may determine the diagnosis of cancer in obscure cachectic diseases. In the presence of new growths of questionable character, as in the breast, its presence or absence may be taken as very strong presumptive evidence (from 85 to 95 per cent.) of malignancy or the reverse. Biologically, the reaction appears to be of wide significance, and has suggested many problems. It has been generally held that the inhibition of trypsin indicates the existence of a specific immune body. Dr. Weil cited

a number of experiments in disproof of this view, notably the inhibition of papain by the serum. The source of the hypothetical trypsin which acts as a stimulus to the production of the so-called antitrypsin, which has been located by different authors in the pancreas, the leucocytes and the tissues, was discussed in detail.

DISCUSSION

DR. S. B. WOLBACH, Boston: Is it possible that changes in the viscosity of the blood, such as occur in disease could have influenced the viscosity of the test mixture (gelatin and blood-serum)?

DR. W. T. LONGCOPE, Philadelphia: Has it been possible to formulate any rule, from the observations with the viscosimeter, as to the characteristics of the antitryptic index in various diseases?

DR. RICHARD WEIL: The viscosity of the serum, in the dilution used (namely, 2 per cent.), played no part in the readings, as it coincided with that of salt solution. It has not yet been possible to formulate any general rules as to the characteristics of the antitryptic index in various diseases; but it seems probable that a larger series of observations with the viscosimeter will make this possible.

An Epidemic of Carcinoma of the Thyroid Gland Among Fish

DR. HARVEY R. GAYLORD, Buffalo: This paper is a continuation of a preliminary report made before the society a year ago. It gives details of two epidemics in different parts of the country, and refers to two others. The epidemic referred to last year, which resulted in the loss of 3,500 brook trout, had, during the summer of 1909, begun to involve the brown trout and adult rainbows, so that heavy losses continued during this summer. Among the fish preserved from this epidemic was one with a tumor on the lower jaw, which on section was found to be either an implantation of the thyroid tumor or a metastasis, as the fish so affected had a primary tumor of the thyroid. From this observation it is plain that this tumor may, under given conditions, metastasize, or that it is implantable. In an epidemic in a second hatchery, an analysis of the course of the disease again showed that where fish occupied ponds which received water from ponds containing infected fish, these fish may become infected; and, furthermore, the rate at which the fish become involved increases progressively as the contents of ponds containing infected fish are added to the water which supply the fish. Another observation of importance is the discovery that lots of fish are immune. This is particularly shown in hybrid fish, in which one lot of hybrid salmon one year old were reduced from 1,043 in April to 44 sound fish remaining in August, whereas another lot of yearling hybrid salmon, although badly exposed by being placed in ponds into which the water from infected ponds ran, remained free from the disease throughout. Three lots of Scotch sea trout remained immune, although badly exposed. The only lot of brook trout two years old which were free from the disease was found on a careful analysis of their position throughout their entire life history in this hatchery, never to have been placed where the water from infected troughs or ponds flowed to them. They were placed in the uppermost pond and remained free from the disease throughout the epidemic. These observations on immunity in hybrid fish, in the light of those made by Tyzzer in inoculation of Japanese waltzing mouse tumor, in hybrids from immune and non-immune parents, serve to accentuate the similarity of this disease in fish to cancer in warm-blooded animals.

The disease is found to affect very small fish. A brook trout of the hatch of 1909, three inches in length, was shown with a tumor of considerable size from which it had died. This was the first affected fish from the hatch of 1909, and it had occupied from May until September one of five troughs which had the previous summer contained infected fish. From this it would appear that the contagion can be localized, even to given, small wooden troughs, and that these troughs can retain their infectivity from year to year. In all the epidemics thus far described, occasionally large fish, when exposed, acquire the disease. A land-locked salmon 8 years old, measuring 24 inches in length, developed large tumors, and in two other hatcheries during the past year, epidemics have broken out

involving considerable numbers of adult rainbow trout and large adult brook trout. Among the large fish epithelioma of the tongue or the region of the mouth, is not uncommon. Carcinoma of the thyroid produces the most rapid destruction among young fish, frequently diffusely infiltrating the gills and also growing to great relative size in the small fish. The tumor erodes bone, destroys cartilage and infiltrates the muscular structure. The tumor presents varying characteristics, frequently retaining the alveolar type with colloid, again of a strictly adenomatous type, but in all cases with areas of complete malignant degeneration and assuming the characteristics of solid soft carcinoma.

In the study of this interesting form of cancer, the discovery of metastases formation, the evidences of immunity and the influence of blood relationship to susceptibility, show the practical identity of this affection to cancer in warm-blooded animals. The apparent absence of metastasis formation as a criticism was long since applied to mouse cancers and to-day falls to the ground in this affection. The evidence of infectivity and contagion appear to the observer to be conclusive, and when correlated in the evidence of infectivity in cancer in warm-blooded animals should prove the greatest support to the parasitic theory we have yet encountered. The marked evidence of infectivity and contagion found in carcinoma of the thyroid in fish appears to be an accentuation of similar evidence of a less convincing character found in other species. Its accentuation in this disease can be largely explained by the environment and the conditions under which fish are artificially propagated.

DISCUSSION

DR. C. R. STOCKARD, New York City: Many of the infiltration phenomena in these diseased thyroids in fish may be due to the fact that the gland is not encapsulated, and that small follicles often appear among the muscle fibers and loose tissues of the bronchial region. It also seems rather strange to find the thyroid cancer more frequently among the yearling fish than among older individuals, since this is the reverse of what is commonly observed regarding cancer in other animals.

The Structure, Distribution and Variation of the Thyroid Gland in Fish

DR. J. F. GUDERNATSCH, New York City: Since the thyroid gland of *Teleostei* is the seat of tumors it seemed of importance to determine its normal features. It is not a compact, uniform organ as in mammals, but is broken up into numerous single follicles which are more or less closely associated. This disintegration and the distribution of the follicles vary not only with the species but also with the individual. The follicles are located around the ventral aorta and its branches to the gills. We usually find them more densely packed in the neighborhood of these vessels, while toward the periphery their arrangement becomes less dense until they finally lie entirely separated. Their distribution extends as far as the other tissues will allow and they creep into any available place. They even invade other tissues, for instance, muscles, as in trout. Laterally the follicles reach out along the gill arteries, and if they find an especially open passage along the vessels they may then invade even the gills. The latter case is found in trout, in which genus the follicles especially show the tendency to break off from a central portion and to spread out toward the periphery. This scattering of the follicles is made possible by the fact that there is no capsule around the thyroid, and since this diffuse arrangement is found in all species examined we must consider it to be the normal condition. The thyroid gland of the *Teleostei* is thus a rather undefined organ in its shape having the tendency to give up its unity and to break up into numerous small parts. This peculiar feature renders it difficult to distinguish between a main body and detached follicles, as we cannot sharply define the main body. The limits between a normal thyroid and a beginning hypertrophy are also rather indistinct, since we do not yet know how extensively the organ may normally develop in the number of its follicles or their wide distribution. This study of the thyroid demonstrates that the follicles may normally be present in regions which might be supposed to contain secondary thyroid tumors, while as a matter of fact such misplaced structures would be a part of the primarily diseased gland.

DISCUSSION

DR. JAMES EWING, New York: I think that the study of Dr. Gudernatsch, showing the wide distribution of normal islands of thyroid tissue in fish, throws much light on the dissemination of tumor nodules in fish suffering with thyroid disease. While it does not affect the conclusion that in some of these animals genuine tumors of the thyroid do arise, it indicates that many of the local extensions of these tumors should not be regarded as a sign of metastasis and malignancy.

DR. HARVEY R. GAYLORD, Buffalo: I have long recognized the necessity of determining the anatomic relations of the thyroid in fish, and have planned to make such a study; but I now feel that the present study has furnished valuable information in this field. I suggested in only a casual way that the anatomic relations of the thyroid in fish are, perhaps, not favorable to the early development of metastasis. The wide distribution of the islands of normal thyroid is, doubtless, partly responsible for the early extensive growth of these thyroid tumors, which often results in the death of the fish from asphyxia before metastasis can occur.

Demonstration of Tumors in Fish

DR. LEO LOEB, Philadelphia, exhibited specimens of fish tumors, which he had received through the kindness of Mr. C. Harold Drew, in Plymouth, England. Among these were two cases (an adenocarcinoma of the liver of the rainbow trout and a tumor of the mesentery of a plaice) in which the same tumors were found in different individuals of the same species; and in the first case, at least, these two fishes were found in the same hatchery, among a relatively small number of fishes. These observations, together with another observation, by Marianne Plehn, found by Dr. Loeb in the literature of the subject, prove that the so-called endemic occurrence of tumors is not rare among fishes; and that it is not limited to the carcinoma of the thyroid in trout. An accidental occurrence could be excluded in these cases, as well as in previous observations made by Dr. Loeb in rats and cattle. In the case of the so-called endemic occurrence in rats, hereditary conditions are probably responsible for these conditions; but whether or not the same cause underlies the corresponding findings in fish, cannot be decided at present.

Teratoma Testicle and Its Derivatives: Two Rare Cases

DR. JAMES EWING, New York: Primary lymphosarcoma of the testicle was first described by Malassez and has since figured extensively in the French literature. Chevassu, an experienced French observer, has recently concluded that a primary tumor of this type does not occur in the testicle but that all such testicular tumors are secondary to original tumors in other parts of the body. This view is to some extent borne out by the observations of Debernardi, who reported three cases of lymphosarcoma testis, at least two of which were clearly secondary, while the third was of doubtful origin. In the following case the clinical history and pathologic examination clearly indicated the existence of a primary lymphosarcoma of the testicle. The patient was a well-nourished boy of 4½ years. The parents first noticed a swelling of the right testicle about July 1, 1909, which in three weeks reached a size of a small hen's egg and gradually involved the inguinal lymph nodes and the overlying skin. About July 30 the tumor, skin and three inguinal nodes were removed. The wound healed well, but after two weeks the child became anemic and began to lose flesh. There was slight fever, but no external lymph node enlargement. Late in August several firm nodules appeared in the skin of the face and chest. The child died September 15, twelve weeks after the first symptom.

The autopsy showed the lymph nodes at the bifurcation of the aorta enlarged to the size of marbles. A few fine pinpoint nodules were present in the lungs and some larger ones in the liver. These kidneys were diffusely infiltrated in several areas. The spleen was moderately enlarged. The general lymph nodes were unaffected. There was no leucemia. The tumor arose in the corpus highmori and epididymis pushing widely apart the tubules of these structures. The testicle proper was separated from the tumor by a fibrous capsule and was uninvolved. In the lymph nodes and in the main tumor the tumor cells were large lymphocytes. In the skin, liver,

lung and kidney there were only small lymphocytes. That the tumor was primary in the testicle was indicated by the clinical history, the relatively large size of the original tumor, the gradual extension up the inguinal chain and the comparatively slight involvement of the general lymphatic system.

The second case was a teratoma of the testicle composed of epidermoid cysts, adult thyroid, a fibromuscular and glandular organ resembling the uterus, and carcinoma with lymphoid stroma. The tumor had been removed from a subject of 35 years who for two years had noticed a gradual enlargement of the organ. The tumor was as large as a goose egg. It contained three communicating cysts lined by stratified squamous epithelium and filled with sebaceous material. The muscular organ was surrounded by a fibrous and fat capsule. It was an elongated structure lined by glandular tissue similar to the uterine mucosa surrounded by thick irregular bands of smooth muscle tissue. Several cross sections of this organ appeared in an area of 4 cm. in breadth. About this organ lay three large islands of adult thyroid tissue. The main mass of the tumor was composed of large cell carcinoma with lymphoid stroma. The small remnant of testicle was displaced to the upper posterior pole of the tumor.

Thyroid tissue probably has not previously been described in testicular teratomata, although common in ovarian teratomata. Possibly the organ described as uterus was a stomach or prostate. The carcinomatous portion may have been one part of an original single tumor. The occurrence of a peculiar type of carcinoma in this teratoma might indicate that when this type of carcinoma occurs alone in the testicle, as it often does, it is nevertheless of teratomatous nature, other portions of the teratoma having failed to develop. The carcinoma possibly originated from fetal entodermal epithelium, and the lymphoid stroma may have been an integral part of the tumor.

(To be continued)

OHIO ASSOCIATION OF MEDICAL TEACHERS

Fifth Annual Meeting, held in Columbus, Dec. 27, 1909

There were about fifty teachers, representing various schools in Ohio, present at the meeting, and a very interesting program was carried out.

DR. E. O. SMITH, secretary of Ohio-Miami Medical College, read a paper on "Entrance Requirements," in which he advocated more uniform and higher standards of entrance, holding that while present preparatory schools were so varied in their standards the state medical board should hold entrance examinations for all applicants.

DR. JOSIAH MEDBERRY, professor of anatomy, Starling-Ohio Medical College, reviewed the work of the "Freshman Year" with especial reference to the teaching of anatomy and the elimination, in this year, of incompetent students.

DR. EDMUND M. BAHR, professor of physiology, Ohio-Miami Medical College, read an interesting paper on the "Basal Nomenclature." This paper was ably discussed by Prof. S. S. Sission of the Ohio State University; both he and Dr. Baehr agreeing that this nomenclature has special merit and should be more generally used.

DR. G. W. SPENCER, professor of physiology, Cleveland Homeopathic Medical College, urged the importance of more practical "Methods in the Teaching of Materia Medica and Therapeutics."

DR. W. D. INGLIS, professor of obstetrics, Starling-Ohio Medical College, outlined in detail the method employed by him in "Section Teaching of Obstetrics," and the importance of thorough preparation of students in this branch.

DR. A. R. BAKER, professor of ophthalmology, Cleveland College of Physicians and Surgeons, in a paper on "The Teaching of Ophthalmology," urged that a larger use should be made of the dispensary and hospital, and that practical instruction should be begun as early as the sophomore year.

DR. J. K. SCUDDER, secretary and treasurer of the Cincinnati Eclectic Medical Institute, read a paper on "Medical College Management," in which he emphasized the importance of endowments for medical colleges, and of larger hospital facilities. Dr. W. J. Means, professor of surgery, Starling-

Ohio Medical College, and chairman of the judicial council of the American Association of Medical Teachers, and President Charles W. Dabney of the University of Cincinnati, took part in the discussion.

DR. W. B. WHERRY, professor of pathology, Ohio-Miami Medical College, urged the "Value of the Laboratory Method to the Medical Student," holding that it is through this agency that the most valuable instruction is to be given and that it should be carried throughout the medical course.

DR. J. H. JACOBSON, professor of gynecology and clinical surgery, College of Medicine of Toledo University, demonstrated "Some Aids to Didactic Teaching," among them being clay modeling, lantern slides and mimeographic drawings.

DR. C. LEE GRAPER, professor of materia medica, Cleveland College of Physicians and Surgeons, advocated greater "Thoroughness in the Teaching of Materia Medica and Pharmacology in our Present-Day Medical Schools."

Election of Officers

Dr. Frank Winders, Columbus, Starling-Ohio Medical College, was elected president for the ensuing year, and Dr. Ernest G. Zinke, Ohio-Miami Medical College, Cincinnati, vice-president. Dr. Elmer I. McKesson, Toledo University College of Medicine, and Dr. Charles W. McGavran, Starling-Ohio Medical College, Columbus, were reelected secretary and treasurer, respectively.

Columbus was chosen as the place of next meeting which is to be held on Monday, Dec. 26, 1910.

WESTERN SURGICAL AND GYNECOLOGICAL ASSOCIATION

Nineteenth Annual Meeting, Held at Omaha, Neb., Dec. 20-21, 1909

(Continued from page 150)

Diffuse Septic Peritonitis

DR. BYRON B. DAVIS, Omaha: The decrease in the mortality of acute spreading infection of the peritoneum is due to the recognition of three important factors. First, the chief absorption from the peritoneum is carried on by the diaphragm, seconded by the great omentum. Second, the Fowler position with free tubular drainage from Douglas' cul-de-sac has proved efficient in turning the current in the opposite direction, thus removing the toxins harmlessly. The third important contribution was made by Dr. Murphy in the use of normal salt solution by his efficient method. There are also other factors which must be recognized in order to get the best results. As the transition from the older methods to those of the present was slower with some of us than with others, I can only include in my series of cases those patients operated on since January, 1907. After the exclusion of cases which cannot rightly come in the category of those under discussion, my records show that since January, 1907, I have operated on 39 patients with diffuse septic peritonitis, with 3 deaths. Thirty-five cases were due to appendicitis, with one death; 2 were caused by the perforation of a typhoid ulcer, with 1 death; 1 was a case due to puerperal sepsis, with an immense amount of free pus in the peritoneal cavity. This woman recovered. And there was one case of perforating duodenal ulcer which ended fatally. Twenty-eight were males, and 11 were females. The average age of all the patients was 26 years and 10 months. The youngest patient was a little boy, aged 5 years, and the oldest was a woman, aged 48 years, the only fatal case due to appendicitis. The appendix was removed at the primary operation in 32 cases. In the remaining 3 the condition was so serious that it was not thought prudent to attempt more than simple drainage, and the appendix was left. Two of these patients had their appendices removed by subsequent operation. The third recovered and is still carrying his appendix, but intends entering the hospital to have it removed this winter. In 4 cases fecal fistulas persisted which were cured by subsequent operation. There have been 2 patients with ventral hernia operated on, and I know of 2 others with hernia which will be operated on, if troublesome. There are probably others, as I believe ventral hernia is frequent after prolonged drainage. There has been no case of intestinal obstruction following these operations. The period of convalescence has in a few

cases extended over a number of weeks, and in 2 of them 4 and 5 months respectively. In the greater number the convalescence has been comparatively brief, not longer than one expects after opening an appendiceal abscess.

A Scientific Inquiry Into the Present Treatment of Peritonitis

DR. ARTHUR E. HERTZLER, Kansas City, Mo.: In this paper I review the present treatment of diffuse peritonitis, taking up the various factors which go to make up this treatment and examine them in the light of established facts in abdominal physiology and pathology. I conclude that the explanation of their mode of action has but limited scientific basis. Most of the papers landing the effectiveness of the modern treatment are unaccompanied by case reports, but those which are so elucidated show that the favorable prognosis is dependent largely on the fact that cases are included in the statistics which are in no sense diffuse. The present improved prognosis is dependent on earlier diagnosis of the disease, and a more accurate determination of the exact anatomic relation of the disease, making it possible to accomplish the necessary operative work with the least possible traumatism and loss of time. The Fowler position and the introduction of fluids into the body, either by vein or rectum, has but a minor influence in the determination of a favorable outcome. In order to facilitate the grouping of cases of peritonitis I propose the following classification: 1. The perforative. This group includes those cases in which there is expelled into the peritoneal cavity some of the contents of the hollow viscera without there having been any previous protective reaction on the part of the peritoneum. 2. The progressive, in which there is escape of visceral contents into the peritoneal cavity unprotected by adhesions, but in which the peritoneum has undergone a protective reaction. 3. Imperfectly encapsulated. This type joins the preceding without a sharp line. Adhesions are present in some areas, but there is extension in some direction, *e. g.*, along the cecum or into the pelvis in appendicitis. 4. The peritoneal abscess, in which there is perfect encapsulation of the infected area. All peritonitides are diffuse in the beginning and the determination of the group to which they will ultimately belong depends on the relation of the factors of virulence of infection and the powers of resistance. The earlier operations are done, therefore, the greater the number of patients who will be operated on before the condition has had time to become encapsulated.

DISCUSSION ON PERITONITIS

DR. R. C. COFFEY, Portland, Ore.: In acute perforative conditions the point of drainage will depend largely on where the perforation has taken place. In a perforation of the gall-bladder or duodenum the drainage is usually better in the right flank. Again, in perforation of the stomach near the median line, or when a patient has been transported a distance and rolled from side to side, it is essential to use the Fowler position, because in putting patients straight up the fluids will always gravitate to the bottom. Another important feature is drainage at the point of suture of the opening. If one sutures a perforated intestine and that intestine is allowed to come in contact with drainage, there is likely to be a fecal fistula; therefore, it is important to make drainage remote from the point of suture. It is also important to lift the intestines away from the drain and not insert the drain irrespective of its relation to the intestines.

DR. VAN BUREN KNOTT, Sioux City, Iowa: I agree with Dr. Coffey that the Fowler position has had more to do with our recent success in the treatment of diffuse septic peritonitis than any other method of treatment which has been employed, although this is somewhat in opposition to the opinion of Dr. Hertzler, who maintains that early diagnosis and prompt treatment should receive the credit. In 1902, I was deeply impressed by Fowler's paper and the position advocated by him in cases of acute peritonitis. Up to this time most of my patients with diffuse septic peritonitis died, but as soon as I began to employ the Fowler position they commenced to recover. Shortly after this I read a paper before this association advocating a stab wound in the median line of the lower portion of the abdomen and drainage through the rectovesical pouch and drainage through the vagina in cases of diffuse sep-

tic peritonitis. Since then I have invariably employed this method with gratifying results.

DR. DANIEL N. EISENDRATH, Chicago: There are points in the pathology and etiology of peritonitis which neither Dr. Davis nor Dr. Hertzler referred to, and as a few of these cases have come under my observation during the past three or four years it might be well to speak of them here. These are the cases in which there is genuine peritonitis, so far as the pathology is concerned, without visible perforation of the appendix or any other viscus. They are not the cases in which a perforation of the duodenum or stomach has been overlooked, but cases in which streptococci migrate along the lymph channels through the appendix wall and get into the general peritoneal cavity in that way. In looking up a series of cases at the Michael Reese Hospital in the past 10 years, I find there were 2 such cases of my own, and 5 others in the practices of Drs. McArthur, Andrews and Greensfelder. In addition to these, a number of cases have been reported in the literature. We overlook in little girls a general peritonitis from infective salpingitis. Riedel has recently called attention to this, and has held autopsies on nine little girls who had died of general peritonitis in spite of operation. He found no perforation of the appendix, but simply a marked and intense salpingitis.

DR. CHARLES H. WALLACE, St. Joseph, Mo.: We notice in these cases of perforation of the appendix or perforation of any hollow viscus, that if we operate within the first 24 or 48 hours, the question of drainage is a minor one if we remove the disturbing element and close the opening. We know that there is a class of cases that become so septic that we get no drainage, it matters not what we put in for the purpose. The wound looks like a wound in a cadaver; there is no exudation of serum, and in this class drainage fails to accomplish anything because the patients are beyond all hope. But in the cases of chronic abscess drainage is of great value.

Further Observations on Enterostomy and Its Technic

DR. JOHN PRENTISS LORD, Omaha: In this paper I report 4 fatal cases in addition to the 4 successive successful cases mentioned last year. In one, the enterostomy was done for typhoid perforation peritonitis, death being due to the extension of the peritonitis. Patients 2 and 3 were operated on for appendicitis and peritonitis, death resulting from ileus due to peritonitis. In Patient 4 the condition was due to spastic ileus. The drainage was practically *nil* and the condition persisted. Enterostomy was recommended above the line of suture as a vent in resections of the distal half of the large bowel in order to prevent distention from gas which is responsible for the greater number of failures in the suture of this portion of the large intestine. The simple technic by three purse-string sutures about a large catheter is an easy, quick and ready means of draining the bowel of gas and feces. It is life-saving, and may save life in some otherwise hopeless cases of obstruction due to peritonitis. The fatal cases reported were extreme ones, and the operation was done as the only remaining recourse.

(To be continued)

SOUTHERN SURGICAL AND GYNECOLOGICAL ASSOCIATION

Twenty-second Annual Session, held at Hot Springs, Va., Dec. 14-16, 1909

(Concluded from page 152)

Pancreato-Enterostomy

DR. R. C. COFFEY, Portland, Ore.: The drawback to the development of pancreatic surgery has been that during embryologic development the pancreas has been rotated out of the peritoneum. The peritoneum produces an exudate when injured which serves the same purpose as callus after a fracture. The fat-splitting ferment of pancreatic juice does not readily penetrate peritoneum, but is serious when spilled in the retroperitoneal areolar fat spaces or between the layers of the mesentery or omentum. The problem to be solved in direct pancreatic surgery is to supply peritoneum to the operative field. This is best obtained from the outer coat of the intestine

by inversion. The lumen of a single intestine is too small. Therefore, it has been necessary to throw the two lumina of an intestinal loop into one which, after inversion, gives an ample peritoneal canal into which the cut end of the pancreas is implanted. Using this method the following classes of operations were done:

The tail of the dog's pancreas was cut in two and each cut end implanted into a separate loop of jejunum. Of four dogs recovered, each showed perfect union between pancreas and intestine; but no pancreatitis nor necrosis. In isolating the tail of the pancreas the pancreatic duct was found patent and delivered into the intestine. The connected end of the pancreatic duct was closed by a thin tough film, the juice all going through the duct of Wirsung. The same thing occurred when the duct was ligated by a linen ligature but not cut, for the ligature was circumvented in all cases, and the juice was freely delivered back into duodenum through the duct which was established around the ligature. By ligating and cutting both ducts of Wirsung and Santorini and interposing omentum, and implanting the cut end of the tail, the juice of the other tail and body was freely delivered into the loop of jejunum through the implanted tail and its duct maintained.

The head of the pancreas and one tail and the duodenum were successfully removed in two stages. First, the bile duct was transplanted to intestine lower down and a gastroenterostomy was done with excision of pylorus. Second, two weeks later the body and one tail of the pancreas and section of duodenum were removed and the remaining tail implanted into the jejunal loop. The results were the same as in the previous cases. In all five cases the specimen showed enormous dilation of the common and hepatic ducts, and in one instance the bile duct was almost as large as the duodenum, and almost as thick. The communication with the intestine was free enough to admit the end of the little finger, the distention evidently being due to intrainstestinal pressure; therefore an indirect method was devised, which consisted of running the duct immediately under the mucous membrane for an inch before bringing it inside. The results in the three specimens removed, two of which were of two months' standing, showed that a perfect valve had been formed and that no dilatation had occurred, the ducts being entirely normal in size and thickness.

Encouraged by these results, I am now conducting a series of experiments in which the ureter is implanted into the large intestine in the same manner with the hope of preventing ascending infection here. Direct implantation of the stripped pancreatic duct was tried in six cases. While one dog lived to be killed on the twenty-fourth day and was in good health, it was found that the duct connected with the intestinal lumen only by a fistula. Four of this group of dogs died before the sixth day, showing pancreatic necrosis. One died on the tenth day. One fact stood out in all the six cases, namely, the pancreatic duct dies as soon as it leaves the pancreas, thus leaving the inference that the pancreatic duct probably receives most of its nutrition from adjacent pancreatic substance, and will not bridge the chasm between the gland and intestine, as is done in the case of the bile duct and ureter.

DISCUSSION

DR. JOSEPH C. BLOODGOOD, Baltimore: The cause of death in acute hemorrhagic pancreatitis has been said to be due to trypsin and perhaps other ferments free in the peritoneal cavity, and present in the blood, and these ferments produce disseminated fat necroses. If one can make a diagnosis of acute pancreatitis the abdomen should be opened and the fluid allowed to flow out and the region of the pancreas drained to prevent further intoxication with these ferments. The question of the operative treatment of acute hemorrhagic pancreatitis is settled, and that is, evacuation of the peritoneal exudate and drainage of the pancreas.

DR. STEPHEN H. WATTS, Charlottesville, Va.: During the present year I have had two cases of acute pancreatitis and one of the sub-acute variety. One of the most interesting things in these cases is the presence of hemorrhage in acute pancreatitis, and it is a question in my mind as to the relation of this hemorrhage to infection in the gland, as to whether or not hemorrhage precedes or follows infection or pancreatitis. Dr. Ransohoff has not found infection in his early cases, as the

cultures have been negative. It seems as if in many of these cases there is an arteriosclerosis which may give rise to the first hemorrhage, and that the blood subsequently becomes invaded through the intestine or biliary tracts.

DR. ROSWELL PARK, Buffalo: At the time President McKinley was shot we did not know much about the surgery of the pancreas, and when seeking an explanation for the peculiar necrosis which we found in his case, I suggested that in all probability the wound of the pancreas had to do with the subsequent course of events. I really believe now that this wound of the pancreas had much to do with it. I believe that unfortunate instance directed surgical attention to the surgery of the pancreas in a way which it would not have done had not that sad event happened.

DR. CHARLES H. MAYO, Rochester, Minn.: I was impressed by Dr. Guerry's statement regarding cholecystenterostomy. No doubt this operation should be more frequently done. If jaundice is present, with hardening of the pancreas, and no gall-stones, then we should at once think of the advisability of doing this operation. The question of doing it in simple inflammatory conditions, such as cholecystitis, is something for the future to decide. These are not the gall-bladders that we would remove to-day, but they are the ones that lead to further operation.

DR. H. A. ROYSTER, Raleigh, N. C.: Two months ago a man of 70 consulted me, giving a typical history of gall-stones. He had had jaundice only once, and that had disappeared entirely. Examination of the urine three days before operation showed a well-marked reaction to sugar. I opened the gall-bladder, removed 180 gall-stones, and drained in the usual manner. The head of the pancreas was enlarged. One week after the operation the sugar disappeared entirely from the urine and has not returned.

DR. WALTER C. G. KIRCHNER, St. Louis: Of five cases of pancreatitis I have seen three which were of the suppurative type, and resulted fatally. In two of these cases a diagnosis was made, but the conditions were so fulminating that operative procedure did not seem to be indicated, or by the time the patient reached the hospital his condition did not warrant operation. In one case in which a pathologic diagnosis was made of hemorrhagic pancreatitis there was no hemorrhage in the abdominal cavity, but the pancreas itself was involved. This patient gave all the acute symptoms of pancreatitis, and at the autopsy an ulcer of the duodenum was found, which had a direct communication with the head of the pancreas.

DR. GEORGE W. CRILE, Cleveland: In making cultures from the gall-bladder in these cases of chronic infection or of chronic pancreatitis, I have seen much better results from the use of autogenous vaccines than from drainage alone, that is, following the use of autogenous vaccine plus the drainage. Furthermore, large doses of utropin (hexamethylenamin) for a certain period of time are of value. Again, in cases of acute hemorrhagic pancreatitis I would call attention to the value of nitrous oxid anesthesia.

DR. JOHN C. MUNRO, Boston: Dr. Guerry's paper reminds me of a case in which I did a cholecystenterostomy six or eight years ago for a lesion at the ampulla, but which proved to be a case of chronic pancreatitis. A diagnosis now can undoubtedly be made both in the chronic and in the acute forms of pancreatitis in a fair number of cases. I have had a number of acute cases of pancreatitis, and in a fair proportion of them have been able to make an accurate diagnosis before operation. The type of jaundice both in the acute and chronic forms is rather significant, although it is not an absolute sign on which to depend. I favor operating in very acute cases.

DR. O. H. ELBRECHT, St. Louis: I would like to report briefly a case which differs somewhat from those mentioned. It was a case of chronic pancreatitis, the patient coming from an insane asylum, presenting the picture of an acute gall-stone attack, with profound icterus. The pain was severe. The case was diagnosed as gall-stones, with probably the escape of the gall-stone through the intestinal wall. A definite lump could be felt in that region, and we found dense adhesions everywhere, and an immensely distended gall-bladder. The gall-bladder was drained. As the patient was

in a bad condition we did not care to explore the region of the pancreas, as it was not suspected at the time. The patient died the next day, and autopsy revealed the case to be one of primary tuberculosis of the pancreas. Sections were made from an ulceration at the tip of the pancreas and found to contain innumerable tubercle bacilli.

Frequency of Cancer

DR. ROSWELL PARK, Buffalo: Cancer is one of the most important problems which confront the medical profession to-day. I believe that cancer is on the increase as a disease of modern life. When I began work in this direction there were in New York State 14,000 deaths from tuberculosis each year and about 5,000 deaths in cases of cancer. Now, the mortality from tuberculosis has been reduced to 11,000 or 12,000 cases a year, while the mortality from cancer has risen to nearly 8,000. Studies have established the fact that cancer is prevalent in certain localities and in certain houses, and that there are certain places where cancer is more prevalent than in others, and that in a considerable number of houses several deaths from cancer had taken place. With regard to heredity, it is now stated as a fact that the disease is not transmitted by inheritance; but there is a possibility of the transmission of predisposition. This is an important question for the laity and for us. The infectivity of cancer is quite generally established. Last year, at the meeting of the International Congress of Surgeons in Brussels, the question of cancer was discussed for three separate days, and some 300 who were present out of a membership of 600, I found the majority of surgeons present believed in the infectivity of cancer. There are still some doubters of this theory. The very fact that metastases occur during cancer is the best demonstration of its infectivity, and for me every instance of metastases in a given case is an expression of a reinfection from the original source. As to the contagiousness of cancer, we have far more proof for its contagiousness than leprosy, or some other diseases that are considered more or less contagious. The early diagnosis of cancer is difficult, and in many instances impossible. Cancer has no definite symptomatology. If cancer could be early diagnosed or recognized, and if it were accessible to our present means of attack, and if it were thoroughly removed it could be curable, but there are "ifs" standing up in tremendous proportion, and they are insuperable, apparently.

Suture of the Recurrent Laryngeal Nerve

DR. J. SHELTON HORSLEY, Richmond, Va.: After a thorough search of the literature I have been unable to find a report of any case in which the recurrent laryngeal nerve was sutured. Considerable experimental work has been done, chiefly by those interested in veterinary surgery, in which the left recurrent laryngeal was divided and implanted higher up in the vagus. Most of these experiments have resulted successfully, so far as restoring the function of the laryngeal muscles supplied by the left recurrent nerve is concerned. I here report a case in which the left recurrent was injured by a bullet wound. The patient was referred to me about three months after the injury. The individual was examined by a laryngologist, and all the muscles supplied by the left recurrent laryngeal were found completely paralyzed. An incision was made along the anterior border of the sternomastoid muscle and the injured nerve was easily found in the groove between the esophagus and trachea. The diseased portion was excised, except a small filament consisting of the posterior part of the nerve sheath. The ends of the nerve were brought together with a single suture of No. 0 chromic catgut in a fine curved needle. Some muscle tissue was drawn over the sutured nerve. The wound healed by first intention and the patient left the hospital nine days after the operation with no improvement in voice or in breathing at that time. The improvement was gradual, however, and two reports from a laryngologist were made after the operation. The first about two months after operation showed improvement in the muscles and the second report, fifteen months after the operation, stated the laryngeal muscles supplied by the left recurrent laryngeal nerve had fully recovered. The case is apparently unique.

Treatment of Wounds of the Heart; with Report of Two Cases

DR. WALTER C. G. KIRCHNER, St. Louis: In reviewing the subject of injuries to the heart I wish to say that at the St. Louis City Hospital there have been five cases of cardiorrhaphy with three recoveries. I here report two of my own cases, one patient dying four hours after the operation, the other making a successful recovery. In the first case there were two wounds of the ventricles, and in the second there was a wound of the heart one and three-fourths inches in length, which penetrated the left ventricle. From these cases I draw the following conclusions: The heart may be manipulated without serious injury to the organ and is amenable to surgical interference and procedure. Hemopericardium with heart tamponade is a serious complication and demands prompt drainage of the pericardial sac. In suspected injuries to the heart the wound in the chest should be carefully explored so that the extent of the injury may be determined, and in cases of doubt, exploratory pericardiotomy is indicated. Small wounds of the heart may heal spontaneously, but in all cases in which hemorrhage from the heart exists, the wound should be promptly sutured. In operations on the heart, when pulsations suddenly cease, massage of the heart and artificial respiration should be tried as aids in resuscitation. With a minimum amount of anesthetic the healthy lung is capable of performing its function, though to a less extent, even when the pleural cavity is exposed. Time is an important factor in injuries to the heart, and an early diagnosis should always be made. The immediate treatment should be directed to the control of hemorrhage and shock. The chief remote complications result from infections of the pericardium and pleura. In treating injuries to the heart the surgeon should have in mind a definite plan of attack, and the kind of flap to be used in approaching the heart should be determined by the nature of the wound in the chest.

Circumscribed Serous Meningitis of the Cord

DR. JOHN C. MUNRO, Boston: An interesting paper on this subject, by Spiller, that appeared in the *American Journal of the Medical Sciences*, January, 1909, explained a condition which I had observed a number of times at operation and for which I had previously obtained no satisfactory explanation. At the time of my earlier cases (1897), I reported the findings to pathologists who not only gave me no light on the subject but even questioned the existence of the lesion. In a small collection of cases of laminectomy reported at the American Medical Association in 1904 I called attention to one with syringomyelia and to another diagnosed as subacute fracture-dislocation, in which I found a "collection of clear fluid under a distinct arachnoid membrane," in which the removal of this fluid produced marked amelioration in the pressure symptoms. This phenomenon and the relief that followed the removal of a soft extradural myeloma in another case led me to say that there is a something that produces grave paralysis that is demonstrated clinically, which appears totally inadequate and for which we have no corresponding experimental nor post-mortem explanation. That the lesion had been observed by Krause and a few others was unknown to me at the time. A clinical lecture by Horsley appearing soon after Spiller's paper has stimulated me to report my own cases in detail in the hope of arousing surgical interest in a class of patients who otherwise would be condemned to a slow, inevitable and distressing death. The pathology is that of the living rather than of the dead, as the condition has been revealed in the majority of instances at the time of operation for suspected tumor. A definite thin pial membrane is forced through the dural wound and when it is opened clear fluid escapes under abnormal pressure. This pial membrane is so definitely an entity that it may be dissected out as a cyst. The cord may or may not be flattened by this local collection of fluid.

No definite cause is known for the lesion. Trauma, syphilis, caries, tuberculosis, glioma, influenza, gonorrhea have all been more or less intimately associated with the lesion. In other cases nothing can be found as the primary cause. The important thing for us to recognize clinically is the fact

that such a condition may exist and that laminectomy is the only rational treatment. In uncomplicated cases the outlook is most encouraging. In complicated cases most distressing suffering can be relieved. There is always pain which at times is intolerable. It may start as a lumbago; it may be girdle-like; it is diffuse and not referred to one nerve root. Paralysis begins generally as weakness of the lower limbs. Spasticity is almost always present and sooner or later there is paraplegia sufficient to render the victim bedridden. Some times there is urinary and fecal incontinence; sometimes the upper extremities are more or less affected. Spasmodic contractions, excited by a light touch, are often most distressing. In simple cases the limbs are well-nourished, the muscular power is good and there is no trophic disturbance. The reflexes vary among individuals and in the same case. Anesthesia may be absolute or very slight. It varies in different regions in the same case and from time to time. So also may the other phenomena of sensation. The onset may be short, a few days after traumatism, and years in other types. Laminectomy by relieving the localized pressure cures the uncomplicated case. Lumbar or local puncture is futile.

Abdominal Cesarean Section for Puerperal Eclampsia

DR. LANE MULLALLY, Charleston, S. C.: I wish to report four cases of puerperal eclampsia. The first two patients were brought into the hospital with the usual history of eclampsia, each having had convulsions for about six hours before being admitted. The first was delivered under anesthesia by dilatation, instrumental and manual and high forceps, and the second by similar dilatation and version, each case occupying from one to two hours. In the first case convulsions continued for twelve hours, when the patient died. The second patient had several convulsions after delivery and recovered. The third, a multipara with considerable scar tissue in the cervix, was anesthetized and an hour or more uselessly spent in attempted dilatation. Finding it impossible to dilate the cervix, I decided on abdominal Cesarean section and delivered the child in seven minutes. The whole operation when completed occupied twenty-seven minutes. The case was a six-months' pregnancy and the child was dead before the operation was begun. In the fourth case of full-term pregnancy the woman had convulsions every fifteen minutes. In this case I did an abdominal Cesarean section at once, delivered the child in six minutes, closed the wound and the patient was returned to the ward in twenty-six minutes from the time operation began. Recently abdominal Cesarean section, with the perfect technic of the present day, has materially lowered the maternal mortality and the operation is selected not only on this account, but also because it offers better advantages in saving the life of the child than many of the intrapelvic methods of delivery. The operation is far less dangerous than high forceps version and, I believe, vaginal Cesarean section. Granting rapid evacuation to be the rational treatment, I contend that it is best accomplished by abdominal Cesarean section.

President's Address: Neurasthenia and Surgery

This paper by Dr. Stuart McGuire, Richmond, Va., will appear in THE JOURNAL.

The Diagnosis of Hyperthyroidism or Exophthalmic Goiter

DR. CHARLES H. MAYO, Rochester, Minn.: An effort has been maintained to consider hyperthyroidism a finished product to be diagnosed as such only within the narrow limits of the imperfect descriptions of the few cases described by Parry, Graves and Basedow nearly a century ago. It was not considered that the thyroid played a more important part than the heart or nervous system. Many marked cases failed in some particular and were classed as fruste or pseudo until the lacking symptom appeared. There is a present tendency to drop some of the old classifications and acknowledge that there are various stages: acute, chronic, mild, severe and irregular forms based on an increase, probably with some changes of secretion and its delivery. The laboratory findings should show an increase in parenchyma, (a) more cells in the alveoli, (b) more alveoli, (c) papillomatous increase

of cells in existing colloid goiter. These changes may be general or in scattered areas. Terminal degeneration of essential organs follows degeneration of the gland in the advanced cases. In this stage the patient may be improved and the disease checked, but not cured by operation. Forms of myxedema are not uncommon in patients who have survived the hyperthyroidism until degeneration destroyed the major portion of the gland. Eye symptoms and heart signs must be differentiated from chronic Bright's disease, and from myocardial changes. Leucemia of the neutrophilic polymorphonuclears and the percentage and absolute increase in the lymphocytes should be looked for as diagnostic laboratory aids of some importance. An early diagnosis has become more important since surgery invaded this field than when it was purely medical, in order that a prognosis of the probable result of an operation can be given. In some cases this may mean before eye changes appear, and in others before the goiter becomes a prominent feature.

An Experimental and Clinical Research into Nitrous-Oxid and Ether Anesthesia

DR. GEORGE W. CRILE, Cleveland, O.: In my service we have given nitrous oxid 575 times for major operations. Among these are included many of the hazardous risks in which ether was contraindicated. Comparing the nitrous-oxid cases with ether cases nausea occurred in 17 per cent. as compared with 42 per cent. in ether. This includes all cases. Post-operative nausea is, of course, not wholly due to the anesthetic, i. e., peritonitis and certain visceral operative trauma may cause nausea independently of the anesthetic. Nausea in nitrous-oxid cases in which there is no other nausea-producing factor rarely occurs. In the course of the operation, nausea, in nitrous oxid, as in ether, is usually due to uneven administration. At the conclusion of the operation the patient is fully awake and in unclouded possession of all his faculties in two or three minutes. There is unmistakably a great diminution in surgical shock. Indeed the immunity from shock is as striking in the clinic as in the laboratory. I am well aware that the shock in the routine cases, free from predisposing complications, is rare; but in the cases most urgently demanding surgical relief, such predisposing causes are present, and frequently constitute the principal factor of the immediate risk. It is here that nitrous oxid appears at its best. Then, too, in infections since using nitrous oxid as contrasted with ether we are equally certain that ether as compared with nitrous oxid impairs the immunity of the patient. The difference is so striking that only a great emergency would now induce us to use ether instead of nitrous oxid in grave infections. In a parallel series of acute infections consisting of 75 cases operated under nitrous oxid and 75 under ether, the technic and the after-treatment being constant factors, careful records were kept at the time of the operation and in bedside notes. At the time of operation the average pulse of the ether patients was 114; and the average of all the pulse observations during the first twenty-four hours following operation was 117. While in nitrous oxid the average pulse rate at the time of operation was 115, the average of all the counts during the first twenty-four hours following operation was 105. In ether there was an average increase of eight beats; in nitrous oxid there was a decrease of ten beats. In every other respect also the patient showed a more distinctly favorable course after nitrous oxid than after ether. Not a case showed the rapid march to fatality immediately following the operation which occasionally follows ether. Nitrous oxid as compared with other general anesthetics is technically difficult and expensive. It has certain dangers which are almost wholly in the control of the skilled anesthetist; it is not the anesthetic of choice for the uninitiated, but only for the highly trained anesthetist. Properly supplemented and skillfully given, it may be used as a routine anesthetic in general surgery. Once the operation is over, the patient is strikingly better off than after ether anesthesia. The rôle of shock and infection is far less in nitrous oxid than in ether anesthesia, and accumulating evidence seems to show that there is a distinct diminution in post-operative neurasthenia. In routine operations the combinations of scop-

olamin and morphin given from one and one-half to two hours prior to nitrous-oxid anesthesia forms so effective a combination that in over 50 per cent. of my patients the day of operation is robbed of all operative memory, and in the remainder it dulled the edge of both the physical and the mental distress.

Gall-Stones and Cancer of the Gall-Bladder

DR. ALBERT VANDER VEER, Albany, N. Y., detailed his observations on this subject. Of 77 cases not previously reported there were 19 males and 58 females, illustrating the fact that females suffer more than males from gall-bladder complications. The diagnosis before operation of the 77 cases was as follows: Gall-stones, 64 cases; cholecystitis, 10 cases, and gall-stones and carcinoma, 3 cases. Operation revealed a variety of conditions. A study of the mortality list showed that stones in the common duct of long standing are very difficult to reach, and that the percentage of deaths is much greater here than in simple cholecystotomy, where there were no such complications. The mortality in the latter cases is very small. One case of the group illustrated most forcibly that marked cholemia is not always fatal after an operation. The experience of surgeons throughout the world during the past ten years indicates that early diagnosis is of the greatest importance to the affected individual. Drs. W. J. Mayo and Charles H. Mayo may be quoted as follows: "In reviewing the mortality of 1,000 operations for gall-stone disease we have been impressed with the very fortunate outcome where gall-stones were in the gall-bladder and therefore were complications. In the 1,000 cases there were 50 deaths, or an average mortality of 5 per cent. The death rate in 820 cases where the disease was confined to the gall-bladder and for benign conditions was 3 per cent. In 416 cases of simple gall-stone disease the mortality was less than 0.5 per cent. The common duct operations amounted to 14.6 per cent. of the whole. In 137 operations for common duct stones the mortality was 11 per cent. In 40 cases, or 4 per cent., malignant disease was discovered, and the operative mortality was 22 per cent. In practically all of these cases gall-stone irritation had been the cause of the development of cancer."

Incisions to Expose and Open the Kidney

DR. HOWARD A. KELLY, Baltimore: In this paper I point out the almost universal abandonment of transperitoneal incisions in approaching the kidney and call attention to the vagueness of view in reference to the lumbar incisions. This vagueness or lack of certainty as to the incision is due to the kidney's situation high up under the ribs and close to the diaphragm. The type of incision must vary with the nature of the kidney affection. In simple conditions, such as movable kidney and hydronephrosis, the kidney can readily be luxated; therefore, there is not the same necessity for getting down immediately on the pedicle as there is in dealing with malignant tumors. An important anatomic landmark, the superior lumbar triangle, has been neglected by anatomists and surgeons. I propose it as a splendid starting point for all kidney incisions to expose a movable kidney, cutting down on the superior lumbar triangle and pulling the muscles apart with blunt force will suffice. This simple incision, which can be the beginning of all incisions, can be lengthened by cutting downward across the lateral muscles of the abdomen, and can be further lengthened by continuing up through these muscles parallel to the costal border to the edge of the rectus muscles. In this way, a flap of the thorax can be turned upward and the upper pole of the kidney and its pedicle directly reached *in situ* without luxation. The cutting of from two to three ribs posteriorly facilitates this.

Acute Suppurative Peritonitis from a Ruptured Pus Tube

DR. J. WESLEY BOVÉE, Washington, D. C.: I have collected 56 cases of this character that, with the exception of my case, had been previously published. I consider the condition of tube perforation occurring so suddenly as not to permit Nature an opportunity to create a barrier to the outpouring of an infectious fluid accumulation as very rare. In this opinion I believe I am supported by the small number of recorded cases and the termination of them. The symptoms are similar

to those of tubal pregnancy, undergoing rupture or abortion. The collapse, however, is usually greater in this condition than in tubal abortion, and later the symptoms of peritonitis afford ample ground for making a correct diagnosis. Of the 56 cases included in my table, 18 patients died without the peritoneal cavity having been opened, and necropsies were relied on for a diagnosis, except in one of Boldt's cases. In the other 38 patients, all operated on by having the peritoneal cavity opened, though perhaps only drainage was added to the procedure, 14, or 37 per cent., died. In one no result was given, and in the 23 remaining successful operations, 20 were done during the first day following rupture. But the mortality rate of the operations done on the first day after rupture, in which the results were reported, was 21 per cent., or 5 in 24. For those done on the second day it was 100 per cent. (3 in 3); for those done on the third day, 67 per cent. (2 in 3), done after the third day, 57 per cent. (4 in 7).

Therapeutic Adaptations of Cecostomy and Appendicostomy

DR. CHARLES A. L. REED, Cincinnati, Ohio: These operations, now being done largely at the instance of medical men as adjuncts to their treatment of certain otherwise intractable cases, are based on the principle that disease within the colon calls for treatment addressed to the colon. The advantages of this method of access embrace (a) exemption of the stomach from medication, (b) escape from impairment of the general health from deranged digestion incident to medication, and (c) relief from the uncertainty of remedies that have been subjected to indefinite and undeterminable chemical reaction in the upper digestive tract. The anatomy of the parts point to cecostomy rather than appendicostomy as the operation of choice. Among the conditions for which ostiomatic operations on the cecum are now being successfully employed are: (1) amebic dysentery, in which it opens the way to treatment more phenomenally successful than has heretofore been realized in the history of this malady; (2) chronic catarrhal or mucous colitis, usually very intractable, but which, as shown by my own cases, are cured by this method more promptly and in larger percentage than by other treatment; (3) chronic constipation depending on atony and not complicated with enteroptosis is readily brought under control as indicated by my own reports confirmed by those of other surgeons; (4) acute septic peritonitis, in which, after operation, the cecum is opened and utilized to flush the colon—"a hot water bottle on the inside"—followed by saline infusion by the drop method—"coloclysis;" (5) defective flora of the colon is remedied by the installation through the cecal tube of bacilli chiefly of the lactic acid series; (6) antiointoxication of intestinal origin is successfully treated by repeated flushings of the colon through the cecum, the cases recorded embracing cures by this method in chronic headaches, idiopathic epilepsy, rheumatoid arthritis and pernicious anemia. My recorded experience and that of other surgeons force the conclusion that: *First*, the establishment of colonic irrigation through the cecum, whether by cecostomy or appendicostomy, is a procedure attended with the minimum surgical risk; *second*, the application of the operation as an adjunct of medical practice is based on the principle of direct treatment of the colon for conditions that are local to the colon; *third*, the results so far realized justify the continued use of the operation and the more extended application of the principle that it embodies.

Surgical Treatment of Epilepsy

DR. W. P. CARR, Washington, D. C., made a further report of results of 20 operations for idiopathic epilepsy of severe type and long standing:

Six of the 20 patients may be called cured, having passed three or more years without seizures. All except one of these 6 have been well for 4 years or more. One as long as 10 years. With one exception, those not cured were benefited in being free from convulsions for from 2 to 17 months, or in having them in much lighter form and at greater intervals. One was not improved. The operation has not been tried in a systematic way since improved technique has made it possible and safe results warrant a further trial by surgeons of experi-

ence in brain surgery. The operation consists in making a large osteoplastic flap and examining the brain carefully for neoplasms, cysts, thickened patches of dura, exostosis or depression of the skull, and any other abnormal conditions. These should be removed when possible. In many cases nothing will be found but a chronic edematous encephalitis. Draining of the superabundant serum in such cases gives always temporary and sometimes permanent relief. The operation is safe; no patients have died, and the more extensive explorations have given the best results. He has declined to operate in mild cases having not more than three or four seizures a month, as the subject is still *sub judice*, and positive results cannot be guaranteed in any given case. But if even one or two bad patients can be cured in a hundred the operation is justifiable and well worth trial. The making of large osteoplastic flaps has done for brain surgery what the Sim's speculum did for gynecology, and free and extensive examinations of the brain are now possible and safe. Consequently, in obscure diseases, exploratory craniotomy is as justifiable as exploratory laparotomy for obscure abdominal lesions. We should no longer allow patients to die from hemorrhage of the brain even when the clots are situated at the base or when they cannot be located before operation.

Surgical Shock

DR. J. G. EARNEST, Atlanta, Ga., gave a description of three cases illustrating some of the phases of surgical shock. In the first very pronounced and profound shock occurred from what would seem to be a trivial cause, uncomplicated with either drug or hemorrhage, and seemed to the author to favor the theory of reflex paralysis rather than reflex spasm. The second case was a prolonged fight for life, in which the patient was kept alive and finally saved by artificial respiration and electricity. The third was apparently one of delayed shock.

Skin Sterilization by Tincture of Iodin

DR. I. S. STONE, Washington, D. C.: There are several good reasons for the use of a better method of skin sterilization, the chief of which are as follows: 1. To save time. The patient is ready for operation immediately after sleep is induced by the anesthetic. No time is spent in washing, etc., which to be effective requires at least ten minutes. 2. The patient may be kept warm and dry during the entire seance, including the time of anesthesia and operation. 3. If the incision must be extended or one made in another place, this quick method is most desirable. 4. The operator's hands may be sterilized with iodine, as the stain can be removed by a weak solution of aqua ammonia.

Gastromesenteric Ileus Following Gastroenterostomy

DR. THOMAS C. WITHERSPOON, Butte, Mont.: I here report a case which teaches, first, the uselessness of gastroenterostomy as a means of drainage for a paralyzed stomach; second, the need of early stomach washing before marked paralysis and dilatation can be detected to relieve tension and possibly to diminish intoxication; third, if after several washings the stomach continues to dilate, the necessity of making free drainage by means of gastrostomy should be considered; fourth, the necessity of keeping the stomach and bowels as free from alimentary material during the first week or ten days after operative procedures on the alimentary canal as the patient's general condition will allow. Nitrogenous foods are the most harmful. Having seen a reasonable number of these cases and believing the majority of gastromesenteric ileus attacks to be due to a similar cause, this case throws light on the entire class. It is reasonably apparent that the attack resulted from a trophic change in the spinal segment which has to do with innervating the stomach. The probability is that injury, operative shock, psychic shock, over-feeding and other causes which upset normal alimentary function or lead to intoxication might bring about this condition. Every case of gastromesenteric ileus which resists stomach washing might well be drained by a gastrostomy, and such a drain might be maintained until the stomach wall regained its tone.

The officers elected were given in THE JOURNAL, Jan. 1, 1910, p. 60.

Medicolegal

Osteopaths Must Secure Regular License to Practice Medicine —Constitutionality of Practice Act—"Medicine" Defined

The Court of Criminal Appeals of Texas affirms, in *Ex parte Collins* (121 S. W. R. 501), a refusal to release the petitioner on a writ of habeas corpus, after his arrest for practicing medicine without a license as required by the act of 1907 of the Thirtieth Legislature. It says that he demanded his discharge on the ground that the act was unconstitutional, which provided that an osteopath should pay a license, because the evidence showed that he used no medicine or drugs to relieve the patient, and therefore there was no evidence from which the court could conclude that he should be held in custody on a charge of practicing medicine without a license.

Section 13 of the act reads: "Any person shall be regarded as practicing medicine within the meaning of this act (1) who shall publicly profess to be a physician or surgeon and shall treat or offer to treat any disease or disorder, mental or physical, or any physical deformity or injury, by any system or method, or to effect cures thereof; (2) or who shall treat or offer to treat any disease or disorder, mental or physical, or any physical deformity or injury by any system or method or to effect cures thereof and charge therefor, directly or indirectly, money or other compensation." The court holds that the decision appealed from was correct, and that the statute is in all respects constitutional.

Nor does the court agree with the contention that section 31 of article 16 of the Texas Constitution, which says that the legislature may pass laws prescribing the qualifications of practitioners of medicine in that state, and punish persons for malpractice, but no preference shall ever be given by law to any school of medicine, limits the power of the legislature in authorizing the licensing of practitioners to practitioners of medicine; or that as the relator, as he is called, in practicing osteopathy used no medicine, therefore he did not come within the provisions of the act. As the court understands him on this point, he conceded that the statute was broad enough to cover his offense, but that the constitutional provision just cited limited the power of the legislature to the regulation of the practice of medicine, and that osteopathy was not practicing medicine.

However, the constitution, when it demanded the regulation of the practice of medicine, the court says, was not attempting to say that the legislature was limited to any mode or method of healing in order to regulate it; but the word "medicine," used in the constitution, means the art of healing by whatever scientific or supposedly scientific method may be used. It means the art of preventing, curing, or alleviating diseases, and remedying, as far as possible, results of violence and accident. It further means something which is supposed to possess, or some method which is supposed to possess, curative power; but if this definition of medicine is not correct, as stated in the constitution, yet there is no limitation on the power of the legislature in said provision of the constitution which inhibits the legislature under its police power to prevent any one practicing any species or character of remedy to cure any real or supposed ill that the body has or is subject to for pay.

Acts with somewhat similar provisions to the act of the Thirtieth Legislature now under consideration were held constitutional by the Supreme Court of Texas in the case of *Dowdell vs. McBride*, 92 Tex., 239; also by this court in the case of *Logan vs. State*, 5 Tex. App., 306. So the court holds that osteopathy is one of the methods of curing the ills to which human flesh is heir, and is one of the methods of curing covered by the act of the Thirtieth Legislature. In other words, in order for one in Texas to practice osteopathy for pay, he must secure a license, as provided for by the act of the Thirtieth Legislature. This the relator did not do. The court accordingly holds that he must be remanded to the custody of the sheriff, where he will be called on to answer the complaint and information relied on in this case.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

Medical Record, New York

January 1

- 1 *Radium as a Specific in Giant Cell Sarcoma. R. Abbe, New York.
- 2 Horizontal Oscillation of the Eyeball in Certain Rare Types of Pontine Lesions Resulting in Seventh Nerve Palsy. L. P. Clark and H. H. Tyson, New York.
- 3 *Unusual Manifestations in Cretinism. L. S. Manson, New York.
- 4 Diagnosis and Treatment of Peptic Ulcer. C. E. Nammack, New York.
- 5 Modern Views Concerning Diseased Tonsils. C. M. Harris, Johnstown, Pa.
- 6 Tuberculin in Ophthalmic Practice. L. C. Peter, Philadelphia.
- 7 Nephroptosis. M. I. Knapp, New York.

1. Radium in Giant Cell Sarcoma.—Abbe reports 11 cases of extensive inoperable giant cell sarcoma in which the use of radium gave great satisfaction, a cure resulting in each case without a recurrence. A tube of radium of varying strengths was imbedded in the mass for from 10 minutes to 53 hours on one or more days, depending on the size and extent of the growth.

3. Cretinism.—B. H. and O. H., male twins, were both wet-nursed until 16 months of age; began to walk and talk at the proper age and appeared to be perfectly normal in every way except that they were extremely fat. B. H. when 11 years of age, while playing out of doors, suddenly became unable to walk and had to be carried home. He was kept in bed for two weeks. With the inability to walk there was considerable pain about the hips and thighs which troubled him occasionally, becoming, however, less and less frequent in occurrence. Two years later his gait became wabbling, the body swaying from side to side, and is manifested at the present time, ten years later. He began to have spells of unconsciousness with tonic and clonic spasms and frothing at the mouth, which spells became more and more frequent, until in October, 1906, they had become almost a daily occurrence; were both nocturnal and diurnal, some severe and some mild, and of very short duration, indicative of occasional attacks of petit mal besides the seizures of grand mal.

O. H., except for being very fat, showed nothing abnormal until 14 years of age, when he developed a staggering gait. He walked like a drunken man and complained of severe pains about the hips. He was treated by means of an extension apparatus, but without any improvement, the staggering gait remaining the same and a similar unsteadiness developing in the upper extremities so that he was utterly unable to use a typewriting machine and found considerable difficulty in using his hands to write.

Both boys were sent to public school at the age of 7 or 8 years, O. H. remaining until 17, and B. H. until 19; both were slow to acquire knowledge, B. H. being the more backward of the two. In both boys the hair of the scalp became thin and sparse while on the rest of the body the growth of hair was excessive, they being compelled to commence shaving the face at the age of 13, B. H. six months sooner than O. H., in whom the loss of scalp hair took place later and the excessive growth over the rest of the body is not so pronounced. The thyroid in both boys was so very rudimentary as to be scarcely perceptible and difficult to map out.

Manson diagnosed the cases as cretinism with unusual manifestations and began the administration of thyroid extract in gradually increasing doses, with considerable improvement following its use in the case of O. H., less in the case of B. H., although his epileptic seizures were greatly modified. The closest possible investigation furnishes no history of an infectious fever, erysipelas of the neck, or rheumatism (unless the pains in the lower extremities with shortness of the Achilles tendon and limitation of motion at the hip joints be rheumatic in nature) as a possible forerunner of thyroiditis.

Boston Medical and Surgical Journal

December 26

- 8 Reverdin and other Methods of Skin Grafting: Historical Review. A. Ehrenfried, Boston.
- 9 Skin Grafting Technic and Cases. F. J. Cotton and A. Ehrenfried, Boston.

- 10 "Rusty Nail" Tetanus, with Tetanus Bacilli in the Inguinal Glands. C. A. Porter and O. Richardson, Boston.
- 11 *Gastric Ulcer. Subacute Perforation in a Boy of Eight Years; Operation; Recovery. F. B. Lund, Boston.
December 30
- 12 The Medical Achievements of Dr. Holmes. E. O. Otis, Boston.
- 13 *Medical Expert Testimony. W. Schofield, Malden, Mass.
- 14 Possible Reform of Judicial Procedure. W. G. Thompson, Boston.
- 15 Improvement of the Present System of Expert Testimony. E. R. Thayer, Boston.
- 16 *Medical Expert Testimony. G. W. Gay, Boston.

11. **Gastric Ulcer in a Boy.**—The patient was brought up on a bottle, had the diseases of childhood in a mild form, and suffered since about a year old with occasional sick spells accompanied by vomiting. These attacks were rare, however, and he never vomited any blood. About a year ago he was ill for a few days with paroxysmal pain in the epigastrium, accompanied by slight fever. The pain was not related to time of eating. He vomited a few times, and on one occasion the vomiting was blood-streaked. A few months later a similar but more severe attack occurred, during which at one time, he vomited about a teaspoonful of bright blood, and for two days the stools were black. On admission to hospital he was evidently in his third attack. He had been ill two weeks with pain, severe and paroxysmal, referred upward and to the left from the epigastrium, with frequent vomiting. On one occasion he vomited about 2 oz. of bright blood. The pain was particularly severe late in the evening or at night. The stools were sometimes dark, sometimes normal. Some fever had accompanied the attack. His temperature was 101.5 F.; pulse was 108, with slight epigastric tenderness. There was blood in the stools. Under supervision his symptoms rapidly subsided, the tenderness soon disappeared and it was thought that he would recover under medical treatment. He was discharged in two weeks. Six weeks later he was re-admitted, having been attacked two days previously with epigastric distress and vomiting. There were small amounts of bright blood in the vomitus. The attacks of pain occurred in sharp paroxysms. His temperature was 102 F., with marked tenderness in the epigastrium, and distinct muscular spasm. It was felt that in all probability there had been a subacute perforation of the ulcer. At the operation Lund found a large indurated ulcer just to the left of the pylorus on the lesser curvature firmly adherent to the liver. The adhesions which tied it to the liver were not disturbed. A posterior-gastro-enterostomy was performed with a short loop. Recovery was uneventful, save for a slight bronchitis.

13. **Medical Expert Testimony.**—Schofield says that if statutes were enacted regulating the fees and contracts of medical expert witnesses, and prohibiting the acceptance by them of any different fees, either for attendance at court or for services, and restoring the common law powers of the trial judge, conditions would be established in the courts by which the evils of medical expert testimony could be greatly mitigated, if not wholly removed. Medical societies can aid the reform by bringing forward the moral issue involved and impressing it on students and practitioners. They can establish rules of conduct to be observed by their members when called on to act as medical expert witnesses. Sir James Stephen said that if medical men laid down for themselves a positive rule that they would not give evidence unless before doing so they met in consultation the medical men to be called on the other side and exchanged their views fully, so that the medical witnesses on the one side might know what was to be said by the medical witnesses on the other, they would be able to give a full and impartial account of the case that would not provoke cross-examination. It would be very natural that parties and counsel should resist as an innovation which would lead to a disclosure of evidence to the opposing party a movement in favor of conference before trial between the experts on each side of the case. But expert witnesses are an exceptional class of witnesses, and the proposition is so manifestly fair and well-intentioned that it ought to have a trial. It would be a step toward the restoration of confidence in the sincerity of medical expert testimony, and would tend to reduce the divergence of medical expert opinions in courts to legitimate and reasonable limits.

16. **Id.**—Gay would give the court authority to charge the jury on medical expert evidence and to appoint medical

experts in certain cases on his own motion, said expert to be paid by the county; and to refer all important questions relating to the mental condition of the parties at suit to a commission of alienists or experts before the trial. The bench and the bar, he says, should correct certain abuses attending the hearings of expert evidence in the courts.

New York Medical Journal

January 1

- 17 *Surgical Management of Complicated Harelip and Cleft Palate. J. B. Roberts, Philadelphia.
- 18 *Chorioiditis Dependent on Appendicitis. R. T. Morris, New York.
- 19 Effect of Venereal Disease on Public Health. E. L. Keyes, New York.
- 20 Is the Demonstration of the Gonococcus as Simple a Matter as is Commonly Supposed? E. Fuller, New York.
- 21 *Pseudoleucemia gastrointestinalis. H. Shoemaker, Philadelphia.
- 22 Indiscriminate Enucleation of the Tonsil. P. Fridenberg, New York.
- 23 The Professional Position of the Roentgenologist. G. H. Stover, Denver.
- 24 Comparison Between Clinical Infection and Experimental Inoculation in Syphilis. D. W. Montgomery, San Francisco.
- 25 The Use of the Electrocautery for Uterine Carcinoma. W. J. Gillette, Toledo.
- 26 *Atypical Exophthalmic Goiter. T. R. Pooley, New York.

17. **Harelip and Cleft Palate.**—According to Roberts, a child born with harelip and cleft palate should be treated by what might be called the composite method. Immediately after birth the mother should press the two halves of the upper jaw together firmly with her fingers two or three dozen times a day. This orthopedic procedure tends to lessen the width of the fissure. As soon after birth as possible, the soft and semicartilaginous bones of the upper jaw should be forced together by means of a Hammond clamp or by the more formal operation of Brophy, with wire tie beams and lead plates. About the same time that this replacement of the bones is attempted, the alveolus should be reconstructed in front, if there be any great deviation in the alignment. Any protrusion of the intermaxillary bone must next be corrected by a plastic or osteoplastic operation at the front part of the septum of the nose. Any gap remaining in the roof of the mouth must next be closed by a flap operation. A fissure in the upper lip must be closed by carefully applied sutures and the deformity of the nostril must be corrected. If the lower lip is conspicuously prominent a V-shaped piece must be excised and perhaps the upper lip widened by insertion of tissue from cheek, chin, or hand. These various operative steps will occupy probably a year or two, because many periods of inactivity will be demanded in order to insure safety to the child and to permit the surgeon to see the effect of the various stages in the operative work.

18. **Chorioiditis Dependent on Appendicitis.**—A clergyman was about to retire from his labors because of chorioiditis. It was anticipated that he was to become entirely blind. His physician stated that he believed the chorioiditis to be secondary to toxemia resulting from the influence of the patient's appendix. This proved to be the correct diagnosis. On examination, Morris found a typical case of fibroid degeneration of the appendix, with the type of irritation which he calls "protective appendicitis," for the reason that it seems to protect the patient against infective appendicitis. The appendix was removed through a short incision, and was found to consist of an organ in which the inner structures had been replaced by connective tissue, as is usually found in such cases. The patient began at once to recover from his intestinal indigestion, from his general nervous irritability, and from the chorioiditis. November, 1909, he considered himself perfectly well and has taken up all of his duties in life again.

21. **Gastrointestinal Pseudoleucemia.**—A composite picture of gastrointestinal pseudoleucemia, according to Shoemaker, presents the following facts: The tonsils are enlarged, and generally also the cervical lymphatics which drain these glands. The disease differs from Hodgkin's disease in the absence of any marked enlargement of the superficial lymph glands over the body. There is a hyperplasia of the lymphoid element in the spleen, the gastrointestinal tract, and the neighboring lymph glands. Herrick, 1908, reports marked enlargement of lymph glands about the pancreas. A splenic tumor, a hyperplasia of the solitary follicles, and Peyer's

patches, are invariable. The solitary follicles are pedunculated, or sessile, and often fuse together forming rugae. This condition may be so extensive that it prevents the intestine from collapsing. These growths may be pigmented or ulcerated. Microscopically there is seen a round cell hyperplasia of the lymphoid tissue which does not invade the surrounding tissue. The bone marrow is red. In one case only were yellow spots seen. No leucocytosis exists, but a relative increase of the small lymphocytes is present. They may equal or exceed in number the polymorphonuclear cells. There is a reduction in the red blood cells, and a relative reduction of the hemoglobin. Poikilocytes are numerous and no nucleated red blood cells are seen—the author's case excepted.

The principal points of difference in the case reported by Shoemaker lie in the moderate involvement of the lymphoid elements in the gastrointestinal tract, and in the age of the patient. He says that no doubt had this process been a more chronic one, and had the patient lived to the average age (he died at the age of 28) the involvement of the stomach and intestines would at least have been equal to those cases reported by other observers.

26. Atypical Exophthalmic Goiter.—In Pooley's case there was absence of any distinct enlargement of the thyroid, a very unusual swelling and protrusion of the conjunctiva, and severe nervous and mental symptoms.

Lancet-Clinic, Cincinnati

December 25

- 27 Problem of a Federal Department of Health. L. H. Montgomery, Chicago.
- 28 Routine Induction of Labor at Term. M. A. Tate, Cincinnati.

Journal of the Medical Society of New Jersey, Orange

December

- 29 *Sterilization of Confirmed Criminals, Idiots, Imbeciles, and other Defectives by Vasectomy. W. J. Chandler, South Orange.
- 30 *Pathognomonic Signs as Relating to Appendix Localization. A. J. Walscheid, Union.
- 31 Laboratory Diagnosis of Typhoid and the Typhoid Carrier. D. S. D. Jessup, New York.
- 32 Typhoid in Infancy and Childhood. LeG. Kerr, Brooklyn.
- 33 Treatment of Typhoid. W. Coleman, New York.
- 34 Surgical Aspect of Typhoid. J. Douglas, New York.
- 35 Prostatectomy. F. M. Donohue, New Brunswick.

29, 30. Abstracted in THE JOURNAL, Aug. 28, 1909, pp. 736, 737.

Journal of the Michigan State Medical Association, Detroit

December

- 36 *Mind Cures in General and the Emmanuel Movement in Particular. A. Church, Chicago.
- 37 *The Physician and the Campaign against Tuberculosis. A. S. Warthin, Ann Arbor.
- 38 *Acute Postoperative Dilatation of the Stomach. A. W. Blain, Detroit.
- 39 Ephraim McDowell. F. C. Warnshuis, Grand Rapids.
- 40 Pathologic Examinations in the Diagnosis of Malignancy. Tabulation of 2,400 Reports. C. S. Oakman and T. Walker, Detroit.
- 41 Saline Container and Dropper. F. J. W. Maguire, Detroit.

36, 37, 38. Abstracted in THE JOURNAL, Oct. 9, 1909, pp. 1220, 1221, 1222.

Annals of Surgery, Philadelphia

December (Jubilee Number)

- 42 *Intrahuman Bone Grafting and Reimplantation of Bone. Sir W. Macewen, Glasgow, Scotland.
- 43 Derangements of the Knee. R. Jones, Liverpool, England.
- 44 *Partial Hypophysectomy for Acromegaly. H. Cushing, Baltimore.
- 45 *Ligation of the Thyroid Vessels in Certain Cases of Hyperthyroidism. C. H. Mayo, Rochester, Minn.
- 46 Significance of Thyroidism and Its Relation to Goiter. J. Rogers, New York.
- 47 Treatment of Dry Arthritis with Injection of Petrolatum. T. Rosing, Copenhagen, Denmark.
- 48 *Lymphatics of the Colon. J. K. Jamieson and J. F. Dobson, Leeds, England.
- 49 *High Amputation of the Rectum. H. Hartmann, Paris, France.
- 50 *Principles of Radical Treatment for Proctosigmoiditis. R. Bastianelli, Rome, Italy.
- 51 *Operative Treatment of Fractures. W. A. Lane, London, England.
- 52 *A Clamp for Fixation of Ununited Fractures. R. Morison, Newcastle-on-Tyne, England.
- 53 *Musculospiral Paralysis Complicating Fracture of the Humerus. C. L. Scudder and W. E. Paul, Boston.
- 54 *Partial Nephrectomy. G. Barling, Birmingham, England.
- 55 *Partial Resection of the Bladder for Malignant Tumor by the Transperitoneal Route. A. Primrose, Toronto, Canada.

- 56 *Cancer of the Prostate. H. H. Young, Baltimore.
- 57 *Acute Hemorrhagic Pancreatitis. J. R. Judd, Honolulu, Hawaii.
- 58 Pancreato-Enterostomy and Pancreatectomy. R. C. Coffey, Portland, Ore.
- 59 *A Disease of the Gall-Bladder Requiring Cholecystectomy. B. G. A. Moynihan, Leeds, England.
- 60 Transduodenal Choledochotomy. N. J. Maclean, Winnipeg, Canada.
- 61 Ileus Due to Meckel's Diverticulum. D. N. Eisendrath, Chicago.
- 62 Diffuse Peritonitis. J. B. Deaver, Philadelphia.
- 63 Appendicostomy in Conditions of Acute Peritonitis. E. W. H. Groves, Bristol, England.
- 64 The Appendix Vermiformis. C. B. Keetley, London, England.

42. Intrahuman Bone Grafting.—A case is reported by Macewen in which the greater part of the shaft of the humerus was restored by intrahuman transplantation 30 years ago. Three other cases are mentioned—one illustrating human reimplantation of the flat bones of the skull and two of restoration by transplantation of human jaw bones. In both of these latter the operation was performed for the removal of marked deformity as well as to restore the function of the mandible. A fourth case is referred to as a note.

These cases are quoted as examples of many others in which bone grafting and transplantation of bone has been successfully performed by Macewen. It is to be noted that the periosteum plays no part in the bone reproduction after transplantation, and in the majority of the cases referred to the periosteum was not transplanted along with the bone. The patient in point, aged 3 years, was (July 17, 1878) in an emaciated and exhausted condition from suppuration due to necrosis of the right humerus, evidently from osteomyelitis. The shaft of the humerus was found to be totally necrosed and already separated from its head near its epiphyseal junction. At the condylar epiphysis crepitation was likewise elicited. The bone was dark colored and fetid. About nine weeks after the onset of the disease, the exposed loose bone was divided near its center into two parts which were consecutively withdrawn. The two portions removed comprised the whole humeral diaphysis. The periosteal tube which remained was covered with a thick layer of granulation tissue which was soft throughout, except at the proximal extremity, where the finger detected rough, osseous plaques of bone. This tunnel was stuffed with carbolyzed lint and the arm was fixed on a splint. The tunnel left by the withdrawal of the bone gradually coalesced from the epiphyses toward the superficial openings without the formation of new bone, except for a short distance from the head of the humerus, where about an inch and a half of shaft had formed three months after removal of the dead shaft. Fifteen months subsequently, two wedges of bone were removed from the tibia of a patient 6 years old, affected with anterior curves. The bases of these osseous wedges consisted of the anterior portion of the tibia, along with its periosteum, the wedges gradually tapering toward the posterior portion of the tibiae. After removal, they were cut into minute fragments with the chisel, irrespective of the periosteum. The bulk of the fragments had no periosteum adhering to them, they having been taken from the interior of the bone. They were then deposited into the muscular sulcus in the boy's arm and the tissues drawn over them and carefully adjusted. Two other wedges of bone of larger size than the first were similarly dealt with and inserted two months subsequently to the first graft, and a third couple were placed in a position five months after the first. These filled the gap in the arm to the extent of four and a quarter inches; the humerus then measured 6 inches in length. Soon the utility of the arm was greatly restored. Seven years after the dismissal from the hospital the humeral shaft was found to have increased in length by one and three-quarters inches, being now seven and three-quarters inches, and it had increased in circumference to a marked extent and had assumed a somewhat irregular shape. The length of the sound arm had, however, considerably outstripped the length of the transplanted humerus. The patient could use his grafted arm for a great many purposes—taking food, adjusting his clothes, and in many games.

44. Hypophysectomy for Acromegaly.—The patient, male, aged 38 years, about 8 years ago, began to suffer from periodic headaches, which have increased in frequency and

severity so that now the pain has become more or less constant, with exacerbations. It is referred to the depth of the head, and often passes to the back of the neck, where there is considerable stiffness and an uncomfortable drawing sensation. Soon after the onset of the headaches the man began to be troubled with photophobia, particularly during the attacks of pain. Otherwise there has been no visual disturbance, no impairment in hearing, no olfactory or gustatory disturbance, no vomiting, no nausea. Gradually there developed all the signs and symptoms of acromegaly. The operation done March 25, 1909, consisted of a preliminary tracheotomy; partial removal of the hypophysis, using the transphenoidal route and osteoplastic resection of the anterior wall of the frontal sinuses. The tracheal wound was closed without drain. Ether anesthesia was used.

Though anxious to return home and quite able to leave the hospital within a week or ten days after the operation, he was persuaded to remain for 17 days. During this interval, he called attention to the fact that his hands seemed much less stiff than formerly; indeed, that he had not seen wrinkling of the skin such as was present for a number of years. Measurements of the fingers showed that they had diminished from 1 to 1.5 mm. in their circumferential measurements. His photophobia had almost entirely disappeared. The one objectionable feature was the inevitable complete loss of his olfactory sense. There had been no headache since the operation, very slight photophobia and only an occasional slight puffiness of the hands—much less than formerly. The speech still remained somewhat thick, and the patient had no subjective consciousness of any diminution in the size of the tongue comparable to that which had occurred in the soft parts of the hands. There had been no nasal discharge. He was troubled only by the loss of the sense of smell, which had cut him off from the enjoyment of certain flavors. He had given up smoking, and now chews tobacco, and no longer cares for coffee. He has gained 10 pounds in weight.

45. Vessel Ligation for Hyperthyroidism.—Five hundred and eighty patients suffering from hyperthyroidism or exophthalmic goiter have been operated on at St. Mary's hospital. Of these operations, 225 were ligations of the superior thyroid arteries and veins. A number of these ligations have been made too recently to base observations on except as to the immediate risk of operation, which is about 2 per cent. in deaths occurring within a few days. Ten of these patients were operated on too late and did not improve but continued in their downward progress, dying in from eight to ten months later of their disease. In these deaths is included a case of pernicious anemia. The Mayos now have full records of 138 cases which were ligated sufficiently long ago to make the report of value.

There were 12 cases of ligation of the remaining superior thyroid artery and vein following thyroidectomy of the larger lobe and isthmus, the primary operation being followed by relapse after one or several years with growth of the remaining lobe. Twenty-eight cases of thyroidectomy followed the ligation of both superior thyroid vessels. Although all of them were very severe cases at the time of ligation, there was no mortality from the second operation.

In cases of ligation without thyroidectomy the results were as follows: Slight improvement, 9; great improvement, 44; very marked improvement, 11; absolutely well, 4; cases of questionable exophthalmic goiter, no improvement, 9.

48. Lymphatics of the Colon.—Jamieson and Dobson review the previous publications on this subject and again emphasize the necessity of complete removal of lymphatic areas when operating for carcinoma of the colon.

49. High Amputation of Rectum.—Although the results of abdominal and perineal amputations of the terminal parts of the intestine have not been very encouraging, Hartmann believes that with the actual improvement of the technic they will become better, and that the abdominoperineal path is to be the path of the future. Hartmann has done this abdominoperineal operation four times—three times bringing down the pelvic colon through the perineum and once the upper end in an iliac incision and total extirpation of the

lower end, with three cures and one death by hemorrhage, the results of an operative fault.

50. Proctosigmoiditis.—In cases of stricturing proctitis or proctosigmoiditis the treatment recommended by Bastianelli is as follows: 1. Cecal anus and laparotomic exploration of the bowels. 2. Perineal or combined removal of the diseased section, in one or two stages, with mobilization of sigmoid and colon, if necessary, and preservation of sphincter. 3. Closure of cecal anus. 4. Plastic operation, if necessary. Bastianelli emphasizes the importance of resorting more frequently to the abdominal route in the treatment of strictures of the rectum for the purpose of preliminary exploration, and the importance of exact ligating and cutting the arterial supply from the abdomen, even in cases of perineal operation to prevent any damage to the circulation.

51. Published in the *Lancet*, June 12, 1909.

52. Fixation of Ununited Fractures.—The clamp described by Morison is intended to hold together fractured bones till union has occurred, when the clamp is removed.

53. Musculospiral Paralysis.—Scudder and Paul report 11 cases in which the end-results are known. In 8 cases there is no wrist drop at present; 3 cases showed no improvement in the nerve function following operative interference. Of these 3 cases, 1 patient died 3 years following suture of the nerve, showing no improvement in the nerve function; another has had 3 unsuccessful operations for ununited fracture of the humerus at intervals of from 6 to 8 years; the third patient at the first operation had the nerve freed, resected and sutured, and at the second operation the bone shortened by resection, the nerve, found bulbous, resected and sutured. After 16 years there is no return of function in the nerve. Eight of these patients were badly injured. The trauma was very severe; the arm was caught in the shafting or the belt of an engine, or had received a gunshot wound, or was crushed by machinery. Nearly all the patients were operated on 3 or 4 months following the accident. The longest interval between accident and operation was 3 years. This patient recovered functional usefulness and the musculospiral supply. Improvement in these patients was first noted 6 months to one year following the operation.

54. Partial Nephrectomy.—In the case reported by Barling, the left kidney was found to have two ureters. Owing to symptoms present it was necessary to do a kidney operation. The upper portion of the left kidney, exactly two-thirds of it, was unusually firm in consistence but otherwise apparently quite healthy; the lower third was in a condition of complete sacculation and presented a yellowish-white color in contrast to the brownish red of the upper healthy portion. The pelvis of this lower third was much dilated, as was the ureter also. No stone could be detected in the pelvis or ureter. The latter was therefore opened and a bougie passed easily into the bladder, showing the absence of stone or stricture. After considerable search, the second ureter was found clinging closely by dense adhesions to the diseased ureter and dilated pelvis. Much trouble was required to separate the two. The dilated ureter was then clamped and divided. A clamp was next placed on the vessels of the kidney and the lower third of the kidney excised. Lest any renal tissue should be left on the truncated lower end of the upper healthy portion, that end was carefully curetted with a Volkmann spoon, and the end was whipped over with a continuous catgut suture. The clamp was then removed from the vessels; very little bleeding occurred. The remaining portion of kidney was returned into the loin and the wound closed, except for a drainage opening. Shock after the operation was extremely marked, much more so than in an ordinary case of nephrectomy for pyonephrosis. The patient's recovery was interrupted by a slight febrile disturbance on the ninth day, two days after the drainage tube was taken out, and was probably due to some little leakage from the cutting out of continuous catgut suture. There was at this time a little hematuria. The patient is now quite well in all respects.

55. Transperitoneal Resection of Bladder.—Primrose reports a case of tumor of the bladder in which he employed successfully the method first advocated by C. H. Mayo—transvesical

resection of a portion of the bladder wall. The left ureter in this case passed through the tumor mass. It was severed one inch from the bladder wall and sutured into the wound. Its patency was preserved. The patient made an excellent recovery.

56. Cancer of the Prostate.—Young's paper consists of a comprehensive and detailed clinical, pathologic, and post-operative analysis of 111 cases in which he operated. He says that a cure can be expected only by the routine removal of the seminal vesicles, vasa deferentia and anterior two-thirds of the vesical trigone with the entire prostate. The operation is not extremely difficult or dangerous, and already at least one cure has probably been obtained (now almost five years since operation). He says that when the disease is advanced and urination very difficult and frequent a catheter life should be adopted. When, however, catheterization is difficult or painful, a palliative operation should be done, in some cases suprapubic cystostomy, but lasting relief of urinary obstruction and vesical pain can be secured by careful conservative perineal prostatectomy.

57. Acute Hemorrhagic Pancreatitis.—Judd reports the case of one patient subjected to operation and who recovered. An opening was made into the head of the pancreas with a blunt instrument and a cigarette drain inserted leading out above the stomach through the gastro-hepatic omentum. The gall-bladder and ducts showed no stones and were apparently in normal condition. The wound was then closed, except for the space occupied by the drain, and another drain inserted through the suprapubic stab wound. The patient was put to bed with the head of the bed raised and was given normal saline solution by rectum. Steady improvement followed the operation. There was considerable drainage of a thin, bloody fluid for the first 24 hours, which rapidly diminished, and by the third day drainage had practically ceased. The temperature reached 101.4 F. on the second day, and was elevated 1 or 2 degrees for 12 days, after which time it remained normal. The pain continued, although of less intensity, for 3 days and required several hypodermics of morphin. The bowels moved voluntarily on the fourth day, followed by a profuse diarrhea for several days. Convalescence was then uneventful and the patient returned home during the fourth week. Since the operation, nine months ago, she has enjoyed good health, and at present is in splendid condition.

59. Cholecystectomy.—Moynihan points out that there is a condition of the gall-bladder in which fine grains of calculous material are embedded in the mucosa: the cystic duct is not affected. The wall of the gall-bladder may appear normal. It may retain the blue color of health and the walls are thin and supple. It may be white and thickened, slightly or grossly, in part or in whole. No stones are free in the gall-bladder though particles of grit may be found in the bile therein. Chronic pancreatitis may be present in the more advanced cases. Inspection of the mucosa of the gall-bladder is necessary to reveal the presence of this condition in its early stages; it cannot otherwise be recognized. Removal of the gall-bladder is necessary; drainage of the common duct may be desirable in cases where jaundice has been present. Three illustrative cases are cited.

West Virginia Medical Journal, Wheeling

December

- 65 *The New Neurology. C. A. Wingerter, Wheeling.
- 66 Artificial Hyperemia as a Therapeutic Measure. J. H. Anderson, Marytown.
- 67 Atrophic Rhinitis. G. A. Aschman, Wheeling.
- 68 Diagnosis and Treatment of Perforation in Typhoid. C. M. Scott, Bluefield.
- 69 Plastic Operation for Relief of Antelexion of the Uterus. H. G. Nicholson, Charleston.

65. Abstracted in THE JOURNAL, Nov. 6, 1909, p. 1587.

Journal of Advanced Therapeutics, New York

December

- 70 Radium Therapy in Inoperable Tumors. W. H. Dieffenbach, New York.
- 71 Standardization of High Potential Electric Currents (continued). E. C. Titus, New York.
- 72 *Treatment of Pathologic Menopause. H. F. Pitcher, Haverhill, Mass.

72. Abstracted in THE JOURNAL, Dec. 11, 1909, p. 1999.

Woman's Medical Journal, Cincinnati

December

- 73 *Habits of Posture a Cause of Deformity and Displacement of the Uterus. E. M. Mosher, Brooklyn.
- 74 Morphology and Physiology of Areas of Langerhans in Some Vertebrates (continued). L. M. Dewitt, Ann Arbor.

73. Posture and Displacement of the Uterus.—Mosher examined *per vaginam* and by rectum a large number of women and girls who have acquired a lateral obliquity of the pelvis from habits of posture, and in almost no instances has she found the uterus in the axis of the pelvis. Twenty-two had a right lateral obliquity (right hip elevated), while the remainder had acquired the opposite tilt. In every one of these cases the uterus approached the elevated hip, especially in the upright position of the trunk. Most of these women had dysmenorrhea and leucorrhea and in some the condition was accompanied by more serious pelvic lesions. Mosher says that a combination of the two forms of obliquity in the habitual posture of the pelvis is common, especially when the habit has been acquired in standing, and the influence of both can be traced in the shape and position of the uterus.

The author urges that mothers in every school district should collectively be instructed in reference to the normal position of the body in standing and sitting, and of the dangers which menace their daughters if not properly trained. Teachers everywhere should be similarly instructed and urged to enforce the adoption of right habits of posture in their pupils. Physical exercise not only in the gymnasium but in the school-room, between classes, should be given to strengthen the muscles which hold the pelvis in normal obliquity and which correct the tendency to lateral obliquity. Physicians and all intelligent people should exert an influence against the use of articles of wearing apparel by girls and women which engender bad habits of posture, the most important of these being high heels, tight corsets, and those which crowd the abdomen back and downward, stocking supporters fastened to the front of the corset, and tight waist-bands.

Western Medical Review, Omaha

December

- 75 The Medicolegal Aspects of the Roentgen Rays from the Standpoint of the Surgeon. R. D. Mason, Omaha.
- 76 Nystagmus. L. B. Bushman, Omaha.
- 77 Typhoid Fever. J. A. Andrews, Holdrege, Neb.
- 78 The Typhoid Problem. R. B. McGrath, Grand Island, Neb.
- 79 Meckel's Diverticulum as a Cause of Intestinal Obstruction. S. R. Hopkins, Omaha.

Journal of Nervous and Mental Diseases, Lancaster, Pa.

December

- 80 *Distribution of Encephalic Hemorrhages. S. D. W. Ludlum, Philadelphia.
- 81 *Unusual Type of Syringomyelia. W. M. Leszynsky, New York.
- 82 *Gunshot Wound of the Brain, without Focal Symptoms. W. M. Leszynsky, New York.
- 83 *Diet in Epilepsy. A. J. Rosanoff, Kings Park, N. Y.
- 84 Cause of Contractures and Spasticity in Cases Showing no Demonstrable Lesion of the Pyramidal Tracts. J. H. W. Rhein, Philadelphia.

80. Distribution of Encephalic Hemorrhages.—In the ninety-three patients examined by Ludlum, it would seem that vascular lesions occur about as frequently in the anterior chorioid, the posterior communicating, and the posterior cerebral arteries, as in the striate group of vessels. They all are, he says, important factors both in softenings, cyst formations and hemorrhages in the region of the basal ganglia.

81. Syringomyelia.—The unilaterality of the symptoms, their almost exclusive sensory character, their accurate correspondence with accepted views of the segmental sensory distribution, the characteristic dissociation of sensibility, and the entire absence of motor symptoms leads Leszynsky to present his patient as an atypical case of syringomyelia in its early stage, or a gliosis limited to the sensory tracts in the central portion of the cord. A tumor of the cord could be excluded.

82. Gunshot Wound of Brain.—The interesting feature in this case is that the bullet took its course almost directly through the median line, traversing the anteroposterior diameter of the brain, and therefore doing no damage to any area

productive of focal symptoms. The bullet in this case was located in the median line of the occipital region by means of radiographs. The present location of the bullet and the absence of signs of irritation contraindicate surgical measures for its removal.

83. **Diet in Epilepsy.**—Rosanoff obtained a reduction in the number of seizures by about 14 per cent., apparently attributable to a simple diminution of the daily allowance of the proteids and to nothing else. This diet consisted of three meals a day at the usual hours, each meal consisting of 125 gm. of bread, 16 gm. of butter, and 250 c.c. of milk, carefully weighed and measured. By calculation this diet contains approximately 52.2 gms. of proteids, 70.3 gms. of fats, and 220.0 gms. of carbohydrates daily.

Journal Tennessee State Medical Association, Nashville

December

- 85 *Primary Malignant Tumors of the Osseous System. W. H. Bryan, Nashville.
- 86 Neurasthenia. J. W. Stevens, Nashville.
- 87 Spread of Tuberculosis. S. M. Miller, Knoxville.
- 88 Management of Transverse Presentations in Labor. J. B. Murfree, Murfreesboro.
- 89 Mortality and Morbidity of Appendicitis. C. N. Cowden, Nashville.

85. Abstracted in *THE JOURNAL*, May 1, 1909, p. 1450.

Military Surgeon, Washington, D. C.

December

- 90 Medical Service in Campaign. P. F. Straub, U. S. Army.
- 91 Medical Service with Philippine Scouts. E. E. Persons, U. S. Army.
- 92 *Medical Equipment and Supplies for the Organized Militia. C. R. Darnall, U. S. Army.
- 93 Medical Progress in Porto Rico. B. K. Ashford, San Juan, Porto Rico.
- 94 Form of Obtaining Sanitary Camps. W. R. Davidson, U. S. Army.
- 95 *Is there a Venereal Peril for Us? J. Van R. Hoff, U. S. Army.
- 96 *Eradication of Specific Urethritis from the Army by Means of the "K" Package, Reinforced by Military Law and Discipline. H. I. Raymond, U. S. Army.
- 97 Venereal Prophylaxis in the Military Service. R. B. Grubbs, U. S. Army.
- 98 Venereal Disease in the Army and the Necessity of Proper Action by State and Municipal Authorities for its Effectual Control. P. C. Fauntleroy, U. S. Army.

92. Abstracted in *THE JOURNAL*, Nov. 13, 1909, p. 1683.

95. Published in the *Medical Record*, Nov. 27, 1909.

96. Abstracted in *THE JOURNAL*, Nov. 20, 1909, p. 1768.

New Orleans Medical and Surgical Journal

December

- 99 Ophthalmic Surgery. H. D. Bruns, New Orleans.
- 100 Two Cases of Pellagra. E. M. Hummel, New Orleans.
- 101 Retropharyngeal Abscess. H. Dupuy, New Orleans.
- 102 Vincent's Angina, with Demonstration of the Organism. A. L. Weil, New Orleans.
- 103 Extrauterine Pregnancy. P. T. Talbot, New Orleans.
- 104 Regional Anesthesia. C. W. Allen, New Orleans.
- 105 Coxa Vara and its Treatment. P. A. McIlhenny, New Orleans.
- 106 Treatment of Fracture of the Patella, especially old Fracture. F. W. Parham, New Orleans.

The Proctologist, St. Louis

December

- 108 The Lymphatics in Proctologic Diseases. R. H. Barnes, St. Louis.
- 109 Stricture of Rectum and Sigmoid. J. D. Potts, St. Louis.
- 110 *New Method for Attempting to Secure Sphincteric Control after Colostomy. C. Ryall, London, England.

110. Published in the *Lancet*, July 3, 1909.

Illinois Medical Journal, Springfield

December

- 111 *The Responsibility of the State in the Care of its Dependents. F. Billings, Chicago.
- 112 Problem of the Blind from the Physician's Standpoint. J. T. McAnally, Carbondale.
- 113 Diagnosis of Fractures. W. Fuller, Chicago.
- 114 Pemphigus Requiring Surgical Attention. S. C. Glidden, Danville.
- 115 Hodgkin's Disease with Primary Tumor in Gall-Bladder. E. H. Weld and P. L. Markley, Rockford.
- 116 Skin Grafting. G. H. Galbraith, Clifford.
- 117 *Prepared Foods and Diabetic Articles. R. T. Woodyatt, Chicago.
- 118 Ulcer of the Stomach, its Differentiation from Cancer, and Treatment of these Conditions. F. M. Mason, Rossville.
- 119 *Vaccine Treatment of Iritis. D. A. Vanderhoof, Rockford.
- 120 The Eye in Relation to General Diseases. W. E. Gamble, Chicago.
- 121 *Eye Diseases Associated with Nasal and Nasopharyngeal Disorders. T. Faith, Chicago.

- 122 *The Nature and Causes of Nasal Mucous Polypi. E. F. Garraghan, Chicago.
- 123 The Tonsil Question. R. H. Brown, Chicago.
- 124 Studies in Workmen's Compensation for Industrial Injuries (continued). W. H. Allport, Chicago.

111, 117. Abstracted in *THE JOURNAL*, June 5, 1909, p. 1880.

119. **Vaccine Treatment of Iritis.**—Vanderhoof reports two cases as examples of the good results which are frequently derived when using vaccine treatment. The results have been especially good in acute streptococcus and staphylococcus infections of the ear, nose and throat. Results have been negative in chronic suppurative conditions of the sinuses.

121. **Associated Eye Diseases.**—Faith claims that nasal and nasopharyngeal disease may be responsible for headaches of an ocular type, supraorbital neuralgia, localized pains in the eyes, asthenopic symptoms, vascular disturbances, congestion of conjunctiva, edema of lids, exophthalmos, orbital cellulitis and abscess, optic neuritis, usually retrobulbar, ocular palsies, and phorias, keratitis, phlyctenulae of either the conjunctiva or cornea, and diseases of the lachrymal apparatus.

122. **Nasal Mucous Polypi.**—That nasal polypi are not necessarily dependent on suppuration in the accessory cavities of the nose, although they are sometimes found associated with such suppuration, is Garraghan's belief. Suppuration in the nasal sinuses may result from the presence of mucous polypi in the nose. Nasal polypi should be considered as a symptom of a disease which in most cases demands more than the simple removal of the polypi to effect a permanent cure. In the majority of instances, after the removal of the polypi, which is best performed by means of the cold wire snare and punch forceps, the thorough removal of all diseased or carious bone which may be found on any of the nasal sinuses is absolutely essential to the prevention of the recurrence of nasal polypi.

American Journal of Physiology, Boston

December

- 125 *Physiology of Lymph—The Leucocytes in the Neck Lymph, Thoracic Lymph, and Blood of Normal Dogs. B. F. Davis and A. J. Carlson, Chicago.
- 126 Relative Toxicity of Various Salts and Acids Toward Paramoecium. L. L. Woodruff and H. H. Bunzel, Woods Hole, Mass.
- 127 The Nucleoalbumen in the Yolk Platelets of the Frog's Egg; Note on the Black Pigment. J. F. McClendon, New York.
- 128 Catalase of Echinoderm Eggs before and after Fertilization. E. P. Lyon, St. Louis.
- 129 Elimination of Total Nitrogen, Urea, and Ammonia Following the Administration of some Aminoacids, Glycylglycin and Glycylglycin Anhydrid. P. A. Levene and G. M. Meyer, New York.
- 130 *Influence of the Removal of Segments of the Gastrointestinal Tract on the Character of Protein Metabolism. I. Levin, D. D. Manson and P. A. Levene, New York.

125. **Physiology of Lymph.**—Davis and Carlson find that the blood of normal dogs contains about 20,000 leucocytes per cubic millimeter, of which about 77 per cent. are polymorphonuclears. On the other hand, the thoracic lymph varies greatly from 1,000 to 30,000 per cubic millimeter, of which about 95 to 100 per cent. are small lymphocytes. Large lymphocytes and eosinophiles are found but the polymorphonuclears are present only with admixture of blood. The neck lymph is similar to the thoracic. The experimental evidence indicates that the lymphocytes do not pass directly from their place of formation through the capillary walls into the blood but are taken up by the lymph stream and enter the blood with the thoracic and neck lymph.

130. **Removal of Segments of the Gastrointestinal Tract.**—Levin, Manson and Levene remark that previous studies of the digestive functions have not taken account of the influence of the various segments of the gastrointestinal tract on metabolism and elimination. The method of study has usually been the removal of portions of the intestinal contents through fistulas. The authors propose on the other hand to study the effect of removing various parts of the digestive organs themselves. The present communication forms the first installment of a series of investigations on this principle. Preliminary to the removal of the entire stomach, they studied the effect on metabolism of gastroenterostomy by which the function of the stomach is practically nullified. Their experiments were performed on dogs and had reference principally to the protein metabolism. They found that the nitrogen of proteins was rapidly excreted, so that with a considerable increase in the protein ration there was no nitrogen

retention after twenty-four hours. The experiments also showed that the principal amount of nitrogen was eliminated very shortly after its ingestion. The experiments seem to show that the chemical digestion of proteins by the stomach is quite subsidiary and that its principal office is to retain the nitrogenous food in such a way that opportunity may be given for the organism to store up and retain the ingested protein. The authors suggest that this is accomplished to a certain extent by the absorption from the stomach of incompletely digested proteins.

Denver Medical Times and Utah Medical Journal

December

- 131 Hereditary Ocular Diseases. G. F. Libby, Denver.
- 132 Physicians and the Public Health. W. H. Sharpley, Denver.
- 133 Pityriasis Rubra Pilaris. A. J. Markley, Denver.
- 134 The Treatment of Wounds. C. E. Tennant, Denver.
- 135 Intrapartum Hemorrhage Due to Premature Separation of the Placenta. A. M. Ditson, Denver.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

Lancet, London

December 18

- 1 *The Brain Structures Concerned in Vision. F. R. Cross.
- 2 Special Sense Discharges from Organic Disease. Sir W. R. Gowers.
- 3 *Latent Chorea: Contribution to the Study of Sydenham's Chorea. R. Miller.
- 4 X-Ray Ulcers Cured by Hilton's Method. A. F. Savill.
- 5 Action of Cryogenine on Physical Temperature. J. E. Gordon.
- 6 Case of Peripheral Neuritis (Alcoholic). J. Wyllie.
- 7 *Case of Pneumonia Migrans. H. B. Roderick.
- 8 Syphilis of Pancreas with a Pancreatic Calculus in the Duct. J. G. Taylor.
- 9 Status Lymphaticus with Sudden Death. R. W. S. Walker.

1. **The Brain Structures Concerned in Vision.**—Cross claims that the visuosensory area along the calcarine fissure is the primary station in each hemisphere for the reception of impressions coming from the retina through the geniculate bodies; around it is the visuopsychic area to which these impressions are transferred; it occupies the rest of the surface of the occipital lobe, its functions being to elaborate and to interpret. If part of the visuopsychic area is primarily diseased, there is likely to be a partial hemianopsia complicated by slight peculiarities of vision more or less indefinite, some difficulty in memory of words, some form of letter, word, or mind blindness. When the fibers that go to the temporal region are affected, there may be word deafness or loss of power in the musical faculty, to recall names or to read aloud. The psychic cells are associated with the psychomotor, where the impressions or information gained by sight are transferred for purpose of thought, speech, or action, and these with the emissive motor by which speech and writing are affected. The centers for these latter acts lie adjoining those for the simple movement of the lips and hand. The various parts of the visual cortex are connected by short association fibers almost infinite in their distributions.

3. **Latent Chorea.**—Miller holds that (rheumatic) chorea declares itself first by symptoms significant of general nervous instability. He urges that in dealing with children suffering from nervous disorders of many kinds special care should be taken to exclude the possibility of their having originated from a slight rheumatic infection. The well-known association between rheumatism and nervous instability is not to be explained by considering that the infection is specially prone to attack neurotic children, but by regarding the nervousness as in most cases the outcome of an infection already present (latent chorea). The mental depression and headache in rheumatic children are usually to be attributed to the disease and not to its treatment by salicylates. The recognition of latent chorea in children suffering from obvious acute rheumatism affords strong evidence that chorea is a rheumatic condition.

7. **Pneumonia Migrans.**—The striking features of Roderick's case were: (1) The cerebral symptoms, which persisted throughout the illness, varying from a semi-comatose state

to a violent delirium; (2) the migratory nature of the pneumonia and the small area of lung involved in each attack; (3) the slight disturbance of respiration, which only once reached 40 to the minute, being usually about 28; and (4) the rapid recovery after a small dose of antipneumococcic vaccine (0.5 c.c. containing 2,500,000 dead pneumococci) which, he thinks, it is reasonable to suppose, was instrumental in bringing about the favorable result.

British Medical Journal, London

December 18

- 10 *Brain Structures Concerned in Vision and the Visual Field. F. R. Cross.
- 11 Preparations of Lactic Acid Bacilli and the Production of Sour Milk. E. Quant.
- 12 *Leucoplakic Vulvitis and its Relation to Kraurosis Vulvae and Carcinoma Vulvae. C. Berkeley and V. Bonney.
- 13 *A New Color-Perception Spectrometer. F. W. Edridge-Green.
- 14 *Treatment of Post-Operative Shock by Pituitary Extract. G. G. Wray.
- 15 Inversion of Appendix and Cecum. W. J. Greer.
- 16 Acute Mastoid Suppuration and Suppuration in the Neck. J. Scott.
- 17 *Is Radium a Cure for Cancer? L. Wickham.

10. See Abstract No. 1.

12. **Leucoplakic Vulvitis.**—The authors have tried a number of remedies for the pruritus in leucoplakic vulvitis, and have found that most of them have failed to give relief. In view of their pathologic findings they advise that the affected area be excised in all cases in which local treatment fails, and since a permanent change of character takes place in all the epithelial cells over the affected area, the excision should be a wide one lest the disease recur again in the scar, which has happened to them in two cases.

13. **New Color-Perception Spectrometer.**—The instrument described by Edridge-Green is a spectrometer so arranged as to make it possible to expose to view in the eyepiece the portion of a spectrum between any two desired wave-lengths. It consists of the usual parts of a prism spectroscope—that is, a collimator with adjustable slit, prism, and telescope with eyepiece.

14. **Post-Operative Shock Prevented by Pituitary Extract.**—In three cases Wray injected 1 c.c. of a 20 per cent. solution of the posterior lobe of the pituitary body intramuscularly into the patient's arm before the patient had fully recovered from the anesthetic. The effect was almost immediate, and the almost imperceptible pulse soon became large and bounding. This effect lasted from 12 to 16 hours, and gradually passed off. Not only did the pulse become larger in expansion, but it was also slowed, and whereas it had been irregular it became regular. This effect seems due not only to the action of the drug on the blood vessels, but also on the heart. The injection was given in conjunction with normal saline by rectum.

17. **Radium a Cure for Cancer.**—From a study of 600 cases of tumors comprising specimens of each variety, before, during, and after the treatment, Wickham concludes that the malignant evolution of these tumors may not only be arrested for months by radium treatment, but that occasionally, these tumors have entirely disappeared, giving the impression of real cure, the rays having on cancer cells a somewhat selective action. He says that radium cannot at present have other pretensions than to act on lesions which are localized and sufficiently accessible, or rendered accessible. In cases with generalization the resources of radium are limited to the reduction in size of the principal tumors, to the arrest of hemorrhage and secretion, and to the diminution of pain. If the cancer is localized and accessible, but inoperable, radium, with some rare but very remarkable exceptions, can only diminish or stop the hemorrhages and secretions, and occasionally render the tumor operable; but, in spite of these great advantages, which result in a prolongation of life, the patient in the end dies of the cancer. The influence of radium diminishes as the tumor becomes less and less accessible. Certain tissues are infinitely less favorably acted on by radium than others, for example, the mucous membranes, especially of the buccal cavity (tongue, tonsils, pharynx, etc.), and in these cases must be added the material difficulty of reaching the region conveniently, and applying the heavy screen-filters and leaving them in position for a sufficient length of time.

Lastly, if the cancer is very extensive, a radium-therapist has great difficulty in obtaining the stock of radium necessary to act sufficiently in every direction, for the number of doses needed in a number of cases is very high.

Medical Press and Circular, London

December 1

- 18 Appendicitis when the Appendix is a Pelvic Organ. J. Bland-Sutton.
- 19 An Apparatus for the Administration of Ether by the Purely Open Method. R. H. Hodgson.
- 20 Tubercle of the Lachrymal Sac. S. Stephenson.
- 21 Hypertrophic Cirrhosis and Alcoholic Paralysis. H. C. Drury and A. C. O'Sullivan.

December 8

- 22 Symptoms of Intestinal Stenosis. A. Mathieu.
- 23 The Opsonic Method. H. W. G. MacLeod.
- 24 Adhesions of the Diaphragm. L. Bassenge.
- 25 The Peritoneum and Peritonitis. E. R. Carling.

Clinical Journal, London

December 1

- 26 Mental Hygiene. S. Warner.
- 27 Diagnosis of Acute Abdominal Disease. H. B. Shaw.
- 28 Meningitis Secondary to Sphenoidal Sinus Disease. E. W. Roughton.

December 8

- 29 Mediastinal Tumor. W. C. Bosanquet.
- 30 Systematic Examination of the Eyes of School Children. N. B. Harman.

December 15

- 31 Diphtheria. F. M. Sandwith.

Glasgow Medical Journal

December

- 32 An Ophthalmic Retrospect. F. Fergus.
- 33 Reflexes in Cardiac Disease. Illustrated by a Case of Paroxysmal Tachycardia in which an Unusual Reflex Occurred. J. S. McKendrick.
- 34 The "Bruit de Roger." J. Cowan and L. Storey.
- 35 *Subcutaneous Treatment of Hernia in Children. A. G. Faulds.

35. **Treatment of Hernia in Children.**—In cases in which a clearly defined feeling of the various parts is to be had, Faulds considers it possible to cure the hernia by following this procedure. The child is prepared in the usual way for an anesthetic. It is placed on its back on the operating table, and its skin is thoroughly sterilized as for the ordinary operation. The operator having reduced the hernia, introduces his left forefinger into the inguinal canal by invaginating a small part of the scrotum, and feels both pillars of the ring. By doing this, he can easily feel the length of the opening, and determine the number of stitches necessary for its occlusion; seldom more than two, and sometimes only one stitch is required. He then takes a strong curved needle armed with a stout silk thread, pierces the skin about the top of the opening, and feels with his forefinger in the inguinal canal the point of the needle as it comes through the pillar of the ring. He thus has the hernia reduced and the sac behind his finger, which is in the canal, with the spermatic cord also behind. He then guides the point of the needle to the opposite pillar, and, taking a good bite of the other pillar, brings the point of the needle out through the skin. He again introduces the needle into the point of exit and brings it down on the long axis of the canal in the subcutaneous fat. He next pierces the pillar of the canal, and guides the needle again across to the opposite pillar, taking a good bite of it, then, traveling again in the subcutaneous tissues, brings the point of the needle out at its original entrance. He thus has the opening of the canal, as it were, in pursed strings, and, pulling the whole together, closes the ring, leaving sufficient room for the spermatic cord. By this procedure the skin and subcutaneous tissues are puckered together, but by catching the skin with a pair of dissecting forceps, and with a little manipulation, the skin and subcutaneous fat can be freed, and the ligature can be tied home on the pillars of the ring. A reef-knot is then tied as tightly as possible, and by lifting up the skin at the point of entrance of the knot with a pair of forceps the ligature is submerged, and thus no trace of operation in a few days can be found.

The canal is thus closed. The two surfaces of the sac have been brought together, room is left for the spermatic cord, and, as the child is kept at rest in the after-treatment, adhesions take place which are strengthened by the growth of the child, and the cure of the hernia is thus effected.

Journal of Hygiene, London

November

- 36 Investigations on the Toxicology of Tin, with Special Reference to the Metallic Contamination of Canned Foods. S. B. Schryver.
- 37 Progress of Ankylostomiasis in Cornwall. A. E. Boycott and J. S. Haldane.
- 38 *Nature of the Cellular Elements Present in Milk. R. T. Hewlett, S. Villar and C. Revis.
- 39 British Industrial Anthrax. C. H. W. Page.
- 40 On Heterologous Agglutinins, Particularly those Present in the Blood Serum of Cerebrospinal and Typhus Fever Cases. W. J. Wilson.
- 41 *Comparison Between the Germicidal Power of a Disinfectant in Solution and in the Emulsified State. R. E. Massey.

38. **Cellular Elements in Milk.**—The authors briefly sum up those facts which support the view that the cells found in milk are for the most part not leucocytes, as follows:

1. The cells present in milk (the so-called leucocytes) are very diverse in nature, and when critically examined, the majority distinctly differ from leucocytes.
2. However fresh the milk may be, the vast majority of the cells in it never stain like active leucocytes with ordinary blood stains.
3. Though many multinucleated cells are present, the majority of these are distinctly different from polymorphonuclear leucocytes.
4. The cells present in milk, however fresh, are scarcely ever amoeboid.
5. Ingestion of bacteria by the cells present (phagocytosis) is practically absent.
6. In milk obtained from perfectly healthy cows these cells may occur in vast numbers, and since the mammary gland in structure resembles other glands, it is against analogy that vast numbers of leucocytes should occur in its secretion.
7. The cause of the presence of a considerable number of cellular elements at times when there is no obvious reason, such as in quarters of the udder which have a previous history of mastitis, etc., but have recovered, is easily explained if these cells are tissue cells and not leucocytes.

41. **Germicidal Power of Disinfectants in Emulsified State.**—Experiments made by Massey showed that the germicidal power of emulsified disinfectants is greater than can be accounted for by the activity of the active constituent. A weak emulsion of tragacanth, when kept between 20 and 40 C. was found to delay solution of phenol for about 15 minutes, and, in the case of the difficultly soluble cresols, the particles could be detected after three hours. Although the temperature and strength of the disinfectant were varied, the emulsion was slightly stronger in each case.

Australasian Medical Gazette, Sydney

November

- 42 History of the Sydney Hospital. T. Fiaschi.
- 43 Schlösser's Method of Deep Injections in Grave Trigeminal Neuralgia. R. S. Skirving.
- 44 Aortic Aneurism. J. C. Verco.
- 45 Artificial Feeding of Infants. A. G. Salter.
- 46 Treatment of Infantile Paralysis. R. B. Wade.
- 47 Surgical Technic in Intussusception Cases. E. H. Binney.
- 48 Calcium and Eclampsia. A. C. F. Halford.
- 49 Cancer of the Cecum, Complicating Myoma. R. Worrall.
- 50 Prostatectomy. R. S. Bowker.
- 51 Furunculosis Treated by Vaccine. J. J. Holland.
- 52 Vitiligo. S. N. Alti.

Journal of Laryngology, Rhinology and Otology, London

December

- 53 Uniform Acoustic Formula Accepted by the Eighth Otological Congress at Budapest. J. Möller.
- 54 *Clinical Value of the Labyrinthine Nystagmus Tests (Analysis of Forty-two Cases). D. McKenzie.

54. **Labyrinthine Nystagmus Tests.**—McKenzie summarizes the results of his examinations as follows:

1. In otosclerosis the activity of the vestibular sense bore no relationship to the severity of the deafness.
2. In noise-deafness, concussion-deafness and deafness from meningitis the vestibular reactions were impaired.
3. In syphilis of the labyrinth the vestibular organ was not invariably affected in proportion to the cochlear.
4. In hysterical deafness the vestibular sense was impaired in proportion to the severity of the deafness.
5. In neurasthenic deafness the vestibular system was hypersensitive.
6. In perceptive deafness of indeterminate causation no conclusions were arrived at.
7. In chronic uncomplicated suppuration of the middle ear and in acute mastoiditis, the vestibular reactions were normal or slightly exaggerated.
8. In circumscribed labyrinthitis the vestibular sense as tested by measuring the caloric induction-period was impaired; and the impairment was increased after cure by the simple radical mastoid.
9. A case of labyrinthitis was found with spontaneous nystagmus to the opposite side, and with normal vestibular caloric reactions.
10. In temporo-sphenoidal abscess the reactions were normal.
11. After the radical mastoid in uncomplicated middle-ear suppuration, the reactions were hastened in two cases and delayed in one.

Annales de Gynécologie et d'Obstétrique, Paris

November XXXVI, No. 11, pp. 657-720

- 55 **Technic of Conservative Cesarean Section.** (Technique de l'opération Césarienne conservatrice.) A. Couvelaire. 1d. (Sutures dans l'opération césarienne.) A. Herrgott.

Annales de l'Institut Pasteur, Paris

November, XXIII, No. 11, pp. 841-936

- 56 **Oxidizing Enzymes.** J. Wolff and E. de Stoecklin.
57 **Yellow Fever at Martinique in 1908.** (Étude de l'épidémiologie amarille.) Simond, Aubert and Noc. Continued.
58 **Mechanism of Immunization against Fowl Cholera.** (Sur le rôle des leucocytes chez les animaux neufs et immunisés. Infectés artificiellement par le microbe du choléra des poules.) A. Sullma.
59 **Passage of Microbes through Intestinal Wall in Experimental Strangulation.** P. Ikonnikoff.

Annales de Médecine et Chirurgie Infantiles, Paris

December 1, XIII, No. 23, pp. 795-828

- 60 **Campaign against Infant Mortality.** (Puériculture.) Périer and Gaujoux.
61 **Nasolachrymal Pathology in Inherited Syphilis.** Antonelli.

Archives Générales de Chirurgie, Paris

November, III, No. 11, pp. 1101-1210

- 62 ***Perforated Gastric Ulcer.** (Ulcère perforé de l'estomac traité et guéri par le drainage sans suture.) M. Leroy and J. Minet.
63 **Successful Intrauterine Autoplastic Operation with Flap of Vaginal Mucosa for Cicatricial Stenosis of Cervix.** G. Potel.
64 ***Cicatricial Stenosis of Uterus of Therapeutic Origin.** P. Maclaure and C. Burnier.

62. **Perforated Ulcer of the Stomach.**—Leroy has been able to find records of 53 cases in France with prompt operation. The list includes only 15 with a successful outcome, and he reports another. His patient was a young woman free from digestive disturbances until the sudden onset of symptoms of gastric ulcer with perforation the fifth day. The lack of vomiting after the first led to the assumption that the perforation was in the posterior wall of the stomach so that the organ emptied its contents during the frequent retching not through the cardia but through the perforation into the sac of the omentum. The perforation occurred some time after a meal, but forty hours elapsed before the operation. Prompt recovery followed with drainage without immediate suture, and the patient has been in comparatively good health for six months to date.

64. **Cicatricial Stenosis of the Uterus of Therapeutic Origin.**—Maclaure presents and reviews a number of cases of stenosis resulting from cauterization with the actual cautery or a caustic or curetting of the uterus, obstetrical intervention or a surgical operation on the cervix, especially the Schraeder operation. If the stenosis is left uncorrected, painful menstruation and sterility are the rule, and an abnormal pregnancy follows if conception occurs. He reviews the various measures that have been applied in treatment, generally with excellent results.

Archives des Maladies du Cœur, etc., Paris

November, II, No. 11, pp. 609-672

- 65 **Historical and Critical Study of Paroxysmal Tachycardia and Its Origin.** H. Vaquez.
66 **Intense Eosinophilia in Carriers of *Filaria Loa*.** (Valeur de l'éosinophilie chez les malades porteurs de "*filaria loa*.") L. Nattan-Larrier and M. Parvu.

Bulletin de l'Académie de Médecine, Paris

November 30, LXXIII, No. 39, pp. 335-402

- 67 **The Bacillus Proteus in Gastrointestinal Infection.** (Association microbienne protéo-typhique.) H. Vincent.

December 7, No. 40, pp. 403-426

- 68 ***Antityphoid Inoculation.** (Prophylaxie et vaccination contre la fièvre typhoïde.) A. Chantemesse.

68. **Antityphoid Inoculations.**—Chantemesse reviews the history of antityphoid inoculations, referring to his own pioneer work in this line in 1888, when he immunized mice by inoculation with killed typhoid bacilli. In 1899, after Wright's practical application of antityphoid vaccination to British troops in Africa, Chantemesse proposed vaccinating his assistants and pupils in his hospital service where professional typhoid infection was sadly frequent. His suggestion was accepted and the entire force in the service were injected with typhoid cultures sterilized by heat. Among the interns were Armand-Delille and Guerbet, now professor at Rouen. The agglutinating power of the serum increased in consequence of the inoculation to 100, 150 and 200 in a few weeks, and then

gradually declined as the years passed, but the fixation reaction has continued positive to date. During the year just closed Guerbet accidentally swallowed several drops of a culture of typhoid bacilli while aspirating it into a pipette, but no symptoms followed; it seems probable that the antityphoid inoculation ten years before was responsible for the harmless outcome of the incident. Chantemesse had three accidents of this kind among his assistants before the inoculations were attempted, one young intern succumbing to perforation of the intestines in the severe typhoid developing six days after aspiration of the typhoid bacilli. Chantemesse urged the appointment of a committee to study the advantages and disadvantages of prophylaxis of typhoid by this method, so that the academy could officially endorse or reject it. A recent editorial in THE JOURNAL, Jan. 1, 1909, page 55, also discusses the practical value of antityphoid inoculation.

Presse Médicale, Paris

December 4, XVII, No. 97, pp. 865-880

- 69 **Infantilism and Puniness.** (Infantilisme et chétivisme.) A. Bauer.
December 8, No. 98, pp. 881-888
70 **Adrenalin in Treatment of Recurring Polymorphous Dermatitis.** F. Balzer and Guénot.
71 **Exfoliation Treatment in Dermatology.** L. M. Pautrier.
72 ***Electric Test for Traumatic Neuroses.** (La névrose traumatique: son syndrome réactionnel électro-musculaire.) J. Larat.

72. **Electric Test for Traumatic Neurosis.**—Larat gives the tracings in seven cases of traumatic neuroses to show the peculiar electromuscular contractions which seem to be specific for traumatic nervous diseases and are not observed in any others. The response to galvanism is increased, the anodic closure contraction equaling or surpassing the cathodic closure contraction. In health the latter surpasses the former by two-thirds. The peaks in the tracings are not rounded as in the reaction of degeneration, but are sharp and angular as with normal contractions. The increased excitability is observed both on the affected and the sound side. These findings confirm the assumption that a traumatic neurosis is a general neuropathic disturbance of the nerve centers, not a local affection.

Revue de Chirurgie, Paris

December, XXIX, No. 12, pp. 867-1020

- 73 ***Segmentary Atrophy of the Colon.** (Atrésie congénitale du colon: microcolon.) J. Okinczyk.
74 ***Symmetrical Lipomatosis.** (La lipomatose symétrique à prédominance cervicale et son traitement chirurgical.) C. Lenormant and M. Verdun. Commenced in No. 11.

73. **Microcolon.**—Okinczyk has encountered two cases of segmentary atrophy of the colon with no indications of preceding inflammation. The findings were an autopsy surprise; both cases were in adults. He has been able to find several such cases on record but all the others were in new-born infants. He thinks it probable that the trouble is the result of torsion of some loop of the intestine, the same factor which is presumably responsible for certain cases of megacolon.

74. **Symmetrical Lipomatosis.**—Fifty-eight cases are summarized from the literature in which diffuse lipomatosis, mainly in the neck, received operative treatment. In only 27 cases was the operation completed at one sitting, the others requiring from 2 to 5 sittings. The tedious operation is not difficult and the results were good in all the cases. In 8 the cure was complete; in 8 the fragments left increased in size, and in 5 the symmetrical lipomas grew again. The ultimate history of the 37 other patients is not known, but the results reported seem to justify prompt operative intervention, the authors think, even if it has to be repeated later.

Semaine Médicale, Paris

December 1, XXIX, No. 48, pp. 565-576

- 75 ***Albuminuria in Connection with Tuberculosis.** (Albuminurie pré-tuberculeuse et albuminurie paratuberculeuse.) J. Teissier.

75. **Albuminuria and Prognosis of Tuberculosis.**—Teissier relates a number of instances that confirm his previous announcements in regard to the importance of periodical albuminuria as the precursor of tuberculosis, and of another form of albuminuria, in the children of tuberculous parents, who are saturated with tuberculosis antibodies. Persons with

this latter "paratuberculous albuminuria" are practically immune to tuberculosis. The significance of the two forms is thus important for the prognosis, the former leading to phthisis, the latter leading away from all tuberculous infection. He has encountered over 20 cases of the pretuberculous albuminuria in which the urine was rather scanty, and pale in the morning, at which time the albuminuria generally occurs, subsiding in the afternoon when the urine becomes darker and turbid; it is excessively toxic at all times. The elimination of albumin is generally intermittent or cyclic, or it may assume the orthostatic type except that the maximum is usually about 11 a. m. The kidney is very permeable, and the phloridzin test for sugar is strongly positive; there is no seroreaction and the arterial tension persists constantly normal. As this pretuberculous albuminuria subsides, signs of active tuberculosis become evident. Teissier explains the albuminuria as the result of the destruction of the invading tubercle bacilli, the products thus set free inducing the albuminuria on their passage through the kidney. When the organism is no longer able to accomplish the destruction of the bacilli, they proceed to induce an active process, while the albuminuria completely ceases. In the paratuberculous albuminuria, on the other hand, the arterial tension is permanently abnormally high, frequently 18 mm. mercury, the seroreaction is pronounced while the kidneys are not quite normally permeable, but display evidences of a slight tendency to cirrhotic nephritis, all the features suggesting parental impregnation of the organism with tuberculous toxins, thus inducing an autoimmunization. In 100 cases of intermittent albuminuria in his practice, 34 of the patients had a tuberculous family history; only 6 presented albuminuria of the pretuberculous cyclic morning type, preceding fatal infection. In the 28 other cases the albuminuria was of the paratuberculous type, and although symptoms suggestive of tuberculosis developed in a few, yet invariably spontaneous retrogression followed and the patients are still hale and hearty.

Berliner klinische Wochenschrift

December 6, XLVI, No. 49, pp. 2177-2224

- 76 Symptomatology of Acute Anterior Poliomyelitis. O. Foerster.
- 77 *Cure of Paralysis of Shoulder Muscles by Plastic Operation. (Heilung von Schultermuskellähmungen—M. trapezius bzw. serratus—durch kombinierte Muskelplastik.) M. Katzenstein.
- 78 Origin and Treatment of Hyperchlorhydria in Smokers. (Entstehung und Behandlung des Magensaftflusses der Gewohnheitsraucher.) M. Skaller.

77. **Cure of Paralysis of Shoulder Muscles by Plastic Operation.**—Katzenstein reports a successful plastic operation for severe paralysis of the trapezius and serratus muscles. He transplanted the pectoralis major from the upper arm to the median margin of the scapula and also changed the point of attachment of the trapezius and rhomboideus muscles in one case. In another case he used flaps from the sound trapezius and latissimus dorsi to take the place of the paralyzed trapezius.

Correspondenz-Blatt für Schweizer Aerzte, Basle

December 1, XXXIX, No. 23, pp. 891-832

- 79 *Course of Pulmonary Tuberculosis under Therapeutic Pneumothorax. L. Spengler.

79. **Therapeutic Pneumothorax.**—Spengler's experience with 40 cases was favorable in 25; merely transient benefit was observed in 6 and slight benefit in 6 more, while the effect was bad in 3 other cases. The measure evidently should be restricted to severe unilateral tuberculosis. If pleuritic adhesions interfere with the attempt to induce pneumothorax, an extensive extrapleural plastic operation on the thorax may be advisable. The therapeutic pneumothorax must be maintained for a year or so. He prefers the Murphy-Brauer technique, rejecting Forlanini's as dangerous on account of the liability to gas embolism.

Deutsche medizinische Wochenschrift, Berlin

December 2, XXXV, No. 48, pp. 2097-2152

- 80 Serotherapy and Prophylaxis in Foot-and-Mouth Disease. (Die Serotherapie, die Seroprophylaxe und die Impfung bei Maul- und Klauenseuche und deren Wert für die Veterinärpolizei.) F. Loeffler.
- 81 Indications and Contraindications for Sigmoidoscopy. H. Strauss.

- 82 Therapeutic Action of Stasis Hyperemia in Erysipelas. (Stauungshyperämie bei Erysipel.) G. Jochmann and C. Schöne.
- 83 Determination of Tubercle Bacilli in Sputum by Ellermann-Erlandsen Technic. (Nachweis von Tuberkelbazillen im Sputum nach der Doppelmethode von Ellermann-Erlandsen.) H. Kögel.
- 84 Staining of Sections. (Färbung von Schnittpräparaten mit der Giemsa'schen Azur-Eosin-Methode.) A. Schuberg.
- 85 *Momburg Belt Tourniquet. (Zur Technik der Blutleere der unteren Körperhälfte.) Momburg.
- 86 Treatment of Chronic Deformities. Andrae.
- 87 Apparatus for Mobilization of Wrist and Finger Joints in Superheated Air. (Hand- und Fingergelenk-Mobilisierungsapparat im Heissluftbad.) F. Bähr.
- 88 Diagnosis of Ovarian Tumors and their Interference with Delivery. (Ovarientumoren und ihren Geburtsstörungen.) R. Jolly.
- 89 Death from Hanging. (Zur Lehre vom Erhängungstode.) A. de Dominicis.

December 9, No. 49, pp. 2153-2200

- 90 *Successful Removal of Fibroma in the Pancreas. W. Körte.
- 91 *Spinal General Anesthesia. (Die Rhachianästhesie zur Anästhesierung sämtlicher Körperregionen.) T. Jonnesco.
- 92 Intestinal Autointoxication. (Die Wiederbelebung der intestinalen Autointoxikationslehre in Frankreich und der "Combismus.") A. Schmidt.
- 93 *Transition of Chronic Myeloid Leucemia into Acute Myeloblast Leucemia. C. Klieneberger.
- 94 *Treatment of Syphilis with Quinin. (Weitere Erfahrungen über die Behandlung der Syphilis mit Chininpräparaten.) R. Lenzmann.
- 95 *Resection of Pelvis for Sarcoma. (Beckenresektion wegen Sarkom.) H. Riese.
- 96 *Infant Feeding at High Altitudes. (Der Säugling im Hochgebirge.) H. Neumann.
- 97 *Improved Roentgen-Ray Technic. (1. Identifikation von Punkten im Röntgenbilde, ein teilweiser, aber objektiver Ersatz der Röntgenstereoskopie. 2. Gleichzeitige Doppelaufnahmen von Röntgenbildern.) M. Levy-Dorn.

85. **The Momburg Belt Tourniquet.**—Momburg writes from Bier's clinic at Berlin to call attention to a few minor points in the technic. The pelvis should be raised rather high in order to have the intestines slide down out of the way. This also removes a large proportion of the nerve terminals from the pressure of the tube wound around the waist. He does not hesitate to shake the abdomen to aid in the settling down toward the diaphragm of the intestines. He reiterates his advice to apply the Esmarch bandage to both thighs as a preliminary measure. Merely the amount of blood normally in the legs is retained in them by this bandaging; without this, raising the pelvis would send too much blood down to the heart region. Instead of pulling hard on the rubber tube he advises winding it around more times. The technic has been applied in over 200 cases to date, including 2 patients with cardiac defects who bore it without mishap. A pad is not necessary but the friction as the tube is drawn under the sacrum must not be forgotten; when this is overlooked the constriction may not be as even as supposed. (The technic for applying the constricting belt was illustrated in THE JOURNAL, Oct. 30, 1909, page 1519.)

90. **Successful Removal of a Fibroma in the Pancreas.**—Körte thinks that this is the first case of the kind on record. The patient was a woman of 51 and the tumor in the pancreas had been noticed ten months before its removal, but caused no disturbance except from compression of the neighboring organs. No benefit seemed to be derived afterward from the dietetic measures that have been recommended as helping to heal the fistula into the pancreas. He had this same negative experience with three other cases of pancreatic fistula, the secretion showing no change. In all his cases the outflow ceased spontaneously in five or six weeks.

91. See THE JOURNAL, Nov. 27, 1909, page 1831.

93. **Fulminating Modification of Chronic Leucemia Under Roentgen-Ray Treatment.**—Klieneberger reports two cases in which a chronic myeloid leucemia suddenly changed into an acute and fatal myeloblast leucemia after Roentgen treatment. This acute transformation should be guarded against by refraining from continuing x-ray treatment when no further benefit is apparent, and immediate suspension when myeloblasts appear in large numbers. This transformation is so unusual, however, he adds, that it should not deter physicians from Roentgen-ray treatment under these precautions.

94. **Treatment of Syphilis with Quinin.**—Lenzmann says that sooner or later the syphilis germ seems to become refractory to mercury and iodid and then quinin may be usefully applied.

95. Resection of the Pelvis for Sarcoma.—Riese has performed this operation twice in the last eight months and has found the Momburg belt tourniquet an important aid in the removal of a sarcoma near the sacro-iliac articulation. The tumor had a broad base and was as large as two fists; the patient was a girl of 13. Under the belt constriction the operation was done without loss of any blood, while the bloodless condition of the vessels much facilitated the operation. There seemed to be some more or less transient disturbance in the splanchnic innervation afterward, weakness in the domain of the femoral and sciatic nerves and paralysis of the peroneal. He does not know whether to ascribe this to the constriction or to pressure from the splint or the retractors used during the operation.

96. Mountain Resorts for Infants.—Neumann has been investigating conditions in Switzerland and has found that the dryness and the purity of the air and the sunshine seem to ensure the thriving of infants, regardless of the method of feeding. He urges sending infants and small children to mountain health resorts as a therapeutic measure even in winter. Rachitis is unknown and nervous troubles are rare in Arosa at an altitude of about 5,500 feet.

97. Improved Skiagraphy.—Levy-Dorn describes a method to obtain the effect of stereoscopy without the usual complicated technic. A cork an inch and one-third high, pierced with a pin, is used to center the skiagrams. After the exposure has been made the object is covered with a sheet of lead and the tube is moved to the second position as for a stereoscopic exposure, but only the cork is exposed this time and only for a brief second. The plate is then changed, the object exposed, then covered with lead as before, and the tube moved back to the first position and the cork alone exposed again for a second. The shadow of the pin in the cork gives the centering point. Another method is to take the skiagraph of the object on the same plate from both positions of the tube. By raising the object a certain distance above the plate, it is possible to cast the shadow diagonally in turn first on one half of the plate and then on the other.

Fortschritte der Medizin, Paris

November 20, XXVII, No. 32, 1201-1232

98 *Breast-Fed Infants who are Not Thriving. (Schlecht gedeihende Brustkinder.) M. Thiemich. Commenced in No. 31.

98. Breast-fed Infants Who Are Not Thriving.—Thiemich warns that when children are not thriving on breast milk the trouble is not with the milk but with the child in almost every instance. Constitutional disease in the child and infection from the parents may interfere with the infant's thriving, and breast milk does not guarantee against this. But breast milk is all the more urgently needed in these very cases and the physician must ponder well before he consents to the weaning of the child even when it does not seem to be doing well on breast milk. He relates a number of typical instances in which the child did not gain in weight for months at a time but the discovery of previously unsuspected tuberculosis in the family or of some acute infectious process in the mother or inherited taint in the child explained the conditions. The tendency to eczema is frequently responsible for the lack of thriving; children with this exudative diathesis seem to display some anomaly in the metabolism of fat.

Jahrbuch für Kinderheilkunde, Berlin

November, LXX, No. 5, pp. 529-666 *

- 99 *The Exudative Diathesis, Scrofula and Tuberculosis.** A. Czerny.
100 Clinical and Anatomical Study of Congenital and Early Acquired Rachitis. II. (Anatomische Untersuchungen über sogen. angeborene und über frühzeitig erworbene Rachitis.) E. Wieland.
101 Histology of Infant Intestine. (Histologische Untersuchungen des Darmes von Säuglingen.) N. Reika.
102 Action of Lime Ions on Water-Absorbing Power of Cartilage. (Wirkung der Ca-Ionen auf das Wasseradsorptionsvermögen des Knorpelgewebes und ihre Bedeutung in der Pathogenese des rachitischen Prozesses.) N. Krasnogorski.

99. Prevention and Cure of Eczema, Catarrh, etc., in Infants: the Exudative Diathesis.—Czerny's conception of a congenital tendency to processes with exudation is important from the fact that he seems to be proving that this diathesis is as amenable to dietetic measures as diabetes, and can thus be

kept latent until the child outgrows it, or it can be fanned into a flame by the food. The constitutional anomaly usually soon becomes evident by the progress of different infants under the same conditions of feeding. According to the nature of the anomaly, the alimentary disturbance induces either rachitis, anemia, nervous irritability or processes with oozing, such as milk crust, eczema, strophulus and catarrhal affections of various mucosae, especially of the air passages and the status lymphaticus. The first two years of life are the most important for the development of this exudative diathesis. As the child grows older the tendency decreases, in direct contrast to what is observed with the uric acid diathesis. Besides improper feeding, intercurrent infections are liable to rouse the latent diathesis to active manifestations or to aggravate it if existing; this is frequently noticed after vaccination. He explains the rapid increase in weight of the new-born infant as due mostly to the intake of water; the infant, like the seed, has stored up in itself the elements of growth and needs merely water for them to expand in rapid growth and development. After the first four or six months the child depends on the nourishment supplied from without for its further growth. Born with the exudative diathesis, any oversupply of food during the first few months, even excess of water, evokes manifestations of this congenital defect in the chemistry of the body. He thinks it probable that this defect involves particularly the tissues which render possible the fluctuations in the water content of the organism. Overfeeding, especially with milk and eggs, rouses the latent tendency to activity and is one reason why this diathesis torments mostly well-to-do families. The derangement is probably in the fat metabolism as the children who are able to tolerate only a small proportion of milk-fat are the ones who show the most pronounced types of the diathesis and for whom the slightest overfeeding is particularly injurious. The manifestations, he says, can be induced and banished at will in young infants by measures to increase or to reduce the water content of the body. In his clinic at Breslau he has numbers of children with tuberculosis grafted on the exudative diathesis, but as he is able by dietetic measures to correct the latter tendency and keep this diathesis in check, the tuberculous children show no signs of "scrofula." The status lymphaticus, he adds, is probably one manifestation of the exudative diathesis as it can be checked and cured by the same dietetic measures. Children with the exudative diathesis do not thrive so well on a purin-poor diet.

Medizinische Klinik, Berlin

November 28, V, No. 48, pp. 1803-1840, and Supplement

- 103 *Modern Treatment of Congenital Dislocation of the Hip-Joint.** (Die moderne Behandlung der angeborenen Hüftluxation.) O. Vulpius.
104 *Puncture of the Corpus Callosum to Reduce Intracranial Pressure in 22 Cases. (Allgemeiner Bericht über 22 Gehirnoperationen mittels Balkenstiches.) G. Anton.
105 *Serodiagnosis of Syphilis with Autopsy Control. (Klinische Beobachtungen über die Wassermann-Neisser-Brucke'sche Reaktion und deren Kontrolle durch Sektionsresultate.) F. Glaser and I. Wolfsohn. Commenced in No. 46.
106 *Pyloric Spasm and Stenosis in Infants. (Pylorusspasmus und Pylorusstenose im Säuglingsalter.) B. Bendix.
107 *Quinin and Cancer. (Chinin und Krebs.) F. Stroné.
108 *Paraffin Treatment of Chronic Constipation. Lipowski and O. Rhode.
109 Pathology of Tuberculosis in Children. (Pathologie der Kindertuberkulose.) Engel.

December 5, No. 49, pp. 1841-1876

- 110 *Causes of Pain in Gynecologic Conditions.** (Ursachen der Schmerzempfindung auf dem Gebiete der Gynäkologie.) E. Opltz.
111 *Intestinal Functioning. (Ueber normalen Darm und normale Darmentleerung.) S. Federn.
112 Serotherapy of Diphtheria. F. Reiche.

103. Treatment of Congenital Dislocation of the Hip-Joint.—This article seeks to impress on the general practitioner the necessity for early diagnosis and prompt treatment of the condition in all circumstances. Left untreated, further deformity results, limping and scoliosis of the spine with unilateral dislocation, lordosis when deformity is bilateral. Vulpius is a consistent advocate of this bloodless technic which he describes in detail, stating that functional healing or great improvement has been attained in over 90 per cent. of his cases, the few failures being due to neglect of the limits imposed by age or to lack of proper cooperation on the part of the family. No child is too young for treatment to be

commenced, but bilateral dislocation can seldom be successfully corrected after the age of 6 and unilateral after 10. The most auspicious age is during infancy. An ideal result was obtained in only 60 or 70 per cent. of his unilateral and in 40 or 50 per cent. of the double dislocations, but the patient and family are generally content with functional success.

104. Puncture of Corpus Callosum.—Bramann and Anton's success in opening artificially a communication between the ventricle and the subdural space has already been mentioned in *THE JOURNAL*, Oct. 30, 1909, page 1520. A small trephin opening is made behind the coronary suture and a cannula introduced down to the falx cerebri and along this to the corpus callosum through which the tip of the cannula is pushed. This opens a passage for the cerebrospinal fluid from the ventricle into the subdural space and thus reduces the intracranial fluid pressure in the ventricle. Anton has performed this operation on 22 patients and the results have surpassed his anticipations. It diverts the fluid in hydrocephalus, thus preventing deformity of the skull, compression, and atrophy of the brain. It has also relieved in cases of brain tumors, averting danger of congestion and hyperemia in the optic nerve and restoring conditions approximately to normal. The tormenting vertigo, headache and vomiting were promptly and favorably influenced in a number of cases. The symptoms induced by the tumor were thus rendered plainer and time was gained to postpone the removal of the tumor until its site and nature could be more accurately determined. It is even possible in puncturing the corpus callosum to explore the ventricle and detect any change in its shape or contents. The puncture of the corpus callosum is also useful as a preliminary to or during an operation on the skull in which there is danger of hernia or laceration of the brain. It should also be given a trial, he declares, in cases of steep skull and similar deformities in which there is danger of injury of the optic nerve from compression.

105. Serodiagnosis of Syphilis and Autopsy Findings.—In the extensive research described, signs of syphilis were found post-mortem in all cases in which the Wassermann test had given positive findings, except three. In these three the disease may have healed so completely as to leave no anatomic trace. But the autopsy positive findings were often merely scars, so that a positive seroreaction by no means indicates always active virus.

106. Treatment of Spasm and Stenosis of the Pylorus in Infants.—Bendix regards these affections as pertaining exclusively to the domain of the internists, with breast milk as the main reliance. After a day on which nothing but water is allowed, he lets the infant nurse at will, but if vomiting is very frequent and copious he restricts the amount and increases the number of feedings. From six to eight weeks may pass before distinct improvement becomes evident and the physician must be firm and not let himself be dissuaded from breast-milk feeding, supplementing the child's nursing possibly by rectal enemas of breast milk, from 50 to 150 gm. several times a day. He lays great stress further on supplying fluids freely to the child to prevent water starvation. He does not approve of lavage of the stomach except possibly once at the beginning of treatment; it is liable to induce severe collapse. Moist heat to the stomach region, especially before meals, frequent warm baths, and small doses of opium with valerian or an alkali are the main reliance. He has never had to call in a surgeon, finding that a turn for the better occurred invariably by the end of the fifth or sixth week. The first sign of improvement is when the child ceases to lose weight.

107. Quinin and Cancer.—Stroné has treated epithelioma with local application of quinin stirred with water to a paste and applied with a cotton wad in a number of cases in which operation was refused. In every instance the quinin had a caustic action on the growth, eating it out until the ulceration was three times or more the size and depth as at first. He renewed the quinin every second day for four times. The lesion then began to heal over under a simple iodoform dressing, and by the twentieth day had entirely healed. This experience has been repeated too many times, he asserts, for it to be a mere coincidence; the quinin applications are con-

tinued until the lesion ceases to spread under its influence. They are also useful, he believes, in palliative treatment of inoperable uterine cancer. The quinin also serves to differentiate cancer from ordinary erosions; with the latter there is none of the destructive action observed with cancer. He advises application of quinin as a preliminary to radical operation as it aids in clearing up the diagnosis.

108. Paraffin in Treatment of Chronic Constipation.—Lipowski here reports the details of 8 typical cases in which he successfully applied his method of paraffin treatment described in *THE JOURNAL*, Sept. 4, 1909, page 822.

110. Causes of Gynecologic Pain.—Opitz has made a point of examining all his patients regularly to detect the three cardinal symptoms of hysteria: the modifications of sensibility, the changes in the reflexes and the hysterogenous zones. Much to his surprise he has encountered this triad in the overwhelming majority of all his gynecologic patients. It seems absolutely impossible to believe that such a large proportion of women can be typical hysterics as these findings would seem to prove. He protests against the idea that suggestion plays an important part in treatment of gynecologic affections, citing among the arguments against this assumption the fact that a new method of treatment instituted by the same physician and under the same conditions otherwise may cure while all previous measures proved unavailing. The trouble is to locate the underlying organic affection and not label everything neurasthenia or hysteria that we are as yet unable to explain. An explanation can be found if diligently sought. One frequent cause for severe pain is inflammation of a vein, either of the wall tissue itself or of the nerve terminals in it. In one case intense pain for which no cause could be discovered ceased abruptly as thrombosis developed in the vein in the region. When irritated, the sympathetic nerve can transmit sensory stimuli, and he is convinced that many affections now classed as functional neuroses are in reality due to irritation of some portion of the sympathetic system, such as the pain in front of the spine in the epigastrium, which sometimes accompanies enteroptosis or may occur without it, and for which the solar ganglion is evidently responsible. With it the aorta can generally be palpated as a pulsating tender cord. In four cases he discovered varicose changes in the large veins in the small pelvis at the point where the patients experienced great pain for which no cause could be discovered until the laparotomy revealed the changes in the veins. The pain subsided after simple ligation of the ovarian vein. Other experiences have shown that mere congestion in the veins, causing distention, may elicit pain. In some cases the pain develops when the patients lie in the dorsal decubitus, while it ceases in other positions, confirming the assumption of local congestion as the cause. In these cases a specially tender point can generally be detected at the hypogastric or ovarian vein; sometimes a varicose enlargement can be palpated. It is possible that medical measures alone, hydrotherapy, general measures to combat the plethora in the pelvis, with possibly gentle massage of the region through the vaginal wall, might prove effectual. Dysmenorrhea may be due to this cause in some cases, especially with a tendency to retarded development of the genitalia.

111. Normal Intestinal Functioning.—Federn reiterates his assertions in regard to the great frequency of partial atrophy of the intestines causing retention and autointoxication as with residual urine. For twenty years he has been studying the subject and has been able to detect this tendency to localized atrophy by delicate percussive along the course of the bowel. The importance of this segmental atrophy, inducing conditions of toxin production and absorption, cannot be overestimated, he declares. He has found the blood pressure permanently high in all such cases. He discusses in detail the physiology of the normal intestine.

Münchener medizinische Wochenschrift

November 30, LVI, No. 48, pp. 2457-2504

- 113 *Chronic Jaundice. (Zur chirurgischen Behandlung des chronischen Ikterus.) H. Kehr.
- 114 Early Phases of Acute Poliomyelitis. (Frühstadien der spinalen Kinderlähmung.) E. Müller.
- 115 *Immediate Massage of the Heart in Anesthesia Asphyxia. (Unmittelbare Herzmassage bei Narkosentod.) E. Rehn.

- 116 *Saline Infusion as Aid to Prognosis in Peritonitis. (Lässt sich für die Anwendung der intravenösen Kochsalzinfusionen bei der Peritonitis eine bestimmte Indikationsstellung ergründen?) A. v. Lichtenberg.
- 117 Treatment of Fractures. (Frakturbehandlung nach Steinmann und nach Zupplinger.) T. Christen.
- 118 Myocarditis and Changes in Striped Muscles in Rheumatism. (Ueber Myokarditis und Veränderung der quergestreiften Muskeln bei Rheumatismus.) P. Geipel.
- 119 Seroreaction in Scarlet Fever. (Komplementbindung bei Scharlach.) A. Uffenheimer.
- 120 Tuberculin Salve Test. (Ueber die Morosche Salbenprobe.) F. Well.
- 121 Improved Technique for Differentiation of Bacteria. (Veränderungen zweier Nährböden — Rosolsäure- und Blutagar — durch Säure bezw. Alkali bildende Bakterien.) M. Mandelbaum.
- 122 Psychophysical Examination with the Galvanometer. F. Peterson and E. W. Scripture.
- 123 Esophagoscopy in 110 Cases. T. Kölliker.
- 124 Electrocardiogram of Absolute Irregular Pulse. (Fehlen der Vorhofzacke (P) im Elektrokardiogramm beim Irregularis perpetuus.) H. E. Hering.
- 125 Affinity for Iodin of Adrenalin. R. Hoffmann.

113. **Chronic Jaundice.**—This article is an appeal by Kehr for an earlier diagnosis of cancer of the biliary passages. He frequently has to operate in cancer cases in which the patients have been treated for months on the assumption of catarrhal jaundice. When the jaundice commences without pain and increases gradually from week to week, while the gall-bladder increases in size, jaundice is the result of obstruction of the common bile duct from a tumor or cicatricial growth. But if the jaundice is accompanied or preceded by colics, if the intensity of the jaundice fluctuates, and if chills and fever are observed, gall-stone obstruction is probable. If no benefit is apparent after six weeks of bed rest, local heat and dieting, if the patient is losing appetite and strength, surgical intervention should not be longer delayed. He rejects entirely the various remedies on the market that claim to promote the secretion of bile; they have no effect, he says, except when Nature happens to accomplish coincidentally a spontaneous cure, the stone making a fistula from the duct into the duodenum or otherwise escaping. But this occurs too seldom to be depended on. The danger from chronic jaundice is the development of biliary cirrhosis, cholangitis and cholemic diathesis. He does not like to assume the burden of the unsuccessful operation when the fault lies with the internist's delay, which has permitted conditions to reach an irremediable stage. No matter how guarded the surgeon's comment may be, yet the conditions speak for themselves. Practitioners should not wait to summon the surgeon until the case has no further interest for any one but the pathologic anatomist. In many cases the conditions simulate inoperable carcinoma but operation reveals merely an inflammatory condition in the pancreas capable of retrogression. The dread of postoperative hemorrhage and peritonitis is exaggerated. He lost only one patient from hemorrhage in his last series of 60 with jaundice, and this patient had cancer; there has been no tendency to peritonitis in any of his last 125 cases. In 45 of this group the patients had more or less jaundice; 36 recovered, 6 with advanced cancer or biliary cirrhosis died, and 3 succumbed to valvular disease or cachexia. In 80 other patients free from jaundice only 2 succumbed and these fatalities were due to a complicating echinococcus disease or perforation. He writes from an experience of 1,500 operations on the biliary apparatus.

115. **Direct Massage of the Heart in Chloroform Asphyxia.**—In the case reported, Rehn applied direct massage to the heart in addition to artificial respiration by the usual measures supplemented by a differential pressure procedure. The effect of the Brauer positive-pressure apparatus was prompt and striking. Two and one-third hours after the circulatory syncope the heart action and respiration were fully restored, the first signs of contraction of the heart being observed after 70 minutes. The patient was a healthy boy of 7, taking the chloroform for correction of a slight deformity on the left hand. After restoration of the circulation and respiration the condition remained satisfactory for two hours, but suddenly the breathing stopped; the heart was kept beating for four hours longer. In massaging the heart through the diaphragm the pleura had been torn but the massaging finger plugged the opening. When the hand was removed, pneumothorax followed, proving fatal. The case teaches the importance of

refraining from injury of the pleura, as the circulatory syncope had been entirely conquered. The differential pressure procedure has many advantages: it dispenses with tracheotomy and permits exact dosage of the air supplied and also admixture of oxygen.

116. **Saline Infusion as an Aid to Prognosis in Peritonitis.**—Lichtenberg states that in peritonitis the degree and permanence of the improvement in the circulation following intravenous saline infusion is a reliable index for the amount of vasomotor paralysis. In health, saline infusion causes only slight and transient changes in the blood pressure but when the vascular tonicity is reduced saline infusion improves conditions and the effect persists in proportion to the recuperative power of the vessels. Saline infusion before the operation is thus useful from several points of view, improving conditions for the operation and also revealing the extent of the paralysis of the vasomotors. Addition of a little suprarenal extract magnifies the effect. If the infusion causes no improvement in the conditions in the circulation little benefit, he asserts, can be anticipated from the operation.

Wiener klinische Wochenschrift, Vienna

December 9, XXII, No. 49, pp. 1697-1736

- 126 Trachoma Bodies. (Die freie Initialform der Prowazeksehen Einschlüsse.) K. Lindner.
- 127 Experimental Research on Acute Anterior Poliomyelitis. C. Leiner and R. v. Weisner.
- 128 *Determination of Hemolysis and its Clinical Importance. (Nachweis und die klinische Bedeutung hämolytischer Erscheinungen.) K. R. v. Stejskal.
- 129 *Traumatic Hysterical Paralysis. (Hysterische Beinlähmung.) E. Raimann and A. Fuchs.

128. **Hemolytic Phenomena and their Clinical Importance.**—Stejskal describes a simple test-tube method of determining hemolytic conditions in the blood and reports a number of cases of pernicious anemia in which such were evident. The positive findings were only in patients with cirrhotic processes in the liver and congestion of bile.

129. **Traumatic Hysterical Paralysis.**—Raimann comments on a case of dislocation of the ankle, the accident occurring from defective flooring in a depot. The claims for damages led to twelve trials with almost endless medical expert testimony and the end is not yet. He cites the case to prove the importance of referring neurologic cases to the neurologists and to confirm anew the evils from the current accident insurance legislation which breeds neuroses out of trifling injuries. Blunders in diagnosis here have the most far-reaching consequences.

Zeitschrift für Geburtshilfe und Gynäkologie, Stuttgart

LXV, No. 2, pp. 283-568. Last indexed October 16, p. 1313

- 130 Displacement of the Ovaries. (Lageveränderungen der Ovarien.) C. H. Stratz.
- 131 *Retention of Membranes and Scraps of Placenta as Cause of Puerperal Fever. (Retention von Eihäuten und Placentarresten als Ursache des Wochenbettfiebers.) E. Puppel.
- 132 Influence of Age and Number of Childbirths on Frequency of Twin Births. (Einfluss von Alter und Geburtenzahl der Mutter auf die Häufigkeit der ein- und zweiföhligen Zwillingsgeburten.) W. Weinberg.
- 133 *Jaundice Always a Sign of Insufficiency of the Liver. (Gibt es eine den Frauen eigentümliche Form der Gelbsucht.) P. Rissmann.
- 134 Hemorrhagic Chronic Metritis and Endometritis. (Die Metropathia haemorrhagica.) O. Pankow.
- 135 Plasma Cells in Gynecologic Affections. (Ueber Plasmazellen und ihr Vorhandensein bei den Erkrankungen der weiblichen Geschlechtsorgane, speziell des Endometriums.) J. Frey.
- 136 Differentiation of Menstrual and Gravid Decidua. (Lässt sich mikroskopisch eine Decidua menstrualis von einer Decidua graviditatis unter allen Umständen unterscheiden?) E. Eicke.
- 137 Presentation with Spine straight in Median Line. (Der hohe Gradstand: Positio occipitalis sacralis et publica.) W. Liepmann.

131. **Retention of Fetal Membranes or Scraps of Placenta as Cause of Puerperal Fever.**—Puppel reports six cases of severe puerperal fever, the sepsis proceeding from retained membranes and recovery following their removal. He makes it a practice to examine the interior of the uterus whenever there is a tendency to fever unless medical inspection shows the expelled membranes and placenta to be complete.

133. **Jaundice in Women.**—Rissmann discusses whether or not there is any special form of jaundice peculiar to pregnancy and the puerperium, deciding in the negative, his verdict being

that jaundice is always a sign of insufficiency of the liver. The prognosis cannot be based on the jaundice alone. The insufficiency of the liver may lead to brain symptoms. In bacterial diseases there may be hemorrhages from mucous membranes, especially during pregnancy. An afebrile course, slow pulse, and only slight disturbance of the general health are signs that the jaundice in the pregnant woman is of a mild form. The behavior of the pulse is the main criterion for the prognosis. Simple mild jaundice in the pregnant woman does not seem dangerous for the child; in one such case reported jaundice for six months owing to obstruction of the common bile duct by a stone did not affect the fetus unfavorably, so far as could be discovered. If the child suffers from the jaundice the primal cause underlying the jaundice must be responsible or some complication. The intoxication causing the insufficiency of the liver or infection or fever or existing nephritis or syphilis are the factors injuring the fetus and not the bile acids. The surgical causes for jaundice must be removed, a gall-stone operation deferred no longer, and if there are indications of the severest form of jaundice the pregnancy must be interrupted. Nothing to date has been proved in regard to an embryogenic origin for the jaundice, but severe changes in the liver with jaundice such as accompany sometimes the toxemia of pregnancy, belong in the syndrome of eclampsia, with or without convulsions.

Zentralblatt für Chirurgie, Leipsic

December 11, XXXVI, No. 50, pp. 1713-1744

- 138 Care of Stump of Bronchus after Removal of Lung. (Zur Frage der Versorgung des Bronchusstumpfes bei Lungenexstirpation.) W. Meyer.

Zentralblatt für Gynäkologie, Leipsic

December 11, XXXIII, No. 50, pp. 1697-1728

- 139 Treatment of Eclampsia. A. Dienst.
140 Three Cases of Appendicitis in Pregnancy. (Appendicitis in graviditate.) F. Stähler.
141 Management of Shoulder Presentation after Death of Fetus. (Zur Behandlung der verschleppten Querlagen.) E. Herz.

Gazzetta degli Ospedali e delle Cliniche, Milan

November 30, XXX, No. 143, pp. 1513-1520

- 142 Persulphate of Sodium for Detection of Adrenalin. (Il persolfato di sodio come rivelatore dell'adrenalina.) F. Pancrazio.
December 5, No. 145, pp. 1521-1534
143 *Addison's Disease. (Osservazioni cliniche sopra la Malattia di Addison.) G. Morelli.

143. Addison's Disease.—Morelli reports a few cases to sustain his assertions that bronzing is not pathognomonic of any special disease; it may appear isolated. Addison's disease may also occur in persons free from tuberculous infection. Tuberculosis, therefore, is not the only or the inevitable cause of the affection. It even seems possible in some cases that the tuberculous becomes grafted later as a consequence of the disturbances resulting from the primary insufficiency of the suprarenal capsules. Addison's disease may retrogress and complete recovery follow if the patient has enough rallying powers. On the other hand, the Addison syndrome may develop in the course of the most diverse morbid processes in the abdomen. In one of the cases reported one set of symptoms from suprarenal insufficiency was superposed on another set from climacteric disturbances but all mostly subsided together after the menopause.

Riforma Medica, Naples

December 6, XXV, No. 49, pp. 1345-1372

- 144 Pyogenic Properties of Bacillus of Malta Fever. (Sul potere piogeno del bacillo melitense.) A. Cantani.
145 Two Cases of Bilateral Tumors in Male Breast. (Tumori bilaterali a tipo familiare in mammelle maschili e sul loro probabile significato.) F. Gangitano.
146 Production of Typical Pain at McBurney's Point in Appendicitis by Indirect Means. (Provocazione indiretta del dolore tipico di MacBurney nelle appendiciti.) L. Paglieri.
147 Intradermal Tuberculin Reaction. (L'intradermoreazione alla tuberculina.) R. Massalongo and A. Calderara.

Hospitalstidende, Copenhagen

November 17, LII, No. 46, pp. 1473-1512

- 148 *Indications for and Effect of Gastroenterostomy. A. Blad.

148. Mode of Action and Indications for Gastroenterostomy.—Blad found that the best results in regard to improved evacuation of the stomach after a gastroenterostomy, in his 20 cases, were obtained when the pylorus had been much obstructed. The improvement in the patient's condition after

the operation is not dependent on whether the motor functioning is improved or not. The reflux of pancreatic and intestinal juice through the new opening into the stomach dilutes the excessively acid stomach content and thus renders it less irritating, allowing ulcerations a chance to heal. There is also evidently some reflex inhibiting action on the secretory functioning after the operation. On the other hand, not much benefit need be anticipated from gastroenterostomy in ulcer complicated with gastritis and achylia with a permeable pylorus. In 2 such cases an ulcer in the lesser curvature was accompanied by pronounced achylia but the pylorus was normal; the gastroenterostomy did not improve conditions in the least but rather seemed to aggravate them.

Ugeskrift for Læger, Copenhagen

November 11, LXXI, No. 45, pp. 1227-1252

- 149 *Tincture of Iodin for Disinfection of the Skin. (Jodtinktur som Huddesinficiens.) A. Pers. Commenced in No. 43.
150 Technic for Making Plaster Casts. (Lidt om Gipssteknik.) E. Nyrop.

November 18, No. 46, pp. 1253-1278

- 151 Treatment of Delirium Tremens with Veronal. V. F. Møller.

149. Iodin Disinfection of the Skin.—Pers joins the chorus of foreign surgeons who are lauding the effects of swabbing with tincture of iodine as the sole means of disinfecting the field of operation, dispensing entirely with scrubbing and washing of any kind. The method was introduced by Grossich, as mentioned in these columns at the time, Dec. 5, 1908, page 2012. Pers has applied this technic in 67 major operations, 29 others and 7 extensive suppurative processes, and has been much impressed with its superiority. He says that it is certainly destined to supplant scrubbing just as the disinfectant spray has been discarded, both macerating the tissues and stirring up the germs, mobilizing them and bringing the deep ones to the surface whence they readily find their way into the wound. The part is swabbed with a 10 or 12 per cent. tincture of iodine applied to the dry skin after it has been dry shaved. The iodine is applied as freely as the usual scrubbing process and over as large an extent. After the anesthetic has been given, the field is swabbed once more with the iodine, and when all is completed the suture is swabbed again. No mishaps were observed by Grossich even when a third of the whole body was swabbed with the iodine. When possible the patient is bathed the day before and puts on fresh linen, but otherwise he applies the iodine to the unwashed wound.

Books Received

All books received are acknowledged in this column and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender. A selection will be made for review in the interests of our readers and as space permits.

THE BATTLE OF THE CLUBS. A Reprint of the Reports of the Special Commissioner of the *Lancet* Appointed to Enquire into Medical Aid Societies. Paper. Pp. 230. Price, 1 shilling. London: The *Lancet*, 423 Strand, W. C., 1909.

INFECTIOUS DISEASES. A Practical Text-Book. By Claude Buchanan Ker, M.D., F.R.C.P. Medical Superintendent, City Hospital, Edinburgh. Cloth. Pp. 555, with 66 illustrations. Price, \$7. London: Oxford University Press, 1909.

BIBLIOGRAPHY OF TRYPANOSOMIASIS. Embracing original Papers published prior to April, 1909, and References to Works and Papers on Tsetse-Flies, especially *Glossina palpalis*, Rob.-Desv. Compiled by G. A. Thimm, Librarian, Sleeping-Sickness Bureau. Paper. Pp. 288. Price, 4 shillings net. London: Sleeping-Sickness Bureau, Royal Society, Burlington House, W., 1909.

HEART DISEASE, BLOOD-PRESSURE AND THE NAUHEIM-SCHOTT TREATMENT. By Louis Faugeres Bishop, A.M., M.D., Clinical Professor of Heart and Circulatory Diseases, Fordham University. Pp. 284, with illustrations. Third Edition. Cloth. Price, \$3. New York: E. B. Treat and Company, 1909.

NERVOUS AND MENTAL DISEASES. Edited by Hugh T. Patrick, M.D., Professor of Neurology in the Chicago Polyclinic and Charles L. Mix, A.M., Professor of Physical Diagnosis in the Northwestern University Medical School. Vol. X of The Practical Medicine Series. Under the General Editorial Charge of Gustavus P. Head, M.D., Professor of Laryngology and Rhinology, Chicago Postgraduate Medical School. Cloth. Pp. 248, with illustrations. Price, \$1.25. Series 1909. Chicago: The Year-Book Publishers.

SKIN AND VENEREAL DISEASES; MISCELLANEOUS TOPICS. Edited by W. L. Baum, M.D., and Harold N. Moyer, M.D. Vol. IX of the Practical Medicine Series. Under the General Editorial Charge of Gustavus P. Head, M.D., Professor of Laryngology and Rhinology, Chicago Postgraduate Medical School. Cloth. Pp. 240, with illustrations. Price, \$1.25. Series 1909. Chicago: The Year-Book Publishers.

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Original Articles

THE FEDERAL CONTROL OF SERUMS, VACCINES, ETC.

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Some seven years ago Congress for the first time passed a bill,¹ the object of which was to control the purity and potency of certain remedial substances which enter into interstate traffic. This enactment, which is now a law of the land, provides for a complete system of governmental supervision over the establishments producing vaccines, viruses, serums, toxins, antitoxins and analogous products. This surveillance consists of (1) inspections; (2) licenses and (3) methods of control or check-testing in the Hygienic Laboratory, which serve to verify the care and efficiency with which the products in question are made and marketed.

The law requires that each package of virus, serum, toxin, antitoxin or other product be plainly marked with the proper name of the article contained therein; the name, address and license number of the manufacturer, and the date beyond which the contents cannot be expected beyond reasonable doubt to yield their specific results.

The law further provides a penalty of \$500 or imprisonment not exceeding one year in the discretion of the court for any violations of its provisions, and provides a still greater penalty in the power to suspend or revoke licenses for cause.

It must be clearly borne in mind that the federal supervision over the biologic products in question applies only to interstate traffic in said articles. Thus, vaccine virus prepared by the Massachusetts State Board of Health for sale, barter or exchange in Massachusetts does not come under the purview of the law, but this vaccine virus cannot cross the state border without an inspection, license and government control, as required by the law of July 1, 1902, above referred to.

THE NEED AND USES OF THE LAW

At the first inspection it was found that irresponsible persons were making and marketing biologic products without sufficient care or knowledge to insure safety and reliability. I was surprised to note the haphazard way, the antiquated methods and the lack of care with which some of the biologic products were produced before the government took a hand in these matters. Four such firms were at once refused licenses, and, not being able to produce a safe and reliable product in accordance with

modern methods, they went out of business. Several applications from other persons or firms have since been refused licenses for similar reasons. Most of the remainder were required to remodel their establishments, change the personnel or improve their methods before being licensed to engage in interstate traffic.

Since the operation of the law a marked improvement has taken place in vaccine virus; standards for measuring the strength of diphtheria and tetanus antitoxins have been established; both the diphtheria and tetanus antitoxins found on the market have a decidedly increased potency; weak serums are forbidden;² contaminated or weak serums and vaccines which have been discovered have been promptly withdrawn from the market; false or misleading labels have been changed, and in general the licensed manufacturers have reached a high state of efficiency, and have spent much money to improve their personnel and property. The law has been enforced without fear or favor.

While the law has been a material help to the practitioner and his patient, it has also been of benefit to the manufacturers in pointing out defects, correcting faults, avoiding pitfalls, improving methods and inspiring confidence in their products.

THE INSPECTIONS

The inspections are made at least once a year, and oftener when necessary, by an officer of the Public Health and Marine-Hospital Service. These inspections are not perfunctory, but comprise a very searching inquiry into the methods of manufacture, the competency of those employed to carry on the work, and into the efficiency of the material equipment. Foreign establishments desiring to do business in the United States must submit to the same inspection, and are required to have licenses similar in all respects to those required of domestic establishments. To this some foreign establishments at first demurred, but when it was found that importations of their products without a license would be impossible they submitted to the law and its regulations.

At present every confidence may be had in all biologic products made under government license. These products are now carefully standardized whenever possible by uniform methods and are cautiously tested for impurities before being placed on the market.

THE LICENSE

The license is issued by the Secretary of the Treasury to the person or firm for a specific product. Each vaccine, serum, toxin and analogous product is considered separately; general licenses authorizing the manufacture of any and all biologic products are not issued.

The fact that a serum or vaccine is granted a license does not mean that it is a valuable curative or prophylactic.

1. An Act to regulate the sale of viruses, serums, toxins and analogous products in the District of Columbia, to regulate interstate traffic in said articles, and for other purposes. Approved July 1, 1902.

2. Before the law went into effect tetanus antitoxin was quite feeble. Diphtheria antitoxin must now have at least 250 units per c.c.; no minimal number of units has yet been set for tetanus antitoxin.

lactic agent; in fact, it may have little or no therapeutic value. Thus, firms are licensed to sell normal horse serum or normal goat serum, provided they are honestly labeled and free from impurities. Further, antistreptococcic serum, antityphoid serum and other antisera of weak and doubtful efficiency and substances in the experimental stage are sometimes licensed. The law provides for the license of biologic products "applicable to the prevention and cure of diseases of man."

It is evidently the province of the medical profession to determine for itself whether a certain substance has therapeutic value or not. The chief concern of the government is to protect the practitioner against sophistications, impurities, faults or mislabeling.

LABORATORY CONTROL

Samples are purchased on the open market by officers of the Public Health and Marine-Hospital Service in all parts of the country and sent to the Hygienic Laboratory in Washington for examination as to potency and purity. Inspectors also obtain samples directly from the manufacturer, which are similarly examined. These examinations are constantly in progress. If any fault is found with a sample the manufacturer is required by the Surgeon-General to withdraw all of that particular product from the market. Antidiphtheric serum, antitetanic serum and vaccine virus are examined for potency and purity; all other serums and vaccines for purity only. All serums are tested to determine whether they contain an excessive amount of preservative.³

These examinations require a certain amount of technical proficiency which has been developed as a specialty in the division of pathology and bacteriology of the Hygienic Laboratory. In these examinations special attention is given to Section 2 of the law, which provides "that no person shall falsely label or mark any package or container of any virus, serum, toxin, antitoxin or product aforesaid; nor alter any label or mark on any package or container of any virus, serum, toxin, antitoxin or product aforesaid so as to falsify such label or mark."

LICENSED MANUFACTURERS

During the past year fifteen establishments were re-inspected and relicensed, and four additional establishments were inspected and licensed. A list showing the establishments which received licenses and the products for which licenses were granted appeared in *THE JOURNAL* of Sept. 18, 1909, p. 961.

GOVERNMENT GUARANTEE

The government does not guarantee that each vaccine point or each package of antitoxin will produce its full therapeutic effect and be free from all danger. This would be impracticable with the extent and variety of the business in biologic products now carried on in this country and abroad. It would be ideal if the government could guarantee the purity and potency of each package, but to do so would require more than supervision—it would almost mean government ownership.

Certain states and municipalities have found it convenient and economical to produce their own vaccine virus and diphtheria and tetanus antitoxins. The federal government has not gone farther than a legal surveillance, although it might some day be found desirable for the government to make these products for use in the medical services and territorial and insular possessions.

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3. Chloroform or trichresol (0.4 per cent.) are the preservatives commonly used.

VACCINE VIRUS

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Vaccine virus is the specific principle in the material obtained from the skin eruption of calves¹ having a disease known as vaccinia. The eruption begins as a papule, which develops into a vesicle, and later a pustule. For the purpose of propagating vaccine virus the material is usually taken from the vesicles when fully developed. This may be somewhere between the fifth and the eighth day after the animal has been vaccinated.

The material should be taken only from typical, unbroken vesicles, and is usually obtained by scraping with a curette. This material scraped from the skin eruption is called vaccine "pulp." The fluid which exudes after the pulp is taken is called vaccine "lymph." Both the pulp and the lymph are mixtures containing epithelial cells, serum, blood, leucocytes, products of inflammation, debris, bacteria, etc., in varying proportions.

The use of the pulp for the purpose of vaccination is of comparatively recent origin. Formerly the lymph was used extensively in a dried state on ivory points, constituting the so-called "dry points."

The specific principle of vaccinia is unknown. The organism, whatever it is, exists chiefly in the epidermal lesions, and the pulp, therefore, contains a more potent and concentrated virus than the lymph. Further, the pulp may be purified with glycerin or other substances, whereas the lymph dried on points is not amenable to such treatment. The pulp is mixed with glycerin in the proportion of about 50 to 60 per cent by weight. The glycerin acts as a preservative for the vaccine virus, but is an antiseptic for the frail non-spore-bearing bacteria. The germicidal action of the glycerin depends largely on the time and temperature at which the glycerinated pulp is kept. At ordinary temperatures the germicidal action of glycerin is feeble, and probably depends on its affinity for water.

Other antiseptic substances have been used for the purpose of purifying vaccine virus, viz., phenol (carbolic acid), potassium cyanid, chloroform, chlorbutanol (chloretone), etc., but with less success in practice.

It is evidently impossible to obtain vaccine virus free from the bacteria of the skin. Practically all the vaccine virus on the market contains a certain number of harmless bacteria, such as the hay bacillus, common molds and spores which exist everywhere and are exceedingly difficult to destroy. It is evidently impracticable to use strong antiseptic methods on the skin of the vaccinated animal, for such substances would destroy the viability of the vaccine virus itself. In the propagation of vaccine virus, therefore, cleanliness and asepsis are the watchwords.

The dry points usually contain a larger number of bacteria than the ripened² glycerinated virus and are, therefore, less desirable. The new federal regulations forbid interstate traffic in the old-style dry points after Jan. 1, 1910.

In imitation of the old-style dry point, which is a very convenient method of vaccination, manufacturers have placed a small drop of glycerinated virus on ivory or glass points hermetically sealed in paraffin or glass. These are safe and satisfactory. In some instances

1. For obvious reasons vaccine virus of direct human origin is now little used in the United States.

2. Glycerinated vaccine virus is said to be "green" before the glycerin has had a chance to be effective. At ice-box temperatures this usually takes thirty days; then the virus is said to be ripe.

gummy substances, such as serum, dextrose, etc., are used to encourage the adhesion of the virus to the point. The glycerin may first be largely extracted from the ripened glycerinated virus by pressing it between blotting papers.

All vaccine virus is tested according to modern bacteriologic methods for streptococci, tetanus spores and other virulent bacteria. These tests include animal inoculations. The tests made by the manufacturer must be satisfactory before the virus is placed on the market and permanent records are required of each lot. Special tests are made to determine the absence of foot-and-mouth or tetanus infection.

The calves are kept in quarantine under observation for seven days before being vaccinated. Only healthy calves free from diseases of the skin are used for this purpose. The calves are killed or otherwise rendered insensible to pain before the virus is removed. The practice of renting calves for the purpose of propagating vaccine virus is no longer countenanced by the federal regulations. The animals must be autopsied as soon as practicable after the removal of the virus in order to determine the presence of lesions indicating other infections than cowpox (*vaccinia*). The federal regulations further require that the vaccine virus taken from an animal showing indications of complicating infections must be destroyed.

All establishments manufacturing vaccine virus for use in interstate traffic are required to operate under government supervision, which has been described in my article on "The Federal Control of Serums, Vaccines, Etc." (see p. 249, this issue).

Reports received by the Surgeon-General from health officers and others all over the country indicate that since the operation of the law the vaccine virus has been much more satisfactory than before.

WHY VACCINE VIRUS SHOULD BE IN THE PHARMACOPEIA

Vaccine virus was the first and it is the oldest and best specific preventive known. It is a drug in the broadest sense of that term, and as such is handled by every pharmacist. One of the first advantages in admitting vaccine virus into the Pharmacopeia would be to establish for it an official and legal name. This would help avoid much confusion now existing on account of the bacterial vaccines and other substances called "vaccines" used in the prevention and cure of disease. For almost a hundred years vaccination was a specific term limited to the introduction of the virus of *vaccinia* into the skin for the prevention of smallpox. In recent years the term "vaccination" has been used in a generic sense to include the introduction of many different substances, in many different ways and for many different purposes. To establish a definite and accurate nomenclature is one of the important functions of the Pharmacopeia.

Furthermore, a certain amount of confusion would be avoided and increased definiteness would be given to the various forms in which vaccine virus is marketed by adopting such titles as "virus vaccinicum glycerinatum" and "virus vaccinicum siccum," etc.

To include vaccine virus in the Pharmacopeia would be one of the best means of calling the attention of all pharmacists to the fact that it must be kept in a cool, dry place, etc. Much of the vaccine virus on the market is inert because not properly handled in the trade. Hence, concise, authoritative directions in the Pharmacopeia would have an educational value and would help prevent smallpox and save life.

The objection that vaccine virus is an indefinite substance, the "active principle" of which is not known, is no longer valid, for the Pharmacopeia contains many such substances, including the ferments, against which similar objection holds.

The objection that vaccine virus can not be "assayed" by the average druggist also lacks force when we recall that the potency and purity of vaccine virus in interstate traffic is cared for by the federal government under the law of July 1, 1902, which relieves the pharmacist of this responsibility. Further, other substances, such as serum antidiphthericum, the testing of which requires special training and special laboratories, have been admitted into the Pharmacopeia.

The Pharmacopeia should briefly state the essential requirements of the law above mentioned concerning false labeling or marking of any package or container of vaccine virus; requiring further that each package of vaccine virus must be plainly marked with the proper name of the article, the name, address and license number of the manufacturer, and the date beyond which the contents can not be expected, beyond reasonable doubt, to give specific results. Such information in the hands of every druggist will serve an educational purpose and also help the federal authorities in the rigid enforcement of the law.

The Pharmacopeia should briefly state the method of preparing vaccine virus and specify the difference between glycerinated preparations and dry points and the other forms found on the market. As a precedent, it might be stated that the Belgian Pharmacopeia (third edition, 1906, page 194) has introduced vaccine virus under the title of "vaccinum," and the Swiss Pharmacopeia (fourth edition, 1907, page 512) has introduced vaccine virus as "vaccinum," synonyms: "Kuhpockenimpfstoff," "vaccine," "vaccin jennèrien," "vaccino jennèriano."

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ANTIDIPHTHERITIC SERUM AND ANTIDIPHTHERITIC GLOBULIN SOLUTIONS *

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Until recently the only means we had of giving diphtheria antitoxin was in the whole serum of the horse in which it had originated. The accumulated knowledge obtained in the investigations of a number of workers allowed the development of a practical method for eliminating a portion of the non-antitoxic serum substances while retaining the antitoxin. Because of this, besides the whole serum, we have at present on the American market two globulin preparations containing diphtheria antitoxin. As these are rapidly displacing the whole serum, I will give a brief description of them.

GLOBULIN PREPARATIONS

The Gibson process of purification and concentration is based on the fact that antitoxin is associated with the globulins soluble in saturated sodium chlorid solution. This purification appeared to be considerable, as

* Read in the Section on Pharmacology and Therapeutics of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

in the average normal horse serum the proteins are distributed as follows: albumin, 40 per cent.; globulin soluble in saturated sodium chlorid solution, 42 per cent.; globulin insoluble in saturated sodium chlorid solution, 18 per cent. Thus it would appear as though about 58 per cent. of non-antitoxic protein was eliminated.

Investigation carried on by Banzhaf and Gibson on the distribution of the proteins in immunized horses brought out the fact that, while the total proteins of the horses were increased during the progress of immunization, the so-called non-antitoxic proteins, the albumins and globulins insoluble in saturated sodium chlorid were greatly diminished. The globulins carrying the antitoxins were greatly increased. This work showed that in the average antitoxic horse serum the proteins were distributed as follows: albumin, 12 per cent.; globulin carrying the antitoxin, 78 per cent.; globulin insoluble in saturated sodium chlorid, 10 per cent. This brought out the fact that the Gibson process was eliminating in some preparations only about 22 per cent. of the total proteins.

About a year ago Banzhaf experimented with antitoxic serums heated at different temperatures and periods of time, and found changes taking place in the proteins which allowed further purification of antitoxin; thus, if antitoxic serums of 600 units per cubic centimeter containing albumin 12 per cent., globulin carrying the antitoxin 78 per cent., globulin non-antitoxic 10 per cent., were heated for from twelve to fifteen hours at a temperature of 57 C., a rearrangement of the proteins would take place, so that albumin would now be 9 per cent., globulin and all the antitoxin 50 per cent., and globulin non-antitoxic 41 per cent., showing an elimination of 50 per cent. non-antitoxic proteins. The loss of antitoxin on heating for this period of time and temperature is from 5 to 7 per cent. The units per gram of coagulable protein for this serum would be 9,446. With the Gibson process using the same serum, we have 11,456 units per gram protein, while with the heating method we have 17,060 units per gram.

For routine work at the Research Laboratories we do not try to concentrate more than to give an antitoxic potency of five or six times the original serum, as we do not want the total solids to be more than 16 to 18 per cent. The treatment of the antitoxic serum or of the globulin solution to fractional precipitation with different concentrations of ammonium sulphate allows of obtaining globulin preparations of somewhat greater degrees of antitoxic potency for each gram of protein. This method is often employed to obtain a fair preparation from a serum of low potency or, again, to obtain a very high potency serum.

The physician should keep in mind that the producer can concentrate the antitoxin either by eliminating the non-antitoxic proteids of the serum or by lessening the percentage of water holding the proteids in solution. The latter expedient, if carried too far, is a detriment.

ANTIDIPHTHERITIC HORSE SERUM

The blood serum from different horses varies not only in antitoxic potency, but also in its liability to produce disagreeable after-effects. Although theoretically it would be possible to test out the bleedings from each horse and to exclude that producing most serum effects, yet practically this would be so expensive as to be prohibitive.

It has been found that long standing and heating to 57 C. have some effect in lessening the after-effects.

The improvement is so slight that most American producers have used unheated serum and have not stored their serum for this purpose.

With the present U. S. government insuring the unit strength and sterility of the serum, it is safe to say that the antidiphtheritic serum supplied by the different producers is practically identical, if of equal antitoxic strength. The elegance and convenience of the container is the main difference. The different lots of serum of the same manufacturer will vary in liability to produce rashes, and this, together with the idiosyncrasy of the patient, causes some physicians to approve and others to condemn the preparations of the same manufacturers.

COMPARISON OF GLOBULIN AND WHOLE SERUMS

The effects of the globulin preparations have to be considered from two standpoints: Have they the curative substances of the whole serum, and, if so, have they any advantages except in concentration over the whole serum? I have most carefully watched the results following the injection of the whole serum and of the Gibson and the Banzhaf modifications. These tests were carried out with preparations made from portions of the same lot of serum. The rashes and after-effects were undoubtedly much less after the Gibson injections than after the whole serum and somewhat less after the injections of the Banzhaf modification than after that of Gibson. Curiously enough, only certain types of rashes are eliminated. The urticarial reactions still frequently follow.

As is well known, certain French and Viennese investigators have asserted that the curative value of antidiphtheritic serum was only partly in the antitoxin, and even that the antitoxin was the least important part. These assertions were based partly on supposed clinical results, but chiefly on the results of animal experiments in which guinea-pigs with multiple fatal doses of living diphtheria bacilli were treated with serums of low and high potency. It appeared from their results that the amount of serum rather than of antitoxin units was of saving value.

These experiments were repeated by us in a very extensive series of tests and later there was a second independent test under Ehrlich's direction. The results were exactly the reverse of those earlier reported. The serums used in Vienna were fortunately obtained by Ehrlich, and he was astonished to find that they had been exceedingly inaccurately tested. When the serums were arranged as to their true unit value the results obtained by Kramers were found to reverse what he supposed and really to strengthen the conclusion that the antitoxin was practically the only curative substance in serum. These results probably apply equally to tetanus antitoxin.

Professor Calmette, when over here last September, promised me to test a number of French serums as well as a number of American samples. He stated that if he found any that proved to have other important curative substances than antitoxin he would send them to me for control testing. He has not as yet sent any.

I am sure I am safe in asserting that so far as animal tests can be depended on (and I believe they can be) the globulin preparations contain all the important curative substances of the whole antidiphtheritic serum.

THE ACCURACY OF STATEMENT IN THE TRADE CIRCULARS

I have looked over the circulars accompanying the preparations sent out by different American producers. There are extremely few statements to which exception

can be taken. Two might be mentioned. One is that the globulin solution contains nothing but antitoxic globulins. We do not know what antitoxin is, but we believe that the globulin solution still contains much non-antitoxic substance, and we certainly hope to remove still more of the non-antitoxic globulins. The other is the claim that the special precipitating agent used gives a different final result. It seems to me that it is very creditable to the honesty and intelligence of the producers that they are so fair and sensible in their claims for their special preparations.

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THE COMMERCIAL PREPARATIONS OF TETANUS ANTITOXIN *

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Antitetanic serum is the serum of certain animals, usually that of horses, immunized to the toxins of the tetanus bacillus. It is marketed in both the liquid and dry forms. Some manufacturers prepare an antitetanic

by Behring (2), the French method of Roux, and (3) the Italian method after Tizzoni.

The European methods are admitted, even by their users, to be unsatisfactory and, in the main, not accurate; in addition, they are complicated and difficult to use. The American unit commends itself for its simplicity, directness, and accuracy. I am informed that it may be adopted officially by the Belgian government.

There is at the present time no standard for serums for veterinary use. We examined, in the Hygienic Laboratory, several different makes of veterinary tetanus antitoxin and found most of them to contain less than 25 units per cubic centimeter, while the minimum strength of the serums for human use now on the market—over which there is federal control—is at least 150 units per cubic centimeter, and much of it considerably stronger.

The need of uniformity in measuring the strength of tetanus antitoxin has long been felt and is very evident from the accompanying table,² from which it will be seen that before the promulgation of the American standard the tetanus antitoxin on the market varied extravagantly in the unit strength claimed.

As will be seen from the table, most of the foreign serums were far below the American in potency.

TABLE SHOWING THE DIFFERENCES IN THE METHODS OF TESTING TETANUS ANTITOXIN BEFORE THE ADOPTION OF
THE AMERICAN UNIT

Name of Manufacturer.	Labeled.	Contents c.c.	Units claimed according to special methods of standardiza- tion, per c.c.	Units accord- ing to the American standard, per c.c.
New York department of health, Albany (submitted by Dr. H. D. Pease for comparison).....	One immunizing dose (No. 2929 F.)		0.5	434
New York City department of health (submitted by Dr. W. H. Park for comparison).....	.....	..	700	166
H. K. Mulford Co. (bought on open market).....	1,000,000 immunizing units (No. 2121).	10	100,000	77
Farbenfabrik vorm. Meister Lucius & Bruning, Hoechst, a/M (submitted for comparative tests).	Tetanus Antitoxin, 5 fach. Normal, Prüfungs dose=1/500. *	10	6,000,000	333
H. K. Mulford Co. (No. 9971 submitted for tests).	60,000,000 units.	..	60,000	90
Parke, Davis & Co.....	.....	..		700
New York department of health, Albany (submitted by Dr. H. D. Pease for comparison).....	.....	..	.75	769
Pasteur Institute, Paris (10 c.c. fluid).....	[Unit value not stated.]	10	Not stated.	40
Pasteur Institute, Paris.....	[Unit value not stated.]	10	Not stated.	40
Tizzoni (No. 2912, Dry).....	[Unit value not stated.]	..	Not stated.	83 3†
Pasteur Institute (No. 11, 7).....	[Unit value not stated.]	10	Not stated.	66
Institut Bactériologique de Lyon et du Sud-Est...	[Unit value not stated.]	10	Not stated	‡

* Dissolved in 26 c.c.

† This equals 833 units per gram of the dry serum.

‡ Less than 50.

globulin; this contains a solution of the globulins of the blood, which are soluble in sodium chlorid solution, together with the antitoxin.

All tetanus antitoxin sold in interstate commerce in the United States must conform to the official standard adopted by the United States Public Health and Marine-Hospital Service, which was officially promulgated Oct. 25, 1907.¹ This unit may be defined as follows: "The immunity unit for measuring the strength of tetanus antitoxin shall be ten times the least quantity of antitetanic serum necessary to save the life of a 350-gram guinea-pig for ninety-six hours against the official test dose of a standard toxin furnished by the Hygienic Laboratory of the United States Public Health and Marine Hospital Service."

Besides the American unit above alluded to, there are three other units for measuring the strength of tetanus antitoxin. They are (1) the German method described

Tetanus antitoxin is used both as a prophylactic and as a curative agent in tetanus. The dried and powdered serum has been used as a dusting-powder for wounds. Used as a prophylactic, the dose is 1,500 units; as a curative it should be given in doses of 3,000 to 20,000 units, repeated during the course of the illness.

Tetanus antitoxin is made in the following laboratories: Parke, Davis & Co., Detroit, Mich. (license No. 1); H. K. Mulford Co., Philadelphia, Pa. (license No. 2); Lederle Antitoxin Laboratories, New York, N. Y. (license No. 17); New York State Department of Health, Albany, N. Y., and the Department of Health, city of New York.

The liquid serum is marketed either in syringes ready for use or in glass vials. Each syringe of tetanus antitoxin made by the American producers contains from 1,500 to 5,000 units without regard to the volume of the serum; the unit value per cubic centimeter varies from 150 to 500 or 600 units.

Many of the foreign serums, as is the case with most of the foreign diphtheria antitoxins, are labeled to con-

* Read in the Section on Pharmacology and Therapeutics of the American Medical Association, at the Sixteenth Annual Session, held at Atlantic City, June, 1909.

1. Rosenau, M. J., and Anderson, John F.: The Standardization of Tetanus Antitoxin (an American Unit Established under Authority of the Act of July 1, 1902), Bull. 43, Hyg. Lab., U. S. P. H. and M.-H. S., Washington, 1908.

2. Bull. 43, Hyg. Lab., U. S. P. H. and M.-H. S., p. 11.

tain so many cubic centimeters and do not give the number of units in the package or per cubic centimeter, and are almost uniformly weaker in antitoxic strength than the serums produced in the United States.

The affinity of the nerves for the toxin and its subsequent binding by them explains why tetanus antitoxin is often of so little value after the symptoms have developed. The antitoxin can, however, neutralize any new toxin that may be formed in cases in which the focus has not been removed and should, for this reason, invariably be used in all cases of tetanus.

Tetanus antitoxin at the present time is in the Belgian, French, and Swiss pharmacopeias. Both the dry and the liquid preparations are recognized by the French Pharmacopeia.

As diphtheria antitoxin is in the United States Pharmacopeia, and as there is now an American standard for determining the strength of tetanus antitoxin, this product should by all means be included in the next revision of the United States Pharmacopeia. Its great value as a prophylactic alone entitles it to admission without regard to its value in the treatment of developed tetanus. I should like to see this Section pass a resolution favoring its admission to the Pharmacopeia.

It may not be amiss to add a few words in regard to the federal control of therapeutic serums, especially of tetanus antitoxin.

Before the adoption of the American unit for tetanus antitoxin by the United States Public Health and Marine-Hospital Service there were as many different units or standards as there were producers of tetanus antitoxin. The physician, in using this serum, could have no idea of the number of antitoxic units the serum contained, as one maker's product was labeled "to contain 6,000,000 units per c.c." and another, probably just as potent, 0.75 per c.c., when in truth, according to the official standard, the first had only 90 units per c.c. and the latter about 770 units per c.c..

The great good that has come from the federal control of therapeutic serums may be summarized as follows:

1. The physician can be assured that every package of tetanus antitoxin now contains at least the number of units claimed.
2. All serums are now examined for, and are required to be free from, bacterial or toxic contamination.
3. The amount of preservative contained in the serums is not excessive.
4. There has been a progressive increase in the potency of tetanus antitoxin without a corresponding increase in cost.
5. A uniform standard having been established, definite amounts of tetanus antitoxin can be used so that data will gradually be collected as to the amount of serum necessary to be used for immunizing and curative purposes.

ABSTRACT OF DISCUSSION

DR. W. H. HUTCHINGS, Detroit: I feel that the valuable work of Dr. Anderson and Dr. Rosenau in formulating this standard unit of tetanus antitoxin should not pass here without some commendation. We have now for the first time definite knowledge of how much antitoxin we are using. Previously we measured the amount given in cubic centimeters with no knowledge—except the word of the manufacturer—of how strong it really was. The value of such information will be appreciated when we see that the serum of one manufacturer, who claimed 6,000,000 units per c.c., contained according to the present standard, only 90; while another

serum, which was stated to contain 0.75 of a unit, in reality, contained 769. As the result of the adoption of this standard we can now use the serum of any American manufacturer and know just how much we are giving. I would suggest that in future reports of our cases we state the number of units employed rather than the number of cubic centimeters. In this way we will soon have valuable data for comparison.

A large majority of manufacturers use either phenol or cresol for preservation in various serums. The amount is usually 0.04 per cent. Consequently every time we give 10 c.c. of antitetanic serum we give at the same time a curative dose of phenol as recommended by Baccelli. Possibly some at least of the reported cures of developed tetanus are due more to the carbolic acid than to the serum.

DR. E. R. LARNED, Detroit: If Dr. Anderson said that the antitetanic unit represented ten times the amount of serum necessary to neutralize the killing dose of tetanus toxin when injected into a guinea-pig of standard weight, 350 grams, then I have misunderstood the technical definition of antitetanic unit and antidiphtheric unit. My conception is that the antidiphtheric unit represents one hundred times the amount of serum necessary to save the life of a guinea-pig of standard weight (250 grams), when injected into the pig, together with minimum lethal dose of diphtheria toxin; that an antitetanic unit represents one thousand times the amount of serum required to save the life of a guinea-pig, of standard weight (350 grams), when injected at the same time with the M. L. D. of tetanus toxin. I understand that the government authorities have required that the standard dose of tetanus toxin to be administered to pigs in standardizing the serum into units is ten times the M. L. D. of toxin and that one hundred times the amount of serum necessary to neutralize the standard test dose of toxin (ten times the M. L. D.), of the same toxin represents the unit; or in other words, the antitetanic unit is one thousand times the amount of antitetanic serum required to save the life of a guinea-pig of standard weight (350 grams) when the serum and the toxin are injected at the same time.

One point that I think served to cloud the solution of the question of antitetanic serum's efficacy in the hands of the every-day practitioner, is the fact that the ordinary practicing physician knows nothing whatever about the necessity of the very early and frequent administration of sufficient quantities of the serum. My experience, which has been large in this particular regard, shows me that physicians are condemning antitetanic serum as a curative agent, because they wait too long, use too small quantities, and give up too quickly. A coal miner in Springfield, Ill., who had received an accidental gunshot wound, developed tetanus, his condition was pronounced hopeless and he was given up by the attending physician. Under the total administration of 198,000 units of serum, he recovered. The opinion in general seems to be that antitetanic serum is of no value for curative purposes. Professor Ehrlich has told me that antitetanic serum, in his opinion, was just as specific for tetanus as antidiphtheric serum for diphtheria, provided it was used early and often enough and in sufficiently large quantities.

DR. W. H. PARK, New York City: During the past few years, and especially the last year, we have found in New York that, when a large intravenous dose is given within a few hours of the onset of the symptoms, the effect is marked. More than 50 per cent. of the patients I have seen thus treated have recovered, some of whom I feel perfectly sure would have died without the serum. Ordinarily the surgeon waits a number of hours to make up his mind and then sends for the serum. He then frequently waits several hours longer until it arrives. At the first sign of actual tetanus an intravenous injection of ten to twenty thousand units should be given, to be followed every twelve hours by further injections. If this is done, we will certainly see some good results. The later injections can be given subcutaneously if there is difficulty in giving it intravenously.

DR. JOSEPH McFARLAND, Philadelphia: How we are to arrive at the correct dosage of tetanus antitoxin I am unable to imagine. I would like to say a word about some observations made on tetanus in thirty-five horses. Sometimes a horse shows symptoms of tetanus, slowly increasing, and

after a prolonged period recovers without any treatment at all. At other times the horse develops symptoms, becomes rapidly worse, and dies in a few days. In the former cases recovery takes place without antitoxin treatment, in the latter, doses of antitoxic serum up to a liter at a time produce no improvement.

Dr. W. H. HUTCHINGS, Detroit: In connection with a comparative experimental study of the various methods of treating tetanus, I have been conducting a series of experiments to determine the curative value of serum when used alone. For this purpose, I have used sheep with long tails. A splinter of wood infected with toxin-free spores was placed in a pocket at the tip of the tail. With the first appearance of symptoms of tetanus, six to seven days later, the tails were amputated 20 centimeters above the point of inoculation. At this time 2 c.c. of blood from the jugular vein of the infected sheep contained enough toxin to kill a 350 gram guinea-pig when injected subcutaneously. Then 4,500 units of antitetanic serum were injected intravenously as mentioned by Dr. Park. Twenty-four hours later, 2 c.c. of this sheep's blood did not contain a trace of toxin. Nevertheless, despite the daily injection of 4,500 units of serum all but one of the sheep died of tetanus. The symptoms were not influenced to the slightest degree by the serum. This experimental evidence goes to confirm the belief of many authors, based on clinical observations, that after the symptoms of tetanus have become manifest, antitetanic serum is valueless as a curative agent, no matter whether it is used subcutaneously, intravenously, intraspinally or intraneurally. Antitoxin will neutralize the toxin present in the body which has not combined with the nerve cells, but it will not break up this combination, the results of which kill most of our patients.

Dr. J. F. ANDERSON, Washington, D. C.: The tetanus unit may be defined as ten times the least quantity of antitetanic serum necessary to protect the life of a 350 gram guinea-pig against the test dose of a standard toxin furnished by the Hygienic Laboratory, U. S. Public Health and Marine-Hospital Service.

I think the pathology of the disease shows us how futile is the use of tetanus antitoxin after the symptoms have fully developed. The toxin, being bound by the nerve substance, cannot be reached by the antitoxin in the circulation, though the latter of course can neutralize any new toxin that may be formed if the original focus of infection has not been removed. I think it should be used, however, in all cases of developed tetanus, for frequently the surgical procedure has not been thorough.

I think Dr. Park's point that the serum should be administered intravenously is well taken and exceedingly important. We know that when a dose of antitoxin is given subcutaneously the maximum absorption is not attained till twenty-four to forty-eight hours after the injection, and much valuable time would be lost if the serum were not administered intravenously.

Dr. JOSEPH MCFARLAND, Philadelphia: The large doses to which I referred were given subcutaneously, not intravenously.

VACCINE THERAPY: GENERAL PRINCIPLES *

MARK W. RICHARDSON, M.D.
BOSTON

In studying the question of specific therapeutics it is important to bear in mind, in the first place, the fundamental distinction between passive and active immunity. In the utilization of passive immunity in the cure of disease, aid to the individual comes from without. Moreover, the mediation of a second animal is required, and the protection given is fleeting, though its immediate power may be great. By the inoculation of lower animals with animal or vegetable cells or their toxins, a

large variety of immune serums has been produced. While most of these have been found to be highly potent in protection against infection, especially in animal experiment, their curative power in the presence of declared disease has been distinctly limited. Diphtheria still stands out as the one disease in which passive immunity has proved its worth emphatically, though results almost as remarkable have been seen recently in serum treatment of cerebrospinal meningitis. Less degrees of success have been noted in dysentery, cholera, typhoid fever, tetanus, snake-poisoning and other infections and intoxications.

In the use of vaccines, on the other hand, we aim at the production of an active immunity. We do not bring to the sick individual immune substances already manufactured; we endeavor to stimulate him to produce for himself a larger amount of these immune substances. To do this we introduce into his body more morbid material in order that he may, by manufacturing an increased amount of the protective bodies, inhibit the growth of the invading organisms and cut short his disease.

Success in this method of treatment presupposes that the patient is not already completely overwhelmed with poison. He must respond to the added stimulation. Furthermore, if this procedure is to bring about, as it should, increased bacterial destruction with the setting free thereby of an increased amount of endotoxin, this destruction must not be too rapid or excessive, lest efforts to cure do harm through hyperintoxication.

Bacterial immunity is brought about through the action of a great variety of different, though related, immune substances, and as a result of inoculation with vaccines there may be formed antitoxins, antiendotoxins, lysins, agglutinins, precipitins, opsonins, and other allied products, the relative importance and proportion of each varying in different infections.

By bacterial vaccine is generally meant a culture of the special organism sterilized by heat, or otherwise, and suspended in known proportions in normal salt solution.

Living organisms, attenuated either in number or virulence, have been used in a few instances. Theoretical considerations would indicate that the use of living bacteria would be followed by results more favorable than those seen after inoculation of the dead organisms, but it is manifest that such use would be in many instances accompanied by great danger. The greater efficiency of living organisms, however, should be constantly borne in mind, in order that, in the process of sterilization, the bacteria may be changed in their characteristics as little as possible.

In this connection may be mentioned the work of Strong, in the Philippines, who found that by the inoculation of plague bacilli of attenuated virulence, he could produce in human beings a much stronger immunity than that ever produced by dead bacilli. Furthermore, in one instance at least, living typhoid bacilli have been used by Italian observers in the treatment of typhoid fever, with what are said to have been excellent results. Finally, living bacilli have been used by Webb, Williams, and Barber¹ in the treatment of tuberculosis. In this treatment the bacilli are so diluted in number that inoculations are begun with a single bacillus, the dose being gradually increased thereafter.

As a general principle, it is better, if possible, to use autogenous vaccines. At any rate, if good results are

* Read in the Section on Pharmacology and Therapeutics of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

1. Webb, Williams and Barber: Jour. Med. Research, January, 1909.

not obtained with stock vaccines, recourse to the auto-genous variety should be had.

As to dosage, no definite rules can be laid down. It is advisable to begin well below what is considered the ordinary dose and gradually to increase. In this way, severe reactions due to individual idiosyncrasy will be avoided. The interval between doses also will vary in different infections. Generally speaking, at least two or three days should be allowed between inoculations.

As to the value of the opsonic index, as a guide to treatment with vaccines, the opinion gains ground steadily that this procedure is so time consuming and unreliable as not to justify its use, in routine practice at least.

TYPHOID BACILLUS

As a result of specific inoculation of large numbers of troops in the British Army, the results, as reported recently by Leishman,² show that of 5,473 soldiers inoculated, only 21 were subsequently infected, with 2 deaths, while of 6,610 non-inoculated in the same regiment 187 had typhoid and 26 died.

The experience of the Germans with antityphoid inoculation has not been so extensive, but in the main it confirms the results seen in England.³ Of 424 typhoid patients, 324 had not been inoculated. In the uninoculated the mortality was 11.9 per cent.; in the inoculated, 4 per cent. In the inoculated the disease was milder and there were fewer complications and relapses.

As a result of these apparent successes with antityphoid inoculations, it has been proposed recently to introduce the same procedure into the army of the United States. Its use in civil life will not become general, doubtless, for a number of years. It is not unreasonable to suppose, however, that this inoculation should recommend itself in large institutions, especially where many of the personnel—physicians, nurses, ward tenders, laundry women, etc.—are not infrequently exposed to typhoid infection. Having demonstrated its usefulness in such situations, its introduction, generally, should be only a question of time, especially in communities threatened with or affected by typhoid epidemics.

In serum treatment of typhoid fever, no one has approached, in experience or success, Chantemesse⁴ in Paris. With his colleagues he has treated 1,000 cases, with a death-rate of 4.3 per cent. Of 5,621 patients who were given routine treatment during the same period, 17 per cent. died. Of patients who were given serum treatment before the seventh day, Chantemesse lost not a single one. The nature of Chantemesse's serum is difficult to understand. He speaks of it as antitoxic and as produced by inoculation of horses with a true typhoid toxin. It does not, however, act directly on the toxin, as does the diphtheria antitoxin, but in some way indirectly. It stimulates the spleen, bone marrow and other lymphatic apparatus to increased opsonin production. The sicker the individual the smaller must be the dose, lest too many bacilli be destroyed at once. There would seem to be, therefore, a strong bactericidal element in the serum. The serum treatment is combined with the cold-bath treatment, and calcium chlorid is given as a routine measure to prevent hemorrhage. Chantemesse's results have been confirmed

to a certain extent by the Germans, and von Leyden⁵ reports three cases treated with an antitoxic serum prepared by Meyer and Bergell.⁶ These cases were all of remarkably short duration, having normal temperatures on the sixteenth, seventeenth and nineteenth days. The serum is said to be of only moderate strength and to be both bacteriolytic and antitoxic. This serum, as produced by Meyer and Bergell, has been studied recently in animal experiment by W. Hoffman.⁷ Hoffman's final conclusion was that the protective power of this serum was not sufficient to justify its use in human cases.

I have already published results seen in the treatment of 132 cases of typhoid fever with specific typhoid products, serum, bouillon filtrates, and the non-toxic residue of the typhoid bacillus, as prepared by Professor Vaughan of Ann Arbor.⁸ The results were largely negative, with one exception. By continued inoculation during convalescence of the non-toxic residue, the occurrence of relapses was cut down apparently from 22 to 5 per cent.

More recently (1908) I have had experience with twenty-eight cases of typhoid fever treated with typhoid vaccines. Twenty-five of the patients were treated first in the original attack, and three for the first time during relapses. In two cases only were autogenous vaccines used. The dose varied from 10,000,000 to 100,000,000. The interval between doses averaged about three days. The results of the treatment were not especially striking.

As regards relapses, however, here again the effect of inoculation seemed to be favorable. In twenty-five cases inoculated, there was after inoculation but a single relapse. This was very atypical and lasted six days.

Of 77 untreated patients, 10 suffered typical relapses. I am, therefore, firmly convinced that whatever effect the vaccines may have on the original disease, there can be little doubt that the percentage of relapses can be much reduced by bacterial inoculation.

More recently series of cases of typhoid fever treated with vaccines have been reported by Watters and Eaton⁹ (thirty cases) and Smallman¹⁰ (thirty-six cases). These series, though small, tend to confirm the impression that vaccines are of value. At any rate, no harmful results were noted.

The possible use of vaccines in typhoid fever, for the cure of the typhoid-carrier has been suggested. Such a case is mentioned by Irwin and Houston.¹¹ In this patient bacilli were found in the urine seven years after the original disease. After three months' treatment with inoculation the bacilli disappeared and did not return.

MICROCOCOCCUS NEOFORMANS

The use of neoformans vaccines in the treatment of malignant tumors has been advocated, especially by Wright. It is said that not only do the tumors decrease temporarily at least in size, but that there is much alleviation of pain. As to the antiserum obtained by the inoculation of animals with this organism by Doyen, there seems to be no basis in fact for the claims made for this remedy. The subject was thoroughly investigated by Payne and Morgan.¹²

5. Von Leyden: *Med. Klin.*, Aug. 4, 1907.

6. Meyer and Bergell: *Berl. klin. Wchnschr.*, May 6, 1907.

7. Hoffman: *Deutsch. med. Wchnschr.*, April 1, 1909.

8. Richardson, M. W.: *Boston Med. and Surg. Jour.*, Oct. 3, 1907. This study was carried on at the Massachusetts General Hospital through the courtesy of the visiting physicians.

9. Watters and Eaton: *Med. Rec.*, Jan. 16, 1909.

10. Smallman: *Jour. Roy. Army Med. Corps*, February, 1909.

11. Irwin and Houston: *Lancet*, London, Jan. 30, 1909.

12. Payne and Morgan: *Med.-Chir. Tr.*, London, 1906, p. 7.

2. Leishman: *Jour. Roy. Army Med. Corps*, February, 1909.

3. Morgenroth: In *Kolle and Wassermann's Handbuch der pathogenen Mikroorganismen*, Supplementary volume, No. 1, p. 234.

4. Chantemesse: *Hyg. gén. et appliq.*, 1907, p. 577.

BACILLUS COLI COMMUNIS

There can be little doubt that infections of the urinary tract due to the colon bacillus are favorably affected by vaccine treatment. The subjective improvement is oftentimes striking, and pain and frequency of micturition are quickly relieved.

The character of the urine, however, changes but slowly and complete elimination of the bacteria is rare.

As to the use of these vaccines in other conditions, mention may be made of inoculation by Wright and Reed, in two cases, of gall-bladder fistulas after operation for gall-stones. Similar cases have been reported by Turton.¹³ Turton mentions also two cases of appendicitis, in which pure cultures of colon bacillus were found, which seemed to do well under colon vaccines.

In all of these discussions of vaccine treatment it is, of course, important to bear in mind that a fever, clinically identical with what is known as typhoid fever, may be due either to the colon bacillus, as pointed out by Coleman and Hastings,¹⁴ or to any of the intermediate organisms between the typhoid and the colon; that is to say, paratyphoid and paracolon varieties.

Any attempt at specific treatment of such intermediate types must, of course, be made with vaccines prepared from the appropriate germ.

The use of a specific antiserum in infection by the *Bacillus coli communis* is mentioned in an article by Makins.¹⁵ This serum was of the polyvalent variety and was used in twenty-five cases of general peritonitis. Of the twenty-five patients nine, or 36 per cent., recovered. All the cases were of great severity. As a result of the use of the serum there was a drop in the pulse and temperature, the patient felt better, and there seemed to be a tendency to form peritoneal adhesions. In cases of chronic colon bacilluria the serum seemed to be of no value.

144 State House.

PRELIMINARY REPORT OF INVESTIGATIONS
OF SERUMS AND VACCINES FOR STREPTOCOCCUS, STAPHYLOCOCCUS, AND
PNEUMOCOCCUS INFECTIONS *

L. HEKTOEN, M.D., G. H. WEAVER, M.D.,

AND

R. TUNNICLIFF, M.D.

CHICAGO

At the request of the Chairman of the Section we undertook a study of the various antistreptococcus and antipneumococcus serums and of streptococcus, staphylococcus and pneumococcus vaccines found on the market, with the purpose of reporting our results in the symposium on the present status of serum and vaccine therapy. The labor involved in an attempt to arrive at some scientific estimate of the real value of these various agents has proved very great, and we are prepared to report our results in a preliminary way only, reserving a fuller report until some further investigations now in progress are completed.

* Read in the Section on Pharmacology and Therapeutics of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

* From the Memorial Institute for Infectious Diseases.

13. Turton: Internat. Clin., Philadelphia, 1908, series 2, xviii, 23-47.

14. Coleman and Hastings: Am. Jour. Med. Sc., February, 1909.

15. Makins: Tr. Clin. Soc., London, 1907, p. 146.

BACTERIAL VACCINES

The antigenic properties of the so-called vaccines were tested by injections in rabbits with subsequent opsonin determinations. Distinct antigenic properties were possessed by all the streptococcus and staphylococcus vaccines tested. The pneumococcus vaccines were inert when injected into rabbits so far as indicated by any change in the opsonic index.

ANTISTREPTOCOCCUS SERUMS

Streptococcus opsonins could not be demonstrated in any of the serums tested, and activation by fresh serums was not accomplished to any significant degree. When they were injected into rabbits, increase in streptococcus opsonins could not be demonstrated in the serums of the animals in any notable degree, except in some instances.

Attempts to obtain protective and curative effects from the injection of antistreptococcus serums in rabbits, guinea-pigs and in a more limited scale in mice met failure. The serums often seemed to reduce the natural resistance and to hasten death.

ANTIPNEUMOCOCCUS SERUMS

In the antipneumococcus serums it was impossible to demonstrate antibodies for pneumococci by any method employed.

It is our belief that the claims for the usefulness of antistreptococcus and antipneumococcus serums rest on impressions from results in clinical cases in man, and have in most cases no foundation whatsoever in experimental tests.

1743 W. Harrison street.

ABSTRACT OF DISCUSSION

DR. D. H. BERGEY, Philadelphia: The last statements in the paper interested me very much because they record results similar to those I obtained some years ago. That is, experimental animals to which the antistreptococcus serum has been administered die more quickly than those not so treated. I was unable to find any explanation at the time, though I suspected it might be due to the antiseptic. Can Dr. Weaver throw any light on this occurrence, that is as to its cause? Can it be due to the preservative used in the serum?

DR. W. H. PARK, New York City: I think that probably most of you have read of the use in Vienna of Moser's antistreptococcus serum in scarlet fever. From 10 to 200 c.c. of serum are injected in a single dose in children suffering from malignant scarlet fever. Two years ago I had the privilege of going over the records covering five years of treatment. In about one-half of these cases improvement rapidly followed the injections and in none was there apparently any harm except severe rashes. I have recently prepared a similar serum but have hesitated to use it in such large doses. In Vienna the serum is used in only about 5 per cent. of all cases.

DR. G. H. WEAVER, Chicago: In regard to animals to which the antistreptococcus serum has been administered dying more quickly than those not so treated, I do not think the preservative was the essential factor, for we had similar occurrences when the serums used contained no antiseptic. Of course, as Dr. Park has intimated, the serum of normal horses is toxic in different degrees for different animals and we know that horse serum is toxic to man to a comparatively slight degree, even when given in large quantities. Whether or not the antistreptococcus serum leads to the rapid disintegration of streptococci and the liberation of toxin, in overwhelming dose, especially in smaller animals, I do not think we are in a position to state.

STATUS OF THERAPY BY ANTIGONOCOCCUS SERUM, GONOCOCCUS BACTERIN AND PYOCYANEUS BACTERIN *

BENJAMIN A. THOMAS, A.M., M.D.

PHILADELPHIA

The question has arisen in the minds of many of the medical profession, not only throughout the United States, but abroad as well, first, whether or not immunization by bacterins (bacterial vaccines), including tuberculin and serums, is actually valuable and practical for the general practitioner, or whether this method of therapeutics is still a matter of empiricism; second, whether these therapeutic agents in the pharmaceutical market to-day are safe and trustworthy, or whether they are, like so many proprietary preparations of modern medicine, either wholly or partly inert, or, on the other hand, dangerously potent.

ANTIGONOCOCCUS SERUM AND GONOCOCCUS BACTERIN

As to the value of treatment of gonorrheal infections by one or both of these agents, depending on the particular affection in a given case, there can be no doubt. The experiences of Rogers and Torrey, Swinburne, Perez-Miro, Herbst, Dunavant and others demonstrate the value of antitoxic treatment by the employment of the serums of rams properly immunized. It would seem, however, that the method of passive immunization is beneficial more particularly in the chronic complications of gonorrhea involving the serous cavities, especially the joints, and my own experience, though not nearly so extensive, accords more closely with that of Uhle and Mackinney, who are unable to note any benefit in the treatment of acute gonorrheal infections by inoculation with antigonococcus serum. Questionable results have been obtained in certain subacute complications of the disease, but there has never occurred any noteworthy or definite improvement by recourse to this method of therapy in the chronic stages and sequels of gonorrhea involving the genito-urinary tract. Indisputable, however, seems to be the evidence that chronic gonorrheal arthritis is favorably influenced by serotherapy.

On the other hand, Wright, Pardoe, Douglass, Freeman, Wells, Fleming, Cole, Meakins, Irons, Hamilton and Cooke have apparently justified the belief that by active immunization (injection of bacterin or gonococcus vaccine) a much larger sphere of gonorrheal affections is afforded for treatment. I myself have observed almost incredible results in gonorrheal arthritis by bacterin therapy. Moreover, the usefulness of bacterins in acute conditions, even in blennorrhea, according to Cole and Meakins—although I have had no experience in this respect—gives it, in my opinion, superiority over serum as a therapeutic measure.

It is probable that, ultimately, various affections will demand different therapeutic agents for the facilitation of their respective cures; that is, diseases involving the mucous membrane may be influenced best by bacterin therapy, while complications affecting the serous membranes may respond more readily to serotherapy. Certainly, a certain amount of empiricism still shrouds the rationale of these two therapeutic agents, but their value in properly selected cases I think is undoubted. The golden rule should be never to undertake the treat-

ment by immunization in any acute, diffused infection, associated with septicemia, sapremia or marked toxemia. Those conditions in which it is particularly indicated are the subacute and chronic localized superficial manifestations of the disease. Sufficient experience perhaps has not yet been adduced to prove which of the two measures is the more valuable, but, for the present at least, the consensus of opinion favors bacterin therapy.

A very important fact to be borne in mind in the practice of medicine is never to discard or to disregard an old-established measure of proved worth for an insufficiently tried, new idea, although attractive and possibly of equal value, for, by the association of the two, the cure will be facilitated. This is especially true not only in gonorrhea, but in every infection; hence, local urethral and prostatic and general treatment, when indicated, should be coupled with the method by immunization, and such treatment will never fail of its reward.

An essential point to be remembered in immunization, whether by bacterin or serum, is progression in dosage, beginning with minimum doses and steadily increasing until tolerance is established. Repeated small doses given at long, regular intervals, are likely to produce a condition of anaphylaxis and hypersusceptibility. Intolerance can also be produced by too frequent inoculations of too large doses. I believe this is the cause of many failures in active immunization or opsonotherapy. On the other hand, animal experimentation seems to prove that no real lasting immunity against subsequent infection can be expected from the inoculation of bacterin or serum, and that permanent immunization must be accomplished solely by living organisms.

Although, occasionally, in some cases, I still make it a practice to determine the opsonic index, not oftener than weekly, I am steadily becoming more convinced that it is unnecessary as a guide for the administration of opsonotherapy, and, in fact, not infrequently conducive to erroneous conclusions. Consequently, I am governed almost entirely by the clinical symptomatology in both bacterin and serum immunization. This is more easily stated than executed, and I believe no little experience is necessary for its proper performance. An almost uncontrollable desire to "push the immunization," carelessness and improper attention to trivial symptoms, as headache, malaise, indisposition, nausea, rise of temperature and local reactions, will invariably lead to utter failure. It is a serious question, therefore, in my mind whether or not the busy general practitioner will be able to use these methods of treatment to attain the highest success. Brilliant sporadic cases will be reported, but I do not believe that uniform and paramount success can be expected, and I fear that the harm which may ensue at the hands of too enthusiastic and careless physicians may offset the true virtue and value of the treatment in competent hands.

Relative to bacterin (vaccine) therapy, I am convinced by comparative experiences that by all odds the most successful results are to be obtained by the employment of autogenous bacterins. On the other hand, stock preparations should be used only when it is impossible or impractical to secure the autogenous agent. Naturally, gonorrheal and tuberculous affections are the particular conditions applicable for treatment by stock bacterins, on account not only of the difficulties of cultivation and length of time necessary for the maturity of the cultural growth, but also because in many instances of the impossibility of isolation of the particular bacterium. If the statement be true that the

* From the William Pepper Laboratory of Clinical Medicine, University of Pennsylvania.

* Read in the Section on Pharmacology and Therapeutics of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

strains of the gonococcus are not so diversified as are those of many other organisms, we should expect comparatively more success from a stock bacterin than in some other infections. It is most important in all proposed treatments to determine definitely the specific infection, and always, when possible, to isolate and culture the particular bacteria and prepare and standardize the autogenous bacterin for administration. The grievous errors arising from guesswork and inoculation by false stock bacterins are obvious and assuredly unscientific. Such therapy is not deserving of success and serves merely to handicap a method of treatment that otherwise not only might be but is serviceable and efficacious. Therefore, it will be observed that opsonotherapy, as a rule, cannot be truly successfully carried out at home by the average practitioner of medicine not having a bacteriologic laboratory and the requisite bacteriologic knowledge.

In the majority of instances, few in number aside from gonorrheal and tuberculous affections, in which I have been obliged to employ stock bacterins, I have used preparations standardized in the William Pepper Clinical Laboratory of Medicine of the University of Pennsylvania. Otherwise I have administered the tuberculins, bacterins and serums placed before the profession by the firms of H. K. Mulford Company of Philadelphia, Parke, Davis and Company of Detroit and H. M. Alexander Company of Marietta, Pa. There may be products of equal virtue on the market by other firms, just as safe and trustworthy, but I have always found these preparations as represented and up to the standard in every respect.

A much-mooted question at present is relative to the length of time bacterins retain their potency. This has been stated to be from six months to a year or more. It is probably true that the efficiency of the preparation will persist for this length of time, but that does not imply, necessarily, that the full or original therapeutic power of the agent is maintained. My experience with the autogenous bacterins of the common pyogenic organisms has shown that the best results have been obtained when the bacterins were prepared anew every two to four weeks.

USELESSNESS OF THERAPY BY PYOCYANEUS BACTERIN

Relative to the bacterin (vaccine) therapy of pyocyanus infections, I have simply to state that I have never experienced the slightest beneficial effect, either from the autogenous or stock bacterins prepared from the *Bacillus pyocyanus*. I am unable to explain this fact save that it is usually an infection superimposed on a previous suppuration, and is independent of the particular bacterium causing the infection; that is, it acts as a scavenger of the primary infection or suppuration—a pus parasite, as it were. It would seem, therefore, illogical to expect that anything can be gained by stimulating the cells of the human organism to the production of antibodies, through inoculation, by the bacterin of an organism which in itself may be entirely dependent on the action and products of a pre-existing infection. Therefore, I strongly favor the discontinuance of the manufacture of pyocyanus bacterins.

116 South Nineteenth Street.

ABSTRACT OF DISCUSSION

DR. SOLOMON SOLIS COHEN, Philadelphia: From a clinical standpoint I can corroborate what has been said of the value of the gonococcus bacterin in the treatment of gonorrheal arthritis. I have no experience with it in any other of the

gonococcus infections. For some time, I have been using it in my wards at the Philadelphia Hospital and at the Jefferson Hospital in the treatment of the arthritic complications of gonorrhea, both late and early, and with good results. In the somewhat limited experience that we have had I have not been able to formulate any definite rule, except to be guided by the reaction of the patient. I am speaking now merely from a general recollection of a number of cases and cannot give those details which would be necessary for scientific critical analysis.

DR. F. M. POTTENGER, Los Angeles: I do not think that there is any warrant for speaking of opsonic therapy. There are many men to-day who do not consider what they are using, yet expect to get results, and are giving their opinions as to the value of vaccine treatment. Regarding the use of tuberculin, there is hardly a week that I do not receive a letter from some one stating that he desires to use tuberculin in a case, and asks: "What is the dose?" This kind of work will bring tuberculin into disrepute. I believe that vaccine therapy should be in the hands of men who will study its action, then something of value will be obtained. Otherwise, our literature will be filled with the opinions of those who have none to present. I have often thought that we have a good reason for autogenous vaccination, for instance in the tuberculous patient, who swallows perhaps a thousand times enough bacilli every day to infect him. His air passages are constantly filled with them, yet he often recovers. That seems to show that he produces more antibodies against his own bacilli, and justifies autogenous vaccination. But when we make an autogenous vaccine, grown on artificial media, we do not have the exact vaccine as we would were the culture grown from human tissue. I am a firm believer in the principles underlying bacteriotherapy. If we are careless, if we are over-enthusiastic, if bacterial therapy is to be exploited by every one, I believe it will be discredited. I do not think the ordinary practitioner has any more right to use it than the surgeon would have to go blindfolded into the abdomen.

DR. B. FANTUS, Chicago: I would just like to bring up for discussion an idea that has been puzzling me; namely, whether the magic touch of the knife, the wonderful results obtained by opening the abscess, are not at least partly due to vaccination with autogenous vaccines.

DR. OSCAR BERGHAUSEN, Cincinnati: It seems to me that one very important point has been neglected this afternoon. I think we should use other measures in addition to the vaccines in order to increase their therapeutic effect. In some cases of acne, the use of a suction cup will secure a hyperemic condition, and more serum will be able to act locally. Likewise in gonorrheal rheumatism by employing congestion through the use of a bandage or hot-air, more serum is called to the part. In certain forms of infections, especially in streptococcus infections, the use of citric acid internally will render the blood more fluid. The use of other assisting measures should be favorably considered and should not be neglected.

DR. W. H. HUTCHINGS, Detroit: It is of the greatest importance that vaccine therapy should be in the hands of men who know how to use it. There is no doubt but that irreparable harm constantly is being done by men who have no conception of either the agent they are using or the theory on which its use is based. With the possible exception of staphylococcus and gonococcus vaccine, I do not believe that stock vaccines should be put in the hands of everybody who chooses to use them. As regards the value of the opsonic index, after an experience of four years, during which time I have treated hundreds of patients, both with and without the index, I have come to believe that it is of great value when properly done. The limit of error should be not over 15 per cent. This, however, can be secured only by devoting a great deal of time to it. The remarks made by Dr. Fantus in regard to abscesses and autointoxication are true. Unquestionably a process of autoinoculation is set up in those cases. Probably this is the way in which tuberculous peritonitis is cured by simply opening the abdomen and withdrawing the fluid. In fact, White of Dublin has shown that the tuberculo-opsonic index of the peritoneal fluid before operation was lower than that of the blood, while after operation the index, not only of the fluid which replaced that withdrawn, but of the blood also was much

higher than before. We do the same thing in operations for cervicæal tuberculous adenitis. An autoinoculation invariably results. I no longer do these extensive operations in this region, but limit myself to simple incision and drainage of the broken down glands, relying on tuberculin for the cure. So far, my results have been satisfactory. I have used a vaccine prepared from the *Micrococcus neoformans* of Doyen in four cases of inoperable carcinoma. In the first of these, a squamous-celled carcinoma of the right superior maxilla, the result was surprising. Pain and bleeding ceased almost immediately and did not return. The sloughing areas cleared up rapidly, leaving a clear carcinomatous area about one-half inch in depth. The general condition improved markedly. The disease, however, continued to extend and the patient eventually died. No effect was produced in the other three cases. I do not for a moment believe that we will cure cancer by bacterial vaccines, but I do believe that by using a vaccine prepared from the germs infecting inoperable cancers, we will relieve the patient of much suffering and prolong life.

GENERAL PRINCIPLES OF TUBERCULIN DIAGNOSIS AND TREATMENT*

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Tuberculin represents the toxin of the tubercle bacillus. It may be in the form of a filtered extract of the bacilli or may be composed of the pulverized insoluble substance of the bacillus itself. In the latter, or emulsified form, tuberculin is also known as tubercle vaccine. The different modifications and preparations of tuberculin are practically identical in their physiologic effects. They vary chiefly in a quantitative way and in absorbability. Whatever their mode of preparation, the greater the content of soluble substances of the tubercle bacillus in a given preparation, the more powerful it is in causing the characteristic reactions. The emulsions being more slowly absorbed, are less active in producing fever reactions.

Tuberculin is in nowise a serum. It is the diametric opposite of an antitoxin, and should not be confused with serums which purport to be antitoxins for tuberculosis, and which have thus far failed to merit the name.

DIAGNOSTIC USE

Tuberculin depends for its diagnostic value on a special sensitiveness acquired by the tissues after a tuberculous infection. This sensitiveness is manifested by an inflammatory response when tuberculin is brought in contact with the skin or mucous membrane. The response is more marked when it is injected into the body in sufficient quantity to reach the focus of disease. The cells composing the tubercle develop the most sensitiveness; hence the so-called focal reaction to incredibly small doses, where the tubercles are recent. As the walls of the tubercles become fibrous, as in the process of healing, the sensitiveness becomes gradually lessened, and with it the delicacy of the tuberculin reaction. Even after complete cicatrization, however, the reacting power persists both in the tubercle and integument practically throughout life (with few exceptions), though more time and a larger dose of tuberculin are required to elicit the response. Hence, the clinical value of a tuberculin reaction is usually proportionate to the smallness of the dose and quickness and degree of the response.

The more recent the infection, and the more extensive the disease, the more delicate is the reaction, unless the

disease is rapidly progressing or grave constitutional weakness is present. In the last-mentioned cases tuberculin can serve no purpose in diagnosis or treatment. The reaction occurs with increasing frequency as age advances. A large percentage of apparently healthy adults react to tuberculin. The number of these varies from 15 to 50 per cent., depending on the dosage, method of applying the test, and individual factors of unknown origin. Repetition of the test in the same or increased dose is capable of arousing a latent sensitiveness from a former or healed infection. Hence, this method, especially when applied subcutaneously, is mainly useful in excluding active tuberculosis. From what has been stated, it must be comprehended that tuberculin tests, when resulting positively, confirm the presence of a past or recent infection, but do not necessarily establish the diagnosis of an existing disease; this must be done by other means. Therefore, the tuberculin test is of equal if not greater value in excluding tuberculosis when no reaction appears, and the interpretation of positive results must be made with care.

CHOICE OF METHODS

The original tuberculin of Koch is the most satisfactory preparation for diagnosis, but other filtered extracts are suitable. Those preparations which contain dead bacilli or their fragments should not be used; likewise the emulsions or vaccines, owing to uncertain and irregular absorption. There is no evidence that tuberculin made from bovine cultures can differentiate between human and bovine infections.

The Cutaneous Test.—As introduced by von Pirquet, this is the most suitable method for general use, and is absolutely harmless. It is the only test required for children, because a positive result is more significant of a recent infection and occurs less often in apparent health under the age of 12. Other methods may be needed in adults to confirm the result of a cutaneous test, but it can be applied as a preliminary method in all cases with advantage.

The Inunction of Tuberculin Ointment, According to Moro's Method.—This involves more trouble, and the tuberculin is less certain to be absorbed uniformly. Much as to the strength or weakness of the reaction depends on the rubbing. It is said to produce fever reactions in slight, healed infections, and is useful in infants where objection is made to scarification. There are no other advantages.

The Intradermic Injection of Small Doses.—This is a delicate but more difficult modification of the cutaneous test, and has no practical advantage over scarification.

The Conjunctival Test (Wolff-Eisner, Calmette.)—This is a simple and delicate method, but to be recommended only with reserve. The eyes should be free from any trace of disorder or history of past disease. Scrofulous persons, children under 15, and adults over 60 should never be tested in this way. The use of strong tuberculin solutions or repetition of the instillation in the same eye are dangerous. When weak solutions are used fewer apparently healthy persons react than with the cutaneous test. The statement that only those persons react who are clinically tuberculous or who are in danger of an outbreak from a latent disease (Wolff-Eisner) has not been substantiated. This test has its best field in confirmation of a positive result from a cutaneous test, and in cases in which the subcutaneous test would be inadvisable or inadmissible, as in febrile cases. If the subcutaneous test is contemplated the conjunctival test should be omitted, as a recurrence of the

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eye inflammation is probable. Applications of tuberculin to the nasal, urethral, or vaginal mucosa have no advantages for diagnosis.

The Subcutaneous Test.—This is the last resource, and the most searching method in tuberculin diagnosis. For this reason many regard it as the only satisfactory one, despite the chance of an unpleasant fever reaction. At present it may be regarded as unnecessary in most cases. In cases in which a focal reaction is desired, as in the diagnosis of superficial or surgical tuberculosis, or in which a negative result after a cutaneous test requires confirmation, it has great value. Since the focal reaction in the lung escapes notice in the majority of suspected pulmonary cases the subcutaneous test is of questionable value in confirming a positive cutaneous reaction. The dangers of this test have been considerably exaggerated, but in inexperienced or careless hands it is potent for harm. Certain contraindications and rules should always be observed, of which the following are to be mentioned as most important: First, the test should never be used when a satisfactory diagnosis can be made without it. Second, it should never be employed when a fever of 99.5 or over is present, or when the patient has a rapid pulse, gives a history of hemoptysis, or has already extensive signs in the chest. It should never be used in suspected Addison's disease. Third, the tuberculin should be fresh and the dosage accurate. Fourth, in the event of the slightest symptoms of reaction the subsequent dose should not be increased.

The interpretation of results in tuberculin diagnosis must take into account the size of the dose required to elicit the reaction, the promptness with which it develops, and the extent of the local and general reactions which accompany it. These factors, when considered in relation to the presence of symptoms of disease and according to the principles above set forth, must form the real basis for a correct differentiation between active tuberculosis and a latent or healed focus.

THERAPEUTIC USE

The therapeutic use of tuberculin may have two fairly definite objects in view: One is to diminish the sensitiveness to the toxin—i. e., to itself—the other is to create intermittent local reactions and thus to stimulate the disease focus to heal or become absorbed. The possibility of the production of a recognizable immunity to the disease thus far by any form of tuberculin treatment is open to question. A certain degree of resistance is indirectly accomplished when sensitiveness to tuberculin is decreased to a marked degree, accompanied by constitutional improvement. Such specific resistance as can be obtained by tuberculin is gradually lost after the treatment is discontinued, so that statements that patients can be made "immune" are unjustified. The degree of tolerance or immunity to tuberculin is proportionate to the dose that can be borne without reaction. Hence the progressive increase of dosage is essential to obtain that object. When only reactions about the focus of disease are desired the dosage need not be increased so long as sensitiveness persists to small doses. As soon as this is overcome the treatment should be interrupted until sensitiveness returns, or the doses must be increased to an unwise degree.

Indications and Contraindications.—Keeping in mind the objects above mentioned to be considered in selecting tuberculin treatment, it must be seen that only patients in a fairly quiescent state of the disease are likely to be benefited. Pulmonary patients should be in a good

nutritive condition and free from persistent fever over 100, hemoptyses, night sweats, chronic diarrhea, or extensive laryngeal complications. The physical signs in the lungs should indicate a localized disease, free from large pneumonic consolidation or disseminated disease. Progressive tuberculosis of any form is a contraindication to this treatment. Tuberculin immunization is the only safe object to be held in view for the majority of pulmonary cases. Reactions are to be studiously avoided, and may involve danger when repeated, except in cases of well-arrested, localized disease. Slight unperceived focal reactions probably occur under any plan of tuberculin treatment and, when rightly timed, are beneficial. It is obvious, however, that focal reactions can be best observed and applied with safety in cases in which the focus is localized in the skin, bones, joints, or genito-urinary tract, and in which the lungs are not involved. Suppurating sinuses from tuberculous lymph nodes are beneficially influenced, but it is irrational to expect good results in large, closed, caseated or suppurated foci of any kind without the cooperation of surgical measures.

The Choice of Tuberculin.—For therapeutic use the choice chiefly lies between the solutions and emulsions or vaccines. Opinions are too variant to permit the formulation of rules. In general the dosage is more controllable with solutions, and reactions are less frequent from emulsions. The emulsions have experimentally some immunizing power against the disease in animals and therefore it would be rational to expect them to be useful in man; but the amounts which can generally be given in safety are too small to produce immunity in man. Owing to the uncertain absorption of emulsions, reactions may ensue unexpectedly if the dose is increased greatly. The solutions are therefore safer for tuberculin immunization until some accurate standards for determining the proper dosage shall be made. The dosage is at present empirical; each individual case must be an experiment, and the symptoms carefully observed before each dose. The clinical oversight is the most satisfactory guide. The opsonic determinations are of apparent value in the hands of a few skilled and painstaking laboratory workers, but are for the majority wholly impracticable and inaccurate as a guide to dosage and as a measure of resistance.

The subcutaneous injection is the only satisfactory method for the administration of tuberculin. The use of tuberculin pills or capsules for stomach ingestion and suppositories per rectum are too uncertain of absorption to warrant any recommendation. Inunctions of tuberculin have a possible field in treatment of skin tuberculosis; otherwise they are also impracticable.

The technic of tuberculin injections, the guide to correct dosage and intervals, are details which vary with the preparation used and the experience of different observers. These details are not considered in this paper, the object of which is to state—even if too arbitrarily—certain general principles which in my opinion should guide and safeguard the use of tuberculin.

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ABSTRACT OF DISCUSSION

DR. FRANCIS M. POTTENGER, Los Angeles, Cal.: First I wish to speak of the opsonic index as a guide to the use of tuberculin. If one studies the neutrophils in connection with their phagocytic powers, he finds that such power increases from Class 1 to Class 4 of Arneth. Hence, in a leucocytosis, which often shows a high percentage of Class 1, there would be relatively less phagocytosis, which seems to disprove Wright's early statement that the leucocyte is an indifferent factor in phagocytosis. In the hands of careful men the opsonic

index will, I think finally yield results. In tuberculin treatment we must bear in mind that we are dealing with an infectious disease, the cure for which depends on the establishment of complete immunity against the tubercle bacilli and its toxin. We must build up the patient so that his body cells will respond when stimulated. Next, we must see that our antibodies when present are applied. In small foci the small doses suggested by Wright are of value, but in advanced cases I believe that the larger doses are more effective, and with increasing dosage and constant stimulation the largest amount of antibodies are formed.

Careful consideration of clinical symptoms and close control of the patient, when using tuberculin, give the better results. I wish to see the patient on the day following as well as on the day on which the injection is made. To give the injections at set intervals is irrational. The time for injection depends on the size of the dose and the symptoms of the patient. The symptoms which guide me most often are unaccompanied by temperature rise. If the patient seems a little more nervous, if he aches, loses appetite, coughs and expectorates more than usual, I take it as a reaction. v. Pirquet's cutaneous test is very valuable, but requires considerable judgment. The symptomatology should aid you in deciding whether or not you are dealing with an active tuberculosis. If a closed case, you can inform your patient how to live.

DR. JOSEPH McFARLAND, Philadelphia: Dr. Pottenger and I stand on opposite sides of this question. It is a matter of surprise to me that one so exact as Dr. Pottenger should be so extremely inaccurate in the matter of tuberculin. Personally, I am opposed to the use of tuberculin in the treatment of tuberculosis and I base that opposition on the fact that no animal can be immunized against tuberculosis by any previous treatment with tuberculin, nor can any animal already tuberculous have its life considerably lengthened by tuberculin. Therefore why we should infer that anything experimentally impossible in the lower animals should prove successful in human beings I cannot understand. We know tuberculin is injurious, it has its place in making the diagnosis of tuberculosis in cows, it is said to be harmless when used for that purpose, and in assisting in diagnosis in man, but beyond that I cannot see its usefulness. When Dr. Pottenger says that he has seen good results accrue from tuberculin that is entirely a matter of opinion, there is no measuring rod, there is no standard of comparison. Some time ago in discussing this matter with Dr. Flick I suggested that if the Phipps Institute could definitely establish some standard of comparison by which the different classes of cases could be investigated with reference to what they would do if they were treated dietically and climatologically without the use of medicaments of any kind, especially without the employment of tuberculin, it would be a most excellent work.

DR. THEODORE POTTER, Indianapolis: In reference to tuberculin, we cannot insist too much, in connection with what is going on over the country, on the importance of clinical judgment. Unless we do there is going to be a vast amount of reckless sort of diagnosis. It is plain that a considerable percentage of apparently perfectly healthy people react to tuberculin, and that there are others who may have a little focus that has been encapsulated and they react easily, and unless we insist to the average doctor that the mere application of tuberculin will not furnish a basis for his clinical diagnosis of tuberculosis, we shall have a lot of trouble over the country.

The surface tests vary in their rapidity. The eye test shows up most quickly of all. That is, I believe, generally agreed to. It not infrequently begins to show in four to six hours and very frequently in eight to ten hours. There is in that fact sometimes an advantage; the time element in making a diagnosis is to the clinician sometimes important. For instance, some of you see cases from outside of the city. Patients come to the city in the morning and must go home in the evening, or they come in the evening and think they must go home tomorrow morning, and in certain instances it seems proper to use tuberculin diagnosis. That may be the factor in determining the use of the eye test. As to the manner of action of tuberculin, its beneficial action: I happen to be one of those who have used tuberculin for many years,

almost ever since it came out. I never believed and do not now believe that the only value is in its immunizing effect. Dr. Baldwin referred to its stimulating the formation of the fibroid tissue, and I always have and now hold that is one of the distinctly valuable effects of tuberculin, but I cannot prove it. I have met with a limited number of interesting examples of most remarkable improvement following the use of one or two large doses of tuberculin which I have never been able to explain. The article of Rotch of Boston, about a year ago in THE JOURNAL on the diagnosis by tuberculin, instances a case in which two children were given by mistake very large doses of tuberculin, in each instance developing a temperature of 106. One of these children promptly died probably, he thought, as the result of the injection. The other child promptly proceeded to get better very rapidly after that large dose. Now I have happened to have several instances of that kind. For instance, a man came to me last October, now some 18 or 20 months ago; he was then 37 years of age. I had not seen him for a year or two, I saw at once that he was not well. He gave the typical history of tuberculosis, fever, night sweats, loss of weight from 160 to 130 or 140, some 25 pounds loss. In spite of the most searching care I could not localize the lesion. I gave him 2 mgrms. of tuberculin with what I thought was a very moderate, but not very certain reaction. I then gave him an injection of 7 mgrms. of tested tuberculin, with a somewhat furious reaction, a temperature of 104 or more, and then there developed some slight focal symptoms, just recognizable, and that was all. I do not know where the real tuberculous focus was in that man. I recognized a little friction in one lung; he must have had tuberculosis somewhere else, probably in his bronchial glands. That man had been going for some three or four months down hill and without other treatment the man turned around and proceeded in a remarkable way to get well. He went along from the first of October until about the next April, when he showed some evidence of trouble and this performance was repeated. I gave him an injection of 4 mgrms. of tuberculin, just one, and he proceeded to get better and he is to-day apparently well. Now I have in the course of twelve or fifteen years happened to have had six or eight experiences of this sort in connection with the diagnostic use of tuberculin, all of course in early cases in which I could not be certain of the diagnosis from the ordinary physical method, and there occurred a pronounced reaction and forthwith there started a rather remarkable improvement. After fifteen years in the use of tuberculin to some moderate extent all the way along and more actively lately, I confess I do not know whether it is of much use or not.

THE TREATMENT OF INOPERABLE SARCOMA BY ERYSIPELAS AND PRODIGIOSUS

TOXINS *

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PHILADELPHIA

The treatment of inoperable sarcoma by the toxins of certain bacteria is a treatment by vaccine. This vaccine differs, however, from certain other vaccines in not being a specific remedy, the toxins of the streptococci and of the *Bacillus prodigiosus* bearing no etiologic relation whatever to sarcoma, for the cure of which they are employed.

The foundation for this method of treatment of sarcoma is an empirical one. In a considerable number of cases in patients afflicted with cancer an attack of erysipelas led to a retrogression and in a certain number of cases to a total disappearance of the cancer, and especially of sarcoma. But certain other acute infectious diseases may likewise cause a retrogression of cancer.

* Read in the Section on Pharmacology and Therapeutics of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

Soon after the discovery of a streptococcus as the cause of erysipelas by Fehleisen¹ this investigator inoculated patients who suffered from cancer with the cultures of streptococci of erysipelas; he was able to obtain some beneficial results. (His first report appeared in the year 1882.) Other surgeons likewise reported cures. In all of these cases, however, living bacteria were used, and it is not to be wondered at that in some instances such inoculations were followed by the death of the patient.

At that time it was already known that toxins are mainly responsible for the pathogenic action of microorganisms. It was a step in advance when in 1891 Lassar,² and soon afterward Spronck,³ in Utrecht, recommended the use of the toxins of streptococci and of erysipelas instead of the living germs. In 1891 W. B. Coley of New York published some observations on the curative effect of the inoculation with the living streptococci of erysipelas in cases of sarcoma. In the following year he began a systematic study of the effect of the toxins of the streptococcus of erysipelas in the treatment of sarcoma. Since that time Dr. Coley has persistently continued in this line of therapeutical effort, and he has been able to collect very large series of cases treated by himself and by others with this method.⁴

He improved the method of treatment by adding the toxins of the *Bacillus prodigiosus* to those of the *Streptococcus erysipelatis*. He was led to this change by the observations of Roger,⁵ who found that the toxins of the *Bacillus prodigiosus* increased, when injected into a rabbit, the virulence of living streptococci. In man, however, the cell contents of the *Bacillus prodigiosus* are toxic in themselves and the result of the injection of the combined toxins represents in all probability only the additive effect of both toxins. After various changes in the technic Dr. Coley found it best to use the non-filtered bouillon cultures of the streptococcus sterilized by heat, to which a certain amount of a culture of *Bacillus prodigiosus*, grown separately on agar and likewise sterilized by heat, had been added. The amount of endotoxin present in such preparations is greater than in filtered extracts. Later it was found that the *Streptococcus pyogenes* isolated from cases of septicemia was as effective as the streptococcus isolated from cases of erysipelas. It is even likely that toxins of other bacteria might serve a similar purpose; and Beebe and Tracy⁶ found that the toxins of *Bacillus coli* had a similar effect on sarcoma of dogs. And, indeed, as early as in the year 1895 Répin⁷ reported on the use of cobra venom for the same purpose.

The toxins are injected in gradually increasing doses, at first in a part of the body removed from the tumor, and later, if possible, directly into the tumor itself. The usual effect of bacterial toxins—rise in temperature, malaise, signs of local inflammation—follow the injection. In favorable cases Dr. Coley finds that the tumor shrinks and becomes softer within a week after the beginning of treatment. A tumor which does not respond to the treatment within four weeks is not likely to be favorably influenced at a later period.

According to Dr. Coley, the indications for the use of the toxins are the following:

1. All cases of inoperable sarcoma.
2. Certain cases of sarcoma of the long bones, still in the operable stage. In these the injection of the toxins may prevent the necessity of an amputation of the limb.
3. After operation for sarcoma, the injection being used as a routine treatment, in order to prevent recurrence of the tumor.

As to the actual results obtained with this treatment the following can be stated:

In tumors of dogs Spronck found in two cases no beneficial results; in five cases improvement followed the injection at a place distant from the tumor; the treatment, however, was not continued long enough to observe complete disappearance of the tumors. Spronck used spontaneous tumors. Beebe and Tracy observed a disappearance of the lymphosarcoma of dogs in a number of cases in which the toxins were injected into the tumor tissue itself. In one early case the tumor did not entirely disappear under the influence of the toxins and internal metastases were found at the post-mortem examination. It is to be emphasized, however, that these latter investigators did not use spontaneous but implanted dog tumors for their experiments, and it is certain that such inoculated tumors retrogress much more frequently spontaneously than primary tumors and are therefore probably more easily influenced by various therapeutic measures.

If we now consider the results obtained by this method of treatment in patients afflicted with sarcoma, Dr. Coley gives the following data: In 430 cases treated the tumor disappeared under the influence of the toxins in approximately 11 per cent. of the cases; 6.5 per cent. of the cases have remained without recurrence over three years after cessation of treatment. In 3 out of these 430 cases death followed, probably as a direct or indirect result of the treatment. According to Dr. Coley, in thirteen cases of sarcoma of long bones, observed partly by himself and partly by other surgeons, the use of the toxins has rendered amputation of the limb unnecessary; in other cases, however, the toxin treatment was without effect.

In a series of 22 cases in which the toxins were used after primary operation, 4 patients are now well after periods of three to eight years, and 9 after periods of one to three years; in 5 cases recurrence took place in spite of the toxin treatment; the remaining patients are still under treatment or the cases are very recent.

In order to supplement these statistics I have written to a number of prominent surgeons asking for a statement concerning their experience with Coley's fluid. Fourteen of these surgeons had had personal experience with this mode of treatment. The majority state, without giving the number of patients treated, that they have not seen any successful cases. From some surgeons I obtained the number of cases treated, and the result was as follows: Among 78 cases of sarcoma, in 4 cases a cure was obtained; therefore in not quite 5 per cent. of the cases treated a positive result was observed. On the other hand, in a number of cases in which no cure was obtained, the injection of the toxins seemed to have a marked weakening influence on the patient, and sometimes it produced a sloughing of the tumor.

It is therefore likely that the treatment of inoperable sarcoma with the toxins of streptococcus and *Bacillus prodigiosus* leads to a cure in approximately 4 to 9 per

1. Fehleisen: Deutsch. med. Wchnschr., 1882, viii.

2. Lassar: Deutsch. med. Wchnschr., 1891, No. 29.

3. Spronck: Ann. de l'Inst. Pasteur, 1892.

4. Coley, William B.: Am. Jour. Med. Sc., March, 1906; The Treatment of Sarcoma with the Mixed Toxins of Erysipelas and Bacillus Prodigiosus, Boston Med. and Surg. Jour., cxviii, No. 6; Sarcoma of the Long Bones, Ann. Surg., March, 1907.

5. Roger, G. H.: Les maladies infectieuses, Paris, 1902.

6. Beebe, S. P., and Tracy, Martha: The Treatment of Experimental Tumors with Bacterial Toxins, THE JOURNAL A. M. A., Nov. 2, 1907, No. 18, xlix, 1493.

7. Répin: Rev. de chir., 1895, xv.

cent. of cases. And some results obtained so far suggest that this method of treatment may prove of value as a postoperative procedure in diminishing the number of recurrences, and that in a certain number of cases it might limit the necessity for amputation of the limb in cases of sarcoma of the long bones. As to its mode of action, nothing definite can be stated, but it is likely that the toxins themselves, as well as the local and general reactions they produce, frequently affect the life of the sarcoma cells unfavorably.

ABSTRACT OF DISCUSSION

DR. B. A. THOMAS, Philadelphia: Dr. Loeb's paper has recalled to my mind a very interesting case which was brought to my attention a year since. The patient had been suffering for several weeks from an inoperable malignant tumor of the mouth and was being treated at the time by one of Philadelphia's most eminent internists, whose word I think would substantiate the diagnosis of a definite neoplasm. After several weeks of treatment the patient was told that nothing further could be done and was advised to arrange his estate. A few days later he was taken ill with a severe infection of grippe. He was confined to bed for several days. A few weeks after he recovered he called to see the physician again and was informed that, beyond a doubt, there had been a considerable decrease in the size of the tumor and there was evidence of healing. In the course of a few weeks the growth had entirely disappeared and the patient died subsequently of other intercurrent condition. It seems to me advisable to report this case, in the belief that toxins of bacteria or infections other than those caused by *Streptococcus* or *B. prodigiosus* may at times be instrumental in the cure or treatment of inoperable sarcoma.

DR. W. DUFFIELD ROBINSON, Philadelphia: I employed Coley's serum in a case of extraperitoneal sarcoma and had tried everything else I could think of and all had failed absolutely in doing anything, but the Coley serum had the most remarkable control of pain. The young man required 1 1/2 grains of morphin every hour or two; on the second day after beginning the treatment the morphin was reduced to 1/4, at the end of two weeks 1/12 grain three times a day. He was made much more comfortable and improved in many ways, but eventually died. Coley changed the serum at different times according to his ideas of the condition present. The entire treatment was under Coley's supervision. The other case was sarcoma of the neck and jaw. This patient was taken to the hospital and treated under Dr. Coley's supervision without result, except for controlling of pain. It failed entirely, although the serum was crowded to the maximum dose. Operation was done and the man has a recurrence now.

DR. O. P. JOHNSTONE, Pittsburg, Pa.: I have used Coley's fluid in two cases of sarcoma; one, a typical large spindle-celled sarcoma of the palate, had been operated on three times the previous year, with recurrences. After the third operation I recommended a trial of Coley's fluid, and it was given every day for three months. It is now a year since the last operation and there has been no recurrence. In the second case, a spindle-celled sarcoma of the skin, operated on a year ago, could not be completely removed, sections from the edge of the portion removed still showing tumor tissue. Coley's fluid was given daily for eight months, and twice a week for the following four months. The wound healed nicely, and the skin around the wound where the sarcoma tissue was left appears normal. The girl has increased in weight and appears perfectly well a year after the operation.

Plague Infected Wood Rat.—The discovery of a wood rat (*Neotoma fuscipes ancetens*, Elliot), from Alameda county, California, on Oct. 17, 1909, infected with bubonic plague, adds a new link to the chain of plague, as it is believed this is the first plague-infected wood rat ever discovered. The wood rat may act as an intermediary in the transmission of disease to other mammals. The infection was found by Passed Assistant Surgeon G. W. McCoy of the laboratory in San Francisco (*Public Health Reports*, Jan. 7, 1910).

ANTIVENINS*

HIDEYO NOGUCHI, M.D.

NEW YORK

In order to understand the proper administration of antivenins we must first consider several fundamental facts concerning the main properties of snake venoms and their antitoxins.

PROPERTIES OF VENOMS

1. *Constituents.*—There are three principal groups of death-dealing constituents in snake venoms, namely, the neurotoxins, hemorrhagins and fibrin ferments. In the venoms of colubrine snakes the neurotoxins are the most important constituents, while the hemorrhagins constitute the chief toxins of all the viperine venoms. The fibrin ferments are present in the colubrine as well as the viperine venoms and vary somewhat with the species. These three groups of toxins may in most venoms be present in varying quantities, but some venoms contain almost exclusively the neurotoxins, or neurotoxins and fibrin ferments with but little hemorrhagin. Thus the venoms of the Australian snakes—*Pseudechis* and *Notechis*—contain all three constituents in fairly even quantity, those of the marine snakes only the neurotoxins, those of the Indian and African colubrine snakes chiefly the neurotoxins with a negligible amount of hemorrhagins. The venoms of crotaline snakes, including the rattlesnakes and pit-vipers of America and Asia, contain chiefly hemorrhagins, with secondary amounts of the neurotoxins and fibrin-ferments. The real vipers owe their poisonousness to hemorrhagins, and sometimes to powerful fibrin ferments in their venoms. The most deadly of all the true vipers are the Indian *Daboia* and *Echis*. The *Elaps* of America has a venom rich in neurotoxins.

2. *The Causes of Death.*—Death from snake-poisoning is due to various causes, according to the varieties of venoms introduced. The death from the cobras, *Elaps*, *Bungarus* and marine snake-bite is due to the paralysis of respiratory center. The fatal issue from the poisoning by the *daboia*, *Echis*, and Australian snakes is due either to a rapid intravascular thrombosis or to secondary poisoning or infection resulting in marasmus. In cases of rattlesnake or any other crotaline snake-bite death is caused by occasional hemorrhages in vital organs or by a setting in of secondary poisoning resulting in cachexia or septicemia. In excessive absorption of these venoms death may result from the effects of neurotoxins also. The most distinctive of venom toxication in the crotaline bite is the extensive local disturbances produced by the hemorrhagins; this local effect is highly important in considering all the viperine and crotaline poisoning.

3. *Fatal Dosage.*—The minimal fatal doses of different venoms can be accurately determined by animal experimentation. But this is influenced by the mode of introduction of snake venom into the animal body. Thus in case of neurotoxic venom there is but little difference in the final result whether it is introduced directly into the circulation or under the skin. On the other hand, the minimal lethal dose of fibrin ferment containing venoms is very much smaller when injected into the circulation than when introduced subcutaneously, the greater part of the toxic ferment being absorbed in the neighborhood of the injection site. This is also true

* Read in the Section on Pharmacology and Therapeutics of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

of the hemorrhagin-containing venoms. The minimal fatal dose of crotalus venom, for example, is several times smaller when given intraperitoneally or intravenously.

4. *Hemolytic Properties.*—Hemolytic principles of venom play no important rôle in the fatal issue.

5. *Specificity of Toxins.*—Specificity of toxic constituents of venoms of various species of snakes is very important in considering the questions of antivenins. It has been established since the investigations of Mitchell and Reichert that different venoms are different in their pharmacologic and chemical properties.

VARIETIES AND PROPERTIES OF ANTIVENINS

But the knowledge of specificity has recently gone much further mainly through the aids of antivenins. The recent studies demonstrate that not only the venom as a whole, but also the apparently similar toxic constituents of different venoms, are not identical. Thus, the neurotoxins of the cobra are not the same as those of *Bungarus* or *Pseudechis*. The hemorrhagins of the rattlesnake is different from those of *Ancistrodon* or *Lachesis*. The fibrin ferment of the daboia venom is entirely different from that contained in other species of snakes. Hemolysins are also specific. This fact is extremely vital in employing antivenins as therapeutic agents.

6. *Varieties.*—There are seven different specific antivenins produced.

Cobra antivenin (Calmette, Lamb).
Crotalus antivenin (Flexner and Noguchi, McFarland).
Moccasin antivenin (Noguchi).
Lachesis antivenin (Brazil).
Crotalus terrificus antivenin (Brazil).
• Trimeresurus antivenin (Kitashima, Ishizaka).
Daboia antivenin (Lamb).

Calmette's antivenin is produced by using several venoms and is a polyvalent one, although its action on other than cobra venom is rather feeble. McFarland's antivenin was also a polyvalent one, though not very strong.

7. *Specificity of Antivenins.*—Antivenins contain multiple antibodies or antitoxins corresponding to the number and varieties of toxic constituents contained in a given venom. There may be present antineurotoxins, antihemorrhagins, antifibrin ferments, antihemolysins, etc. But their action is highly specific—that is, the antineurotoxin of cobra antivenin cannot neutralize any other neurotoxins but the cobra neurotoxin. The antihemorrhagin of lachesis antivenin is effective only in neutralizing the corresponding hemorrhagin. The hemolysis or fibrin ferment of daboia venom are not affected by the antifibrin ferment or antihemolysin of other antivenins.

8. *Standardization of Antivenins.*—In the therapeutic application of antivenins their specificity must first be respected. The methods of standardization of antivenins are different according to different investigators. With cobra antivenins the only reliable method is to resort to animal experiments. Calmette chose the rabbit, giving the antivenin and venom simultaneously into the marginal vein. Myers preferred the mouse, giving a mixture of the venom and antivenin which had been left in contact for a few hours, administered intraperitoneally.

With crotalus antivenin Flexner and Noguchi and Madsen and Noguchi used intraperitoneal injection of the venom and antivenin mixture into guinea-pig and rabbit.

With daboia antivenin Lamb employed rabbits and monkeys. The daboia venom cannot be used or tested

in the same manner as in cases of other antivenins, as it contains powerful fibrin ferments. The strength is estimated by using the mixture of the antivenin and venom (*in vitro*) or by observing the anticoagulating power on the citrated blood plasma *in vitro*.

With trimeresurus antivenin Kitashima employed several laboratory animals.

9. *Therapeutic Dosage of Antivenins.*—This depends on the quantity of venom that may be introduced by the bite. We require that quantity of antivenin which neutralizes a maximum quantity that a snake can inject. Three important snakes can yield at one time the following doses:

<i>Naja tripudians</i> (Cobra)	0.2 — 0.35 gm. (dried)
<i>Crotalus adamanteus</i>	0.2 — 0.3 gm. (dried)
Daboia	0.15 — 0.25 gm. (dried)

The cobra antivenin prepared by Lamb requires 200 to 350 c.c., that of Calmette twice as much (Martin and Lamb).

The crotalus antivenin prepared by Flexner and Noguchi requires about 100 to 150 c.c.

The daboia antivenin prepared by Lamb requires about 150 to 250 c.c.

These quantities of antivenins appear enormous, but here come in some important factors to alter the matter. The resistance of man to these venoms, and the possibility of unfavorable conditions that may prevent snakes from injecting the maximum quantity of venom are the chief ones.

From animal experiments we can approximately estimate the minimal lethal dose of different venoms for man. Thus, according to several authors, one obtains the following data:

Cobra 0.015—0.0175 gm. (Lamb)
0.01 (Calmette).
0.031 (Frazer).
Daboia 0.06 (Lamb).
Crotalus 0.15—0.20 (Noguchi).

Under favorable conditions only the maximum quantity of venom may be injected by a snake, but this is not always the case. Especially the bite of *Crotalus* seldom destroys human life (Mitchell).

Supposing that a bite is inflicted by a cobra or any other venomous snake and the person receives a quantity of the venom little over the human tolerance. This excess may be so small that a few vials of antivenin may neutralize it and save the victim from death. This is very important in encouraging the use of antivenins whenever available. From animal experiments we know that the animals which survive acute poisoning with cobra or daboia recover rapidly without sequelæ. This is also true in human cases. The persons who escape death within the first few days usually recover soon.

Another factor is the favorable effect of a ligature in case of the daboia bite. The venom causes a quick intravenous thrombosis and prevents the absorption of the rest of the venom into the general circulation. Here we have ample chance to derive benefit from the administration of antivenin.

In crotalus poisoning death never occurs so rapidly and we also may expect much benefit from its antivenin.

All the antivenins should be administered intravenously or intramuscularly. In case of crotalus poisoning by *Crotalus* it is advisable to inject the antivenin both around the wound and intravenously.

In the future we must strive to produce much stronger preparations of antivenins than hitherto. At the Rockefeller Institute we now have several large animals under immunization with the venoms of the rattlesnake and water moccasin.

In closing I may add that in the southern isles of Japan the trimeresurus antivenin has been freely used and the statistics indicate a sudden fall of the mortality among the persons bitten by this formidable reptile.

The benefit of any antivenin is naturally greater when it is administered promptly, and none is to be injected unless the specificity is respected.

Rockefeller Institute for Scientific Research.

ABSTRACT OF DISCUSSION

DR. JOSEPH MCFARLAND, Philadelphia: Against how many fatal doses of erotalus poison has 1 c.c. of the antierotalus serum been able to protect and what kind of serum was used?

DR. H. NOGUCHI: Twelve doses to 1 c.c. injected intraperitoneally; the serum was goat serum.

DR. MCFARLAND: Sheep serum is better.

DR. JOHN A. VAN VALZAH, Daytona Beach, Florida: But how soon would the poison act after the subject was bitten by a snake?

DR. NOGUCHI, New York: In a human case? Very little experience has been had. One of the assistants in the laboratory was bitten in the little finger. After about five or ten minutes he became nervous and the finger felt painful. Permanganate of potassium solution was injected freely, but the patient became depressed and the swelling went up his whole arm within twenty-four hours. Eventually he recovered. This was in the days before the antivenins were employed.

ANTIRABIC VIRUS

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Antirabic virus or vaccine, as used in the Pasteur treatment for the prevention of rabies or hydrophobia in exposed persons, consists of the spinal-cord material of rabbits which have died from rabies (or have been killed just before its termination), which has been induced by the subdural inoculation of the fixed virus of this disease. This fixed virus is obtained by the serial passage of the rabies as met in Nature (as, for instance, in mad dogs), through many successive rabbits. By this procedure it acquires finally a virulence which for any given strain of virus is fixed, and the incubation period of the disease caused by it in animals is uniform. At the same time its pathogenic properties have been modified so that it is less capable of causing rabies if inoculated subcutaneously.

In Pasteur's method of treatment, the spinal cord of the rabbit is dried for a time over caustic potash, at a temperature of 23 C., the result of this treatment being that the cord gradually loses its virulence, this so-called attenuation being probably a numerical decrease of infective units rather than a qualitative change. In inoculating persons who have been bitten by rabid animals those cords are administered first which have been dried so long that their infectious properties have become lost, and then on successive days cord is administered which has been dried for a shorter and shorter time, and which is consequently of increasing potency.

The virus or vaccine consists then of the spinal cord material of the rabbit, plus the micro-organism of rabies and its products, artificially modified as to its pathogenic properties.

It is administered subcutaneously, after being emulsified by rubbing up in a mortar, with a bland fluid such

as physiologic salt solution or bonillon. The anterior abdominal wall is the most suitable site for inoculations. The treatment lasts from two to three weeks, according to the formula adopted by the institution providing the treatment, and is usually modified according to the severity and site of the injury. Injections are given daily.

The immunity thus induced is of the "active" type, the patient producing in his own body the "antibodies" necessary to prevent the pathogenic effect of the rabies virus with which the person has been accidentally inoculated. These antibodies are demonstrable in the blood of immunized persons or animals. This immunity is comparable, therefore, to that induced by smallpox vaccine against smallpox, and is entirely different from the passive immunity conferred against diphtheria, by the injection of antidiphtheritic serum. Reference to antirabic virus or vaccine as a "serum" is evidently incorrect.

It has been shown that this virus, like that of smallpox vaccine, is uninfluenced as to its potency for some time (at least three or four weeks) by immersion in neutral glycerin, or by the presence of small proportions of other antiseptics (trichresol, phenol). Advantage has been taken of this fact, and the virus may now be sent to distances from the laboratory where it is prepared, by conserving it in this manner, and be fully potent when used, provided that too long a time has not elapsed since its preparation and that it has been kept cool during transit. Deterioration is less rapid when the virus is preserved in bulk than when it has previously been emulsified.

Antirabic virus has no favorable influence on hydrophobia, once the disease has developed. Its beneficial effects are solely prophylactic and are rendered possible only by the fact that the average incubation period of rabies is relatively long.

Since the introduction of prophylactic inoculation by Pasteur many modifications in details have been introduced, the principle remaining the same. A detailed description of these modifications cannot be given here. What has been said applies to the most commonly used method of immunization with desiccated cord.

The treatment fails in cases in which the incubation period is too short to allow the necessary time for immunity to develop, in cases in which it is resorted to too late, and in those rare cases in which, from unexplained peculiarities of personal make-up, the individual is incapable of producing antibodies. These failures amount to less than 1 per cent., whereas in untreated persons who have been exposed the mortality has been variously estimated at from 5 per cent. to 20 per cent. or more. Variations in mortality statistics are due largely to the preponderance or small number of serious or belated cases in different regions. The bites of mad wolves, as in portions of Russia, give a mortality in untreated persons which often reaches 50 or 80 per cent., because the injuries are very severe and likely to be about the head and neck.

Pasteur treatment is now available at some twenty or more institutions in the United States,¹ and may be obtained from the Surgeon-General, United States Public Health and Marine-Hospital Service, on application by health officers having moderate laboratory facilities for administration under their supervision.

1. For a list of these see the publication *The Prevalence of Rabies in the United States*, by the United States Public Health and Marine-Hospital Service, Washington, 1909; also *THE JOURNAL A. M. A.*, Sept. 25, 1909, lili, 989.

ANIMAL EXPERIMENTATION AND CANCER*

JAMES EWING, M.D.

NEW YORK

"The humanity which would prevent human suffering is a deeper and truer humanity than the humanity which would save pain or death to animals."—Charles W. Eliot.

Contrary to current ideas, cancer seems to be as widespread as are animal species. Although numerically more common in man, the statistics of Fröhner,¹ Sticker² and Semmer³ show that from 5 to 8 per cent. of sick dogs suffer from cancer; that the mortality from tumors among pet dogs is surprisingly high; and that it is probable that the later periods of canine existence are even more afflicted than are similar periods of human life. In horses, swine and cattle, tumors are much less frequent, but particular forms of cancer, as melanoma in the horse and cancer of the eyelid in cattle, are relatively common. In birds lymphoma is a common and fatal form of malignant tumor, while some varieties of cancer have been recorded in nearly every organ of the body. In mice and rats the recent search for tumors for experimental study has revealed the rather frequent occurrence of tumors of the breast and other organs, as well as many cases of multiple tumors of various sorts in the same animal.

Passing from domesticated to wild animals, there appears to be a sharp fall in the incidence of cancer. Yet this gradation is sharply interrupted by an epidemic disease, probably cancer, occurring in artificially bred trout. In the Auckland Society Trout Hatchery, Bonnett⁴ reports the occurrence of as many as 3,000 cases in four months. In pelagic fish the observations collected by the Imperial Cancer Research Commission show that cancers are not wanting in fish living under natural conditions, while bony tumors in certain fish are so common that W. Bell⁵ once supposed that such conditions were constant and normal.

Descending even to the reptiles and amphibians, we find cases of cancer of the testis in the giant salamander recorded by Pick and Poll,⁶ thyroid adenoma in the tortoise, cancer of the kidney and other growths in frogs (Bashford⁷), and many tumors in salamanders and lizards (Plehne⁸). Thus the study of cancer has a universal biologic interest. No other disease presents an equal scope, and the dignity of cancer research appears in its true form when one considers that its results apply for all time to all orders of living animals, possibly even to plants.

The frequency of most diseases varies in different periods of their history. Smallpox, once an ever-present scourge, is now comparatively rare. Tuberculosis, always abundant, has steadily been reduced in frequency.

The declining incidence of these diseases is an important factor in judging of their hygienic significance. If cancer is steadily declining in frequency, or likely to do so, its importance as a human problem diminishes.

The weight of evidence to-day points almost conclusively to the opinion that cancer is steadily increasing in frequency in man and domestic animals and that this increase is likely to become more pronounced. Yet the most diverse opinions exist regarding the alleged increase in cancer, emanating from the varying character of the evidence assumed by different authorities as valid. Surgeons are practically unanimous in the belief that cancer has been steadily growing in frequency during the last quarter-century and has been appearing at earlier periods of life. Yet such testimony must be regarded as somewhat uncertain and unconvincing. Riechelmann⁹ has shown that in the Berlin hospitals 20 per cent. of the cases of cancer demonstrated at autopsy were not recognized during life, and, since the diagnostic skill of Berlin physicians is probably above the average, there is still room for a 20 per cent. increase in the cases of recognized cancer from improved diagnosis alone. Cancer is a disease chiefly of the third to fifth decades of life, and it is, therefore, obvious that the improved hygiene of youth permits an increasing proportion of persons to live to adult life and thus reach the cancer zone.

These facts should be borne in mind in reviewing the statistics drawn by Williams¹⁰ from the Report of the Registrar General of England.

CANCER IN ENGLAND AND WALES

Year.	Total deaths.	Cancer deaths.	Proportion to population.	Proportion to total deaths.
1840	359,687	2,786	1-5,646	1-129
1850	368,995	4,966	1-3,579	1- 74
1860	422,721	6,827	1-2,915	1- 62
1870	515,329	9,530	1-2,361	1- 54
1880	528,642	13,210	1-1,946	1- 40
1890	562,248	19,433	1-1,480	1- 28
1900	587,830	26,731	1-1,207	1- 22
1902	535,538	27,872	1-1,183	1- 19
1904	549,784	29,682	1-1,138	1- 18
1905	520,031	30,221	1-1,131	1- 17

Thus from 1840 to 1905 the cancer deaths in England and Wales rose from 1 in 129 deaths from all causes to 1 in 17. In the registration area of the United States very similar figures are obtained, the cancer deaths rising from 63 per 100,000 living in 1900 to 72 per 100,000 living in 1906. The frequency of the disease may be better appreciated from the computation that in England of those living at the age of 35 years one man in eleven and one woman in eight dies of cancer. Future ratios we are perhaps not warranted in forecasting. In England cancer is already a more fatal disease for women than is consumption.

Are there any general hygienic factors in sight which may limit the cancer death-rate? On the contrary, statistics show that sanitary measures, which control the infectious diseases, exercise no such power over cancer, which is somewhat conspicuous by a relative failure to attack the poor, the overworked, the underfed, and the savage, but chooses a notable proportion of its victims among the well-to-do, the well-nourished, the well-protected against infectious diseases, and the indolent. Cancer is a growing penalty on a one-sided civilization. It has as yet no place in sanitary science. The most conservative estimate must, therefore, admit that the situation in regard to cancer is ominous. This disease is the greatest of all physical evils in the higher animal king-

* This article is one of a series issued in pamphlet form by the Council on Defense of Medical Research of the American Medical Association for circulation among the public. Eight of these pamphlets are now ready or on the press, taking up the questions of ethics, diagnosis, cancer, vaccination, the live stock industry, tuberculosis, rabies, typhoid, etc. An editorial survey of the series appeared in THE JOURNAL January 1 and a list of the pamphlets, with prices, was given on advertising page 8 of that issue.

1. Fröhner: Statistische und casuistische Mittheilungen über die Vorkommen und die chirurgische Behandlungen der Geschwülste beim Hunde, Monatsh. f. prakt. Tierh., 1894, vi, 79, 111.

2. Sticker: Arch. f. klin. Chir., 1902, lxx, 616.

3. Semmer: Lehrbuch der allgemeinen Chirurgie und Operationslehre (Möller), 1893.

4. Bonnett, cited by Pick: Berl. klin. Wehnschr., 1905, xlii, 1435.

5. Bell, cited by Williams: Natural History of Cancer, Scientific Reports, Imperial Cancer Research Fund, 1904, i, 7.

6. Pick and Poll: Berl. klin. Wehnschr., 1903, pp. 518, 546, 572.

7. Bashford: Scientific Reports, Imperial Cancer Research Fund 1904, 1.

8. Plehne: Ztschr. f. Krebsforsch., 1906, iv, 525.

9. Riechelmann: Berl. klin. Wehnschr., 1902, xxxix, 728, 758.

10. Williams: The Natural History of Cancer, New York, Wm. Wood & Co., 1908.

dom and its unhindered ravages constitute a stigma on human intelligence which is not the less genuine because cancer is the most obscure and comprehensive problem of biology.

Thoughtful persons may well ask what science has done and what it is proposing to do for cancer.

In the first place, science—and exclusively medical science—has written the natural history of cancer. How it was accomplished has been told by Wolff¹¹ in a volume of 750 pages in which the labyrinth of detail, depicting the varying conflict of truth and error, does not obscure the magnitude of the task, the volume of labor expended, or the fascination of the narrative, which covers 2,000 years of human history. In this story, one is impressed by the fact that cancer research has been strictly limited by the progress of collateral sciences, and that the real progress of our knowledge has been contributed by relatively few men whose work was wholly beyond the reach of the public ken and whose results were depreciated or ignored by a considerable portion of the medical profession of their day.

The natural history of cancer has been very fully written, and to the surgeon belongs the credit of making practical use of this knowledge. The wisdom of an early recognition and complete removal of cancer by the knife is a lesson that has been thoroughly learned. Yet cancer is on the increase, and it must be seriously doubted if the earlier recognition of the disease and more effective removal will ever succeed in greatly reducing the mortality from its present figures. From the operating surgeon the cancer patient can hope only for an earlier resort and more frequent submission to the knife, and it is doubtful if this prospect has been any more abhorrent to the patient than to the surgeon.

Cancer research also up to 1900 has offered little encouragement to the victim of the disease. The systematic study of the cancer process, having vainly exhausted its energy in the parasitic theory, had fallen into a state of hopeless inertia. Medical science had branded this field as fruitless. Laboratory workers who were looking for results turned with dismay from the uninviting prospect. But in 1902 cancer research sprang into intense activity. New ideas riveted the attention of laboratory workers on this subject. Local, national and international societies were formed for the study of cancer along new lines. Broadly organized institutions supported by enlightened governments, universities, and men of means, were established in England and Germany for the systematic pursuit of the new themes. Medical literature abounded with contributions in the new field, and two new journals were shortly established, devoted exclusively to this work. The change has been almost instantaneous and constitutes nothing short of a revolution.

What influence has been capable of bringing about such a change? It was the introduction of animal experimentation into the study of cancer.

The idea of transplanting cancer from one animal to another was not new. Peyrilhe¹² tried it about 1780, when France was not ready for such work. Surgeons had long recognized that they never contracted cancer during operations in such cases, and Alibert¹³ found that he could not inoculate himself or his assistants with the disease. Scores of observers had wholly failed in many attempts to transfer the disease from one animal

to another, so that it was generally accepted that cancer was not inoculable. Yet in 1889 Hanau's¹⁴ report of the successful transfer of an epithelioma from one rat to another excited much passing interest in Germany. In the same year, in France, Moreau¹⁵ had very definite success in eight out of ten mice inoculated with a carcinoma of a mouse, and by 1894 he had carried this tumor through seventeen generations, making the first experimental observations on the influence of gestation and heredity on tumor growth. It was not until 1901 and 1902, when Loeb¹⁶ in America and Jensen¹⁷ in Denmark reported their systematic studies of transplanted cancers in rats and mice, that the great importance of this work became recognized. It was now seen that it was possible by animal experimentation to study the growth of tumors under the exact conditions of a laboratory experiment. The same methods which had proved successful with smallpox, cholera, diphtheria and tuberculosis were now made available for cancer research.

Accordingly the experimental study of cancer has been taken up energetically in England, Germany, France, Austria, Japan and America, with the result that in five years new facts of first importance have been demonstrated and the entirely new field of cancer immunity has been thrown open. It is too early to place a final estimate on the true value of many of these facts, but present indications point out some of the results as most significant and as revealing the revolutionary influence of the experimental study of cancer.

1. In 1862 Virchow¹⁸ stated that no human being could define, even under torture, exactly what a tumor was. To-day we know, at least for cancer, that the final criterion is the capacity of a tumor cell to maintain an independent existence when transplanted into an animal of the same species, and this test has been successfully employed in several doubtful cases.

2. A sensational feature of the recent studies is the demonstration that cancer cells may apparently grow forever, if suitable environment be provided. The Jensen strain of mouse tumor has been transplanted through several hundred generations over a period of seven years and still shows undiminished vitality. There is good reason to believe that a certain sarcoma of dogs readily transmitted by coitus has acquired its very great infectivity by repeated natural transfers in this manner and thus constitutes a wholly new form of parasitism.

3. It has been shown that the conditions under which transplanted tumor cells will grow are extremely narrow, vastly more so than those governing the growth of bacteria. Haaland's cancer grew well in Berlin mice fed on milk, but when an attempt was made to transplant this tumor into Copenhagen mice of exactly the same species, but fed on carbohydrates, great difficulty was encountered. The slight difference in the diet sufficed to render the soil refractory. Such a result encourages the hope that it may prove possible to influence the growth of established tumors by practical therapeutic measures, although previously there seemed to be no ground for such a hope.

4. The question of the spontaneous cure of malignant tumors had long been debated and remained uncertain until such spontaneous regression had been repeatedly observed in transplanted tumors of mice, rats and dogs. This observation was so contrary to the well-established

11. Wolff: *Die Lehre von der Krebskrankheit*, Jena, 1907.

12. Peyrilhe, cited by Wolff: *Die Lehre von der Krebskrankheit*, p. 65.

13. Alibert, cited by Pianese: *Beitr. z. path. Anat. u. z. allg. Path.* (Ziegler's), 1896, Suppl. 1.

14. Hanau: *Arch. f. klin. Chir.*, 1889, xxxix, 678.

15. Moreau: *Arch. de. méd. expér. et d'anat. path.*, 1894, vi, 677.

16. Loeb: *Jour. Med. Research*, 1901, vi, 28.

17. Jensen: *Centralbl. f. Bacteriol. u. Parasitenk.*, 1903, xxxiv, 122.

18. Virchow: *Die krankhaften Geschwülste*, 1863, i, 3.

belief that malignant tumors never spontaneously regress that its occurrence in lower animals was at first vigorously denied, and only repeated demonstration compelled its final acceptance.

5. Most significant is the discovery that there is such a condition as immunity to cancer. Most animals that have recovered from tumors either spontaneously or after incomplete operation are thereafter immune to cancer. Not only may this immunity be established after spontaneous cure, but it has been artificially induced by inoculation with extracts of normal mouse organs and embryos. It is hardly possible to overestimate the importance of this discovery, since it at once takes cancer from a realm of baffling obscurity and places it in much the same position as the infectious diseases. The nature of this immunity is very complex. New methods must be devised for its study, but the possibility of perfecting these methods exists and solely as the result of animal experimentation.

6. After repeated transplantation cancers have been found to increase in rapidity of growth and in the capacity to survive transplantation; i. e., they acquire increased virulence. This wholly unexpected result, which might appear to be of no practical significance, has been used to produce artificial immunization, for by vaccinating an animal with a feeble strain of tumor from which it recovers, the animal becomes immune to the most malignant cancers. The principle of a preventive treatment of cancer has thus been disclosed.

7. Medical science has spent many years and much labor in the vain effort to discover a parasite of cancer. Even recently it has been feared that cancer patients were a menace to their neighbors, and that the houses of cancer victims should be burned. But the experimental study of tumors has greatly strengthened the view that cancer is not a contagious disease, that its exciting cause cannot be a readily transmissible parasite, and that the long-looked-for cancer parasite is the cancer cell. The field of research has, therefore, been narrowly defined, and it is not likely that the enthusiastic search for a specific cancer parasite will soon again assume the dominant position it once occupied.

8. The relation of heredity to malignant tumors has formed a vital chapter in cancer research, but based on the uncertain observations of family histories the most divergent views on this subject are extant, and exact knowledge about the nature of any hereditary influence in tumor growth is lacking. Are the offspring of two cancerous parents especially liable to develop the disease, and, if so, to what extent, and what course will the disease take? No one knows. Yet the early observations of Moreau bore directly on this subject, and in the short-lived mouse it is possible to devise experiments of reasonable time-span which will definitely settle some of these questions. In several laboratories such experiments are already well advanced, with preliminary results of great interest and importance.

9. The rational cure of established cancer in man remains a problem for the future. Mice have been cured by serum therapy, and in nine consecutive cases a malignant sarcoma in dogs has been cured by bleeding the animal and transfusing it with the blood of dogs immunized to this tumor. But the cure of advanced cancer in a human being presents many peculiar difficulties. It may be unsafe to make any predictions, but it is certainly legitimate to claim that the therapeutic principles established in lower animals will prove applicable in

some form to man for cancer as for diphtheria. Hence we may endorse the statement of Ehrlich,¹⁹ that the beginning of the end of the cancer problem is in sight. By the systematic pursuit of the principles of cancer growth and immunity already discovered by means of animal experimentation we may confidently hope to prevent some cancers, to check others, and greatly to reduce the incidence and mortality of this disease.

These are some of the practical results of the new era of experimental cancer research. From the standpoint of rational therapeutics the results of five years' work by the experimental method overshadow those of the thousand years preceding. Medical history offers no similar demonstration of the wisdom of absolute freedom for science in the use of animal experimentation. Thousands on thousands of fruitless efforts extending over at least a century were made to transplant tumors before a single definite success was secured. Yet it is said that needless repetition of experiments ought to be checked. Moreover, these results have not been reached without bitter controversy. Every step of the way has been energetically contested. Many loudly proclaimed that the experimental tumors of lower animals were not true cancers. Yet it is now known that every essential property of human cancer is exhibited by the cancers of mice, rats, and dogs. The immediate requirements of the practicing surgeon, and some theoretical burdens of the physiologist and biologist and of other scientists interested in cancer, have perhaps not been affected in a startling manner, so that in some quarters appreciation of the true value of this work may be slow. In the rear of every army of progress there is a scattered following of disaffected non-combatants, and modern cancer research has, therefore, been pronounced wholly fruitless by some uninformed persons.

To all critics, whether helpful or destructive, the answer must be that there is no prophet directing cancer research. No doubt posterity will be able to look back to the beginning of the twentieth century and point out that this or that piece of work was not in the direct line of progress. But here and now the most mature, although uninspired, human judgment says that genuine progress has been made into the dark domain of cancer pathology by means of the experimental method; that this knowledge could be acquired in no other way; and that these principles must be mastered before the cure of human cancer can be devised or attempted. Some critics seem to assume that the concentration of interest on the experimental studies has distracted attention from other equally important branches of the subject. But not the least valuable result of the experimental work has been the renewed impetus given, and the new view provided for the investigation of such topics as the inception of tumor growth, the laws of nutrition of tumor cells, and the influence of neoplasms on the body.

In view of the great significance of cancer for the animal kingdom, especially for man, and of the sudden transformation of the gloomy aspects of the problem wrought by the introduction of the experimental method into this field, what is the duty of the layman toward animal experimentation and cancer? Who may dare to lay obstacles in the way of this progress, or to obstruct the ray of hope that begins to shine for the victim of cancer? In America the workers in this and allied subjects look forward with confidence to the moral support of every intelligent person, and even anticipate that men of large minds and large means will come forward and adorn the land with one thoroughly organized and fully equipped institution for cancer research.

19. Ehrlich: *Arch. a. d. k. Inst. f. exper. Therap. zu Frankfurt a. M.*, Jena, 1906, p. 78.

THE DIAGNOSTIC IMPORTANCE OF EXAMINATION OF THE FECES *

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INTRODUCTION

At the present time when the medical laboratory men are following Ehrlich and Wright into the fourth dimension of medical science, when clinicians cry for a "dead-sure" test and when all demand nice, "new," clean work, it would seem a thankless task to spend fifteen minutes in talking about stool examination. I also would much prefer as subject the "complement fixation of this," "or the opsonic index of that," etc.; but a varied experience in clinical laboratories has taught me the importance of stool examination, and its growing importance now that functional diagnosis is rightly demanding more and more attention. While I was in charge of a clinical laboratory to which specimens were sent from all directions, many mistakes by physicians came to my notice, of which the following are a few illustrations: a strip of mucus was mistaken for a "decomposed tapeworm"; normal meconium was called blood; a roundworm six inches long was diagnosed as hookworm because it resembled a much-enlarged picture of *uncinaria*; solid fat was not recognized at all; soap globules and vegetable cells were called eggs, and eggs of harmless saprophytes were considered those of pathogenic parasites. But stool examination is fast assuming a new and very practical importance. Functional diagnosis is the subject of the future. We now no longer ask merely, "What is the matter?" but also, "How much is it the matter?" and to gain any idea of the functional ability of the stomach, bowel, pancreas and liver, the stools must be studied.

My paper is not so much for the general practitioner who is willing to remain ignorant of the difference between an antigen-amboceptor combination and a thermostable immune opsonin, but who does know mucus when he sees it, as it is for those younger than I who lose the valuable information which stool examination might give them.

In the following paper I shall speak only of those findings which are of value to the busy general practitioner, omitting those methods of investigation which are reserved for the clinical laboratory.

At the onset permit me to emphasize one test which is very important; in fact, is the basis of all stool-work; the determination of the number of hours required for food to pass from mouth to rectum. This is easily determined by giving the patient with breakfast about one dram of charcoal or a little carmine. These are easily recognized in the stool. In some groups of cases it is well to use this test as a routine, and the results are often interesting.

This test may be used to test the presence of the so-called "latent constipation." In this condition it is supposed that while there is a normal-appearing stool every day and, therefore, no suspicion of constipation, yet the intestine contains always the feces of two or three days instead of but one, and each stool is, therefore, the refuse of the third or fourth day before instead of the second. While I would not try to be positive I do not believe in this idea.

MACROSCOPIC EXAMINATION OF STOOLS

It is from the inspection of a stool that one gets the most information. How few physicians ever look at the stools of their patients! How many are content with the nurse's stereotyped description, e. g., "a moderately large, fairly well-formed stool."

In certain conditions the appearance alone of some (but not all) of the stools of some (but not all) patients suffering from these diseases is at certain stages (but not all) of these diseases sufficient for diagnosis. But because the appearance of all the stools is not diagnostic one should not refuse the aid occasionally given.

As a rule the patient needs no aid in making this diagnosis of constipation, but it is otherwise with those who think their periods of constipation normal and who complain of the brief periods of diarrhea. These persons illustrate the old and very true, if not strictly medical, French adage that "diarrhea is one of the best symptoms of constipation." The stools in this condition are rather characteristic, since in the fluid stool are seen flecks of mucus and small, hard fecal masses which are evidently broken off from impacted masses higher up which cause irritation and so the diarrhea.

In mucous colitis, mucus is passed with the stools, sometimes a few shreds, sometimes many and in some cases the stool consists of nothing but mucus. One patient recently passed nearly a pint of mucus in one stool. Some think that they have passed pieces of bowel. These strings of mucus should be searched for in all doubtful cases with abdominal pain. Unfortunately general practitioners too often fail to look for them, or do not appreciate their significance. The nature and the differences between mucous colitis and membranous enteritis, if differences there be, cannot be discussed here, but even the most conservative will admit that the nervous element in both is of great importance, while the most radical will maintain that, except in a few cases due to pelvic tumor, mucous colitis is always a purely functional neurosis. Over 95 per cent. of the patients are nervous women and should be treated as such and the local bowel condition left alone. Were their stools examined for mucus, very many of these women would escape operations for appendicitis, renal colic, floating kidney, gallstones, and ovarian troubles, one or each in succession, since the colic of mucous colitis can stimulate each of these troubles. During the past year there have come under my personal observation roughly two thousand nervous women, and the history some give is very sad. They have had from one to ten operations performed on their abdominal and pelvic organs, and yet give clear histories of mucous colitis antedating their first operation. I feel this so strongly that in all doubtful cases suggesting any one of the above conditions I question carefully for the history of mucous stools, and in case these are or have been present will consent to operation only when the indications of a local trouble demanding operation are very conclusive.

The rare and interesting condition of intestinal sand does not attract nearly as much attention as it deserves. Intestinal sand is the name given to the sediment of fine granules which sometimes settle in a fresh liquid stool. These granules are from 1 to 2 mm. in diameter, are dark red, green or black in color, are spherical or slightly irregular in outline, and very hard. They are often present in great abundance, even half an ounce in one stool. Examined chemically, they have been found to consist of the phosphates and carbonates of calcium especially, but also of magnesium, iron, etc. A little

* Read in the Section on Practice of Medicine of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

organic matter, fat, cholesterin, and also bacteria are present in them. In one case they consisted of calcium sulphate. Those I have examined chemically consisted of a little plug of epithelial cells impregnated with carbonate salts. When but a few granules are present there is often a question as to the correctness of the diagnosis. Pseudosand is common. This may be the seeds of small fruits, various food adulterations, and various vegetable structures. The lower power of the microscope would easily detect the difference, and yet raspberry and similar seeds (perhaps timothy-grass seeds) have been sent to use for diagnosis. Intestinal sand appears intermittently in the liquid stools of some nervous persons. It may or may not be associated with mucus. It is perhaps due to a secretory neurosis and has the same significance as mucus.

A definite colitis is usually indicated by the presence in the stools of pus- and blood-containing mucus. Whether or not there is increased frequency of evacuation will depend on the portion of the colon involved. Rosenheim has recently emphasized the relation between the portion of bowel involved and the symptoms. There is a form of colitis of the descending colon and sigmoid flexure especially, in which the stools are almost characteristic. Food is evacuated in from five to eight hours after ingestion. Its color, the test for bilirubin and the appearance of the muscle fibers and vegetable tissues on microscopic examination show that digestion in the small bowel is practically normal. The stools are soupy in consistency and contain many small masses of blood-stained mucus. On microscopic examination the red cells and leucocytes in the mucus cells are found to be in almost perfect condition. The stools are not very frequent, perhaps four or five a day, which is evidence of a normal rectum. This condition in one case now under observation has continued for over twenty years, without any periods of constipation, which differentiate it from the amebic colitis, and with little influence on the general health.¹

In cases of rectal carcinoma the stools are very frequent and contain much blood and some mucus.

In all cases the feces of mucus should be studied for amebæ.

In the case of children the stools of blood-stained mucus should always suggest the possibility of intussusception.

Acholic stools are usually betrayed by their clay color, soft consistency and foul odor. They mean obstruction of the common duct. But somewhat similar-appearing stools are passed by persons on a milk diet, or other diet rich in fat. The stools in a case of violent diarrhea may be colorless. In some cases the putty-like stools are due to bacterial fermentation which have changed the bile pigments to leucourobilin. In the latter case the color will return if the stool stand in the open air. Bile in abundance can often be extracted by alcohol and ether from a stool the appearance of which would suggest its absence. When a common duct obstruction is suddenly relieved the stool sometimes has a bright orange color, due to bilirubin which normally is never present in any amount.

Fatty stools may indicate several possibilities. Large amounts of fat are present in acholic stools and in those of a person on a milk diet or a diet including much cod-

liver-oil or olive-oil. The fatty stools of patients with diseases of the intestinal wall which prevent absorption, as tuberculosis or malignant diseases of the retroperitoneal lymph glands which blocks the flow of lymph are often of great aid in diagnosis. But true steatorrhea is present practically only in cases with total destruction of the pancreas and not always then. The fat of these stools resembles melted butter and hardens at once on cooling. The stools most characteristic of pancreatic disease are those described by Ury and Alexander. These are fairly solid and contain a great deal of visible fat, much muscle fiber, and are the stools of patients who are not jaundiced. But the large bulky, fetid, greasy stools, the volume of which seems out of all proportion to the amount of food eaten, which show signs of active fermentation and which contain gross masses of undigested meat and vegetables, are also very characteristic of deficient pancreatic fluid, and should be looked for in cases of malnutrition.

In pancreatic disease the inspection of the stools often gives very important information. In acute hemorrhagic pancreatitis an intractable constipation usually obtains at first; then, if the patient lives, a diarrhea which is just as intractable. The stools may or may not be acholic. In five cases from literature fat was grossly visible. In gangrenous pancreatitis a persistent diarrhea, sometimes with involuntary stools, is the rule. The movements are thin, copious, very fetid and in one case green, much resembling vomitus. In three cases abundant blood was present.

In abscess of the pancreas the diarrhea is very severe. The movements are profuse, watery, fetid, although in some cases they are solid and very offensive. In one fatal case there were over twenty movements a day. In one case there occurred a profuse hemorrhage, about 1,000 c.c., from the bowel. In only one case was fat recorded, while in several cases pus was grossly visible. In cases of pancreatic cyst the stools will depend on the injury the pancreas has suffered. The stools are usually normal, but in five a definite steatorrhea was present. The diarrhea pancreatica which accompanies the evacuation of the cyst through the bowel is especially interesting. Late in a case of chronic pancreatitis, diarrhea is the rule. The stools are pale in color, of offensive odor, contain much undigested food and sometimes rather large lumps of fat. Blood is sometimes present in the stools. In cancer of the pancreas the stools may be normal, but steatorrhea and azotorrhea often are present near the end. In 13 cases of calculus of the pancreas with subsequent atrophy, blood was present in the stools of 4, and fat in those of 3.

The tarry stools in cases of gastric and duodenal ulcer are characteristic of severe hemorrhage in the upper alimentary tract. One practically never sees really tarry stools in typhoid fever; in the most of these cases the blood is fairly bright. But the stools may be fairly black when the patient is taking bismuth subnitrate or after they have stood for a time in the air, if he is taking iron.

Gall-stones should always be searched for in the stools of a case of suspected gall-stone colic. The stool should be mixed with water and strained through a coarse mesh. Failure to find the stone may mean that the right stool was not examined, that the stone was soft and disintegrated in the bowel, or—and this is most important—that the colic is due to some other cause. In this connection should be mentioned pseudogall-stones. Of these the fat concretions are most important. These may be from a pea to a hazelnut in size and consist of fat of

1. At autopsy the colon from just above the cecum to the sigmoid was uniformly small, scarcely admitting the finger. Its mucosa seemed in the main replaced by scar tissue in which were innumerable small bleeding points. The patient died of carcinoma of the cecum. There was no evidence of tuberculosis or amebic dysentery.

high melting-point. They may follow a meal rich in pork fat, mutton-fat, tallow, etc., but the most are seen in the stools of a person taking much olive-oil. It is these pseudostones which give this oil its undeserved reputation as of value in helping the gall-stone to pass. Also masses of vegetable and especially of fruit tissue may appear as concretions and they are sometimes harder than gall-stones. It is well to split open a suspected gall-stone and to examine its fractured surface, or to dissolve a little of it in boiling alcohol and to obtain cholesterin crystals when the alcohol cools.

The curds seen in the stools of infants and of adults on the milk diet are usually said to consist of casein and are interpreted as evidence that milk is not well borne. But these "casein-curds" often consist of almost pure fat.

One never in a normal stool finds gross particles of meat, bread or potato. These may be present in diarrhea due to any cause, but if they are seen in a firm stool the evidence is in favor of pancreatic disease.

The normal stool may contain visible masses of soaps—the yellow masses of calcium soaps, and masses of colorless soaps.

The study of intestinal worms is of growing importance. The ordinary roundworm and links of the tapeworm are readily recognized. It is well to remember that decomposing tapeworm-links are practically never found in a fresh stool. That which suggests this diagnosis is almost invariably a string of mucus. To find the head of the worm it is best to shake up the stool in water and allow it to settle. All fragments of the worm will promptly sink to the bottom.

Tania solium is in this country an exceedingly rare worm. I know of but one certain case. But one is often tempted to make this diagnosis, since the over-ripe segments of the *Tania saginata* would appear to have a uterus with few coarse branches. An expert recently visiting the museums of some of our medical schools was able to find no specimen of *Tania solium*. Of thirteen specimens thus labeled, eleven labels were certainly incorrect and the other two worms were too decomposed for identification.

To find the smaller worms, the stool should be well spread on a porcelain plate. *Oxyuris*, contrary to popular belief, does inhabit the intestine as high as the cecum or even higher, and may be found in the body of the stool. *Uncinaria americana* and *duodenalis* can easily be differentiated under a dissecting microscope if one take trouble to examine the head and caudal bursa. The reason why adult trichinas and whipworms have not been found oftener is that they have seldom been looked for.

THE MICROSCOPIC EXAMINATION OF THE STOOL

This is really the only method which the clinician can use to judge of the functional ability of the digestive organs, since accurate metabolism work is impossible for him. But to form a correct estimate the patient must be on a special test diet. That to be recommended is the Strasburger and Schmidt diet. To examine the stool microscopically the particles to be examined should be selected with care. If the stools are mixed with water and spread on a plate the choice often is easily made. If not, the stool may be mixed with water in a glass jar. The mucus will tend to rise to the surface together with some of the vegetable tissue. Parasites' eggs will sink together with fragments of food, meat especially. From this water suspension may easily be selected particles for further study. The variety of

objects which may be found on microscopic examination of the stool is unlimited. It will depend on the food eaten, on extraneous matter eaten with the food, on substances contributed by the digestive organs, on the flora and fauna of the alimentary canal, and lastly on the extraneous matter which adds itself to the stool after it is evacuated. This means that the microscopist may run across almost anything. He should be able to recognize vegetable tissue in general, especially the common forms of fiber. Especially should he be able to recognize chlorophyll-containing cells. The spiral cells are easy to recognize; the guard cells of leaves have been taken for fragments of carcinoma. The thorns of the down on some fruits are often diagnosed as worm embryos, while single cells, spores, pollen, etc., are often mistaken for eggs. Unfertilized eggs often do look very much like vegetable cells. Muscle fibers with the cross-striation well preserved are easy to recognize, but those partially digested are more difficult. It is important to be able to judge roughly whether an unusual number of fibers have appeared in the stool and if they show signs of insufficient digestion, for the condition known as azotorrhea is important in the diagnosis of pancreatic disease. By this we mean the presence in a firm stool of an unusual amount of undigested muscle.

One who systematically examines stools will surely find many eggs and larvæ which he cannot recognize. The great wonder is he does not find these oftener. Two easy mistakes are thinking that the eggs of *Tyroglyphus siro*, or the flour mite, are those of *Bothriocephalus latus* and mistaking the larvæ of many dipteræ for the rather serious screw-worm. The number of dipteræ and other insects which have access to food and to the raw materials of which food is made is great. Here they lay their eggs or add their bodies to the dish. In the stool one finds eggs, larvæ, perfect insects, and fragments of these. But the insect contaminations of greatest importance are those which are added to the fresh stool if it is not carefully covered as soon as evacuated. Fortunately we can usually recognize these as accidental findings. If in doubt one can always refer the specimen to the experts at Washington. In general these extraneous saprophytes' eggs are larger than those of pathogenic parasites. But just as serious is the danger of interpreting vegetable cells and even some soap masses for eggs.

The work of careful men has shown what a large number of persons are the hosts of animal parasites. *Ascaris lumbricoides* was found in about 0.4 per cent. of all examined, *Oxyuris vermicularis* in 0.8 per cent., stronglyloid worms in 0.6 per cent., *Trichocephalus trichiurus* in 10.3 per cent., and *Uncinaria* in even 3 per cent. of all examined in some portions of the South. The eggs of *Ascaris lumbricoides* occur in large numbers in the stools of infected persons. When fertilized they are very characteristic, but the unfertilized eggs are often mistaken for vegetable cells. The eggs of *Oxyuris vermicularis* may be found in the stools, but more often in shreds of mucus on the surface of the stool and still more often in the scrapings from the margins of the anus. The eggs of *Uncinaria duodenalis* and *Uncinaria americana* are exceedingly important, since the anemia these worms produce is now recognized as a disease of national importance.

In searching for eggs the temptation is to pick out for examination a fragment of feces at random. But when in doubt the stool should be mixed with water, sedimented or centrifugalized and the sediment examined. It is often wise to give a dose of santonin or

thymol to aid in the search for worms. If an infection with *Strongyloides intestinalis* is suspected the stool should be placed in a dish, a small depression made on its surface, this filled with water and the stool left in a thermostat over night. If embryos are present they are easily found as eel-like worms actively swimming in this water. The eggs of these worms are seldom found in the stools. Of the protozoan parasites the various flagellata and ciliata are usually easy to find because of the commotion they make. *Amœba coli* is an exception to this. The stools, or better still the mucus which the eye of a rectal tube scrapes from the rectal wall should be examined while very fresh and, during the winter, before it has chilled. One examines the flecks of blood-stained mucus, if such there are; if not, the liquid portions of the stool. Definite ameboid motion, by which we mean the extension of a hyalin pseudopod from a granular endosarc, should be demanded. If in doubt the safest rule is always to discard the doubtful cell. One learns much now of the non-pathogenic *Entamœba coli* and the pathogenic *Entamœba dysenteriae*, and of the encysted stages of the latter; but for the clinician these terms are only interesting reading. If he finds a small ameba, without hyalin ectosarc, in the fluid part of the stool, not associated with blood and mucus, and in a case the symptoms of which are not those suggesting amebic dysentery, he may possibly be safe in calling it the harmless *Entamœba coli*. Fortunately, however, during acute exacerbations the amebas are often numerous, are found in flecks of blood-stained mucus and themselves often contain one or more red blood cells. Clinically cases of amebic dysentery are characterized by chronicity and the tendency to relapse. The cases of great importance are those of amebic abscess of the liver and yet in patients who give no history of dysentery. The stools of all cases of suspected liver abscess should be carefully examined.

Pus in the stools is seldom recognized grossly, but the mucus flakes clouded with pus cells are helpful in the diagnosis of ulcers low in the small bowel and colon. Red blood cells are usually seen in the mucus. From the condition of these red cells and the conditions of the leucocytes one can easily get an idea as to the source of the mucus. Charcot-Leyden crystals, if numerous, are important as suggesting an animal parasite.

Those who cling to the possibility of an autointoxication from the intestine are still making cultures of the stools for bacteria. As is well known, bacteria may make up even one-third of the dried stool. Many of these are dead and most cannot be demonstrated as alive by any of the common methods of investigation. These bacteria of the bowel contents may be classified as the normal flora, the harmless organisms accidentally swallowed with food, and those causing disease. Among the flora are *Bacillus lactis aerogenes* from the upper bowel, and *Bacillus coli communis* from the lower, *Bacillus subtilis*, *Bacillus alkaligenes*, and, for the suckling, *Bacillus bifidus*. Various thermophilic and acidophilic organisms may occur in great numbers.

Among the interesting pathogenic organisms which are frequently found are *Bacillus pyocyaneus*, the various staphylococci, streptococci, *Bacillus tetani*, *Bacillus aerogenes capsulatus* and *Bacillus tuberculosis*. That many of these pathogenic organisms, especially the streptococci and staphylococci, are almost normal flora, is seen by their almost constant presence in appendix abscesses and in the peritoneal pus in cases of perforation of the bowel. *Bacillus tetani*, *Bacillus aerogenes*

capsulatus, *Bacillus bifidus* and *Bacillus subtilis* are some of the important Gram-positive organisms which have attracted attention recently in cases of pernicious anemia. In cases of suspected tuberculous enteritis it is important to search for the tubercle bacillus. To fail to find it has but little value. In cases of pulmonary tuberculosis, bacilli may often be found in the stools. To search for this bacillus it is well to examine any particles of mucus which may be present, but to digest a stool is seldom profitable work. If one wishes to examine a solid stool, a small fragment is mixed with 1.5 c.c. of distilled water. To this is added 54 c.c. of a mixture of equal parts alcohol and ether, and it is centrifugalized for ten minutes. A smear is made from the sediment. Of course, one should test the bacillus as to its alcohol-fast as well as acid-fast properties.

In certain cases of intestinal fermentation it may be well to examine for *Bacillus bifidus*. The search of *Bacillus typhosus* by the use of the Drigalski-Conradi medium is seldom of practical importance in the diagnosis of typhoid fever.

CHEMICAL ANALYSIS

The chemical analysis of the stool is seldom of any practical importance in the hands of clinicians, but the detection of occult blood in the stools is a marked exception and should always be tested for in doubtful gastrointestinal cases. Even the fresh blood accompanying a firm stool and ascribed to hemorrhoids is of importance, since there is evidence that these repeated small bleedings may lead to severe anemia. Blood in any amount from the cecal region or colon is discharged red and fluid, but blood in small quantities from even the colon, or from the small intestine, is usually mixed with the feces and can be detected only on chemical or spectroscopic examination. A great deal of interest, and rightly, is now centered on the minute traces of digested blood found in the stools in malignant disease or ulcer of the stomach. The idea is that a constant trace is suggestive of cancer, while in ulcer there are periods with much blood present and then periods with none. Since tests are also given by all hemoglobin-containing and some by chlorophyll-containing foods, and all by some medicines, the patient should be on a diet of milk, bread and eggs, the limits of which diet-period are sharply marked by charcoal. The turpentine-guaiac test is given positively by too many foods, and so the aloin test is preferred because of its delicacy and because it is not given by chlorophyll or urobilin. This test too often fails to show blood with tuberculous ulcers of the bowel, while in chronic passive congestion blood is usually present. This test has proved of greatest value in the diagnosis of gastric carcinoma and in the differential diagnosis between ulcer of the stomach and nervous gastralgia. But in the case of gastric carcinoma I do not think it is as important as the test for blood in the gastric contents.

I believe that the bilirubin tests also have practical clinical value in the diagnosis of the location of a bowel trouble, whether in the colon alone, in which bilirubin cannot be detected in the stools or in the small bowel also, in which cases it will be formed. Schmidt's test is easy and satisfactory.

Microscope-stage chemistry is often valuable, and is easy for one practiced in that technic. One forms an idea as to the amount of muscle fibers digested, and readily distinguishes between mucus and vegetable tissue. Fatty acid crystals are seen as short, delicate curved needles which are clustered in thick masses. These are dissolved on warming and in ether. Soap may

be present in yellow masses of calcium soaps, in colorless masses and in long needles in clusters or fans, or as short, plump crystals or scales. The most of the crystals one sees are soaps. Soaps are not soluble in ether but are in water. One of the best tests for soaps is to warm the stool on the slide with a drop of acetic acid and watch the crystals of fatty acid crystallize out. The droplets of neutral fat are soluble in ether and give the Sudan III test. But droplets are seldom seen unless there is a great increase in the stool. Hawes² has shown that an increase of visible fat under the microscope will certainly mean an increase of fat in the stool, but there may be an increase of the total fat without any visible evidence of it. An easy way to test the presence of fat in the stool is to press a portion under a cover-glass. If the portion selected be mucus or vegetable tissue the glass, when released, will spring back and air will rush in under the cover from all sides. If fat, the glass will stay down.

Starch granules are easily recognized by running a drop of Lugol's solution under the cover-glass.

Both pepsin and trypsin may be demonstrated in the stools in a case of diarrhea. The detection of trypsin has again recently attracted attention.

ABSTRACT OF DISCUSSION

DR. HENRY F. HEWES, Boston: Many men turn away from work on the feces because they claim the new methods of examination are so difficult. As a matter of fact, it is a very simple matter to make an examination of feces if time is taken and ordinary apparatus be at hand. It is much easier to obtain feces than it is to obtain the gastric contents. It is a common thing to have referred to me patients with intestinal trouble of a year's duration who have never had their feces examined. I think I have saved at least ten such individuals from the surgeon's knife, from an operation for appendicitis by examining the feces and finding mucus. There should be more study of the food elements and a determination of the functional conditions. A common objection to this is that it entails the giving of a test diet and patients will not take the test diet because it means from two to three days' deprivation of their ordinary meals. Of course, when we want to be accurate the test diet must be used. But if the observer has much experience of feces examination he can draw his conclusions from the feces of any simple diet and need not keep to the strict test diet. For example, if a sufficient amount of fat is taken and if there is much disturbance in digestion or absorption of that fat there will be some evidence of it whatever the diet and one can judge pretty accurately whether there is a disturbance of fat digestion or absorption causing a failure of nutrition. I do not think that any difficulty in giving the test diet should stand in the way if one takes a little trouble. Take a microscope and examine the feces and learn what food has been taken; if one is familiar with the feces one can soon learn to note variations from the normal for the amount and character of the food taken in any given case. Certain methods should be used in a routine way in all cases in which there is any question, and these methods can be carried out perfectly well by the general practitioner in his office. It is easy to obtain feces and it is easy to learn without special instruction how to examine the feces and to recognize elements as they appear normally or in pathologic conditions; but the physician must stick to his work for a month or two until he familiarizes himself with the normal feces and learns to recognize abnormal elements.

DR. GEORGE DOCK, New Orleans: I have practiced the same methods for a long time and I can confirm every thing that has been said about the value and practicability of such an examination. There are one or two practical difficulties in the examination of stools that I have encountered which may be worth mentioning. As Dr. Hewes has just stated, the exam-

inations are best made in the office; the more recent the stools the better. It is surprising how many persons can produce a stool at command. One can get a stool almost as easy as he can get a sample of urine in many cases. By placing a flat dish or a developing tray under the seat of a closet one can get a stool without urine. If the patient cannot have a stool at command give him a glycerin suppository. But in some cases stools must be sent. It is as important that the patient should be told how to prepare and send the stool as it is to tell him how to send a specimen of sputum. The ordinary method of obtaining a stool in an ordinary chamber and then decanting it is open to criticism. The stool should be brought to the physician in as natural condition as possible; the best thing to use is a so-called granite custard dish. Formerly I used a photographic developing tray, but the dish is cheaper and better and the stools can be kept fresh with a lid. Next to that is the ordinary fruit jar. Another point I wish to speak about is the great objection many have to examine stools; the general practitioner speaks of the disagreeableness of this sort of work. That is an individual's opinion of course. I have found, as a general thing, that the examination of a pathologic stool is no more disagreeable than the examination of sputum or stomach contents. An examination of a normal stool, however, is more disagreeable. The more pathologic the stool is the less repulsive is it. If one will practice examinations of stools, doing the actual work, not only will he find out much diagnostic information, but will be surprised to see how easy a matter it is and how few real technical difficulties there are.

DR. DAVID L. EDSALL, Philadelphia: A point of importance in regard to the test diet is its value in comparing one case with another; but to use the test diet as the only method of examination overlooks another very important point. What we want to know is how the patient digests the food taken in his ordinary diet; hence I think the most important thing in determining the condition of a patient so far as examining the stools is concerned, is to examine the stools when he is on his ordinary diet. It is easy in this way, as a rule, to determine whether fat, protein or carbohydrate is causing disturbance in the amount and kind of food that the individual has been taking. If we simply use the standard test diet which ordinarily differs very much from what the patient has been in the habit of taking, we often do not determine what is wrong in his manner of life. Another thing which has not been mentioned I have found extremely helpful, namely, observing the extent to which the stools ferment. It is easy to do this by simply keeping a stool in a closed jar at room temperature for from twelve to twenty-four hours and observing what degree of fermentation occurs, and the result often helps clearly in determining whether the symptoms of fermentation are due actually to abnormal degrees of fermentation in the bowels or whether the flatus and other similar symptoms are due to neurotic disorders of peristalsis, etc. It helps also in outlining the diet and in determining the degree to which improvement is taking place. As to the question of mucus I feel positive that there is a strong tendency to make too much of this unless very abnormal amounts are present. Patients readily get terribly hipped about the presence of a small amount of mucus in the stools. Small amounts usually mean nothing except that there is some slight source of irritation and, probably, that Nature is making an effort to limit this irritation by protecting the bowel wall with mucus. One common and important cause of the persistent presence of mucus in the stools is the more or less excessive use of purgatives; many cases of so-called mucus colitis are merely purgative colitis and not a disease. In a large proportion of instances getting the patient to stop the use of purgatives by means of diet and other normal measures will cause the mucus to disappear from the stools entirely.

SIR JAMES ALEXANDER GRANT, M.D., Ottawa, Canada: I have listened with pleasure to the paper and discussion on the diagnostic importance of examining the contents of the alimentary canal. A neurotic condition has just been referred to. For nearly fifty years, since graduation at McGill University, I have carefully observed varied conditions of the alimentary canal, and years ago was convinced that a neurotic state of this canal had more to do with its troubles than is

2. Hawes: Boston Med. and Surg. Jour., 1909, cix, 429.

general credited. My first effort on this subject was fully twenty years ago ("The Alimentary Canal and Human Decay, With Reference to the Nerve") and recently in the *New York Medical Journal* in a brief paper on "The Clefts of The Axis Cylinder, The Cable of the Nervous System." Prof. Walter Foster in his last great work (page 122) adverts to the axis cylinder having clefts, which have been observed during life and after death, but no reference whatever to the results of such an abnormal condition. Professor Sherrington of Manchester and McDonald of Sheffield, England, have carefully defined the saline constituents in the axis cylinder. Imperfect assimilation of food products, animal and vegetable, generates poisonous gaseous material, which acting directly on these very axis cylinder salines produces the clefts in question and hence the telling systemic results. There are troublesome digestion, inability to move about with usual activity, ordinary business duties most troublesome, the heart's action feeble and imperfect, frequently approaching heart failure. Why all these indications of constitutional debility? They are entirely the result of defective power in the elaboration of blood, the outcome of these very clefts, so disturbing to the histogenetic process, in Nature's greatest laboratory, where the chief pabulum of life, blood, is generated. To counteract this there should be strict attention to diet, massage over the abdomen with antiseptic liquid soap for ten minutes daily and continued for two or three weeks, and after each massage application of electricity by means of a neurotone and dry electric cell for ten minutes at each application. Much benefit is also derived from application of electricity to the moistened extremities for a few moments daily, thus calling into action the terminals of the crural and sciatic nerves—to the pelvis, spinal cord and abdominal ganglionic system. Beyond a doubt electricity removes the clefts and reestablishes digestive power to a remarkable degree. We are but in the initial stage in this investigation, which I have briefly presented on the present occasion, feeling confident years can thus be added to any ordinary life in middle age entirely free from organic disease.

DR. WOODS HUTCHINSON, New York: There seems to be a healthy recognition of the limitations of modern methods of diagnosis; as yet we have not come to know just how far they can be depended on. One must consider both the sample of feces and the clinical history and, in case of doubt, the latter should dominate in our decision. One point in particular in an examination of the feces should be emphasized and that is: Of what do the feces actually consist? Two-thirds of the feces consists of the secretions of the glands of the lower half of the remaining third of bacteria intestines. The 85 and 95 per cent. of the food that is properly digested does not appear in the stools. Only the 5 per cent. of husks, bran, fibers, seeds, etc. No wonder we gaze perplexedly at the odoriferous mass, trying vainly this, that or the other food substance. Our surgical friends called attention to experiments made in the Columbia University laboratory two years ago on the various forms of intestinal suture and closure. They cut off and sutured the ends of a loop of the small intestines in such a way that it was still connected with its blood vessels, but cut off from the lumen of the food canal. In four or five days this loop of intestine was found to be packed with apparently normal feces secreted by the glands in its mucous lining. A large part of the feces in a normal individual bears no distinct or definite relation to the food at all, only such parts of it as have escaped digestion. The recognition of mucus in the stools is most important, it is a secretion always abnormal in appreciable amounts and indicative of some neurotic disturbance in the individual. I have seen four patients with mucoenteritis who had been operated on for appendicitis; one woman was about to be operated on a second time and was only saved when the surgeon saw the scar of the previous operation. Colica mucosa is an urticaria of the bowels, as asthma is an urticaria of the bronchi. Mucus in strings, flakes and spirals and the intestinal sand, so-called, may be compared with Curschmann's spirals and Leyden's crystals found in asthma. In both diseases relief is best obtained by attention to the nervous system, especially the vasomotor. Place a patient with a mucoenteritis in bed, feed liberally and leave the bowels alone, especially avoiding cathartics, and more will recover than if any intestinal treatment be employed.

OPERATIVE TREATMENT FOR CIRRHOSIS OF THE LIVER *

GEORGE DOCK, M.D.

NEW ORLEANS

Operative treatment for cirrhosis of the liver has engaged the interest of many physicians and surgeons since Talma proposed it twenty years ago. If it is not more frequently carried out, the reason may partly at least be found in the high mortality immediately following the operation or within the next two months. I shall not attempt a new statistical study, since this has been done well by several others within a recent period, but shall point out certain facts that need to be considered in connection with all novel operations and especially for those in diseases inevitably fatal, for alleviation of symptoms, and not with a view to radical cure.

The statistics of the Talma-Morison operation and its modifications and substitutes are unfavorable partly because many patients have been operated on too late to do good, and when the risk of failure was excessively great on account of other organic disease. Such a thing happens in all new operations, but, instead of stopping operative treatment altogether, it should, if the operation has a single thing in its favor, lead only to more careful selection, earlier diagnosis, and greater care in the operation and after-treatment. Moreover, the death-rate and the shortening of life must not be compared with similar incidents in persons previously healthy, or persons with trivial diseases. As in so many other border-line diseases, we should think chiefly of the pain and disability, and the inevitable death within a time not very long, under the usual methods of treatment. From that standpoint, a single patient made comfortable for a time beyond the usual expectation outweighs many others whose days may have been lessened, though they lost nothing they ever could have gained in function. In such a case, it seems only fair to put the matter as plainly as possible before the patient, and to let him decide. Many, in the particular case now before us, will prefer the cathartic and the trocar, just as many others will refuse to stop the injurious habits against which they are warned. Some, however, will prefer a definite risk with the hope of relief, and it is in order to show what may be done even under many disadvantages that I bring the subject up at this time.

I have long been interested in the subject, but in most cases could not get the patient and surgeon to coincide. In some cases the one, in others the other, demurred. In one case I found what seemed an ideal subject, a man with recently developed ascites and distinct but not severe symptoms of cirrhosis, no cachexia, and no anomalies in the urine. Paracentesis gave a characteristic fluid and showed the liver not enlarged. After the situation was explained to the patient, he chose an operation, which was performed by an experienced surgeon with every appearance of technical accuracy. The liver was moderately cirrhotic, the spleen enlarged, the veins in the omentum and under the parietal peritoneum distended. Death occurred on the third day from septic peritonitis. Such an event is always discouraging, and it gives me all the greater pleasure to report another case in which the duration of life and maintenance of function seem unmistakably lengthened, notwithstanding many adverse circumstances. I cannot claim any credit for the result, which the patient owes to Dr.

* Read in the Section on Practice of Medicine of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

Edward Hamilton, of Houston, Texas. I simply have taken advantage of a clinical experiment, with the hope of encouraging others by the lesson it teaches.

REPORT OF CASE

Summary.—Symptoms of cirrhosis of the liver, with ascites following a history of hard work and hard drinking; patient tapped for ascites fourteen times, then had omentopexy, in December, 1902; was tapped ten times after that, up to June, 1903, and since that time has been able to do hard work, only at long intervals having symptoms, which are easily relieved by medicine.

History.—E. D. S., aged 49; single, railroad switchman, American, was admitted to the Charity Hospital, New Orleans, Jan. 7, 1909, on account of fulness of the abdomen, pain in the stomach, vomiting of a large quantity of blood, and tarry stools. The family history is unimportant. The patient had smallpox and gonorrhea at the age of 30, and during the next eighteen years several mild attacks of malarial fever. In 1892 he was shot while aiding the Cuban patriots, a rifle-ball going through the abdomen transversely just below the liver, but not near the portal vein, as indicated by the scars. There was constant oozing for twenty-four hours, but in a week the wounds healed and the patient had no further trouble from them. The patient has worked on railroads and in the oil fields, working hard most of the time, and exposed to risks from bad food and water, and malarious climates most of the time. He has chewed tobacco since the age of 10. He drank regularly but moderately up to fifteen years ago, when he began to get drunk about every four months, spending on drink all he had saved in the interval. The periods of intoxication averaged five to ten days, but were sometimes prolonged to two to four weeks. In 1902, while working in the Texas oil field, with poor food and great exposure, he began to feel bad, drowsy and tired, and developed a severe diarrhea which resisted treatment. In about three weeks the abdomen became swollen, and he then went to St. Joseph's Infirmary, Houston, Texas, for treatment. He was under the care of Dr. Edward Hamilton, to whom I am indebted for information regarding the operation, and also for the privilege of reporting the case. The diagnosis was cirrhosis of the liver. The ascites was severe, the abdomen measuring 45 inches when full, and tapping had to be done at short intervals—six to ten days. After he had been treated three months, and tapped fourteen times, the patient followed Dr. Hamilton's advice regarding an operation. "The abdomen was full of fluid, the arteries and veins of the omentum and peritoneum enormously distended, and the liver hard and nodular. The omentum was sutured with catgut on each side of the wound to the parietal peritoneum. The patient made a good recovery, but had to be tapped ten times during the next four months, and left the hospital in June, 1903, six months after the operation." Six months later he appeared before Dr. Hamilton in order to undergo an examination as brakeman, "and would probably have passed if it had not been for the scars on his abdomen." (The quotations are from Dr. Hamilton's letter.) The abdomen then measured 32 inches. The patient worked in a malarial locality, had numerous attacks of fever, for which he took whisky, and from about five months after the operation he had again taken up the habit of frequent intoxication. In 1905 he had diarrhea, shortness of breath, distention of the abdomen and all his previous symptoms. After trying with no benefit the waters of various mineral springs, he came to the Charity Hospital, and left much improved after two months, having been treated with purgatives, principally jalap. He then remained perfectly well, working as switchman, until October, 1907. Then, having been drinking regularly, he had a return of symptoms, and a hemorrhage from the stomach, and returned to the Charity Hospital, under the care of Dr. John B. Elliott. There was moderate ascites, anemia, and slight icterus. The liver dullness was small; the organ could not be felt. Treatment with compound jalap powder again was followed by complete relief of symptoms, and the patient was able to do hard work again, carrying loads of 150 pounds. Later, a

return of malaise and bad taste in the mouth led to drinking. This became worse in the fall of 1908, and a few days before the last admission the abdomen again grew large, there was pain after eating, and the stools were black but became natural before admission.

Examination.—On admission I found the patient almost free from subjective symptoms; temperature, pulse and respiration normal. There was slight emaciation, cachexia, skin was sallow, sclerae not yellow. The heart was in the normal position, the sounds weak but clear, the radial arteries tortuous. The lungs were negative; diaphragm shadow from the sixth to the seventh intercostal space on the right side; the seventh to the eighth on the left. The abdomen was slightly enlarged, one and a half inches above the level of the ribs. The superficial veins running up the middle of the abdomen, continuous with those on the thorax, were slightly enlarged. There was a sear in the median line, 7 em. long, extending from 3 em. above the umbilicus. This lay above an oval elevation, corresponding to a soft irregular mass beneath and adherent to the abdominal wall. The liver could be felt; the dullness was small. The spleen was slightly enlarged and hard. There was movable dullness in the abdomen, rising to the umbilicus on standing. There were no hemorrhoids. Urine and blood were negative.

Later Course of Disease.—Treatment was again carried out with compound jalap powder, by my colleague, Dr. J. B. Guthrie. There were no stomach symptoms and no blood in the stools. The distention subsided, though the superficial veins remained enlarged. After a short time the patient was able to assist in the ward work. He was then given a position in the pathological laboratory, later made night-doorman, and has remained well up to the present time.

I can not add anything to the theory of the effect of the operation. I am inclined to agree with Rolleston in attributing the benefit chiefly to the lessening of venous pressure, enabling the liver to deal more readily with the toxic substances passing through it, the improved arterial circulation following the reduction of venous pressure, and the greater chance of compensatory hyperplasia. So far as the ascites is concerned, it seems that in many cases the improvement of that may be due more to the effect of the operation on the serous membrane than to the opening of collateral paths for the blood.

From every point of view it is desirable to operate early, before the liver has undergone advanced degeneration, and before toxemia and disease of other organs have made the operation too dangerous. As to the details of the operation, I shall not discuss those that have been proposed by surgeons, but confine myself to the suggestion that in all cases the abdominal organs should be examined as carefully as possible, in order to furnish data of value in the analysis of future cases.

In view of H. Eichhorst's recent recommendation of cream of tartar¹ for cirrhosis, it is interesting to see how well the compound jalap powder seemed to do in the case now reported, taking down the ascites rather better, it seemed to me, than usual. Cream of tartar is an ingredient of compound powder of jalap, and has been much used alone as a laxative in such cases.

124 Baronne Street.

ABSTRACT OF DISCUSSION

DR. NATHANIEL BOWDITCH POTTER, New York: I should like to speak of a patient operated on by Dr. George E. Brewer of New York at the City Hospital six years ago. The patient has been in my service at either the City or French Hospital nearly every year since the operation. This patient's life undoubtedly has been prolonged over five or six years.

DR. ALBERT E. ROUSSEL, Philadelphia: My experience with cases of this kind has not been so satisfactory as those that have been reported here. I have had under observation at dif-

1. Eichhorst, H.: Med. Klin., 1909, No. 11.

ferent times probably eight or ten patients who have been operated on, and in those with distinct cirrhosis of the liver, with two exceptions, there has been no benefit. I think we should take into consideration the fact that occasionally the mere operation of tapping will result in establishing a compensatory circulation and enable the patient to live for a considerable period of time in fairly comfortable condition. I have such a case in mind now; in this case I made an unfavorable prognosis. After the first two tapplings in which two gallons of fluid were removed, the patient, a woman, remained in good health for a period of five years. To be sure, these are exceptional cases, but they do occur, and consequently they should be borne in mind when the advisability of an operation is considered. Another very important point that should be borne in mind is that many of these patients have cirrhosis of the liver long before they come to us because of the ascites. In making examinations for life insurance, we know that there are a number of instances in which men, especially club men and individuals over 40 years old, have relatively large livers; very often such an enlarged liver is the early stage of atrophic cirrhosis or of fatty cirrhosis of the liver; but rarely is it, as often imagined, hypertrophic cirrhosis, which is a very rare disease. By careful dietary treatment in the early stages of the affection, by a removal of the cause, such as alcohol or over-eating, the process may be delayed for a very great period of time. It is unfortunate that no visible evidences of the disease can be demonstrated to the patient, such as albumin and casts, which appear in the urine, showing an interstitial nephritis. When this does occur in the last-named disease, however, the patients are really frightened, and they then may mend their ways. We know that people may have enlarged livers without having any definite symptoms pointing to the trouble. I think it is up to the man of the future to make a diagnosis of cirrhosis of the liver before the circulatory and toxic symptoms make their appearance; then medical and perhaps surgical treatment will give different and better results.

DR. CHARLES A. HOOVER, Cleveland: I should like to report one case. This patient was under observation thirteen years ago at the City Hospital in Cleveland. The man was tapped I believe about fifteen times at the hospital. The resident physician was in the habit of doing the paracentesis. When he completed his service at the hospital he went to practice in a neighboring town. This man with the ascites liked the manner in which the retiring physician had done the work, and so followed him to the town in which he started to practice. The doctor was in the habit of doing the operation once in about five days. One morning the patient with distended belly visited the physician in his office and requested a paracentesis. The doctor was busy at the time and said he would tap him that afternoon. But at noon the patient had a profuse hemorrhage from the bowels, losing great quantities of blood. Two hours after losing so much blood the man was very blanched; when the doctor arrived a friend of the patient was at the bedside, who said: "From my observation it seems strange to see him so bloodless, and yet he appears to have such a good pulse." The man died from anemia that same night. An autopsy was performed on the following day and the abdomen was found to be dry; every bit of the serum had been absorbed. Judging from the repeated tapplings that had been done, not less than five liters of serum had been taken up. There was absolutely nothing here excepting the usual venous anastomoses and the lowered intravascular pressure to enter into the rapid absorption of fluid.

DR. SAMUEL E. MUNSON, Springfield, Ill.: Dr. Hoover's report of his case reminds me of a man, 60 years old, who had hepatic cirrhosis accompanied by tabes dorsalis, and who developed dropsy. For a period of almost one year I performed paracentesis about every seven or ten days. Sometimes I removed as much as six gallons of fluid. After a period of time following these tapplings, the fluid disappeared and did not recur again. This man lived two or three years afterward. Death was due to tabes dorsalis.

DR. JOSEPH L. MILLER, Chicago: I have seen two cases of so-called cirrhosis of the liver cured after a few tapplings. In one case it was found that the patient was suffering from tuberculous peritonitis. The second patient was supposed to be

cured, but returned in a few months with a tuberculous peritonitis. It is my opinion that some of these cases of so-called cirrhosis of the liver reported cured by tapping are really cases of tuberculous peritonitis.

DR. GEORGE DOCK, New Orleans: It is very important to remember that ascites and cirrhosis of the liver do not mean the same thing; there may be cirrhosis of the liver without ascites. In any case we must not suppose that the ascites is the result of cirrhosis of the liver; this does not always follow. Many cases are diagnosed as cirrhosis of the liver and reported as cured by operation, or cured after repeated tapplings, that are found afterward to be cases of tuberculous peritonitis or some other form of peritonitis. The advantage of an operation, however, is that it enables one to make an accurate diagnosis. Dr. Hoover's report of his case is very interesting; but I would like to point out that often the ascites disappears without known cause and without treatment. I reported a case some years ago in which a patient was prepared for tapping to be done a few days later, and then there was nothing to tap for. The abdomen was flat and there were no signs of fluid in it. Two weeks later this patient died and no fluid was found in the abdomen. There was a secondary cancer of the peritoneum. With regard to whether the operation does any good in these cases, that is something I know no more about than anyone else. But the results of the operation, such as reported by Dr. Potter and others, and the results published in the literature, shown by improvement and sometimes recovery, we cannot get around. For a certain period of time there is no doubt that in some cases good results follow the operation. Dr. Rolleston's idea is that improvement in the circulation followed such an operation, thus enabling the patient to withstand the disease longer than he otherwise could. Talma discovered on the autopsy table that in those cases which pursued a favorable course in cirrhosis of the liver, new vessels had spontaneously formed which were capable of carrying on a collateral circulation. I have seen such a condition in a patient operated on a second time by Dr. Roswell Park. The vessels were enormously developed. I think that the major part of the benefit of the operation comes from changing the process in the peritoneum. Whether there is such a change as occurs in Bier's hyperemia treatment, I do not know; but the hyperemia may be an important part. In patients having a great deal of ascites and without much change in the liver, I should prefer having the operation done. My colleague, Dr. Matas, is now looking for a patient on whom he can make a direct anastomosis of the abdominal veins and send the blood around the liver. Such an operation as he proposes promises a great deal.

THE EPIDEMIC OF SPINAL DISEASE IN NEBRASKA

GEORGE P. SHIDLER, M.D.

YORK, NEB.

It is the purpose of this paper, in order to answer many of the questions asked in letters from physicians over this and neighboring states, to chronicle a few interesting facts relative to the epidemic of spinal disease now prevalent in Nebraska and variously diagnosed as cerebrospinal meningitis, acute anterior poliomyelitis, myelitis and meningitis.

The recognition of the epidemic in new neighborhoods is important, first, on account of its infectiousness and contagiousness and the consequent necessity of early and immediate quarantine; second, because of the relatively high fatality and the question of the possibility of using Flexner's serum; and, third, because new and interesting facts concerning poliomyelitis and meningitis of epidemic variety may show the necessity of disregarding at times the things we have been taught in favor of unmistakable clinical evidence to the contrary.

BEGINNING OF EPIDEMIC

About July 4 an epidemic of spinal disease of some sort was recognized in and about Stromsburg, Neb.

The malady seemed confined, in the main, to children under 10, many of whom showed unmistakable meningeal symptoms.

There was a consultation of physicians on several cases, and the diagnosis of acute poliomyelitis made in one case and cerebrospinal meningitis in several others. According to most common text-books and authorities, neither disease was quarantinable. There was a Fourth-of-July celebration with excursions from the surrounding towns and counties. By July 15 many cases began to be reported from the neighboring towns and country. By July 20 one physician alone reported having had over one hundred cases. About this time the State Board of Health met in special session, and on account of the rapid spread of the disease ordered a three weeks' quarantine of all but the bread-winners of the affected families. In another ten days it had reached York, twenty-five miles away, whence it has spread over the entire state. The quarantine was then made absolute.

The following are illustrations of the manner in which the disease spread:

A woman from York had taken her child with her to the wedding of a sister at Stromsburg, about the Fourth of July, in a

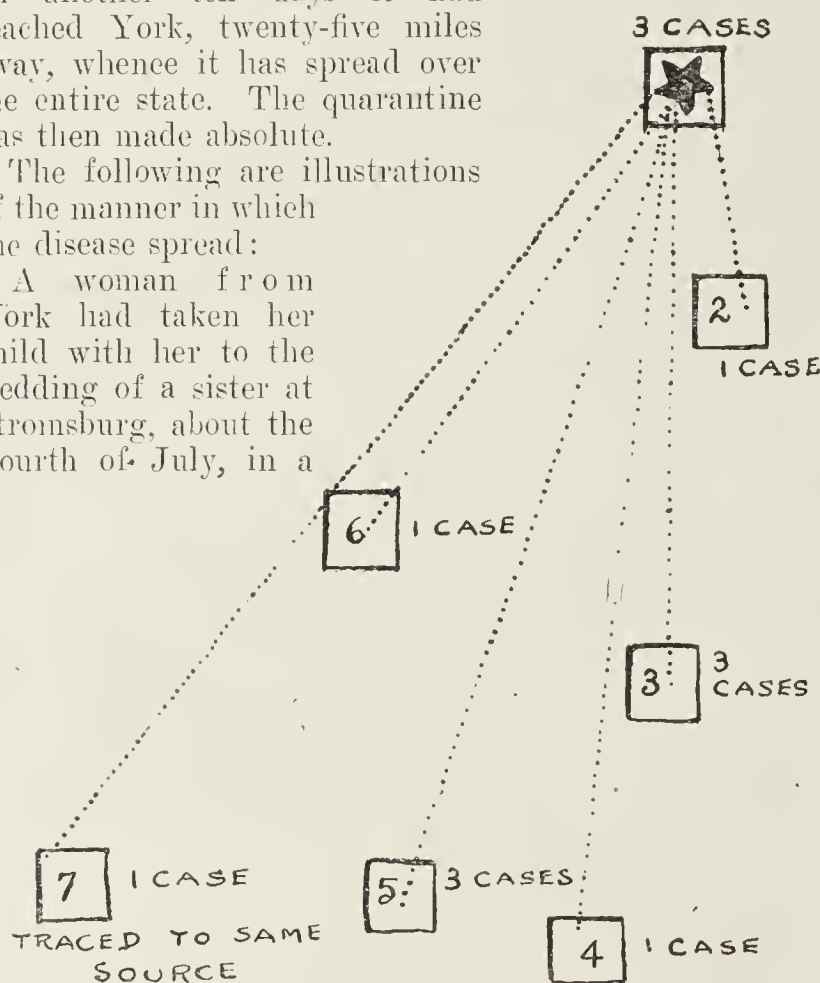


Fig. 1.—Diagram of course of infection among the members of a threshing crew near Benedict. Star indicates the house which was the source of infection in these cases.

house where a younger sister had had the disease and was yet partially paralyzed in the lower limbs. The woman returned to York, and in nine days another of her children, a boy of 5, came down with a fever lasting three days. It was diagnosed as rheumatism. The fever fell by crisis and the boy's left leg became partially paralyzed. This was the first case in York. Next door there lived a family of six children. They began to have, one after another, slight fevers and developed similar symptoms. One had a partial paralysis of a leg, one of an arm and one of both legs; three had common symptoms, but no paralysis. A washerwoman brought her baby, allowing it to romp and play with these children while she worked. In five days it became ill, developed meningeal symptoms and died three days later with bulbar paralysis. Another child, a block east, contracted the disease, had paralysis of both legs and arms and, after two weeks of painless lingering, devel-

oped bulbar symptoms and died. At this time quarantine was established in York, and the malady checked. Later it was brought into the city again from outside, and again mastered by a strict quarantine.

Figure 1 shows diagrammatically the development of the disease near Benedict, Neb. At the house marked by a star there were three patients, one a nursing baby a year and three months old, one a girl of 12 years and a lad about 19 years old. The baby recovered from a slight paralysis of the arm. The girl, who had paralysis of both legs and arms and could not turn in bed, has recovered the use of her arms, but has contractures of flexors of the legs which prevent her from standing or walking. The lad suffered only a slight indisposition for several days in the way of general aches, pains and stiffness of neck with a low temperature. He worked during this time. About fifteen rods from this house stands another farmhouse. A young fellow, a chum of the first, lives here. He developed the disease like the others with no visible paralysis. Both of the young men were on a threshing crew exchanging labor with seven other men ranging in age from 15 to 30. These men drank out of the same jug, worked hard in the hot sun together, ate at the same table and developed the disease, one after the other. One of the young men, aged 18, died. There were two 30 years of age infected.

The disease spread from Benedict to Marquette and elsewhere in the following manner:

A child came into Benedict from near Polk, Neb., and was taken ill; it returned to the country, where the case was diagnosed as epidemic spinal disease. The 12-year-old daughter of the family next had the malady at home. Several weeks later the son-in-law of the parents of the affected children came from Marquette, Neb., with his infant son and visited over night. In five days the infant came down with the disease, this being the first case in Marquette. A child of another family came in from the country to the house of the above-mentioned family in Benedict about a month later, not having been allowed by its parents to see any other child all summer. She stayed one night at this house, returning home in the morning. In five days, that is, on the first day of school, she became ill, and after three days' fever developed a paraplegia of both legs.

In another instance, occurring in York, Neb., at place marked by a star (Fig. 2), a boy, aged 8, developed what were diagnosed as typhoid symptoms—coated tongue, stair-step rise with higher evening temperatures and several days of prodromal malaise. The case was reported by neighbors and quarantined after child had developed paralysis of both legs. Before this, however, there had been a general exposure of the neighborhood. A child came to visit next door, at house marked 2, looked at some fish in front of the house with the sick child, next day went out in the country fourteen miles and in due time developed double leg paralysis after four days' temperature. The first child recovered after three weeks; the second child recovered the use of one leg after five weeks; the other leg developed atrophy with no electrical reaction and with a quadriceps femoris and tibialis anticus paralysis. The child hobbles about without aid of crutch or cane. On the other side, at house marked 3, 18-months-old boy had a fever for two days with partial paralysis of one leg and later complete recovery. Across the street, at 4, another infant, 16 months old, at the breast, developed paralysis of left leg. The parents attributed fever of one day's duration to teething. At 5 another infant became ill and after paralysis of several weeks developed a hypostatic pneumonia and

died. These cases were all in a thickly settled Russian neighborhood. The children who were affected later had been with the first child when he had had his fever.

And so I might relate series after series of cases to prove that this epidemic should be quarantined, that it is infectious and probably contagious. One physician reports fourteen cases in which the infection was traced in every case. One physician reports that his two children had the disease. One child recovered; the other has yet a paralysis of one leg. I have emphasized this at the length I have because there is nothing said about quarantine in the common text-book, and it is the most important measure we have at our command to defend our children.

DESCRIPTION OF THE EPIDEMIC

Sixty cases have been chosen in a series as they came and studied. They are used throughout except in "Number of Cases in a Family," where purposely ten extra single cases occurring in families of more than one child were added to forestall the argument that, because single cases happened so often in families of more than one child, the disease was not contagious or infectious and, therefore, should not be quarantined.

Period of Incubation.—This could not be determined in many cases; in several cases it was five days; in several, eleven to thirteen days, probably depending in large part on the susceptibility of the patient, the resistance to infection and the virulence of the infecting organism, all unknown quantities.

Age.—It will be noted from the tabulated statement below that 25 per cent. of the patients in the series are under 3 and 20 per cent. over 10 years of age. The last fifteen cases in the county, which are not included in this series, are of a much higher age throughout.

Age. Years.	No. Cases.	Age. Years.	No. Cases.
Under 1.....	9	7 to 8.....	5
1 to 2.....	2	8 to 9.....	4
2 to 3.....	7	9 to 10.....	4
3 to 4.....	4	10 to 15.....	6
4 to 5.....	4	15 to 20.....	5
5 to 6.....	5	20 to 30.....	4
6 to 7.....	1		

Sex.—Twenty-nine patients are females and thirty-one males.

Time of Year.—All these cases have occurred in July, August and September.

Number of Cases in Family.—Thirty-one per cent. of these cases occurred as single cases in families having more than one child. Forty-four per cent. occurred in families in which there were two or more children, all of whom acquired the disease. Four per cent. occurred in families where there was a single child. Sixty-four per cent. of the cases occurred in families where there was more than a single child in the family.

Single cases in family of one child.....	3
Single case in family of more than one child.....	22
Two cases in family of two children.....	6
Two cases in family of more than two children.....	6
Three cases in family of three children.....	15
Four cases in family of four children.....	4
Four cases in family of five children.....	4
Four cases in family of six children.....	4
Six cases in a family of six children.....	6

Previous Health.—Most of those afflicted have been in fine health previously—are fat country children, having had the benefit of plenty of sunshine and fresh air.

Sanitation.—In large families where hygiene and sanitation are disregarded there seemed to be a slight tendency for more of the members to be affected. Most of the patients, however, had clean, well-kept homes.

Various Factors.—Teething seemed to have no effect on acquiring the disease. Injuries do not predispose.

Overwork seemed to be a factor, especially in the cases of the young men who threshed in the hot sun.

Symptoms.—*Temperature:* The onset is usually sudden. The child is noticed to have a fever of varying heights, usually moderate, and to feel suddenly tired with a change of disposition; refusing to play or eat, although in very few cases the restlessness at night or pain on movement is the first thing to attract attention. Once the initial symptom of a 10-year-old girl was an inability to see down a post hole when she stood close to it, because of the stiffness of the neck muscles. Occasionally the parents notice that for several days the child has not seemed natural. In several cases there was no fever noticed—nothing unusual until the child limped or could not walk or raise its arm. Only once was there an initial chill reported. The temperature seems to be higher in smaller children and in fatal cases, although in one fatal case there was a temperature of 101 F. for twenty-four hours preceding death. As a rule early severe symptoms give a higher temperature. As to the duration of the fever, two-, three- and four-day tempera-

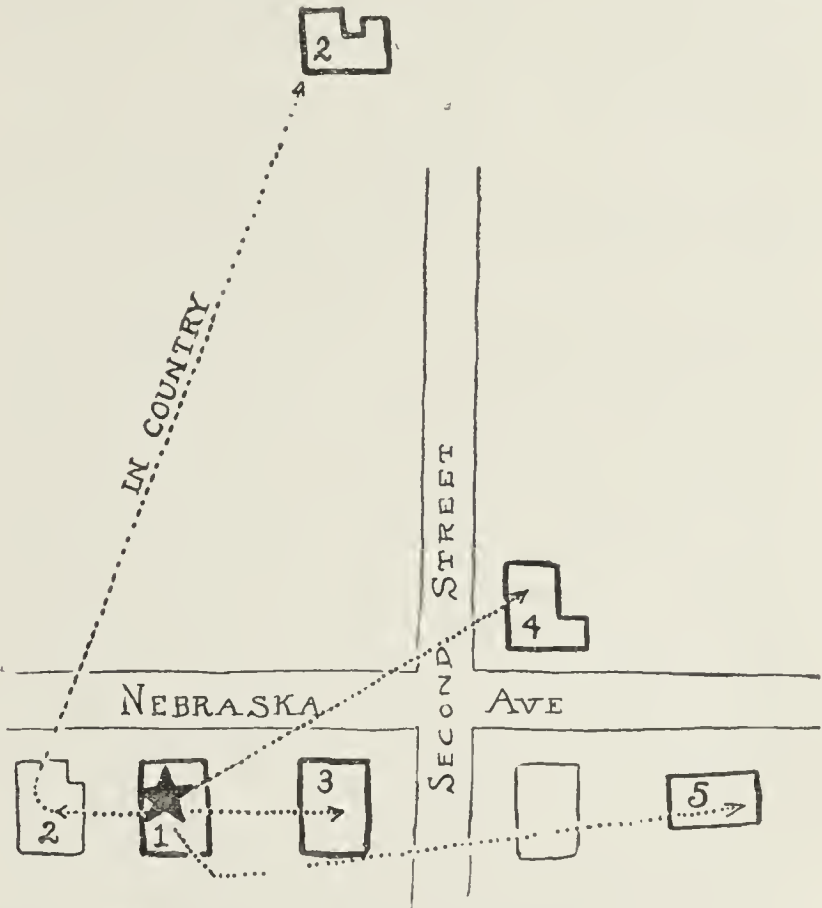


Fig. 2.—Map showing course of infection in York, Neb. Star indicates house where disease first developed.

tures seem to be the rule, falling in twenty-four hours by crisis.

Dura- tion.	No. Cases.	Dura- tion.	No. Cases.
1 day.....	7	4 days.....	14
2 days.....	16	5 days.....	7
3 days.....	14	6 days.....	2

There has been in lingering cases a secondary rise due to other causes, in three cases to pneumonia. These should not be confused with the original infection temperature.

Condition of Bowels: Diarrhea may be present, but constipation is the rule. Occasionally nothing has attracted attention to the bowels. In a few cases there was vomiting, but that was the exception, surely not the rule.

Paralysis: The worst paralyzes have occurred in children from 8 to 12 years of age when the disease has not proved fatal. The localization is tabulated as follows:

No paralysis	10
Incoordination	11
Both legs	16
Right leg alone.....	2
Left leg alone.....	1
Supinators of arm.....	4
One arm and one leg (same side).....	2
Both arms and both legs.....	6
Deltoid and pectorals.....	2
Deltoid alone	2
Intercostals	2
Abdominal muscles	2
Bulbar paralysis	6

It will be seen from this that in a large percentage of cases there was no paralysis and in another large class merely incoordination existed. These cases occurred in families where other members of the family had paralysis and the same infection was present. Both legs seem to be the most common paralysis, with both arms and both legs next in frequency. The paralysis is flaccid and only in three cases was there any spasticity noted in arms or legs other than the knee symptoms elicited by the Kernig manipulations. A Babinski was not always tried for, but was never found present when the test was made.

Reflexes: These are generally sharp or exaggerated during the fever; absent after the fever in paralytic cases.

The reflexes are diminished or absent according to the degree of paralysis, and return with the return of function of muscles.

Other Signs and Symptoms: Often there are pink lines under the eyes, running from the inner canthus outward and downward to the malar bone. There is usually some stiffness of the neck muscles, occasionally slight retraction of head, even in mild cases. Under subjective symptoms a basilar headache comes first and most important. It is almost constant. There is often pain in the back of the neck. General hyperesthesia of back and limbs is frequently present. In the more marked cases and as the disease progresses to the second, third or fourth day or to the temperature crisis there is generally a modified Kernig's sign present in that flexion of the thigh on the body with an extended leg will give unusual pain under the knee in the hamstring tendons. Often the leg cannot be straightened even with the back bent. The thigh may be flexed on the body with the knee bent. Especially is this sign present if the limbs are to be paralyzed. Retraction of the head or perfect rigidity of the neck muscles is noticeable in the more severe cases. The pain along the spine increases in some cases and there frequently develops an almost intolerable hyperesthesia. Among the unusual symptoms noted in over two hundred cases were strabismus once, opisthotonos several times, formication once, numbness once, photophobia once, sphincteric paralysis thrice, and bulbar paralysis.

Prognosis.—Recovery seems to be good in mild cases, improvement beginning in a few days to a week and recovery becoming established in three or four weeks. Most of the more seriously affected patients do not recover. There is usually a slight improvement, but finally atrophy of certain groups appears well marked, a grim reminder of the dreaded disease. The most frequent atrophy occurs in the deltoids, pectorals, quadratus femoris and tibialis anticus muscles. The number of deaths in this series was 7, or 11 per cent. Out of upward of 200 cases in York County there has been a mortality of over 7.5 per cent. The first cases about Stromsburg were not so frequently fatal. The last uninclosed cases have had a higher rate of fatality.

Differential Diagnosis.—As to the differential diagnosis I shall mention some of the things encountered in this epidemic.

Trauma: Injuries ("fell against water-tank," "fell out of swing," "ran a tack in his foot") are insisted on by the parents to account for the leg symptoms. In mild cases the temperature alone will differentiate between the epidemic disease and trauma, provided the wound is not lacerated or infected. There is the location of the muscle paralysis and the probable injury to be investigated. Chance for infection will sometimes aid.

Tonsillitis: Three times cases were diagnosed as tonsillitis because the pharynx and tonsils were red and swollen and a general soreness, fever and slight stiffness of the neck present. A high polymorphonuclear leucocytosis would favor tonsillitis. A tonsillar history might be a deciding factor. Later when the fever falls and the paralysis supervenes the diagnosis is cleared up.

Typhoid Fever: The differential diagnosis between typhoid and the spinal epidemic should offer no serious difficulties, because of the rapid onset, earlier time of year, negative Widal, longer duration of disease, early fall of temperature by crisis, absence of rose spots, no bronchitis, good appetite after subsidence of fever, and paralysis.

Colds, Commonly Called Grip: These, as a rule, lack the nervous symptoms, rigid neck and history of infection. They come on after exposure in cold, damp weather, and more often in older people. In grip there is no modified Kernig and no paralysis.

Rheumatism: The facts that in rheumatism there is usually a history of previous attacks and joint involvement with redness and swelling, but no muscular paralysis in children, and that salicylates are efficacious, would be sufficient to differentiate. The presence in both conditions of swollen tonsils and joint pain and general tenderness calls for careful diagnosis. In all these cases the presence of organisms of any sort in the spinal fluid would be a deciding point.

Diphtheria: This might call for a differential diagnosis in the paralytic stage. The history would clear up the diagnosis in most cases.

Nature of the Epidemic.—A transverse myelitis or a multiple neuritis would hardly be seriously thought of. The final diagnosis resolves itself into acute anterior poliomyelitis, meningitis or cerebrospinal meningitis. I have made fourteen lumbar punctures. Specimens were withdrawn according to the technic of von Quinke. Hand centrifuge, microscope and stains were taken to the homes. Only one sterile fluid was obtained, and in that case the puncture was done four weeks after the temperature had subsided. Wright's stain was used for all smears. In nine cases what appeared to me to be a Gram-positive coccus was obtained and in three a diplococcus, but never intracellular. The fluid was clear as water in every case but one. This fluid was slightly turbid and showed the only polymorphonuclear leucocytosis. In fact, the others showed a lymphocytosis. In three cases the tension was notably increased, the fluid spurting in a stream from the needle, showing a meningitis. Cultures were made, but the possibility of contamination in transit prevented exact conclusions. Animal experimentation and more careful bacteriological work, I hope, will clear up the organism.

The clear spinal fluid, the comparative rarity of cerebral symptoms and the relatively low death-rate almost completely banish, to my mind, the diagnosis of cerebrospinal meningitis caused by the *Diplococcus intracellularis meningitidis* and, therefore, the possibility of using Flexner's serum in therapeutics. The possibility of its

occurrence, even in the midst of an epidemic of something else, should not be forgotten, however.

To be sure, there are in this disease meningeal symptoms, but nothing that a simple meningitis caused by some unknown organism could not explain. The fact that in every acute case organisms have been obtained shows that there are bacterial toxins to produce degeneration of the cord and to inflame the cord membranes. Is it not a logical and scientific hypothesis that in this disease the simple meningitis and the poliomyelitis may be caused by the same thing, and that sometimes the infection of the meninges may predominate and at other times the infection of the gray substance of the cord? The mortality is too high for poliomyelitis of the commoner text-books. The percentage of recoveries without atrophy is not according to text-book description. But could we not find organisms differing from all those in the past epidemics if not in kind, in characteristics, which would produce an anterior poliomyelitis and a meningitis? Is it not natural to suppose that in most cases, on account of the blood-supply and the proximity of the membranes to the cord substance, the two infections go hand in hand and that, while poliomyelitis may leave the predominating lesion usually, at any time it would be possible for the meningeal symptoms to appear uppermost?

I wish to thank the doctors of York County who have kindly cooperated in studying this epidemic.

106½ East Sixth Street.

JONNESCO'S ANALGESIA METHOD

JOHN J. MOORHEAD, M.D.

Instructor in Surgery, Postgraduate Medical School and Hospital;
Attending Surgeon, Red Cross Hospital; Assistant Visiting
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NEW YORK

By reference to Jonnesco's article,¹ "Remarks on General Spinal Analgesia," it appears that he first advocated this method before the International Society of Surgery, in Brussels, September, 1908, when he reported fourteen cases "by my new method . . ." (addition of strychnin to stovain). At the German Society of Surgery, in Berlin, April, 1909, Professor Bier (Berlin) declared that the method must be rejected; and Professor Rehn (Frankfort), at the same meeting, stated that animal experiments demonstrated considerable danger in injections higher than the lumbar region.

In explanation of this hostility, Jonnesco says that, as he expected, the method would be considered ". . . too novel and too hardy to be accepted without opposition . . ." and he adjures his critics not to be condemnatory on *a priori* grounds, predicting that ". . . my new method of general spinal analgesia will in a short time be universally accepted. . . ." He adds that since October, 1908, he has used this method exclusively in his private and public operations, and he claims to have convinced Professor Schauta (Vienna) of its merits by personal demonstration.

The article then goes on to explain the method of preparing the strychnin sulphate and stovain, with the proper dosage according to the age and general physique of the patient. He advocates only two spinal zones for injection; namely, a "superior" (or "high") between the first and second dorsal vertebrae, and an "inferior" (or "low") between the twelfth dorsal and first lumbar

vertebrae. The former, he claims, is efficient in producing analgesia of the upper part of the body, including the face, head and neck; while the latter permits operative manipulation on all parts approximately below the waistline, and is especially helpful in laparotomies because it produces what he terms "abdominal silence."

SOME STATISTICS

His total number of personal cases by the "new method" is 412; of these, 117 were high and 295 low injections.

After-effects were notably absent, he says: nausea being noted in 2.25 per cent.; vomiting ("a single effortless ejection") in 1.25 per cent.; sweating in 2 per cent.; headaches in 6.25 per cent.; transitory retention of urine in 4.5 per cent.; in no case did postoperative temperature reach 104. He never saw any paralysis.

The duration of analgesia in the high injections is about forty-five minutes; in the low, from an hour and a half to two hours. A second injection is given if the operation is not completed within the above periods. He relates cases in which at first he failed to produce the desired effect because he did not enter the arachnoid space in the mid-line; or because the patient made an involuntary movement at the instant the needle was felt, thus deflecting the latter. He, however, has never failed to produce analgesia, although in some cases many attempts are necessary (see below).

This article is illustrated by four large photographs, two of them showing Jonnesco performing his high and low injection, respectively.

During his visit to this country, and up to Dec. 29, 1909, Jonnesco says that he has effected twenty-three spinal analgesias. Eleven of these were in New York hospitals; five in Philadelphia; three in Chicago, and three at Rochester, Minn. (State Hospital). Seven of these were superior dorsal and sixteen low dorsal injections. Commenting on these cases in a letter to the *New York Medical Journal*, Jonnesco says he regrets that newspaper reports make it appear that he claimed to have discovered medullary narcosis; on the contrary, he disclaims any intent to rob Dr. J. Leonard Corning of this city of that honor. Neither does he claim to have discovered stovain or strychnin; but he does assert that his method of combining these drugs is new and original with him, as is his introduction of them into the two spinal zones already mentioned.

ANALYSIS OF AN UNFAVORABLE CASE

In this letter he explains the unfavorable outcome of the high injection given in Case 3 at the Post-Graduate Hospital (osteoma of left frontal region) on the theory that the patient was an epileptic and had a bad cardiac lesion; adding that ". . . Immediately after the operation began, he [the patient] had an epileptic fit which lasted throughout the whole operation. This should be enough to explain a momentary cessation of the respiration, but the heart never ceased beating and a few moments of artificial respiration were enough to bring him around again. The delirium which appeared after the operation is simply an epileptic delirium, and I cannot understand how anyone can think it was produced by the anesthetic. . . ."

This statement is in marked contrast to the report of the case as given² by Dr. Aspinwall Judd, who assisted Dr. Judd makes no mention of an epileptic fit which Dr. Robert T. Morris at the operation, and certainly it does not accord with my observations of the occurrence.

1. Brit. Med. Jour., Nov. 13, 1909, p. 139C.

2. New York Med. Jour., Dec. 25, 1909.

Dr. Judd makes no mention of an epileptic fit which began at the time of and lasted throughout the operation, nor did I witness any such incident. Respecting the "momentary cessation of respiration" it appears from Dr. Judd's report that the operation lasted twelve minutes and that respiration thereafter was very seriously interfered with, and that it required heroic treatment for twelve minutes before respiration was re-established. Those who observed the patient after he left the operating room would hardly agree with Jonnesco in terming the case one of "momentary cessation of respiration"; nor would he have any supporter in his statement that ". . . a few moments of artificial respiration was enough to bring him around again" This patient had a wild delirium an hour after, requiring a strait jacket for two hours, the delirium recurring at intervals until the following morning. Jonnesco says that this was an epileptic delirium and ". . . cannot understand how anyone can think it was produced by the anesthetic"

The consensus of opinion respecting this case was that the high injection was exceedingly dangerous, and that the analgesia was far from complete and was responsible for the almost fatal collapse of the patient.

A HISTORICAL SUMMARY

Spinal anesthesia was demonstrated by Corning of New York in 1885, but it was several years later before the method was tested surgically, and it was then abandoned as unsafe and uncertain not only as to the immediate but also to the later effects. Since then, especially with the advent of some widely heralded new local anesthetic, medullary narcosis for a time again becomes prominent; but, despite the advocacy of many surgeons in many lands, the method has never gained a strong or lasting following. Jonnesco is the most recent sponsor for this more than twenty-year-old "discovery," declaring that the addition of strychnin to stovain, novocain, the various eucains, alypin, tropococain, etc., robs these local anesthetics of their dangers and makes high or low invasion of the cord safe and reliable.

I witnessed the operations performed at the Post-Graduate Hospital of this city under spinal analgesia induced by Jonnesco, and also visited Chicago and Rochester, Minn., soon after the demonstrations were given in those cities. From personal observation and from conversations with surgeons of my own and the above-mentioned places a consensus of opinion was obtained that seems unanimous both as to the method and the means of inducing this form of anesthesia.

THE DANGERS OF HIGH ANALGESIA

Observers of Jonnesco's method condemn high spinal analgesia without exception, because of the known dangers of invasion of that section of the cord, even though a small needle and 1 c.c. of sterile solution are the only foreign bodies introduced. That this opinion is well founded seems proved by recalling that of the seven cases of high spinal analgesia demonstrated during Jonnesco's visit, four resulted unfavorably. One of these was the Post-Graduate case above mentioned; another at New York (superficial chest operation) caused so much pain that the patient asked for chloroform; in a third case Jonnesco was unable to obtain cerebrospinal fluid after repeated trials, but did succeed in withdrawing blood; ether was finally given. In a fourth case reported by Dr. Edward Martin of Philadelphia (amputation of breast) it appears that the patient ". . . narrowly escaped death. . . . Later ether had to be given to control the pain. . . ." Incidentally, Dr. Martin

states that there has been one death and one case of partial paralysis in his city following spinal analgesia by imitators of Jonnesco.

THE DANGERS OF LOW ANALGESIA

Respecting low spinal puncture there appears to be some division of opinion as between those who would not advocate it under any circumstances and those who might employ it in the event of some contraindication to inhalation or local anesthesia.

THE DANGERS IN GENERAL SUMMED UP

In general, the cogent factors warranting hostile criticism of the method are:

1. Danger of interference with a highly organized section of the nervous system, considering the possibility of (a) puncture of blood vessels, leading to (b) spinal hemorrhage and areas of (c) spinal sclerosis or (d) syringomyelia later.
2. Uncertainty of reaching the arachnoid space and hence failure of analgesia.
3. Psychic shock incident to operations where patients are conscious and appreciative of the sights and sounds occasioned by the occurrence.
4. The advantages do not outweigh the dangers, known and unknown, in a yet insufficiently tried radical departure from older methods.

SPINAL ANALGESIA HAS A LIMITED FIELD

It is apparently the general opinion that spinal analgesia will always have a limited application that is best represented by emergency or battlefield operations; and that it will not be employed except for marked contraindications to either inhalation or local anesthesia.

We have had the opportunity of witnessing the demonstrations of an expert, but we were unconvinced that even with his considerable experience and enthusiastic advocacy we are warranted in recommending this method, even though so attractively and widely again offered to a willing but skeptical profession.

101 Manhattan Avenue.

BISMUTH SUBNITRATE GAUZE FOR USE IN THE NOSE

HAROLD HAYS, A.M., M.D.
NEW YORK

After submucous resection of the nasal septum, after inferior turbinectomies, etc., I have been using small strips of bismuth subnitrate gauze, prepared at the time of using by rubbing powdered bismuth subnitrate on gauze bandages, two inches wide and cut to the proper length. These strips were folded to a width of about one-half inch and the packing accomplished by placing one strip of gauze on the other.

Since Dr. Wiener's paper appeared¹ I have been using the bismuth gauze prepared according to his formula. The only objection I have found to Dr. Wiener's gauze is that, being packed in a crumpled condition in a glass tube, it cannot be laid out smoothly for use in the nose, when cut in small pieces.

In order to overcome this difficulty, I have had the gauze put up in a package of a different style, which is far more convenient for my use. The gauze is cut into small pieces, two and one-half inches square, after being immersed in the bismuth emulsion and dried. About fifty of these squares are packed in onion-skin paper, the ends of the paper being so folded that they can be easily lifted

1. Wiener, Solomon: The Use of Bismuth Gauze in Gynecologic Work, THE JOURNAL A. M. A., Oct. 23, 1909, III, 1397.

up without too much handling. This package is put into a small square pasteboard box. The original paper package is sterilized by heat and then the final package is sterilized in formalin in the same manner as all packages of the kind are sterilized.

When one wishes to use the gauze, the onion-skin paper can be lifted off from it and one or a number of pieces can be taken out with a sterile forceps. The pieces underneath are not touched and therefore can be left for later use. I am now having packages made containing twenty, fifty, and one hundred pieces.

11 West Ninety-first Street.

A CASE OF TRAUMATIC FRONTAL SINUSITIS OPERATION; A CURE DUE IN PART TO THE INJECTION OF BISMUTH PASTE; PRACTICALLY NO DEFORMITY

F. PHINIZY CALHOUN, AB., M.D.

ATLANTA, GA.

There are always two important facts to be considered in any radical operation on the frontal sinus: first, deformity frequently follows the operation; and, second, the operation does not always effect a cure.

The case I report is one in which both of the bad results just mentioned have been avoided, and I attribute the cure to two injections of bismuth paste into the cavity.

History.—The patient, a healthy, robust-looking man, aged 41, consulted me May 23, 1908, on account of a continuous headache. He had consulted several oculists in neighboring cities for the same trouble, and glasses had been prescribed in each case. His headaches, restlessness at night and loss of appetite increased to such an extent during the few weeks prior to his visit to Atlanta that he had been referred by one doctor to another, with the hope of finding relief, and the patient stated that his trouble had been frequently diagnosed as incipient insanity and brain abscess. The patient attributed his present trouble to a blow which he received on March 27, 1907, while walking through the railroad yard of a neighboring city on a tour of inspection, when a heavy door of a refrigerator car suddenly swung open and the edge struck him on his right temple. He was knocked unconscious for a few hours and was confined to his bed for several weeks. After that time the headache increased in severity. March 19, 1908, two months before consulting me, a supposed polypus was removed from his right nose. There had never been a discharge from his nose.

Examination.—This showed a decided roughening of the right frontal eminence, over which there was a small scar in the skin, evidently from an old lacerated wound. On palpation there was tenderness, especially when pressing upward beneath the supraorbital ridge. There was a marked deviation of the nasal septum, high up, pressing against the middle turbinal body, the anterior end of which had been removed. This operation undoubtedly is what the patient thought to be the removal of a polypus. It was impossible to probe the nasofrontal duct. On transillumination there was a distinct shadow over the right side which might have been due to this bony thickening. An anterior skiagraph revealed a distinct difference in the two sides. This difference also might have been due to this bony thickening. A lateral view showed a very large sinus, and compared to a picture of the left side, the difference was marked. The patient's temperature, taken twice, morning and afternoon of the first day's examination, was a degree above normal.

Operation.—I was not sure, from my examination, that the patient had a purulent sinusitis, although I was so convinced that there was something wrong that I advised an operation, exploratory, if necessary, and the patient readily consented. He was placed in the Wesley Memorial Hospital, May 26, 1908, and operated on the same day. My incision was along the upper margin of the right brow, extending down into the lat-

eral side of the nose. The skin and periosteum were retracted and a small groove was made above the supraorbital ridge, when there flowed out a quantity of thick, yellow odorless pus, apparently under pressure. Most of the entire external wall of the frontal sinus was removed and the cavity was thoroughly ennetted. The ethmoid cells were explored and found healthy. The nasofrontal duct was enlarged and gauze passed through it into the nose. The wound was packed lightly with iodoform gauze, and except for a slight drain at the inner angle of the skin wound, it was closed entirely.

Postoperative History.—On the fourth day the gauze in the cavity was removed through the nose, under gas anesthesia, and I considered it best and safest to pack the wound open through the brow incision. The wound was dressed daily for a while, then every other day until healing took place, nearly fourteen weeks after the operation. Two months later he returned with some puffiness over the scar, and with a probe a long sinus leading high up was discovered, out of which oozed a quantity of mucopurulent discharge. My colleague, Dr. C. R. Andrews, suggested the injection of bismuth paste into the cavity, as he had used it rather extensively in his orthopedic practice. It required but two injections, at intervals of four days, of the following formula to bring about a permanent cure:

Bismuth subnitrate	30 parts
Paraffin, melt at 120.....	10 parts
White wax	10 parts
Petrolatum	50 parts

More than a year has now elapsed with no evidence of a discharge, and the patient has been absolutely free from headache since the day following the operation. The cavity filled almost completely and the deformity is practically not noticeable. The cause of the infection was undoubtedly the compound fracture of the external wall of the right frontal sinus. An intracranial infection would have taken place eventually, as the external table was unusually thickened.

833 Candler Building.

APPLICATION OF A SPLINT FOR FRACTURED ULNA

PENN-GASKELL SKILLERN, JR., M.D.

PHILADELPHIA

I recently encountered a case of fracture of the ulna in which a new application of an old method seemed indicated. The solution of continuity occurred in the lower third of the shaft of the left ulna. The deformity, caused as usual by direct violence, was that the inferior fragment was driven outward, thereby encroaching on the interosseous space. Reduction by manipulation was evidently to be maintained by overabduction of the hand. Just so is overadduction aimed at in Colles' fracture.

How could the hand be secured in this position? The simplest method seemed to be to apply a Bond splint in reverse. The patient was furnished with a right-handed splint and instructed to grasp the semicylindrical block with his hand. The shaft of the splint, being free, formed an acute angle with the radial border of the pronated forearm. The hand was secured to the block by adhesive strips applied so as to describe an ellipse between the posterior surface of the bases of the metacarpals and the under surface of the distal end of the splint. The next manipulation accomplished with surprising satisfaction the result desired. The acute angle between the shaft of the splint and the forearm was obliterated by pushing the splint toward the forearm until it paralleled the latter. This of necessity forced the hand, bound to the block, over toward the radial side, in overabduction. The result was that the lower fragment of the ulna was drawn away from the radius as far as the interosseous ligament would permit, and thus the perfect coaptation of the fragments was obtained.

A very pertinent reference to this fracture is the following:¹

Great care is necessary in the treatment of this fracture, lest the upper end of the lower fragment retains the vicious position into which it is forced at the time of the accident, and so is ultimately soldered to the inner margin of the radius. To prevent this occurrence, the hand should be permanently inclined toward the thumb by two splints, the extremities of which are rendered somewhat sloping from behind forward, in a direction opposite to that of the splints sometimes employed in the management of fracture of the corresponding end of the radius.

The principle, therefore, is an old one, but I think that it merits reconsideration, and that the single splint applied as described exactly meets the indications. It should be added that the leather side-pieces with which these splints are usually equipped were absent, since I was not convinced that they serve any practical purpose. Anyone may satisfy himself of the efficiency of this method by manipulating a splint in the manner indicated.

241 South Thirteenth Street.

ARTIFICIAL INCREASE OF EOSINOPHILE CELLS IN DEMENTIA PRÆCOX

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TRAVERSE CITY, MICH.

Several months ago in an article² by Dr. H. D. Purdum and myself, we mentioned the increase in eosinophile cells in the blood, which is often seen in dementia præcox, and also mentioned two cases in which we succeeded in raising the percentage of eosinophiles by administration of thyroidectin.

Since that time I have been testing the effect of thyroidectin on the blood of cases of dementia præcox. The original idea for administering the drug was based on the theory that the disease was possibly caused by perverted secretion of the thyroid gland. Recently several cases of catatonia have been reported as having been cured or improved by partial extirpation of the thyroid gland. It was for this reason that it was thought that thyroidectin might exercise the same influence on dementia præcox. No improvement in any of the cases was noted, but it was observed that certain changes in the blood took place in most of the cases, which were characteristic.

The blood of ten cases of dementia præcox was examined at intervals of a few days during the administration of the drug. Five cases of catatonia and five cases of hebephrenia were taken at random. One case of epileptic insanity, one case of manic depressive insanity, one case of general paresis and a normal individual were also tested.

The following tables show the blood changes in the cases of dementia præcox:

CASE 1			
	Leucocytes.	Eosin. Per cent.	Neut. Per cent.
Average count	10,660	15.4	61.7
May 5, after 40 grs. thyroidectin	13,706	20.0	57.6
May 7, 5 grs. t.i.d.....	14,594	18.5	53.9
May 12, 5 grs. t.i.d.....	14,340	25.1	45.6
May 15, 10 grs. t.i.d.....	14,088	28.1	40.0
May 17, 10 grs. t.i.d.....	not obtainable	27.8	49.6
May 20, 10 grs. t.i.d.....	not obtainable	32.3	40.3
May 23, drug discontinued.....	8,376	22.0	45.9
June 4, drug discontinued.....	not obtainable	13.4	53.5
June 15, drug discontinued.....	not obtainable	7.8	51.9

CASE 2

	Leucocytes.	Eosin. Per cent.	Neut. Per cent.
Average count	6,592	6.0	61.4
May 7, after 35 grs. thyroidectin	13,452	10.8	53.1
May 9, 15 grs. t.i.d.....	11,042	6.3	50.8
May 13, 15 grs. t.i.d.....	8,884	14.2	49.6
May 26, drug discontinued.....	5,692	15.4	40.3
May 30, drug discontinued.....	8,756	9.6	62.5
June 1, drug discontinued.....	7,482	8.3	37.4
June 5, drug discontinued.....	6,996	12.4	48.2
June 15, drug discontinued.....	8,122	6.1	47.0
June 22, drug discontinued.....	9,010	5.7	53.4

CASE 3

	Leucocytes.	Eosin. Per cent.	Neut. Per cent.
Average count	13,326	5.8	61.3
May 25, after 35 grs. thyroidectin	14,594	10.4	51.9
May 28, 5 grs. t.i.d.....	13,580	11.1	48.9
May 30, 5 grs. t.i.d.....	14,340	12.3	45.3
June 1, 5 grs. t.i.d.....	13,706	11.2	51.4
June 4, 10 grs. t.i.d.....	12,944	9.0	50.3
June 6, 10 grs. t.i.d.....	not obtainable	9.2	47.0

CASE 4

	Leucocytes.	Eosin. Per cent.	Neut. Per cent.
Average count	11,548	3.4	71.7
June 2, after 30 grs. thyroidectin	8,248	5.1	56.0
June 4, 10 grs. t.i.d.....	9,264	5.1	56.1
June 6, 10 grs. t.i.d.....	8,248	3.4	62.7

CASE 5

	Leucocytes.	Eosin. Per cent.	Neut. Per cent.
Average count	11,042	0.7	78.4
June 1, after 30 grs. thyroidectin	9,518	4.6	62.2
June 4, 5 grs. t.i.d.....	10,914	7.6	60.0
June 8, 5 grs. t.i.d.....	11,802	5.0	67.8

CASE 6

	Leucocytes.	Eosin. Per cent.	Neut. Per cent.
Average count	13,072	3.5	70.5
June 10, after 20 grs. thyroidectin	8,122	1.2	73.0
June 12, 5 grs. t.i.d.....	10,534	1.1	70.0
June 14, 5 grs. t.i.d.....	8,884	3.0	72.1

CASE 7

	Leucocytes.	Eosin. Per cent.	Neut. Per cent.
Average count	11,422	6.0	45.8
June 17, after 25 grs. thyroidectin	8,755	7.1	45.5
June 19, 5 grs. t.i.d.....	8,884	10.5	43.4
June 21, 5 grs. t.i.d.....	9,392	8.4	48.0

CASE 8

	Leucocytes.	Eosin. Per cent.	Neut. Per cent.
Average count	18,404	1.3	57.1
June 18, after 30 grs. thyroidectin	13,960	2.6	56.1
June 20, 10 grs. t.i.d.....	13,580	3.1	55.1
June 22, 10 grs. t.i.d.....	14,722	3.2	55.0

CASE 9

	Leucocytes.	Eosin. Per cent.	Neut. Per cent.
Average count	9,392	1.2	67.8
Oct. 12, after 15 grs. thyroidectin	10,660	1.7	70.2
Oct. 13, 15 grs. t.i.d.....	9,898	1.4	76.0
Oct. 14, 15 grs. t.i.d.....	10,888	2.4	63.6

CASE 10

	Leucocytes.	Eosin. Per cent.	Neut. Per cent.
Average count	8,168	2.0	64.8
Nov. 28, after 35 grs. thyroidectin	5,552	4.2	59.6
Dec. 1, 15 grs. t.i.d.....	6,340	3.0	61.2
Dec. 3, 15 grs. t.i.d.....	6,214	5.4	49.0

In making the differential counts in these cases, at least 500 white blood cells were counted and often a thousand. They were all counted by one person. Wright's blood stain was used.

The most notable variations in the blood are the increase in the eosinophile cells in 90 per cent. of the cases and the decrease in the neutrophiles, the latter, as a rule, showing a greater decrease in proportion than the rise in eosinophiles. Case 6 is the only one in the series in which there was no rise in the eosinophiles. It

1. Gross: System of Surgery, Edition 6, i, 965.

2. THE JOURNAL A. M. A., July 4, 1908.

is also noticeable that there was very little variation in the neutrophiles in this case. This patient is one who has suffered from hebephrenia for many years, but who does not show many active symptoms and lived outside of the institution for several years before admission. The rise in eosinophiles is apparently greater in those having originally a high eosinophile percentage, but most of those having a lower percentage originally show practically a doubling of the eosinophiles. The total number of leucocytes showed no constant variation, being increased in some cases and diminished in others.

It is noteworthy that the blood findings in the normal individual remained fairly constant:

	Leucocytes.	Eosin. Per cent.	Neut. Per cent.
Average count	6,720	4.7	60.3
May 17, after 30 grs. thyroidectin	6,664	4.4	62.2
May 19, 5 grs. t.i.d.	5,692	5.6	60.0
May 22, 5 grs. t.i.d.	6,848	4.0	60.0

The other cases of insanity tested showed no rise in the eosinophiles and no notable changes in the neutrophile count nor in the total leucocyte count. From the small number of cases examined, it cannot be claimed that these changes in the blood are specific for dementia præcox, but from the experiments with other forms of alienation and with a normal individual it would seem that there must be some degree of specificity or an unstable condition of the blood in dementia præcox which produces these results. If this test proves to be specific, it could be used as a diagnostic procedure in cases which are not clear.

The etiology of dementia præcox is still obscure. Possibly many factors contribute to its causation. From the experiments with thyroidectin it might be theorized that the disease is due to perverted function of the thyroid gland, for we know that at certain periods in the course of hebephrenia and catatonia the eosinophile cells are normally increased. If, therefore, thyroidectin produces the same effects on the blood that is observed normally in many cases of hebephrenia and catatonia, it would seem rational to suppose that perverted thyroid secretion is one factor in the etiology of dementia præcox.

New and Nonofficial Remedies

SINCE THE PUBLICATION OF THE BOOK "NEW AND NONOFFICIAL REMEDIES, 1909," THE FOLLOWING ARTICLES HAVE BEEN ACCEPTED BY THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION. THEIR ACCEPTANCE HAS BEEN BASED LARGELY ON EVIDENCE SUPPLIED BY THE MANUFACTURER OR HIS AGENT AND IN PART ON INVESTIGATION MADE BY OR UNDER THE DIRECTION OF THE COUNCIL. CRITICISMS AND CORRECTIONS TO AID IN THE REVISION OF THE MATTER BEFORE PUBLICATION IN THE BOOK ARE ASKED FOR.

THE COUNCIL DESIRES PHYSICIANS TO UNDERSTAND THAT THE ACCEPTANCE OF AN ARTICLE DOES NOT NECESSARILY MEAN A RECOMMENDATION, BUT THAT SO FAR AS KNOWN IT COMPLIES WITH THE RULES ADOPTED BY THE COUNCIL.

W. A. PUCKNER, SECRETARY.

(Continued from page 132)

SERUMS AND VIRUSES*

SERUM ANTIDIPHThERICUM AND ANTIDIPHThERIC GLOBULINS.—Antidiphtheric Serum or Diphtheria Antitoxin is an official preparation; for description see the U. S. Pharmacopeia, 8th decennial revision. The diphtheria antitoxin sold in interstate commerce in the United States and in the

District of Columbia is required to conform to the standard established by the United States Public Health and Marine-Hospital Service. Some manufacturers mix serums of different strengths so as to secure a preparation containing approximately a definite number of units per c.c. Most of the firms also market a concentrated diphtheria antitoxin or antidiphtheric globulins prepared by the removal, by precipitation with neutral salts, of most of the constituents of the serum except that fraction of the globulins bearing antitoxic potency.

Inasmuch as the ordinary (not concentrated) serum antidiphthericum is contained in the U. S. P., it is desirable that the term "U. S. P." be used in connection with this product (and only with this one) in order to avoid confusion with the globulin preparations.

The French, German and Spanish Pharmacopeias recognize both liquid and desiccated preparations.

H. M. Alexander & Co., Marietta, Pa.

Diphtheria Antitoxin. Only the antidiphtheric globulin is marketed; the antidiphtheric serum is concentrated and refined in accordance with recent improvements of the Gibson method. Marketed in syringes containing from 500 to 5,000 units.

Burroughs, Wellcome & Co., London, England, and New York City.

Diphtheria Antitoxin Serum. Serums of different values from a number of horses are mixed to yield a definite value (from 450 to 500 units per Cc.), also a high potency serum, 1 Cc. of which contains 1,000 units. Trikresol (0.3 per cent.) is added as a preservative. Marketed in hermetically-sealed vials containing 1,000 to 4,000 (Ehrlich-Behring) units; also a high potency serum containing from 1,000 to 10,000 units.

Cutter Laboratory, Berkeley, Cal.

Diphtheria Antitoxin. Marketed in syringes containing 4,000 units; also in bulbs. Diphtheria antitoxin globulin marketed in syringes containing 1,000 units.

Farbwerke, vorm. Meister, Lucius and Bruening, Hoechst a. M., Germany. (Victor Koechl & Co., New York.)

Diphtheria Antitoxin "Behring," imported into the United States only upon special order.

Department of Health, City of New York.

Refined and Concentrated Diphtheria Antitoxin (Globulin). The preparation is a solution of the globulins of the blood which are soluble in a saturated sodium chloride solution; this contains most of the antitoxin. Preserved with chloroform. Marketed in syringes containing from 2,000 to 5,000 units, each Cc. containing 800 to 1,500 units. Also in vials.

Wm. R. Hubbert, Detroit, Mich.

Diphtheric Antitoxin. Marketed only in bulk (usually from 1 to 10 liters).

Lederle Antitoxin Laboratories, New York City. (Schieffelin & Co., New York.)

Diphtheria Antitoxin. Only antidiphtheric globulin is sold; this is marketed in syringes containing from 500 to 10,000 units each; also in vials containing from 1,000 to 5,000 units each. The latter are prepared more particularly for the use of Boards of Health.

Memorial Institute for Infectious Diseases, Chicago.

Antidiphtheric Serum. Most of the antitoxin prepared is concentrated. Marketed in packages of from 1,000 to 5,000 units each, both in syringes ready for use and in bottles.

H. K. Mulford Co., Philadelphia.

Diphtheria Antitoxin, Concentrated (globulin). Prepared from serum antidiphthericum by the removal, by precipitation at 33½ per cent. saturation with ammonium sulphate, of the serum albumins and globulins. The product consists essentially of a soluble serum globulin freed from inorganic salts by dialysis and redissolved in physiological salt solution. Preserved with not more than ¼ per cent. trikresol or not more than 1/10 to 1 per cent. chloroform. Marketed in syringes containing from 1,000 to 5,000 units.

National Vaccine and Antitoxin Institute, Washington, D. C.

Diphtheria Antitoxin, Concentrated; prepared according to Gibson's method. Preserved with chloroform. Marketed in syringes containing from 500 to 6,000 units.

Parke, Davis & Co., Detroit, Mich.

Antidiphtheric Serum, U. S. P.; preserved with 0.4 per cent. trikresol; marketed in piston syringe containers of from 500 to 5,000 units each.

Antidiphtheric Globulins. Marketed as above.

Antidiphtheric Globulins (dry). Marketed in packages of 3,000 units each. The dry powder is readily soluble in water and will keep indefinitely.

Frederick Stearns & Co., Detroit, Mich.

Diphtheric Antitoxin, U. S. P. Preserved with 0.4 per cent. trikresol. Marketed in syringe containers holding from 1,000 to 4,000 units.

Concentrated Diphtheric Antitoxin. Prepared by the Gibson process; preserved with chloroform (2.4 minims per fluid ounce). Marketed as above; also in syringes containing 5,000 units.

* Editor's Note: In this issue appears a symposium on serums, vaccines, tuberculins, etc., which was presented in the Section on Pharmacology and Therapeutics at Atlantic City, 1909.

ANTIDYSENTERIC SERUM.—

H. K. Mulford Co., Philadelphia, Pa.

Antidysenteric Serum. The blood serum of horses immunized against the Shiga bacillus. Recommended in dysentery and summer diarrheas where the bacillus of Shiga is an etiologic factor. Marketed in syringes containing 10 Cc. Dose 10 to 40 Cc. every four to eight hours; to be injected hypodermically.

ANTIGONOCOCCIC SERUM.—Favorable results have been reported from the use of antigonococcic serum in the treatment of chronic complications of gonorrhea involving serous cavities, especially the joints. The results in the ease of the chronic stages and sequels of gonorrhea involving the genito-urinary tract seem to be less favorable while it seems to have still less value in acute gonorrheal affections.

Parke, Davis & Co., Detroit, Mich.

Antigonococcic Serum, prepared from the blood of rams immunized against both dead and living cultures of virulent gonococci according to the method of Rogers and Torrey¹. Marketed in bulbs containing 2 Cc. each.

Dosage. Two Cc. subcutaneously, to be repeated in 1 to 4 days.

ANTIMENINGOCOCCUS SERUM.—

Farbwerke, vorm. Meister, Lucius und Bruening, Hoechst a. M., Germany. (Victor Koechl & Co., New York.)

Meningococcus Serum "Hoechst." A serum prepared by the immunization of horses with virulent cultures of diplococcus intracellularis or its products according to Ruppel's method. Recommended as a diagnostic agent for distinguishing (by the agglutination test) the meningococcus from other diplococci and as a prophylactic and curative agent. It is injected subcutaneously or intralumbally or in the dry form may be used as a dusting powder applied to the nasopharyngeal space or tonsils. Marketed in powder form mixed with 49.5 per cent. milk sugar and 0.5 per cent. alumnol, for use as a dusting powder; also in the dried form to be dissolved in 10 parts of water and injected subcutaneously or intralumbally; also in the liquid form, preserved with 0.5 per cent. phenol (for agglutination tests).

Dose. 2.5 Gm. of the dried serum, dissolved in 25 Cc. water, subcutaneously to be followed, after lumbar puncture, by 10 to 15 Cc. or more, intralumbally. In severe cases much larger amounts are recommended. 1 Gm. as a protective dose.

ANTIPNEUMOCOCCUS SERUM.—Antipneumococcus serum is the blood serum of horses immunized against pneumococci. Frequently both dead and living pneumococci are used.

Use.—It has been said to be useful in the treatment of pneumonia when injected subcutaneously. Hektoen, Weaver and Tunnicliff have recently examined the serums of this class found on the American market. They summarize their views as follows: "In the antipneumococcus serums it was impossible to demonstrate antibodies for pneumococci by any method employed."

"It is our belief that the claims for the usefulness of anti-streptococcus and antipneumococcus serums rest on impressions from results in clinical cases in man, and have in most cases no foundation whatsoever in experimental tests."

H. K. Mulford Co., Philadelphia.

Antipneumococcic Serum, stated to be prepared by immunizing horses with both dead and living pneumococci. Marketed in syringes containing 20 Cc. Dose: 20 to 100 Cc.

Frederick Stearns & Co., Detroit, Mich.

Pneumolytic Serum, stated to be a composite polyvalent serum prepared by injecting horses with virulent pneumococci from various sources. The horses are first immunized with diphtheria toxin. Marketed in syringes containing 20 Cc. Dose: 10 to 20 Cc., to be repeated in 12 to 24 hours.

ANTISTAPHYLOCOCCUS SERUM.—

Burroughs, Wellcome & Co., New York.

Antistaphylococcus Serum is stated to be obtained from horses injected with killed cultures of staphylococcus pyogenes aureus, albus and citreus. Preserved with trikresol. Marketed in vials containing 25 to 50 Cc. Recommended in the treatment of various staphylococcus infections.

ANTISTREPTOCOCCUS SERUM.—Antistreptococcus serums are prepared by immunizing horses with virulent cultures of streptococci. Most manufacturers employ several strains of streptococci, thus obtaining polyvalent serums. In some cases humanized strains of streptococci are used; in others, cultures, the virulence of which has been much increased by passage through animals. In a few cases both human and animal strains are employed. Some manufacturers employ horses immunized against diphtheria, making the doubtful claim that

such serum is especially active in stimulating leucocytosis and phagocytosis.

Actions and Uses.—Antistreptococcus serum has been claimed to be useful in the treatment of streptococcus infections such as erysipelas, scarlet fever, puerperal septicemia, tuberculosis (mixed infection), etc. It has also been used as a prophylactic prior to surgical operations, after labor, in scarlet fever epidemics, etc. Its value is doubtful.

Hektoen, Weaver and Tunnicliff recently examined the preparations found on the American market; in a preliminary report (1) they state: "Streptococcus opsonins could not be demonstrated in any of the serums tested, and activation by fresh serums was not accomplished to any significant degree. When they were injected into rabbits, increase in streptococcus opsonins could not be demonstrated in the animals' serums in any notable degree, except in some instances. Attempts to obtain protective and curative effects from the injection of antistreptococcus serums in rabbits; guinea pigs, and in a more limited scale in mice, met failure. The serums often seemed to reduce the natural resistance and to hasten death."

"It is our belief that the claims for the usefulness of anti-streptococcus and antipneumococcus serums rest on impressions from results in clinical cases in man, and have in most cases no foundation whatsoever in experimental tests."

Antistreptococcus serum (liquid and desiccated) is recognized by the French pharmacopeia.

Burroughs, Wellcome & Co., London and New York.

Polyvalent Antistreptococcus Serum is stated to be obtained from horses injected with killed cultures of a number of strains of cases of erysipelas, scarlet fever, puerperal fever, rheumatism, septicemia, angina, pneumonia and ulcerative endocarditis.

Antistreptococcus Serum (Erysipelas) is stated to be obtained from horses injected with killed cultures of a number of strains of streptococci obtained from cases of erysipelas.

Antistreptococcus Serum (Rheumatism) obtained from horses injected with killed cultures of a number of strains of streptococci obtained from cases of rheumatism.

Antistreptococcus Serum (Scarlatina) obtained from horses injected with killed cultures of a number of strains of streptococci obtained from cases of scarlet fever.

Antistreptococcus Serum (Puerperal Fever) obtained from horses injected with killed cultures of a number of strains of streptococci obtained from cases of puerperal fever.

All of the above are prepared with trikresol and are marketed in hermetically-sealed vials containing in most cases 25 to 50 Cc.

Cutter Laboratory, Berkeley, Cal.

Polyvalent Streptococcic Serum, stated to be prepared by the injection of many strains of living humanized cultures of streptococci into horses immunized with diphtheria toxin. Marketed in piston syringe containers, each containing 10 Cc. of serum.

Chemische Fabrik auf Actien (vorm. E. Schering), Berlin, Germany. (Schering & Glatz, New York.)

Aronson's Antistreptococcus Serum, stated to be a polyvalent serum obtained by inoculating horses with streptococci the virulence of which has been highly exalted by animal passage and with various humanized strains of streptococci. Preserved with 0.4 per cent. trikresol. Dose: 20 to 100 Cc., according to the severity of the case and the age of the patient.

Farbwerke, vorm. Meister, Lucius und Bruening, Hoechst a. M., Germany. (Victor Koechl & Co., New York.)

Antistreptococcic Serum, Hoechst, stated to be a polyvalent serum, prepared by immunizing horses against streptococcus cultures of the most varied origin and with highly virulent passage cultures according to the method of Meyer and Ruppel. Contains no artificial preservatives. Dosage: 1 to 10 Cc. for immunization. 2 to 25 Cc. for single curative dose. 3 to 50 Cc. for double curative dose.

Lederle Antitoxin Laboratories, New York City. (Schiefelin & Co., New York.)

Antistreptococcic Serum Polyvalent; marketed in 10 Cc. syringes. Dose: as a prophylactic, 10 Cc. curative, 20 to 100 Cc.

H. K. Mulford Co., Philadelphia.

Antistreptococcic Serum, stated to be the serum of horses which have been treated with streptococci of various strains. Marketed in 10 Cc. syringes. Dose: 20 to 80 Cc.

Parke, Davis & Co., Detroit, Mich.

Antistreptococcic Serum, stated to be a polyvalent serum; prepared by immunizing horses with killed cultures of streptococci; the latter are obtained from various human streptococcus infections and certain pathologic conditions common to animals. Preserved with trikresol. Marketed in 10 Cc. piston syringe containers, also in bulbs containing 10 Cc. each.

Frederick Stearns & Co., Detroit, Mich.

Streptolytic Serum, stated to be a composite and polyvalent serum; composite because it contains diphtheric antitoxin in addition to the streptococcus antibodies. Marketed in 10 Cc. syringes some of which have attachments for subcutaneous injection, others for rectal injection.

ANTITUBERCLE SERUM.—

Parke, Davis & Co., Detroit, Mich.

Antitubercle Serum. A serum prepared by treating horses for several months with the toxic products of the tubercle germs. Stated to be an experimental remedy claimed by some to give favorable results in tuberculosis. Marketed in 1, 2 and 4 Cc. bulbs and in 1 ounce bottles. Dose: 1 to 4 Cc. daily hypodermically.

ANTITYPHOID SERUM.—Antityphoid serum is a serum obtained from horses which have been injected with killed cultures of bacillus typhosus.

Actions and Uses.—Antityphoid serum has been employed in the treatment of typhoid fever, but the evidence as to its value is conflicting.

Burroughs, Wellcome & Co., London and New York.

Anti-typhoid Serum is stated to be obtained from horses injected with killed cultures of *Bacillus typhosus*. Marketed in hermetically-sealed vials containing 25 to 50 Cc.

TETANUS ANTITOXIN.—(Antitetanic Serum and Antitetanic Globulin).—Antitetanic Serum is the blood serum of horses immunized to the toxin of the tetanus bacillus. It is marketed in both liquid and dry forms. Some manufacturers prepare an Antitetanic Globulin; this contains a solution of the globulins of the blood, which are soluble in a saturated sodium chloride solution, together with the antitoxin, and contains the latter in concentrated form.

The antitetanic serum sold in interstate commerce in the United States should conform to the standard established by the United States Public Health and Marine-Hospital Service. This standard is defined as follows (Treasury Department Circular No. 61, Oct. 25, 1907; Bulletin 43, Hygienic Laboratory): "The immunity unit for measuring the strength of tetanus antitoxin shall be ten times the least quantity of antitetanic serum necessary to save the life of a 350-gram guinea pig for ninety-six hours against the official test dose of a standard toxin furnished by the Hygienic Laboratory of the Public Health and Marine-Hospital Service."

Uses.—Antitetanic serum is used both as a prophylactic and a curative agent in tetanus. The dried product may be used as a dusting powder.

Dose.—Immunizing, 1,500 units; in tetanus, 3,000 to 20,000 units every four to eight hours.

Serum Antitetanicum is official in the Belgian, French and Swiss Pharmacopeias. Both liquid and desiccated preparations are recognized by the French Pharmacopeia.

Department of Health, City of New York.

Antitetanic Globulin. Preserved with chloroform. Marketed in vials containing 1,500 units.

Lederle Antitoxin Laboratories, New York City. (Schieffelin & Co., New York.)

Only the concentrated antitoxin (globulin) is marketed; this is offered in syringes containing from 1,500 to 5,000 units each.

H. K. Mulford Co., Philadelphia, Pa.

Tetanus Antitoxin, marketed in syringes containing 1,500 units.

Parke, Davis & Co., Detroit, Mich.

Antitetanic Serum, marketed as follows:

1. In piston containers, 1,500 units.
2. In bulbs containing 1,500 units.
3. Dry.

4. Antitetanic Dusting Powder; the dried serum mixed with a small quantity of chloretone (chlorbutanol).

VACCINE VIRUS.—Vaccine virus is the material obtained from the skin eruptions of calves having vaccinia. The "pulp" is ground and mixed with varying percentages of glycerin. The latter has a certain degree of antiseptic action. It is usually marketed in capillary tubes or as glycerinated points. The serums which exude after the removal of the crusts have been used by some manufacturers for the preparation of "dry lymph points." These are generally regarded as unsatisfactory and the new federal regulations forbid interstate traffic in them after Jan. 1, 1910.

Some firms test the activity of their products on the cornea of rabbits and on calves.

Vaccine virus is official in the Belgian Pharmacopeia under the name "Vaccinum"; in the Swiss as "Virus Vaccinum."

H. M. Alexander & Co., Marietta, Pa.

Marketed as "glycerinated lymph" in capillary tubes; also as "glycerinated vaccine points" and as "dry points."

Cutter Laboratory, Berkeley, Cal.

Marketed in two forms; ivory points (dry) and in capillary tubes.

Lederle Antitoxin Laboratories, New York City. (Schieffelin & Co., New York.)

Glycerinated Vaccine Virus: (a) in glass capillary tubes and in bulk (for 10, 20 or 50 vaccinations); (b) upon Lederle's Protected Ivory Points; the latter are contained in capsule-like glass tubes which do not require breaking.

H. K. Mulford Co., Philadelphia.

Glycerinated Vaccine Lymph, in sealed capillary tubes. Glycerinated Glass Vaccine Points; glycerinated lymph on sterile glass points.

National Vaccine and Antitoxin Institute, Washington, D. C.

Glycerinated Vaccine Virus marketed in capillary tubes; Glycerinated Vaccine Virus on Ivory Points; special capsule.

Parke, Davis & Co., Detroit, Mich.

Glycerinated Vaccine: (a) in capillary tubes, (b) on ivory points. The points are contained in sealed glass tubes provided with Lee's breakable ring so that they may be opened without difficulty.

BACTERIAL VACCINES

Bacterial vaccines (cf. also tuberculin) are suspensions of the killed bacteria in physiologic salt solution; phenol (0.5 per cent.) is usually added as a preservative. Being suspensions, there is a tendency for the bacteria to settle on standing; hence the vial should be shaken before the syringe is filled and the latter should be shaken before injecting.

Pharmacopeial Preparation.—The French Pharmacopeia contains a "*Vaccin antipesteux*," consisting of a suspension of killed plague bacilli and a "*Vaccin antipesteux sensibilisé*," prepared by treating killed plague bacilli with antiplague serum. (Antiplague Serum is also official in the French Pharmacopeia.)

Actions and Uses.—The use of many of these vaccines is in the experimental stage. Bacterial vaccines are often prepared from cultures obtained from the individual to be treated (autogenous vaccines); these usually give the best results. In fact some authors maintain that "stock" vaccines should be used only when it is impracticable to secure the autogenous agent.

Bacterial vaccines are used to aid the production of an active immunity. Great care and skill are necessary for their proper use and no definite statements as to dosage, etc., can be given; the physician must be guided by the condition of the patient and the manner in which the latter reacts to the treatment.

The following were licensed to manufacture and sell in interstate commerce products of this character prior to July 15, 1909. (Cf. also Tuberculin).

Burroughs Wellcome & Co., London, England and New York City.

Lederle Antitoxin Laboratories, New York City.

H. K. Mulford Co., Philadelphia, Pa.

National Vaccine and Antitoxin Institute, Washington, D. C.

Parke, Davis & Co., Detroit, Mich.

Swiss Serum and Vaccine Institute, Berne, Switzerland.

The following products have been submitted to the Council:

Some of the licensed firms do not market stock vaccines, but prepare them only from cultures from patients.

BACILLUS COLI VACCINE.—*Bacillus Coli Vaccine* seems to cause distinct improvement in certain infections of the urinary tract, due to the colon bacillus. Pain and frequency of micturition are said to be quickly relieved, but complete elimination of the bacteria is stated to be rare. It has also been used in subacute and chronic appendicitis and in gall bladder fistulas where there was an infection with the colon bacillus.

H. K. Mulford Co., Philadelphia.

Coli-Bacterin. Marketed in 1 Cc. vials; each Cc. is said to contain approximately 50,000,000 killed bacilli suspended in normal salt solution.

BACILLUS PYOCYANEUS VACCINE.—This is said to be useful in local infections in which this organism is present. A recent writer states that he has never experienced the slightest beneficial effect either from the autogenous or stock vaccines prepared from this organism, and considers its use illogical.

H. K. Mulford Co., Philadelphia.

Pyocyano-Bacterin. Each Cc. is said to contain about 30,000,000 killed bacilli.

GNOCOCCUS VACCINE.—Gonococcus vaccine has been used with much success in subacute and chronic gonococcus infections involving the prostate, joints, eyes, etc. It has been stated that the strains of the gonococcus are not so diversified as are those of many other organisms and that therefore better results may be expected from stock vaccines of this organism than in many other cases.

Cutter Laboratory, Berkeley, Cal.

Gonococcic Vaccine. Marketed in 1 Cc. vials; each Cc. containing about 50,000,000 cocci suspended in physiological salt solution with 0.4 per cent. trikresol.

H. K. Mulford Co., Philadelphia.

Neisser Bacterin. Each Cc. is said to contain approximately 50,000,000 killed gonococci; preserved by 0.5 per cent. phenol.

National Vaccine and Antitoxin Institute, Washington, D. C.

Gonococcic Vaccine. Marketed in syringes each said to contain 2,000,000 to 50,000,000 bacteria; sterilized by heat.

Parke, Davis & Co., Detroit, Mich.

Gonococcus Vaccine. P., D. & Co. Marketed in bulbs each said to contain 20,000,000 bacteria; sterilized by heat.

MICROCOCCUS NEOFORMANS VACCINE.—Micrococcus neoformans vaccine is claimed to be beneficial in ulcerated tumors in which this organism occurs as a secondary infection.

H. K. Mulford Co., Philadelphia.

Neoformans-Bacterin. Each Cc. is said to contain approximately 50,000,000 killed neoformans micrococci.

PNEUMOCOCCUS VACCINE.—Pneumococcus vaccine has been claimed to be useful in pneumococcic infections. In laboratory experiments it was found inert so far as indicated by any change in the opsonic index when injected into rabbits.

H. K. Mulford Co., Philadelphia.

Pneumo-Bacterin. Each Cc. is said to contain about 50,000,000 killed pneumococci.

STAPHYLOCOCCUS VACCINES.—These have been used with much success in localized surface infections such as acne, acute boils, carbuncles and septic wounds, in multiple subcutaneous abscesses, sinuses, chronic osteomyelitis, etc. The best results are obtained with autogenous vaccines. Laboratory experiments have also shown that these vaccines possess distinct antigenic properties when tested by infections in rabbits with subsequent opsonin determinations.

Cutter Laboratory, Berkeley, Cal.

Staphylococcus Vaccine. Each Cc. contains about 500,000,000 cocci preserved with 0.4 per cent. trikresol.

H. K. Mulford Co., Philadelphia.

Staphylo-Bacterin. Each Cc. is said to contain about 300,000,000 killed staphylococci aurei.

Parke, Davis & Co., Detroit, Mich.

Four forms of vaccines are offered.

1. From staphylococcus pyogenes albus.
2. From staphylococcus pyogenes aureus.
3. From staphylococcus pyogenes citreus.
4. From the three preceding combined.

Each Cc. contains about 400,000,000 bacteria.

STREPTOCOCCUS VACCINE.—Recommended in various infections by streptococci (scarlet fever, puerperal septicemia, erysipelas, etc.).

H. K. Mulford Co., Philadelphia.

Strepto-bacterin. Each Cc. contains about 50,000,000 killed streptococci.

Parke, Davis & Co., Detroit, Mich.

Streptococcus Vaccine. Each Cc. contains about 40,000,000 streptococci pyogenes.

TYPHOID VACCINE.—Inoculations with typhoid vaccines have been practiced extensively in various armies; the results, both as regards the morbidity and the mortality from typhoid fever seem to have been distinctly favorable. Such inoculations have been recommended in institutions where many of the personnel are not infrequently exposed to typhoid infection and in communities threatened with or affected by typhoid epidemics. It has been suggested that typhoid vaccines may be of value in the treatment of typhoid carriers.

H. K. Mulford Co., Philadelphia.

Typho-bacterin. Each Cc. contains about 50,000,000 killed typhoid bacilli.

TUBERCULIN PREPARATIONS

Tuberculins represent the toxins of the tubercle bacillus. They may be in the form of a filtered extract of the bacilli or may be composed of the pulverized insoluble substance of the bacilli themselves. In the latter, or emulsified form, tuberculin is known as tubercle vaccine, and might be classed with the "Bacterial Vaccines" (which see). Tuberculins are therefore of two general classes:

1. Those prepared from the germ-free culture media, and containing for the most part only soluble products of the bacillus. This class includes Tuberculin "old" (or Tuberculin Koch) and Tuberculin Denys (Bouillon Filtré).

2. Those which contain the greater part of the germ body itself; they include the new tuberculins of Koch ("T. R." and the "New Tuberculin Koch [Bacillus emulsion]").

OLD TUBERCULIN, "O. T." (Tuberculin Originale, "T. O."; Tuberculin Koch).

Old Tuberculin is prepared by evaporating a 6 to 8 weeks' bouillon culture of tubercle bacilli at boiling temperature to 1/10 of its volume and filtration through clay or porcelain. A clear, syrupy, amber colored fluid; containing about 50 per cent. glycerin. Frequently marketed in "serial dilutions" by which the doses may be gradually increased.

TUBERCULIN "DENYS" ("B. F."; Bouillon Filtrate; Bouillon Filtré, Denys).

This is the bouillon from cultures on which tubercle bacilli of the human type have grown to maturity (5 to 6 weeks) freed from germs by filtration through porcelain.

"NEW TUBERCULIN"—"T. R."—New Tuberculin represents a portion of the tubercle bacillus.

It is prepared as follows: A suspension of ground virulent tubercle bacilli is centrifugalized; the upper layer, consisting of extractives and fatty substances mixed with bacilli, is removed while other bacilli and fragments are thrown to the bottom. The sediment is again ground and centrifugalized; the process is repeated until almost no sediment remains. The second and supernatant liquids are united and to them glycerin, 20 per cent., and a little formaldehyde in solution are added; this emulsion is the "T. R." Each Cc. represents the residue from approximately 10 mg. dry originally virulent tubercle bacilli (human).

NEW TUBERCULIN, KOCH, BACILLI EMULSION ("B. E."). This represents the entire bacilli whether soluble or insoluble.

The germs are simply crushed and pulverized and mixed with equal parts of water and glycerin. The suspension contains 5 mg. dry, originally virulent, tubercle bacilli (human).

Action and Uses.—The different modifications and preparations of tuberculin are practically identical in their physiologic effects. They vary chiefly in a quantitative way and in absorbability. They are used both for diagnostic and therapeutic purposes:

Diagnostic Use.—"Tuberculin depends for its diagnostic value on a special sensitiveness acquired by the tissues after a tuberculous infection. This sensitiveness is manifested by an inflammatory response when tuberculin is brought in contact with the skin or mucous membrane." The original tuberculin of Koch is considered the most satisfactory preparation for diagnosis but other filtered extracts are suitable. There are four principal methods of applying the test: 1. The Cutaneous Test (von Pirquet); 2. The Inunction Test (Moro); 3. The Conjunctival Test (Wolff-Eisner, Calmette); 4. The Subcutaneous Test. The proper performance and correct interpretation of these tests require much knowledge and experience. Some of them, notably the conjunctival and subcutaneous tests, may, under certain circumstances and in the hands of inexperienced or careless persons, do much harm.

Use in Therapeutics.—The successful employment of tuberculin in therapeutics depends upon a thorough knowledge of the disease and the individual patient; in many cases its use may do much harm. Baldwin² states the general principle involved as follows:

"The therapeutic use of tuberculin may have two fairly definite objects in view: One is to diminish the sensitiveness to the toxin—i. e., to itself—the other is to create intermittent local reactions and thus to stimulate the disease focus to heal

1. Some firms add trikresol to their preparations of this tuberculin; the necessity or advisability of this is considered questionable if the glycerin is of the proper strength. It is stated that trikresol will, in the course of time, weaken the tuberculin.

2. Baldwin: THE JOURNAL A. M. A., 1910, liv, 260.

or become absorbed. The possibility of the production of a recognizable immunity to the disease thus far by any form of tuberculin treatment is open to question. A certain degree of resistance is indirectly accomplished when sensitiveness to tuberculin is decreased to a marked degree, accompanied by constitutional improvement. Such specific resistance as can be obtained by tuberculin is gradually lost after the treatment is discontinued, so that statements that patients can be made 'immune' are unjustified."

As regards the choice of tuberculin and the method of administration Baldwin says:

"For therapeutic use the choice chiefly lies between the solutions and emulsions or vaccines. Opinions are too variant to permit the formulation of rules. In general the dosage is more controllable with solutions, and reactions are less frequent from emulsions." "Owing to the uncertain absorption of emulsions, reactions may ensue unexpectedly if the dose is increased greatly. The solutions are therefore safer for tuberculin immunization until some accurate standards for determining the dosage shall be made. The dosage is at present empirical; each individual case must be an experiment, and the symptoms carefully observed before each dose. The subcutaneous injection is the only satisfactory method for the administration of tuberculin. Tuberculin pills or capsules for stomach ingestion and suppositories per rectum are too uncertain of absorption to warrant any recommendation. Inunctions of tuberculin have a possible field in treatment of skin tuberculosis; otherwise they are also impracticable."

Pharmacoepial Preparations.—Koch's "old tuberculin" is official in the German Pharmacopeia under the name "Tuberkulinum-Kochii, Tuberkulin"; in the Belgian under the name "Tuberculinum"; in the Swiss under the name "Tuberkulinum Concentratum"; and in the French under the name "Tuberculine Brute." The French and Swiss Pharmacopeias contain also diluted tuberculin ("Tuberkulinum Normale Dilutum" of the Swiss, "Tuberculine Diluée" of the French, Pharmacopeia), prepared by diluting 1 Cc. of the concentrated tuberculin with 10 Cc. of 0.5 per cent. phenol. The French Pharmacopeia contains also a "Tuberculine Solide Purifiée" prepared by precipitating the "Tuberculine Brute" with ten times its volume of 80 per cent. alcohol, washing the precipitate with ether and drying *in vacuo*. For use 0.01 Gm. of this is dissolved in 100 Gm. distilled water.

Preparations:

H. M. Alexander & Co., Marietta, Pa.

Original Tuberculin "O. T." (Koch); marketed in 1 and 3 Cc. vials.

Tuberculin.—Bouillon Filtrate "B. F." (Human). 1 and 3 Cc. vials.

Tuberculin Residue, T. R. (Human) (Koch).

Bacillin Emulsion "B. E." (Human).

Dixon's Tubercle Bacilli Extract (See "Fluid of Dixon," Medical News, Jan. 17, 1891). An extract of tubercle bacilli dissolved in normal saline solution. Marketed in syringes containing the extract from 1 mg. bacilli. The standard therapeutic dose is a weekly injection of the contents of 1 syringe, to be reduced in amount and frequency if the patient shows signs of reaction.

Dixon's Suspension of Dead Tubercle Bacilli (See "Possibility of Establishing Tolerance for Tubercle Bacilli," Medical News, Oct. 19, 1889). A suspension of dead tubercle bacilli in physiologic salt solution which have been decreased by prolonged treatment with alcohol and ether. Marketed in syringes containing 0.001 mg. bacilli, which is the standard therapeutic dose (cf. preceding).

Tuberculin for the Cutaneous Test (von Pirquet). A solution of tuberculin original in capillary tubes. Solutions of two strengths, one for children and one for adults, are prepared.

Tuberculin Ointment Capsules (for the Moro Test). Consists of equal parts by weight of Koch's Old Tuberculin and anhydrous wool fat. Marketed in capsules.

Tuberculin for the Ophthalmic Test. Tuberculin Precipitatum, "T. P." Prepared by precipitation with 95 per cent. alcohol from

4. The directions given by some manufacturers as to the method of using and the conclusions to be drawn from the use of their preparations seem to the Council to be open to criticism in certain respects. Thus many firms enclose droppers for use in making dilutions; droppers are not sufficiently accurate for use with strong solutions. Pipettes, accurately calibrated in the metric system, should be used.

The use of ready made "serial dilutions" as a routine practice is not to be commended. Such solutions deteriorate rapidly, especially in the presence of phenol or trikresol and the rate of such deterioration may not be the same in different dilutions; competent authorities think it desirable to limit the use of dilutions to one month or even less in the case of soluble tuberculins. Some firms state the date of manufacture on the labels; it is desirable that this should be done in all cases. Sufficient precautions are often not given as to the care necessary in passing from a weak to a stronger solution.

The dangers from the use of tuberculin in the eye are not sufficiently emphasized by some firms.

The "conclusions" which some manufacturers state may be drawn from a "positive reaction" seem to the Council to be in some cases stated too dogmatically.

Koch's Old Tuberculin. Marketed in tubes in solutions of two strengths (0.5 per cent. and 1 per cent.).

Tuberculins for the Detre Differential Diagnostic Test. Three capillary tubes: 1. Tuberculin Original, "T. O." 2. Bouillon Filtrate, "B. F." (Human). 3. Bouillon Filtrate, "B. F." (Bovine).

Cutler Laboratory, Berkeley, Cal.

Tuberculin "Old," Koch; Concentrated; in 1 Cc. vials and preserved with trikresol; for use in solutions only. Also in serial dilutions; the latter in packages containing 5 bottles each holding about 8 Cc., ranging from 0.01 to 100 mg. per Cc.

Deny's Bouillon Filtrate; in 1 Cc. vials; preserved with trikresol; for use in dilutions only. Also in serial dilutions.

Tuberculin, Koch (concentrated).—For the cutaneous reaction; in capillary pipettes.

Tuberculin, Purified; 1 per cent. solution, for the ophthalmic reaction.

Farbwerke vorm. Meister Lucius and Bruening, Hoechst a. M., Germany. (Victor Koechl & Co., New York.)

Tuberculin "Koch" (old), marketed in vials containing 1 Cc.

New Tuberculin "Koch" (T. R.), marketed in vials containing 1 Cc.

Koch's Bacilli Emulsion; marketed in vials containing 1 Cc.

Tuberculosis Diagnostic "Hoechst," Dry. Dried tuberculin free from glycerin, prepared from Tuberculin, Koch (old Tuberculin). To be used in 0.1 per cent. solutions for the tuberculo-ophthalmic reaction. Marketed in powder form and in 0.1 per cent. solution ready for use (in pipettes containing the amount necessary for one reaction).

H. K. Mulford Co., Philadelphia.

Tuberculin "Old" (O. T.). Marketed in 1 Cc. vials; also in serial dilutions in 5 vials of 8 Cc. each progressing by doses of 2 minims containing 0.001 mg. to 2 minims containing 10 mg.; in rectal suppositories containing from 1 to 500 mg. tuberculin in cacao butter.

Tuberculin, Bouillon Filtrate, Denys. Marketed in 1 Cc. vials; also in serial dilutions.

Tuberculin "R." Marketed both in concentrated form and in serial dilutions.

Bacillin Emulsion "B. F." Marketed in 1 Cc. vials; also in serial dilutions.

Tuberculin Ophthalmic Test Solution. Prepared from the precipitate obtained on treating Tuberculin "Old" with 70 per cent. alcohol; $\frac{1}{2}$ and 1 per cent. solutions in physiological salt solutions are made of the dried precipitate.

Tuberculin Ophthalmic Test Tablets. The precipitate as prepared above; each tablet contains 1 mg. dried tuberculin; to be dissolved in 0.13 Cc. (2 minims) of water.

Tuberculin Ointment. An ointment consisting of 50 per cent. of tuberculin "Old" with an equal part of adeps lanae hydrosus.

Parke, Davis & Co., Detroit, Mich.:

Tuberculin, "Old" (Koch). Marketed in $\frac{1}{2}$ Cc. bulbs.

Tuberculin B. E. (concentrated). Bacillus Emulsion, marketed in bulbs containing 1 mg. of dry tubercle solids per Cc.

Tuberculin B. F.; marketed in 1 Cc. bulbs; contains 0.4 per cent. trikresol.

Tuberculin T. R. Marketed in 1 Cc. bulbs in 2 strengths; one contains 0.001 mg. of tubercle solids per Cc., the other 1 mg. per Cc.

Tuberculin Discs for the Ophthalmic Reaction. Prepared by precipitating concentrated tuberculin with alcohol. Each disc contains 3.3 mg. tuberculin which when dissolved in 0.3 Cc. (5 minims) of water makes a 1 per cent. solution.

Moist Dead Tubercle Germs. For use in making the bacillary emulsion for the tuberculo-opsonic test.

Bacterio-Therapeutic Laboratory, Asheville, N. C.

This laboratory is licensed to manufacture all tuberculin preparations including Watery Extract of Tubercle Bacilli (von Ruck), and Tubercle Bacilli Emulsions (von Ruck); they are supplied only to physicians who make special applications for them.

OTHER SERUM PRODUCTS

ANTIRABIC VACCINE.—An emulsion of the cords of rabbits that have died as a result of the subdural injection of fixed Rabies Virus. The fixed virus is obtained by the passage of Rabies Virus through a long series of rabbits until the animals die after a uniform period of incubation; this period may vary according to the strain of virus. The cords are removed from the rabbits and, as a rule, dried over potassium hydroxide for a period of from 2 to 15 days.

Use.—Antirabic vaccine is used for the preventative treatment of Rabies. Emulsions of the cords are prepared with broth or saline solution and injected subcutaneously. The "scheme of dosage" varies according to circumstances but the general principle consists in daily injections, beginning with an emulsion of a cord dried for from 8 to 14 days and gradually increasing until a "2 day" cord is used.

H. M. Alexander & Co., Marietta, Pa.

Antirabic Vaccine. The fixed virus is of the strain employed by the Hygienic Laboratory, Washington, D. C. An emulsion of vaccine in glycerin sufficient for one dose, together with a syringe and needle, is contained in a vacuum tube by which a low temperature may be maintained for a period of 36 hours. A dose is sent each day by mail; the treatment requires 18 to 22 days.

ERYSIPELAS AND PRODIGIOSUS TOXINS (Coley).—Parke, Davis & Co., Detroit, Mich. A mixed culture of *Streptococcus Erysipelatis* and *Bacillus Prodigiosus* made according to the specifications of Dr. W. B. Coley. Marketed in 1 oz. bottles.

Action and Uses.—Loeb summarizes the results¹ of the treatment of sarcoma with these toxins as follows: "It is therefore likely that the treatment of inoperable sarcoma with the toxins of streptococcus and *Bacillus prodigiosus* leads to a cure in approximately 4 to 9 per cent. of cases. And some results obtained so far suggest that this method of treatment may prove of value as a post-operative procedure in diminishing the number of recurrences, and that in a certain number of cases it might limit the necessity for amputation of the limb in cases of sarcoma of the long bones. As to its mode of action, nothing definite can be stated, but it is likely that the toxins themselves, as well as the local and general reactions they produce, frequently affect the life of the sarcoma cells unfavorably."

The toxins are injected in gradually increasing doses, at first in a part of the body removed from the tumor, and later, if possible, directly into the tumor itself.

NORMAL HORSE SERUM.—Injection of this has been recommended in various conditions where the coagulative power of the blood is deficient, as in hemophilia, severe anemias and purpura with hemorrhagic tendencies. Applied locally to bleeding surfaces it is said to act as a styptic and to have a favorable action on septic wounds. There is, however, an element of danger in the use of this or any other serum in certain conditions (Anaphylaxis), and while this is slight because of the rarity of dangerous effects it is sufficient to make the use of serums for purposes in which their value is extremely doubtful a questionable procedure.

National Vaccine and Antitoxin Institute, Washington, D. C.
Sterile Normal Horse Serum. Marketed in syringes containing 10, 15 and 20 Cc.

(To be continued)

Therapeutics

SUGGESTIONS FOR THE PHARMACOPEIA OF 1910

USEFUL DRUGS OF THE PHARMACOPEIA OF 1900

OLIVER T. OSBORNE, M.D.

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NEW HAVEN, CONN.

(Continued from page 289)

DIGESTANTS

The drugs which are used to aid digestion are hydrochloric acid, pepsin, pancreatin, and diastase.

The scientific indication for the administration of hydrochloric acid can only be obtained by analysis of a test meal which has been taken on an empty stomach. On the other hand, a careful analysis of the symptoms and signs of indigestion may develop the probability of an insufficiency of this acid, and its administration in small doses (and often five drops of the dilute acid in a wine glass of water, after meals, is sufficient) will improve the digestion and the appetite. It is very frequent, however, that hydrochloric acid is present in the stomach in excess, and then the use of hydrochloric acid as a drug would be contraindicated.

There seems to be no reason for substituting for hydrochloric acid, lactic acid, and, in fact, there seems to be no good therapeutic use for lactic acid, and it could well be omitted from the Pharmacopeia.

Whether nitrohydrochloric acid is a stimulant to digestion, or whether it has specific action in stimulating the liver, is rather doubtful. In conditions of sluggish liver or in conditions of jaundice or so-called biliousness,

nitrohydrochloric acid has long been used, but it is doubtful, as above stated, if it can act any differently than does hydrochloric acid. To have a specific activity of the combined acids, nitrohydrochloric acid should be freshly made and should be strong. Therefore one or two drops, well diluted, of the acidum nitrohydrochloricum is more efficient than more of the acidum nitrohydrochloricum dilutum. However, as just stated, both the acidum nitrohydrochloricum and the acidum nitrohydrochloricum dilutum could well be omitted from the next Pharmacopeia. The same is true of the diluted nitric acid.

It may be here parenthetically stated that there is no reason for perpetuating in another Pharmacopeia the diluted hydrocyanic acid. As a gastric sedative or as a sedative expectorant it is a myth, unless a dangerous dose is administered.

The amount of pepsin that is used internally is continuously on the decrease. This must show that its therapeutic value as a digestant is much less than was supposed. It also probably shows that the small amount that is administered is of little value in aiding the digestion of an ordinary meal. Also, its value has been overestimated because it is so frequently given with hydrochloric acid, and the hydrochloric acid is what has aided the digestion, and not the pepsin. It is probably very infrequent that pepsin is much diminished in the stomach, or, if it is, that dilute hydrochloric acid will not stimulate its secretion to a sufficiency. To administer pepsin with an alkali, as is often done, is absurd, as the alkali will inhibit or even prevent its activity. To combine pepsin and pancreatin in one prescription, to be administered either before or after meals, seems absurd. The pancreatin might act as long as the contents of the stomach remained alkaline or neutral from the saliva or alkaline foods ingested, but probably in much less than an hour, ordinarily, its activity in the stomach must cease from the normal acidity which develops, and its activity would be permanently prevented, and by the time it reached the duodenum it would be inert.

As a menstruum, in various elegant liquid preparations, in which to administer disagreeable, irritant or bad tasting drugs, pepsin preparations may have value, but there certainly is no need for the large number offered by the National Formulary.

There is probably no reason for the administration of pancreatin internally. Pancreatin is of value when combined with its proper amount of alkali as a predigestant of protein foods. Its value for this purpose is very great.

Diastase preparations and malt preparations may have their use in aiding the digestion of starches, but ordinarily it is much better, when there is poor digestion of starches, to limit the amount ingested or to discover the particular starch that is the best digested. There is no amount of diastase or malt that will cure, or much aid, a diabetic.

ANTACIDS

To reduce hyperacidity or lessen abnormal acidity of the stomach the following drugs are valuable: sodium bicarbonate, magnesia, chalk, lime water, and some form of ammonia.

As it is always better to prevent than to cure, a proper regulation of the diet and the proper treatment of any inflammation of the stomach that may be present constitute the curative treatment of pyrosis, heart burn, and disagreeable sensations due to abnormal acidity of the stomach. The above medicinal treatments are purely symptomatic. The most used and the most satisfactory

1. Loeb: THE JOURNAL A. M. A., 1910, IV, 262.

is probably the bicarbonate of soda, but constant repetition of this alkali tends, if not actually to injure the stomach, at least to do it no good, and may increase metabolic waste and cause actual loss of weight. This, of course, it cannot do in any series of doses, but if persistently taken for weeks or months, it certainly is not good treatment. Sodium bicarbonate taken just before a meal, in small doses, will probably quickly stimulate the outpouring of normal hydrochloric acid, and the digestion may be more quickly completed. The most disagreeable and abnormal stomach acidity, however, occurs two or three hours after a meal, and this may not be due to increased hydrochloric acid, but to lactic acid or other acids produced by fermentation. The bicarbonate of soda administered at this time will surely counteract the acidity and stop the disagreeable sensations, but will cause the production of gas, which often must be eructated.

It is not good practice to swallow bicarbonate of soda tablets or soda-mint tablets without previously either dissolving or at least crushing them with the teeth. A bicarbonate of soda tablet, as well as most tablets which contain salts, may irritate and cause inflammation of the mucous membrane of the stomach in the region where it drops and slowly dissolves. The swallowing of such tablets should be discouraged, and the same is true of the quite general mistake of sucking and then swallowing the concentrated solution of potassium chlorate tablets when there is slight sore throat. I believe that ulceration of the stomach can be caused by potassium chlorate concentrated solution thus swallowed.

Perhaps the next most active alkali is the aromatic spirits of ammonia, from a few drops to half a teaspoonful, given in plenty of water. This not only counteracts the acidity, but is a slight cardiac stimulant. The other results are just the same as with the bicarbonate of soda.

As the aromatic spirits of ammonia is one of the best preparations of ammonia, either for cardiac stimulation or as an antacid, there seems to be no reason for the *spiritus ammoniac* in the next Pharmacopeia. There is also no reason therapeutically that the Pharmacopeia should recognize *aqua ammoniac fortior*.

I might parenthetically now say there is no use for ammonium iodid in the Pharmacopeia, and no use for ammonium salicylate. It is also quite doubtful if ammonium bromid is less depressant than sodium bromid. It certainly is very much more disagreeable to take.

Magnesia, or *magnesium oxidum*, is a simple, and perhaps the simplest, antacid. It is hardly absorbed at all, slightly laxative in its action, and can probably only do harm when it is taken in large amounts for a long time, and then it may form concretions much as does bismuth when persistently taken, this in spite of its slight laxative action. In the form of the milk of magnesia it is one of the most elegant antacids offered. The *magnesium oxidum* causes less production of gas than does the *magnesium carbonas*, and there seems to be no reason for the preference of *magnesium carbonas* above the *magnesium oxidum*. The former might, therefore, be omitted from the Pharmacopeia. The *magnesium oxidum ponderosum* (heavy magnesia) seems superfluous.

Chalk in the form of the official *creta preparata* is antacid and slightly constipating. It is not as active as the other antacids, and the dose required is slightly larger. For children with hyperacidity of the stomach and intestines, with diarrhea, chalk mixture is often a simple symptomatic treatment, although free catharsis

and a regulated diet is better treatment. If the bowels are constipated, milk of magnesia is better treatment.

Lime in the form of lime water (*liquor calcis*) is frequently used as an antacid, and frequently used in milk to prevent the formation of large curds. To be of much value, the dose should be larger than is generally used. It is slightly constipating. As an antacid a syrupy preparation of lime, as *syrupus calcis*, would seem contraindicated. There is probably no use in the next Pharmacopeia for *syrupus calcis*, the *liquor calcis*, when needed, answering all therapeutic purposes.

CARMINATIVES

Carminatives are used to increase peristalsis of the intestines and to promote eructations of gas from the stomach when such is present in abnormal amount, and often to prevent nausea from disagreeable tasting drugs, and as pleasant menstrua for any drug. The number in the Pharmacopeia is too great. It is probable that as carminatives peppermint, capsicum, cinnamon, anise cardamon and ginger represent all that are required.

If spearmint, or *mentha viridis*, be omitted from the Pharmacopeia it will do away with the adjective *piperita* and save unnecessary writing when peppermint is ordered.

It is doubtful if the fluidextract of capsicum is needed. The oleoresin of capsicum may be occasionally used.

It should be decided in the next Pharmacopeia which cinnamon is the best, and that alone should be made official. It seems unnecessary to have both a tincture and a spirit of cinnamon; the spirit is sufficient.

Anise and cardamon are much favored as carminatives, and ginger is often a valuable aromatic. It is doubtful if the fluidextract of ginger is needed, or the oleoresin; the tincture and the syrup are sufficient.

If the rest of the aromatics are removed from the Pharmacopeia, and if their oils, spirits and waters are removed, the Pharmacopeia will be considerably diminished in bulk.

CATHARTICS

In this age of constipation and the age in which a large number of people must take, or at least do take laxatives, the necessity for advising such people to use only the mildest has become evident. There has also gradually become less and less need of strong, drastic, irritant cathartics. Occasionally they may be indicated, but it is probably rare. It is probable that gamboge, colocynth and scammony could be dropped without any serious loss of cathartic efficiency.

The compound cathartic pill, containing, as it does, six cathartics, is a left-over, old, hereditary composition. This pill, however, is strongly favored by many surgeons and some internists, but it is very true and easily proved that a proper dose of other, simpler cathartics would act as well. The vegetable compound cathartic pill is not needed.

Euonymus, with its extract and fluidextract, and *leptandra*, with its extract and fluidextract, could all be well omitted from the Pharmacopeia.

The number of preparations of aloes and rhubarb should certainly be reduced. It is doubtful if *mastiche* and myrrh have any activity, and probably do not do more in combination with aloes than perhaps to inhibit its solution. The tincture of aloes and myrrh, the pills of aloes and myrrh, the pills of aloes and *mastiche*, and the pills of aloes and iron (each physician should be able and capable of combining aloes and iron to suit his individual patient) could well be omitted.

(To be continued)

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NORMAL AND PATHOLOGIC LOCALIZED DEPOSITS OF FAT

There occurs in many treatises on pathology and surgery a statement to the effect that lipomas commonly retain their size, and may even grow larger, at the same time that all the natural fat deposits of the body are being exhausted in cachexia or starvation. This phenomenon, if at all constant or even if frequent, has more than passing interest as a medical curiosity, for it indicates that one of the simplest of neoplasms, which seems to show no essential deviation in structure from the normal tissues from which it arises, does differ in some fundamental way as to its metabolism; and also, being a striking exception to the other fat tissues, this behavior of the lipomas should throw some light on the problems of fat metabolism. It is unfortunate, therefore, that most of the references to the behavior of lipomas in emaciation consist of general statements as above cited, without specific details; and Shattock, in a recent discussion of this topic, finds that the evidence which is available is not convincing, and cites a case in which the lipoma decreased in size when the patient lost weight. It would be well if practitioners having cases which furnish any evidence on this subject would put them on record now that the question has been raised.

With the physiologic behavior of lipomas as a text, Shattock has made a most interesting excursion into the comparative anatomy of localized fat deposits, which brings out certain new facts as well as others which are not generally familiar.¹ Many animals normally possess localized deposits of fat which are certainly normal in their physiologic behavior, being absorbed whenever the body needs the fat reserves, although anatomically they are often as distinctly circumscribed as the lipoma, and if it were not known that they were natural and constant in the group of animals in question they would probably be designated as lipomas. Perhaps the most familiar example is the "hump" of the camel, which is simply a mass of fatty tissue on which the animal draws in its journeys across the desert, finishing a particularly exhausting trip with the hump flabby and drooping. The hump of the zebu consists of both fat and muscle, and, as there is no mechanical function for the latter to perform, it is probably a storehouse of protein. The fat-tailed breeds of sheep use their remarkable appendages

(which in some breeds are so large as to require that wheels be fastened under them to prevent abrasions from dragging) as a reserve in case of need, and a similar provision exists in the fat-rumped sheep. For the latter there is a striking human analogy in the fat masses of the buttocks and thighs of the Bushmen and Hottentots, which are said to become flabby as a result of deprivation of food, and which are circumscribed fat deposits distinct from the diffuse fat of general obesity. It is interesting to note that representations of this steatopygy are found in the relics of predynastic Egyptian art, indicating that in ancient times representatives of the Bushmen existed as far from their present South African home as the Nile valley, and even Crete. In time they were driven farther and farther south by the stronger races until they are now limited to a small area of the continent of which they were the primitive inhabitants.

In many hibernating mammals there are specialized masses of fatty tissue in the neck, which annually take on a great deposit of fat, but which are not simple adipose tissue. They contain a peculiar type of cell, rich in protoplasm, in which lie many small fat globules, entirely different from the large unilocular fat cells of ordinary fat tissue. This tissue is very vascular, and is properly considered to be a special organ with the function of storing fat with exceptional rapidity in a readily accessible condition. As is well known, human cretins frequently exhibit fat masses about the neck and axillæ, and Shattock finds that these correspond to the fat glands found in the neck of the hibernating mammals. The normal human neck also contains similar but less conspicuous fat glands, equipped with the same specialized vacuolated cells. In case of emaciation this fat is drawn on and the size of the masses decreases. Another interesting form of local fat deposit in the human being is exhibited in the so-called "sucking cushions" of infants, which lie in the cheek in front of the masseter muscles and prevent the cheek from being drawn in between the jaws in sucking. These structures seem to be localized masses of adipose tissue of the ordinary type, differing from the subcutaneous fat tissue neither in structure nor in chemical composition; practically they are encapsulated lipomas, and (which is of special significance) they do not give up their fat when the child becomes emaciated, but rather, by their persistence, become unusually conspicuous when the adjacent subcutaneous fat wastes away. Here, then, we have a normal prototype of the lipoma, in the form of a deposit of fat that is not available to the body as a reserve food-supply, and this fact makes it entirely probable that lipomas may have the same property of persisting independent of the existing conditions of fat depletion.

THE STATUS OF SERUMS, VACCINES, ETC.

With an increasing knowledge of the antitoxins, vaccines, viruses and similar products, comes the realization of their great importance as remedial agents. In this

1. Shattock, S. G.: Normal Tumor-like Formations of Fat in Man and the Lower Animals, *Proc. Roy. Soc. Med.*, 1909, ii. 176

group we have vaccine virus, the greatest of all prophylactic remedies; diphtheria antitoxin, the greatest specific in bacterial diseases; tuberculin, of so much value in the diagnosis and treatment of tuberculosis; tetanus antitoxin, antirabic virus, and a large number of bacterial vaccines.

There is no class of remedial agents on which the physician should be better informed and none, unfortunately, concerning which it is so difficult to obtain a scientific and unbiased opinion. Only one of the drugs of this class—diphtheria antitoxin—is recognized by the present U. S. Pharmacopeia, and, although some of the others (vaccine virus, for instance) have been in use for some time, all are the subject of such active investigation at the present time and so many new facts concerning them are being discovered that it is extremely difficult for a practitioner to keep abreast of these developments.

Scientific and disinterested information concerning them is widely scattered and often not easily accessible; the result has been that physicians have become dependent to an unusual degree on the circulars issued by manufacturing houses. Some of these circulars are almost models of scientific accuracy; others, unfortunately, are far from accurate and the directions given for the use of the products are not even safe.

In order to meet in a certain measure this need for unbiased information concerning these agents, the Council on Pharmacy and Chemistry decided some time ago to include in New and Nonofficial Remedies a chapter on sera, viruses, vaccines and analogous products. The first report on this subject was published in *THE JOURNAL*, Sept. 18, 1909, and consisted simply of a list of the products of this class which legally may be sold in interstate commerce in the United States. The system of federal control exercised over them was also briefly outlined. At that time it was stated that descriptions of the individual products would follow; these are published this week in the Department of New and Nonofficial Remedies.

In order to aid the physician to a better understanding of these products and their uses, the officers of the Section on Pharmacology and Therapeutics invited a number of the foremost authorities of the country to take part, at the Atlantic City meeting, in a symposium on "The Present Status of Vaccine and Serum Therapy with Special Reference to the Products on the American Market." This symposium¹ appears in this issue, and, taken with the descriptions in New and Nonofficial Remedies, gives a survey of the field of serotherapy that is at once instructive and inspiring in its extent and detail. In these products the medical profession has an agency equally as potent and exact as drugs and one whose limitations are still unknown.

JONNESCO AND STOVAIN

The publicity given to the visit of Professor Jonnesco to this country, and the extravagant way in which the newspapers have commented on his method of anesthesia, have awakened the desire in the minds of many physicians to know the exact status of spinal anesthesia.

Since Corning in 1885 demonstrated the possibility of producing surgical analgesia by intraspinal injection, in addition to cocaine other drugs have from time to time been used for this purpose, among them novocain, eucain, tropococain, alypin and stovain. Each has had its enthusiastic advocates, though on account of the many annoying immediate effects, and frequent fatalities, as well as unfavorable sequelæ in the non-fatal cases, the method has at no time had a large number of permanent adherents. As previously stated in *THE JOURNAL*,¹ stovain is not a new anesthetic, but has been in use both as a local and general spinal analgesic since its discovery by Fournieu and its presentation to the profession by Haller in 1904.

On account of the depressing effects of all these drugs on the heart and respiration, spinal analgesia has been confined almost entirely to the low or lumbar injection for operations on the abdomen and pelvic viscera. Jonnesco uses with stovain a certain proportion of strychnin and asserts that thus the lethal effects on heart and respiration are overcome, permitting the use of the drug in the high or dorsal injection for operations on the upper portion of the trunk, the arms, neck and head. In this respect, it may be considered that Jonnesco's method, being an improvement over the employment of the analgesic drug alone, is entitled to stand by itself and to be judged without too great emphasis being laid on the shortcomings of the method as heretofore employed.

But the effects on these two vital functions are not the only serious shortcomings of this method of anesthesia, whether stovain or any other of the drugs named be employed. Holländer, who is rather an advocate of the method in many cases, admits that in abdominal operations the occurrence of unexpected hemorrhage with the patient conscious would seriously hamper the surgeon. Rehn says that surgeons generally agree that the high anesthesia is dangerous, and that it is more dangerous in the young than in the elderly in whom physiologic hardening of the tissues of the cord renders them less sensitive. He says further that there is little prospect of localizing the anesthetic in the subarachnoid space, and that it is strictly contraindicated in suppurations, disturbances in the central nervous system, widespread tuberculosis and in arteriosclerosis, which latter would seem greatly to limit its use in the very cases in which it is said to be most useful, on account of the frequent heart and nephritic accompaniments of arteriosclerosis. Propping's experiments show that a fluid of greater specific gravity than the cerebrospinal fluid

1. This symposium is complete in this issue except for one article which had to be left over until next week because of its unusual length. This is the article by Dr. B. A. Thomas, Philadelphia, on "The Results of Three Years' Experience in Bacterial Immunization."

1. Nov. 27, 1909, p. 1831, and Dec. 18, 1909, p. 2117.

quickly diffuses itself and may reach the medulla with fatal effect. It is to avoid this possibility that Jonnesco and others are careful not to allow the patient to lie in the fully recumbent position for some minutes after the injection.

Another serious objection has been stated by Spielmeier, whose experiments on rabbits and examination of fatal cases showed that degeneration of the motor ganglion cells of the anterior horn takes place, to an irreparable degree in many cases, with a dose of 0.07 gm. of stovain. These cord changes did not take place immediately but some days or weeks after the injections. No direct reports of experiments on this point with the other spinal drugs have been noted, but it is not unreasonable to come to the conclusion that the injection of these drugs into the delicate structures of the cord and its membranes may have exactly the same disastrous results.

An article on Jonnesco's demonstrations in this country by Dr. J. J. Moorhead appears in this issue. Dr. Moorhead not only attended Professor Jonnesco's operations in New York, but followed him to Chicago and to Rochester, Minn., and consulted many prominent surgeons, to secure a consensus of opinion, and sums up the grounds on which hostile criticism of the method may be based. It is not to be understood that the method is here condemned entirely, nor that the somewhat radical conclusions of Dr. Moorhead's paper are fully approved. The attitude assumed is rather to allow credit for all of real merit that the modified method possesses.

It is to be remembered that Professor Jonnesco is one of the leading surgeons of his own country. For this reason, and also because he is a man of considerable wealth, it may be assumed that his research and work in surgery are in the interest of pure science. He is an enthusiast on the method of using stovain originated by him, and he deserves credit for his courage in coming to a country with whose language and customs he was not acquainted to demonstrate his method. It is unfortunate that so much publicity was given the matter in the sensational newspaper press after its own peculiarly inaccurate manner. This perhaps prejudiced the profession to a certain extent and detracted from such an impartial hearing as the method may have been entitled to.

The medical profession welcomes every new advance in the art and science of medicine, but it is right that it should not give its approval too easily until a method has passed most severe tests. As Dr. Moorhead says, we have had the opportunity of seeing this method in the hands of an expert, and if it makes no better showing under his direction, it certainly behooves the average man to use it only with the utmost precaution. There are undoubtedly cases in which this method of producing anesthesia is of service, but in the majority of instances, it is apparent that other methods are better.

PREVENTABLE WASTE OF LIFE

Especially significant as an indication of the progress for better health conditions is a pamphlet recently issued by the Provident Savings Life Assurance Society of New York, entitled "The State and the Death-Roll," and designed to show the increased waste of life from kidney, heart, brain and other non-communicable maladies in the past thirty years, in contrast to the reduction in the death-rate from contagious diseases. The author, Mr. E. E. Rittenhouse, president of the society, refers to the report of Professor Irving Fisher on national vitality, showing that over six hundred thousand human lives are needlessly sacrificed in the United States every year, and that about three million persons are constantly seriously ill in the United States, more than one-half of these illnesses being preventable. The financial importance of these statements to life-insurance companies is evident.

While the general death-rate and especially the death-rate from communicable diseases has been reduced, the rate from non-communicable diseases due primarily to personal habits, overwork, etc., has been largely increased. In proof of this, the following facts are cited: The death-rate for consumptives in the registration area in the United States has decreased 49 per cent. since 1880, while the death-rate from diseases of the kidneys has increased 131 per cent. in the same time. The death-rate from heart disease has increased 57 per cent., from apoplexy 84 per cent., and from all three 83 per cent. At the same time, the death-rate from heart, apoplexy and blood-vessel diseases in England and Wales has decreased 7 per cent. Particularly illuminating is the table showing the death-rate for different ages by decades from 1880 to 1907, that of Massachusetts and that of England and Wales being contrasted. Between the ages of twenty and thirty, the death-rate in Massachusetts has decreased 41 per cent., while between the ages of twenty-five and thirty-five it has decreased in England and Wales 34 per cent. Between the ages of thirty and forty, the death-rate in Massachusetts has decreased 15 per cent. and in England and Wales 25 per cent., but between the ages of forty and fifty the death-rate in Massachusetts has increased 35 per cent., while in England and Wales the rate from forty-five to fifty-five has decreased 11 per cent., making a total difference of forty-six lives per hundred between the ages of forty and fifty-five, the most valuable years of a man's life, in which England and Wales have gained while Massachusetts has lost. Mr. Rittenhouse concludes that this abnormal increase in the death-rate from non-communicable diseases is due to the early wearing out of vital organs due to excesses in eating, drinking, working and playing—in short, intemperate living and the strenuous life. He says: "The science of sanitation and disease prevention has steadily advanced and yet the death-rate from these degenerative maladies has increased by leaps and bounds. The fact that the mortality in the younger lives is decreasing is very gratify-

ing, but it offers no excuse for ignoring the extraordinary increase in mortality in middle life and old age. We try to protect a man from a disease which another might give him, but, without the slightest help, permit him to die of a disease which he may unknowingly give himself."

As a remedy for existing conditions, Mr. Rittenhouse urges that the state inaugurate a systematic and permanent campaign of education for the prevention of diseases of all kinds by the distribution of health bulletins, the liberal use of health and medical inspectors and by other methods. He also suggests that the state provide free medical examinations, periodically, for any who may desire them, for the purpose of detecting disease in time to check and cure it. This plan, he says, would enlarge the work of the health departments and would require an increased staff of inspectors and medical examiners, but this would be well within the bounds of reason and would be amply justified by the results.

Mr. Rittenhouse's pamphlet is a most significant and encouraging evidence of the rapid growth of public opinion in favor of the prevention of disease and the conservation of life. When it is once thoroughly realized by business organizations and by commercial interests that the present waste of life means an enormous loss not only to the country at large, but also to the business interests themselves, steps will be taken to prevent the waste of life and energy which has been going on unchecked. This subject is of interest not only to capital as represented by the life-insurance companies and invested interests, but also to organized labor, since a large share of the preventable loss through sickness and death falls on the laboring man and his family.

SEROTHERAPY AND THE PHARMACOPEIA

Rosenan's remarks in this issue on "Why Vaccine Virus Should Be in the Pharmacopeia" are especially pertinent. No one conversant with modern medicine doubts for an instant that vaccine virus and some of the antitoxins and bacterial vaccines are of quite as great importance in the prevention and treatment of disease as many of the preparations at present in the Pharmacopeia and vastly greater than some. The last committee of revision made an important advance when it included serum antidiphthericum; it certainly may be taken for granted that the next committee will include an antidiphtheritic globulin and a number of other products of this general class. In view of the great importance of the subject, it is to be hoped that the pharmacopeial convention will elect as a member of the committee of revision some one who is a recognized authority on these subjects. Nothing will do more to restore the Pharmacopeia to its proper place in the eyes of the medical profession than the inclusion in its pages of those products of modern research which have become such invaluable additions to the armamentarium of the present-day physician.

Medical News

DISTRICT OF COLUMBIA

Society Meeting.—At the annual meeting of the Medical Society of the District of Columbia, January 3, the following officers were elected: President, Dr. Louis Mackall; vice-presidents, Drs. D. Olin Leech and Philip S. Roy; corresponding secretary, Dr. Dwight G. Smith; recording secretary, Dr. Henry C. Macatee; treasurer, Dr. Charles W. Franzoni; librarian, Dr. Edwin L. Morgan, and censors, Drs. D. Olin Leech, Henry B. Deale, Francis R. Hagner, James D. Morgan, and Raymond T. Holden.

COLORADO

Personal.—Dr. Mary E. Phelps, Canon City, is about to leave for Europe, and during her absence her practice will be in charge of Dr. Minerva M. Knott, Sedalia, Mo.—Dr. Pruitt, Redstone, has been appointed physician of the Colorado Fuel and Iron Company, vice Dr. Lewis B. Paul, resigned.

Society Meeting.—The annual meeting of Mesa County Medical Association was held in Grand Junction, January 11, and the following officers were elected: Dr. P. Phelps Collins, Grand Junction, president; Drs. Harry Freudenberger, Grand Junction, and Robert B. Porter, Fruita, vice-presidents; Dr. Carl W. Plumb, Grand Junction, secretary-treasurer; Dr. Benjamin F. Miller, Grand Junction, delegate to the state association, and Dr. Francis D. Coltrin, Grand Junction, alternate.

Asylum Report.—In his annual report Dr. Alfred P. Busey, superintendent of the State Hospital, Pueblo, recommends the purchase of a farm near the hospital for colonization and open air treatment of patients. There are at present 896 inmates in the institution. When the three cottages provided for by the last legislature have been built, he claims that there will still be enough on the waiting list to more than fill the institution, necessitating other additions. The daily cost of maintaining each patient was forty-one cents.

FLORIDA

New Laboratory for State Board.—The State Board of Health is to erect a laboratory in Jacksonville, on property donated by the city at Raspberry Park. The proposed building will cost about \$15,000, and will contain accommodation for experiments and investigation, incubator rooms, refrigerator rooms, offices, library and records. The laboratory is to be in charge of Dr. Henry Hanson, formerly of Milwaukee, Wis.

Personal.—Dr. John Halton, Sarasota, narrowly escaped drowning in Big Sarasota Pass, while fishing, December 29.—Dr. Charles E. Terry has been appointed health officer of Jacksonville. Dr. Joseph L. Romero, retiring health officer, was presented by the health department with a loving cup in appreciation of his services.—Dr. Gaston Day has been appointed city physician of Jacksonville.—Dr. James H. Randolph, chief physician of the Florida Hospital for the Insane, Chattahoochee, has resigned, to take effect April 1.—Fire in the Holder Block, Ocala, recently caused a damage of about \$400 to the office of Dr. F. E. McClane.

ILLINOIS

Hospital News.—The Whiteside Hospital, Sterling, the only hospital in Whiteside county, was dedicated January 1.—The medical staffs of the state hospital are now placed in the new classification of medical assistant superintendents, physicians, assistant physicians, and medical interns.

Safeguarding the Babies.—Dr. Catherine Hedger, at a meeting of the Chicago Association of Day Nurseries, January 13, launched a movement to place all public nurseries in Illinois under the state law, the proposed law following in the general lines of the law at present in force in New York State.

Per Capita Cost of State Institutions.—The last quarterly bulletin of the Illinois Board of Charities gives the following as the net cost per capita of maintaining each of the state hospitals for the year: Chester, \$44.69; Kankakee, \$38.23; Peoria, \$37.75; Anna, \$37.54; Jacksonville, \$34.15; Elgin, \$33.88, and Watertown, \$31.97.

Personal.—Dr. Carl G. S. Rydin has resigned from his position in the Kankakee State Hospital to take effect February 1.—The office building of Dr. William W. Huston, Good Hope, was seriously damaged by fire, January 10.—Dr. George L. Eyester, Rock Island, who has been under treatment in Chicago, has entirely recovered.—Dr. Ora L. Pelton, Jr., Elgin, will return from Europe about the middle of Feb-

ruary.—Dr. Eli V. Rice, Chenoa, who has been seriously ill with inflammatory rheumatism, is reported to be convalescent.—Dr. J. T. Black, one of the staff of the Illinois Asylum for Feeble-Minded Children, Lincoln, has resigned.—Dr. Jacob Huber, Pana, is reported to be critically ill.—Dr. George H. Brannon, Manhattan, who was recently operated on in St. Joseph's Hospital, Joliet, has returned home.—Dr. Joseph DeSilva, Rock Island, has been appointed a commissioner for the Joliet Penitentiary.

Chicago

Hospitals Benefit.—The net receipts of the annual charity ball amounted to \$29,000, which is to be distributed among twelve institutions.—At a benefit given January 13, at the Illinois Theater for the endowment of a bed at St. Joseph's Hospital, \$1,500 was netted.

Personal.—Dr. Eugene S. Talbot has been appointed a corresponding member of the Budapest Royal Society of Physicians.—Dr. John A. Cavanaugh has been appointed professor of otology, rhinology and laryngology in the Chicago Eye, Ear, Nose and Throat College.—Dr. Frank B. Earle has been elected surgeon of the local organization of the Society of Colonial Wars.—Dr. Richard H. Street has been appointed fleet surgeon of the Chicago Yacht Club.

INDIANA

Personal.—Dr. Warren S. Williams has been appointed local surgeon for the T. and C. I. Railroad at Kendallville.—Dr. Clay A. Ball, Muncie, was operated on for appendicitis, December 18.

Anatomic Society Incorporates.—A number of physicians of Evansville have organized the Evansville Anatomical Society, with the object of the study of practical anatomy. Drs. Walter R. Cleveland, Henry C. Knapp and Eugene C. Taylor have been elected directors.

Reciprocity with New York.—Dr. William T. Gott, Crawfordsville, secretary of the State Board of Medical Registration and Examination, announces that reciprocal relations as regarding physicians' licenses have been established between Indiana and New York, subject to the rules and regulations of reciprocity between the medical boards.

State Board Organizes.—The State Board of Medical Examiners and Registration met in Indianapolis, January 11, and organized by the election of the following officers: President, Dr. James M. Dimmen, Fort Wayne; vice-president, Dr. Solomon G. Smelser, Shirley; secretary, Dr. William T. Gott, Crawfordsville, and treasurer, Dr. Moses S. Canfield, Frankfort.

Elections.—The annual election of the Indianapolis Medical Society was held January 5, resulting as follows: President, Dr. Samuel E. Earp; vice-president, Dr. John L. Freeland; secretary-treasurer, Dr. Roscoe H. Ritter; councilors, Drs. Charles F. Neu, Alois B. Graham and Harry G. Gaylord; and delegates to the state association, Drs. David Ross, John H. Oliver and John A. McDonald.

Physicians' Protective Association.—The Protective Association of Physicians and Surgeons has been incorporated in Indianapolis, with a capital stock of \$10,000. The officers of the organization are: President, Dr. Frederick A. Tucker, Noblesville; vice-presidents, Drs. Charles H. Emery, Bedford, and Thomas F. Spink, Washington, secretary and general manager, Fred L. Mills, Robinson, Ill., and treasurer, Dr. J. A. Garrettson, Indianapolis.

IOWA

Coming Meeting.—The Southwestern Iowa Medical Association will hold its annual meeting in Albia, February 17.

New State Board Secretary.—Dr. Guilford H. Sumner, Waterloo, the new secretary of the Iowa State Board of Health, has gone to Des Moines and assumed the duties of his office.

The Afflicted.—Dr. Joseph J. Flannery, Des Moines, who has been seriously ill at Mercy Hospital, Des Moines, is reported to be greatly improved.—Dr. George E. Crawford, Cedar Rapids, underwent an operation for disease of the gall-bladder, January 1, in St. Luke's Hospital.—Dr. David A. Robertson, Williams, is reported to be seriously ill.—Dr. Harry R. Layton, Leon, is reported to be seriously ill with heart disease.—Dr. Anthony P. Donohoe, Davenport, who was recently operated on at Mercy Hospital, is reported to be convalescent.—Dr. Elijah W. Jay, Marshalltown, who was operated on for the removal of gall-stones in Augustana Hospital, Chicago, has returned to his home.—Dr. William L. Creswell, Danbury, was operated on for appendicitis recently.

Personal.—The office of Dr. John W. Dixon, Burlington, was entered by burglars, January 1, and \$70 was stolen.—Dr. Everett E. Richardson, Webster City, has been appointed a member of the State Board of Health, vice Dr. Alexander M. Linn, Des Moines.—Dr. J. C. Ryan has been appointed professor of surgery in the Medical Department of Drake University, Des Moines.—Dr. Grover C. Coakley has purchased the interest of Drs. John W. Reynolds and Oliver S. Barber in the Physicians' Hospital at Preston, and will conduct the institution as a private hospital.—Dr. George M. Agan, mayor of Silver City, has resigned and will move to Glenwood.—Dr. Peter A. Bendixen, Davenport, has been appointed local surgeon for the Burlington System.

Society Meetings.—The Poweshiek County Medical Society, at its annual meeting, December 5, elected Dr. Clinton E. Harris, Grinnell, president; Dr. Delano Wilcox, Malcolm, vice-president; Dr. E. E. Harris, Grinnell, secretary-treasurer, and Dr. Charles D. Busby, Brooklyn, censor. Dr. Bert L. Eiker, Leon, a member of the State Board of Health, presented a paper on "Pellagra."—The thirty-seventh annual meeting of the Marion County Medical Society was held in Knoxville, December 9, and the following officers were elected: Dr. Ernest C. McClure, Bussey, president; Dr. Clarence E. James, Durham, vice-president; Dr. Corwin W. Cornell, Knoxville, secretary; Dr. Joseph W. Finarty, Knoxville, delegate to the state society, and Dr. Lewis E. Park, Tracy, censor.—Clinton County Medical Society, at its annual meeting, held in Clinton, January 5, elected Dr. Kurt Jaenicke, president; Dr. Frank N. Keefe, vice-president; Dr. Frank O. Kershner, secretary-treasurer; Dr. Grace Schermerhorn, librarian; Dr. John F. H. Sugg, delegate to the state society, all of Clinton; and Dr. George Hofstetter, Lyons, alternate.—At the annual meeting of Muscatine County Medical Society, December 30, the following officers were elected: President, Dr. Elbridge H. King, Muscatine; vice-presidents, Drs. Edward K. Tyler, Muscatine, and Francis H. Battey, West Liberty; secretary-treasurer, Dr. Jeff D. Fulliam, Muscatine, and censor, Dr. Alexander R. Leith, Wilton Junction.—At the last meeting of the Woman's Clinical Society, Des Moines, Dr. Lenna L. Means was reelected president; Dr. Sophie H. Scott, vice-president, and Dr. Jennie M. Coleman, secretary.

LOUISIANA

Slidell Sanatorium.—The Louisiana Antituberculosis League of New Orleans will erect two buildings 40 by 60 and twelve two-room cottages of frame construction at Slidell to cost \$6,000.

Tuberculosis Sanatorium Site Donated.—The Great Northern Railway has donated a site for the St. Tammany Cottage Home for Tuberculosis, on one of the highest points in the parish, well drained and covered with pine trees. The railway has not only donated the site, but will dig an artesian well and transport the cottages and furnishings of the present sanatorium to the new site free of charge.

MAINE

Examiners of School Children Appointed.—At the meeting of the school board of Bangor, December 14, Drs. Blanche M. Mansfield, Harold H. Crane, Luther S. Mason and Harris J. Milliken were elected medical examiners of public schools of the city.

Medical Society Meetings.—The annual meeting of Kennebec County Medical Association was held in Augusta, December 30. Dr. Herbert E. Milliken, Waterville, was elected president; Dr. Richard H. Stubbs, Augusta, vice-president; Dr. Wellington Johnson, Augusta, secretary-treasurer; and Dr. Oscar C. S. Davies, Augusta, censor.—At the annual business meeting of Cumberland County Medical Association, held in Portland, December 10, Dr. Alfred King, Portland, was elected president; Dr. Charles B. Sylvester, Harrison, vice-president; Dr. Charles S. Knight, Portland, secretary; Dr. Arthur S. Gilson, Portland, treasurer; and Dr. Willis Bryant Moulton, Portland, censor.

MARYLAND

The Insane in Maryland.—In its twenty-fourth annual report, the State Lunacy Commission urges a bond issue of \$500,000 to provide necessary buildings, etc., for the state care of the insane.—According to Dr. Arthur P. Herring, secretary of the State Lunacy Commission, there are 1,816 insane in the state hospitals, 924 in private sanatoria, 788 in asylums, and 88 in almshouses. There has been an increase during the year of 111.

Society Meetings.—The following officers were elected by the Prince George's County Medical Society at its annual meeting in Hyattsville, January 11: President, Dr. Guy W. Latimer,

Hyattsville; secretary, Dr. Henry B. McDonnell, College Park; treasurer, Dr. Arthur O. Etienne, Jr., Berwyn; delegate to the state society, Dr. Charles A. Fox, Beltsville, and alternate, Dr. Lewis A. Griffith, Upper Marlboro.—Allegany, County Medical Society, at its annual meeting in Cumberland, January 12, elected the following officers: President, Dr. Emmett L. Jones, Cumberland; vice-president, Dr. Algernon G. Smith, Midland; secretary-treasurer, Dr. Charlotte B. Gardner, Cumberland; censor, Dr. Thomas W. Koon, Cumberland; delegates to the state society, Drs. Timothy Griffith, Frostburg, and John E. Legge, Oakland, and alternates, Drs. J. Marshall Price, Frostburg, and Henry W. McComas, Oakland.

Baltimore

Deaths from Violence in 1909.—During 1909, there were 288 fatal accidents in Baltimore. Of these 57 were due to drowning, 48 to burns, 37 to railway injuries, 20 to street car injuries, 15 to falls, 8 to accidental poisoning, and 95 to suicide.

To Aid Widows and Orphans.—A concert, supper and sale is to be held in the new Medical Hall, February 2 and 3, for the benefit of the Ladies' Auxiliary of the Widows' and Orphans' Fund of the Medical and Chirurgical Faculty of Maryland.

Personal.—Dr. George B. Reynolds, a police surgeon, has been detailed to instruct the police in first-aid.—Drs. Henry M. Baxley, Edward E. Mackenzie and Edmund A. Muñoz have been reelected attending physicians to the Baltimore General Hospital.—Dr. Harry Adler has been reelected president of the Hebrew Hospital.—Dr. Harry Friedenwald has been elected president of the Jewish Home for Consumptives.—At a reception given by the Board of Lady Managers of the Presbyterian Eye, Ear and Throat Charity Hospital, January 10, in honor of the thirtieth anniversary of the connection of Dr. Herbert Harlan with the institution, a silver loving-cup was presented to Dr. Harlan.

The Work Against Tuberculosis.—The Maryland Association for the Prevention and Relief of Tuberculosis recommends the establishment of a municipal dispensary for tubercular patients, and urges the legislature to appropriate at least \$10,000 a year for the antituberculosis work of the State Board of Health. It recommends the separation of the Hospital for Consumptives from Bayview Asylum (the city almshouse), and the increase of the capacity of the hospital to 500 beds. It also recommends the establishment under the board of managers of the State Tuberculosis Sanatorium of a farm colony for colored consumptives. During last year the traveling exhibit of the association visited every county in the state; 267 free lectures were given before about 130,000 persons; 126,500 separate pieces of literature were distributed, local associations were organized in four counties, and a special tuberculosis dispensary was maintained at Fell's Point in southeast Baltimore.

MISSISSIPPI

Personal.—Dr. Albert G. McLaurin, Brandon, has been elected physician to the Rankin Prison Farm; Dr. McCallum has been reelected physician of the Sunflower Farm, and Dr. Christmas of the Belmont Farm.—Dr. Nolan Stewart has been appointed superintendent of the Mississippi Insane Hospital Asylum, vice Dr. Thomas J. Mitchell, to take effect on Dr. Mitchell's retirement, May 3.—Drs. Taylor H. Henry and William H. Cryer have been elected members of the board of health of Columbus.

Society Meetings.—At the annual meeting of Jefferson County Medical Society, held in Fayette, December 7, Dr. Daniel C. Warren, Perth, was elected president; Dr. William H. H. Lewis, Fayette, vice-president; Dr. John C. McNair, Fayette, secretary; Dr. Sherrod R. Towns, Union Church, delegate to the state association, and Dr. G. T. Warren, alternate.—At the meeting of the Winona District Medical Society, held in Winona, January 4, the following officers were elected: Dr. James O. Ringold, Vaiden, president; Drs. John W. Young, Grenada, James P. Wiggins, Eupora, Henry J. Small, Winona, and Graham W. Diggs, Black Hawk, vice-presidents, and Dr. John W. Banksdale, Vaiden, secretary-treasurer (reelected).—At the annual meeting of Adams County Medical Society, held in Natchez, January 4, Dr. McDonald Watkins was elected president; Dr. John W. D. Dicks, vice-president; Dr. Jacob S. Ullman, secretary; Dr. Richard D. Sessions, delegate to the state association, all of Natchez, and Dr. Paul L. Bellenger, censor.—The Brookhaven Doctors' Club, at its annual meeting, held December 28, elected Dr. Norman A. McLeod, president; Dr. Oscar N. Arrington, vice-president, and Dr. Dudley W. Jones, secretary.—Forest County Medical Society, at its annual meeting in Hattiesburg, elected Dr. Emmett Dill, president; Dr. Prentiss A. Carter, vice-president; Dr. Fern Champenois, secretary-

treasurer; Dr. Lawrence D. Hudson, counselor; Dr. Isham H. C. Cook, delegate to the state association, and Dr. Leonidas H. Martin, censor, all of Hattiesburg.

NEBRASKA

Money for Health Bureau.—Health Commissioner Connell, Omaha, has made requisition for \$28,000 for the use of the health department for the coming year. Last year \$16,900 was apportioned for the use of the department.

Site for Medical School.—Formal transfer of six lots at Forty-second and Jackson streets, Omaha, has been made to the regents of the University of Nebraska, and the site will be used as a location for the new medical school of the university.

Personal.—Dr. Lawrence T. Moore, Campbell, recently suffered the loss of a hand by the accidental discharge of a shotgun.—Dr. Sherman J. Jones, Minden, has returned from Europe.—Drs. Radfield and Josiah R. McKirahan, Grand Island, have assumed charge of a hospital at North Platte.

Election.—Saline County Medical Society, at its recent meeting in Crete, elected Dr. Francis J. Stejskal, Crete, president; Dr. Howard W. Quirk, Crete, vice-president, and Dr. George E. Henton, Friend, secretary-treasurer.—York County Medical Society, at its annual meeting, elected Dr. Orville M. Moore, York, president; Dr. John W. Meehan, York, vice-president, and Dr. James N. Plumb, York, secretary-treasurer.

NEW HAMPSHIRE

Society Meetings.—The sixth annual meeting of the Grafton County Medical Society was held in Woodsville, December 14, and the following officers elected: President, Dr. Frank A. Smith, Lebanon; vice-president, Dr. William E. Lawrence, North Haverhill; secretary-treasurer, Dr. George A. Weaver, Warren; censor, Dr. George W. Hazleton, Haverhill; member of committee on public health and legislation, Dr. Claude M. Sneed, Littleton; delegates to the state society, Drs. Edward O. Crossman, Lisbon, and Charles R. Gibson, Woodsville, and alternates, Drs. Elmer H. Carleton, Hanover, and Elmer M. Miller, Woodsville.—At the annual meeting of the Nashua Medical Society, held January 6, the following officers were elected: President, Dr. Herbert L. Smith; vice-presidents, Drs. William E. Reed and Arthur L. Wallace; secretary, Dr. Eva M. Locke; treasurer, Dr. Patrick J. McLaughlin, and historian, Dr. Charles B. Hammond.

Hospital Staff Organized.—The augmented staff of the Notre Dame Hospital, Manchester, has organized with the following officers and members: President, Dr. Gustave Lefontaine; vice-president, Dr. Evariste C. Tremblay; secretary, Dr. Leon J. Lacasse; surgeons, Drs. Joseph E. Larochelle, Noel E. Guillet, Frederick H. Perkins, George S. Foster and Wilfred L. Biron; physicians, Drs. Gustave Lefontaine, Edouard N. Fugere, Irving L. Carpenter, J. R. Pepin and Leon J. Lacasse; specialists, Dr. Evariste C. Tremblay and Alfred A. Macleay, and pathologist, George A. Foster.

NEW JERSEY

Personal.—Dr. S. Leslie West severed his connection with the Westmont Hotel and Sanitarium Company, Atlantic City, November 24 last.—Dr. Richard M. Davis has been reappointed a member of the Salem Board of Health.—Drs. W. Scott Smith and Ellen B. Smith, Salem, will sail for Europe February 1.—Dr. Harry J. Moss, of Woodbine, has been appointed assistant superintendent of the Mount Sinai Hospital, New York City.—Dr. N. Howard Burt has been elected president of the Ocean City Board of Health.—Dr. Henry B. Diverty has been made secretary of the newly organized Board of Health of Woodbury.

Society Meetings.—At the annual meeting of Monmouth County Medical Society, held in Freehold, December 14, the following officers were elected: Dr. Harry B. Slocum, Long Branch, president; Dr. Peter P. Rafferty, Red Bank, vice-president; Dr. Edwin Field, Red Bank, secretary; Dr. Isaac S. Long, Freehold treasurer; Dr. Peter P. Rafferty, recorder, and Drs. Isaac S. Long, Freehold, Harry B. Slocum, Long Branch, and D. Edgar Roberts, delegates to the state society.—At the annual meeting of the Camden City Medical Society, January 4, the following officers were elected: President, Dr. William H. Pratt; vice-president, Dr. Joseph W. Martindale; secretary, Dr. William I. Kelchner; treasurer, Dr. Joseph H. Wills; and historian, Dr. Albert B. Davis.

NEW YORK

Convalescent Home for New York Poor.—The people of Otisville have purchased a farm of 140 acres near the village and have stocked it for the purpose of establishing a home for convalescent women and children of New York City in the summertime and to help sick mothers in the winter.

Annual Meeting of State Society.—The one hundred and fourth annual meeting of the Medical Society of the State of New York will be held in Albany, January 25 and 26, under the presidency of Dr. Charles G. Stockton, Buffalo. The program includes symposiums on vaccine therapy and appendicitis. The annual banquet will be held at the Hotel Ten Eyck, January 26.

County Laboratory Established.—The Monroe County Pathologic Laboratory has been established in Rochester under the charge of Dr. Charles Hennington. Monroe is the fifth county in the state to take advantage of the enabling act, making provision for the more accurate laboratory diagnosis of such diseases as tuberculosis, diphtheria and typhoid fever, in order to safeguard the public health of country communities.

Ophthalmia Neonatorum.—Dr. Eugene H. Porter, State Commissioner of Health, reports that the bureau in the state department created a year ago to forward the work among physicians for the prevention of blindness among the newborn has accomplished excellent results. Registered physicians throughout the state have pledged themselves to the use of silver nitrate solution sent out by the health department. The New York Committee on Blindness is cooperating with the State Health Department.

Need of Efficient Surgery in Prison.—The report of the State Prison Commission just made public states that proper medical attention can do more to reform some convicts than prisons. Sing Sing's hospital department, under Dr. Lettice, has been materially improved, particularly in the surgical department. It is urged that every prison should supply its surgeon with modern appliances, an assistant physician and a trained nurse, as one of the serious troubles in state prisons is that ample attention has not been paid to diseases amenable to surgery among convicts. Unfortunates are released from prison with physical imperfections which handicap them in their struggle for a livelihood. The commission reports conditions in a number of the station houses and prisons as regards cleanliness and sanitation that are a disgrace to those responsible for them.

Insurance Company May Erect Sanatorium.—Superintendent Hotchkiss of the State Insurance Department announces that the department has approved the application of the Metropolitan Life Insurance company for permission to purchase land in Westchester county to build and maintain there a tuberculosis sanatorium for its employees who may be afflicted or threatened with tuberculosis. When application for the establishment of such a sanatorium was made some months ago, the superintendent doubted whether under the charter of the insurance company such a step would be legal. A friendly suit was begun in the supreme court to decide whether this purchase of land was "necessary for its convenient accommodation in the transaction of its business," as the insurance law stipulates in regard to the purchase of real estate by insurance companies. The court declared that the superintendent had the right to approve or reject the application at his discretion.

Work of State Charities Aid Association.—At the annual meeting of the State Charities Aid Association it was stated that the work of this organization for the suppression of tuberculosis was beginning to be apparent, though statistics did not as yet show much decrease, which was probably due to a more truthful assignment of that cause of death where formerly other causes had been assigned. There are still 15,000 deaths annually in this state from tuberculosis. The almshouse has become a diminishing factor in the charities problem. During the thirty years from 1878 to 1908 the inmates of almshouses actually decreased from 7.1 per cent. to 6.7 per cent. In the same period the inmates of state institutions for curative treatment of special diseases, reformatory treatment and custodial care of permanent defectives increased from 3,000 to 36,000, of whom 27,000 are in state hospitals for the insane. The association has at present 70 anti-tuberculosis committees in the state with a membership of over 3,000. Tuberculosis exhibits were sent to 41 county fairs and to the state fair. Last year 511 persons were received in the insane asylums from penal institutions. At present the insane are increasing at the rate of 1,000 a year.

New York City

New Health Commissioner.—Dr. Ernest J. Lederle has been appointed Health Commissioner to succeed Dr. Darlington. The complaints that Brooklyn did not receive sufficient attention during the last administration will receive attention. Dr. Lederle will spend a part of three days every week in the Brooklyn office where he will be ready to hear suggestions for the improvement of the service in that borough.

Gifts to Charity.—At the last meeting of the trustees of Columbia University it was announced that \$10,000 had been received for the equipment of the medical and engineering schools, and William K. Vanderbilt, Clarence H. Mackay and Alexander Smith Cochran each gave \$2,500 for special maintenance. The university hopes to erect a building for cancer research in the near future.—Mr. John Berwind of New York and Newport has donated \$100,000 to the Maternity Outdoor Clinic on East Seventy-sixth street.—By the will of Mitchell Valentine the Presbyterian and Hahnemann Hospitals will each receive about \$900,000.

NORTH CAROLINA

Violates Revenue Laws.—Dr. S. A. W. Hayes, Rutherfordton, is said to have been sentenced to fifteen months' imprisonment in the federal prison for violation of the internal revenue laws, and also to have been fined \$100.

Personal.—Dr. John R. Williams, Greensboro, president of the antituberculosis association, who has been seriously ill with typhoid fever, is reported convalescent.—Dr. W. G. Bradshaw, High Point, has been seriously ill with ptomain poisoning.

Tri-County Society Meeting.—The Medical Society of Pasquotank, Camden, and Dare counties, met January 6 in Elizabeth City and elected the following officers: President, Dr. Claude B. Williams; vice-president, Dr. Charles W. Sawyer, and secretary-treasurer, and delegate to the state society, Dr. Isaac Fearing, all of Elizabeth City.

OHIO

Medical Student Dies.—Harry T. Simmons, a junior student at the Western Reserve Medical College, Cleveland, fell in a hospital clinic recently, sustained a fracture of the base of the skull, and died on the operating table.

Reinstated in Practice.—At a meeting of the State Board of Medical Examination and Registration in Columbus, January 4, Dr. James N. Nelson, Alliance, was reinstated as a practitioner without restrictions. The action was taken on recommendation of the Stark County Medical Society.

Physician Freed by Jury.—The Clermont county grand jury, which, on October 21, returned an indictment against Dr. John D. Wakefield, Loveland, for perjury, based on testimony given by the physician in a damage suit against the Baltimore and Ohio Southwestern Railway, acquitted him December 24, after a four days' trial in the common pleas court.

Society Meetings.—At the annual meeting and banquet of the Columbus Woman's Medical Club, December 7, Dr. Susanna L. Bryant was elected president; Dr. Ida M. Wilson, vice-president, and Dr. Marinda E. Blackburn, secretary-treasurer.—Dr. John S. Tierney has been elected chairman, Dr. Willard C. Stoner, vice-chairman, Dr. Hiram B. Ormsby, secretary, and Dr. Samuel L. Bernstein, councilor, of the clinical and pathologic section of the Cleveland Academy of Medicine.

Health Officers to Meet.—The annual Conference of the State Board of Health and City and Village Boards of Health will be held in Columbus, January 20 and 21. Among the speakers will be Dr. Cressy L. Wilbur, chief of the vital statistics division of the Census Bureau, Surgeon Leslie L. Lumsden, P. H. and M.-H. Service, Dr. William C. Woodward, health officer of the District of Columbia, Rufus B. Miles of the Bureau of Municipal Research, Cincinnati, and Dr. Luther H. Gulick, New York City.

Limit Itinerant Medicine Vending.—A bill prepared by the state pharmacy board and the state association of pharmacists, to prevent itinerant vending of medicine, which will be presented to the legislature, provides that before any person or firm may sell medicine from house to house a license costing \$250 must be obtained from the board, and applicants must satisfy the board that medicines are not dangerous to life. For sale without license a fine of from \$100 to \$200 is imposed, and for the second conviction, a fine of from \$200 to \$400.

Academy Election.—At the annual meeting of the Cincinnati Academy of Medicine, held January 3, the following officers were elected: President, Dr. Samuel E. Allen; vice-presidents, Drs. Robert Carothers and William D. Porter; secretary, Dr. E. Otis Smith; treasurer, Dr. Alexander G. Drury; librarian, Dr. Arch I. Carson; trustee, Dr. Asa B. Isham; censor, Dr. Edwin W. Mitchell; delegate to the state association, Drs. Magnus A. Tate, Charles L. Bonifield and William D. Haines; member of the auxiliary committee of public safety and legislation of the Ohio State Medical Association, Dr. Charles A. L. Reed; and delegates to the Antituberculosis League, Drs. Benjamin F. Lyle, Allan Ramsey and John H. Landis.

May Not Practice in Ohio.—The decision is said to have been reached by the governor and the attorney general who make up the board of appeals from decisions of the State Board of Medical Registration and Examination on December 14, that it has no jurisdiction to compel the board to grant an Ohio certificate to Dr. Renben G. Woodworth, Colorado City, under the reciprocity arrangement with the State Board of Medical Examiners of Colorado, where Dr. Woodworth practiced after leaving Columbus. The question involved is the failure of the Colorado board to testify in the reciprocity certificate as to the character and fitness of the physician certified.

Bills on Behalf of State Board of Health.—Dr. Charles O. Probst, Columbus, secretary of the State Board of Health, has prepared three bills to be introduced in the legislature, the first authorizing the establishment of a bureau for the prevention of infectious diseases, and providing for the division of the state into not to exceed twelve districts, with the appointment of a properly qualified physician as medical inspector for each district to enforce health and sanitary regulations; the second authorizing the State Board of Health to manufacture antitoxin for the cure and prevention of diphtheria for free distribution, and the third providing that all school children shall be examined annually by their teachers and tested for sight, hearing and obstruction of breathing.

Fined for Violations of Law.—In the case of Dr. Francis M. Murray, Delaware, charged with violation of the Rose law in the issuance of prescriptions for liquor, the defendant is said to have been found guilty and fined \$250 and costs. The judge, in his decision, called especial attention to the fact that the person who had procured the prescription did not state that he was ill, but simply asked for liquor. It was shown that the defendant had issued nearly 1,000 prescriptions during the previous two months.—Dr. N. V. Speece, Quincy, charged with issuing illegal prescriptions for liquor, is said to have been found guilty and fined \$250 and costs, and prohibited from writing prescriptions for liquor for two years.—George H. Schubert, a real estate agent of Springfield, is said to have been fined \$25 and costs, December 14, for the illegal practice of medicine.

PENNSYLVANIA

Sale of Christmas Stamps.—J. Byron Deacon, executive secretary of the Pennsylvania Society for the Prevention of Tuberculosis, has issued a statement that although the report of the sale of Red Cross Christmas stamps is as yet incomplete, it is safe to say \$20,000 had been raised outside of Pittsburg and that \$5,000 has been secured in that city.

Officers Elected.—At the meeting of the Delaware County Medical Society, held in Chester, January 14, the following officers were elected: President, Dr. Francis N. Baker, Media; vice-president, Dr. D. Forrest Harbridge, Chester; secretary, Dr. Charles I. Stiteler, Chester; treasurer, Dr. Daniel W. Jefferis, Chester; reporter, Dr. Walter E. Egbert, Chester; librarians, Drs. Samuel Trimble, Newtown Square, and Amy E. White, Chester; censors, Drs. J. Harvey Fronfield, Media, Frederick H. Evans, Chester, and Horace F. Taylor, Ridley Park, and district censor, Dr. Daniel W. Jefferis, Chester.—The Lancaster County Alumni Association of the University of Pennsylvania held its annual meeting in Lancaster, January 1 and elected Dr. William H. Tront, president, Dr. William G. Fox, vice-president, and Dr. Charles P. Stahr, secretary-treasurer.

Philadelphia

Bequests.—The will of the late Anna E. Porter bequeathes \$10,000 to the Methodist Hospital for a free room to be known as the "Porter Memorial."

Personal.—The degree of doctor of laws was conferred on John Herr Hnsser, M.D., professor of clinical medicine in the University of Pennsylvania by Franklin and Marshall College, Lancaster, Pa., January 7.

Appropriations to Hospitals.—During the last fifteen years the Medico-Chirurgical Hospital has received in state appropriations \$1,350,000, Jefferson \$1,275,000, and the University Hospital \$970,000. The Medico-Chirurgical received \$670,000 for improvements in the same period, Jefferson \$550,000, and the University \$125,000.

Physicians' Motor Club.—At the initial banquet of the newly formed Physicians' Motor Club, held January 11, a movement was started to have the same police regulations now governing ambulances apply to doctors' automobiles. The following officers were elected: President, Dr. S. Leon Gans; vice-presidents, Drs. L. Webster Fox, Edward E. Montgomery and Solomon Solis-Cohen; secretary, Dr. Sylvester J. Deehan, and treasurer, Dr. J. Gurney Taylor.

Doctors War on Smoke Nuisance.—A movement to do away with the smoke nuisance has been started by the physicians of this city under the leadership of Dr. S. Weir Mitchell. It will be supported by the county medical society, the civic and business men's associations and the Department of Health and Charities. Better standards have been attained in both food and water in the last few years, but the supply of air has deteriorated, particularly since the coal strike in 1902, by the increased use of bituminous coal as fuel within the city limits. The recent snow storm has served to show how the smoke from the chimneys, locomotive stacks and factory funnels permeates the air before it finally settles.

Faith Curist Convicted.—For permitting his 6-year-old son to die without medical attention, Thomas A. Gibson was convicted of involuntary manslaughter in Quarters Session Court before Judge Kinsey, January 6. Gibson is a follower of a self-styled "divine healer" of Faith Tabernacle at Second street and Lehigh avenue. Dr. Jesse A. Bolin, former coroner's physician, testified that the child had been suffering from chronic nephritis with edema that had distended the abdomen almost to bursting. This condition had existed for three months and when the child's abdomen was tapped in performing the autopsy, three gallons of water were removed. The defendant's only excuse was that he did not believe in doctors.

Officers Elected.—At the meeting of the Northern Medical Association, held January 14, the following officers were elected: President, Dr. William A. Brady; vice-presidents, Drs. Thomas Shriner and O. Luther Latchford; treasurer, Dr. John W. Millick; secretary, Dr. Paul F. Bremer; censor, Dr. Albert Bernheim; corresponding secretary, Dr. Thomas R. Currie; and librarian, Dr. Howard D. Geisler.—At the meeting of the Pediatric Society held in the College of Physicians on January 11, the following officers were elected: President, Dr. Charles A. Fife; vice-presidents, Drs. James T. Rugh, Theodore Le Bontillier and Arthur Newlin; treasurer, Dr. Howard C. Carpenter; librarian, Dr. Charles F. Judson; and secretary-recorder, Dr. Maurice Ostheimer.

TEXAS

Personal.—Dr. Louis H. Kirk has been appointed health officer of Austin, vice Dr. William J. Mathews, resigned.—Dr. B. M. Jones, Boyd, was stabbed in the right lung in an affray, December 17.—Dr. Marshall M. Chandler, Greenville, was presented with a loving cup by the Hunt County Medical Society, in recognition of his long and persistent support of the organization.—Dr. John W. Overton, Lubbock, has been appointed surgeon of the Santa Fe System at Sweetwater.

Society Meetings.—The sixtieth semi-annual session of the North Texas Medical Association, District No. 14, was held at Fort Worth, December 14-16. Dr. Alva W. Carens, Hutchins, was elected president; Dr. Francis M. Teas, Denison, vice-president; Dr. H. Leslie Moore, Dallas, secretary, and Dr. Thomas W. Crowder, Sherman, treasurer. The association adjourned to meet in Sherman in June.—The South Texas District Medical Association, comprising the medical societies of the Ninth and Tenth Councilor districts, met in Galveston, December 9. Dr. William Keiller, Galveston, was elected president; Dr. D. Stuart Wier, Beaumont, vice-president; Dr. Edward F. Cooke, Houston, secretary-treasurer (reelected). Houston was selected as the place for the next semi-annual meeting.—The Seventh Councilor District Medical Society held its annual meeting in Austin, December 16, and elected the following officers: Dr. Washington A. Harper, Austin, president; Dr. Lewis B. Bibb, Austin, secretary-treasurer, and Drs. Edward M. Thomas, Georgetown, S. E. Hudson, Austin, Benjamin M. Worsham, El Paso, James C. Anderson, Granger, and Howard B. Granberry, Austin, censors.—The physicians of Hale county met at the residence of Dr. J. D. Hanby, Plainview, December 18, and organized the Hale County Medical Society.

VIRGINIA

Elections.—At the annual meeting of the Richmond Academy of Medicine held December 14, the following officers were elected: President, Dr. Charles R. Robins; vice-presidents, Drs. George P. LaRoque, J. Fulmer Bright and Alexander G. Brown; secretary, Dr. W. Brownley Foster; treasurer, Dr. William A. Shepherd, and librarian, Dr. George P. LaRoque.—Physicians of Augusta county have incorporated the Augusta County Medical Association without capital stock and with the following officers: Dr. John B. Catlett, president; Dr. Hunter B. Spencer, secretary; and Drs. Edwin L. Gibson and Marshall J. Payne, all of Staunton.—Lynchburg Medical Society, at its annual meeting, January 3, elected

Dr. George J. Tompkins, president; Dr. John J. Lloyd, vice-president; Dr. Victor V. Anderson, secretary; Dr. J. Paulett Clark, treasurer, and Drs. James Morrison and Ferdinand M. Perrow, censors.—Petersburg Medical Society has elected Dr. Leverett S. Early, president; Dr. Hampden A. Burke, vice-president; Dr. Julian R. Beckwith, corresponding secretary; and Dr. William C. Powell, secretary-treasurer.

WISCONSIN

Inspection of Sanitation of Students' Quarters.—All boarding and rooming houses occupied by students of the University of Wisconsin are henceforth to be under the inspection of the faculty committee on hygiene, consisting of Dr. Mazyck P. Ravenel, chairman; Dr. W. D. Frost, bacteriologist; Dr. Charles H. Bunting, pathologist; Dr. J. Helen Dobson; Dr. Joseph Erlanger, physiologist; and Dr. A. S. Lovenhart, of the department of pharmacology and toxicology.

Hospital Officers and Staff Elected.—The directors of the Johnston Emergency Hospital, Milwaukee, on January 5, elected the following officers: President of the medical and surgical staff, Dr. Robert G. Sayle; Dr. Daniel Hopkinson, secretary; president of the board of trustees, Dr. Frank B. Golley, and secretary of the board of trustees, Dr. Ralph Elmergreen. The following staff was chosen: Surgeons, Drs. William F. C. Witte, Curtis A. Evans, Frederick J. Gaenpsen, Robert G. Sayle, Henry F. Kortebein, Willard T. Nichols, Ralph Elmergreen, John L. Yates, Ralph P. Peairs, Filip Forsbeck, Daniel Hopkinson, Arthur T. Holbrook, Philip F. Rogers, Gerhard A. Bading, Maurice L. Henderson, William E. Kramer, William A. Sickels, Edward J. Purtell; physicians, Drs. Arthur J. Patek, James D. Madison, Oscar E. Lademann, William Ackerman, Peter Langland, Franklin H. Hagerman, Louis F. Jermain, Lewis C. Tisdale, Rudolf F. Teschan, Milton M. Spitz, Thomas C. Malone, and Alfred L. Kastner; gynecologists, Drs. John T. Scollard, Warren B. Hill, and George A. Carhart; ophthalmologists, Drs. Gilbert E. Seaman, William S. Stanley, and Charles J. Coffey; dermatologists, Drs. Leopold Schiller and Otto H. Foerster; pediatricians, Drs. Lorenzo Boorse, Albert W. Myers and Alfred W. Gray; alienists, Drs. William F. Wegge, William F. Becker, Moses J. White, Frank C. Studley and Richard Dewey; and pathologists, Drs. Wilhelm Becker, George C. Ruhland and Gustave A. Landman.

GENERAL NEWS AND COMMENT

New Hospital for Cebu.—Cebu, P. I., is to have a new hospital of reenforced concrete and of modern construction at a cost of \$40,000.

Railway Surgeons Meet.—At the annual meeting of the Chicago Northwestern Railroad Surgeons Association, January 6, the following officers were elected: President, Dr. David S. Fairchild, Clinton, Iowa; vice-president, Dr. G. E. W. Court, and secretary-treasurer, Dr. D. J. Andrews.

Typhus Fever.—Drs. John S. Anderson and Joseph Goldberger, of the staff of the hygienic laboratory of the U. S. P. H. and M.-H. Service, who have been in Mexico since November 1 studying typhus fever, have issued two preliminary reports, the first showing that Mexican typhus fever is not identical with Rocky Mountain spotted fever, and the second paper reports negative results from all cultures.

Hookworm Conference.—The first Hookworm Conference was held in Atlanta, Ga., January 18 and 19. The conference opened with about 500 in attendance and a representation from twelve states. Dr. Henry F. Harris, secretary of the Georgia State Board of Health, was elected temporary chairman and Mr. William Whitford of Chicago, secretary. The foremost speaker on the program was Dr. Charles Wardell Stiles, U. S. P. H. and M.-H. Service, Washington, D. C. A permanent organization was effected under the name "Southern Health Conference." A full report of the conference will appear in THE JOURNAL.

School Hygiene Meeting.—A joint meeting of the American School Hygiene Association, American Physical Education Association, Public School Physical Training Society and the Department of Superintendents will be held in Indianapolis, March 2-4, under the auspices of the Department of Superintendents of the National Educational Association. Dr. John H. Musser, Philadelphia, is president and Dr. Thomas A. Storey, New York City, secretary of the American School Hygiene Association; Dr. George L. J. Meylan, New York City, is president, and Dr. James H. McCurdy, secretary, of the American Physical Education Society, and Dr. C. Ward Crampton, New York City, president of the Public Schools Physical Training Society.

Coming Meetings.—The twelfth annual association of the Tri-State Medical Society of the Carolinas and Virginia will

be held in Richmond, Va., February 15, 16 and 17, under the presidency of Dr. LeGrand Guerry, Columbia, S. C. Dr. J. Howell Way, Waynesville, N. C., is secretary of the association. The question of district membership in the American Medical Association is to come up at this meeting.—The International Medical Association of Mexico will hold its fifth annual meeting at Aguascalientes January 25, 26 and 27, under the presidency of Dr. S. H. Hodgson, Tampico. Of the 31 original articles on the provisional program 19 are by physicians from the United States, and 12 from physicians in Mexico.—The fourteenth annual meeting of the Sioux Valley Medical Association will be held in Sioux City, January 20 and 21, under the presidency of Dr. Matthe N. Voldeng, Cherokee, Iowa.

Medical Fraternities Elect.—The fourth annual meeting of the Chi Zeta Chi Medical Fraternity was held in Nashville, December 29-31. The following officers were elected: Dr. Hugh M. Lokey, Atlanta, Ga., Supreme Eminent Grand; Dr. Guy L. Bush, Supreme Deputy Grand; Dr. J. Calhoun McDongall, Atlanta, Supreme Bursar; Dr. Robert G. Stephens, Atlanta, Supreme Historian. Little Rock, Ark., was chosen as place of meeting for next year. The fraternity, which was organized less than seven years ago, now has nineteen chapters with a membership of 700.—The fourteenth annual meeting of the Phi Chi Medical Fraternity was held in Chicago, December 30 to January 1, about 100 delegates from twenty-five of the thirty-four chapters being present. Dr. L. F. Luckie was elected Grand Presiding Senior; Dr. Edward R. Schunk, Grand Presiding Junior, and Dr. Dunning S. Wilson, Louisville, Grand Secretary-Treasurer.

FOREIGN

First Aid in Mexico.—The governor of the Federal District of Mexico formally inaugurated the first-aid to the injured service in the City of Mexico, December 17. Dr. Leopoldo Castro, chief surgeon of the police ambulance department, is in charge of the service. Five physicians, three medical students, three nurses and a number of attendants are in attendance at the headquarters. Horse ambulances are at present used, but two automobile ambulances are being constructed for the use of the service.

Congress of Medicine and Hygiene.—As already announced, the International Congress of Medicine and Hygiene will be held May 25 in Buenos Aires, Argentine Republic. In order to facilitate the contribution of papers and exhibits from the United States, there has been appointed by the president of the congress, Dr. Eliseo Cantón, and the minister of the Argentine Republic at Washington, a committee of propaganda of which Dr. Charles H. Frazier, 1724 Spruce street, Philadelphia, is chairman and Dr. Alfred R. Allen, 111 South Twenty-first street, Philadelphia, is secretary. The congress has been divided into nine sections, each section being represented in the United States by its chairman, as follows:

SECTION 1.—BIOLOGIC AND FUNDAMENTAL MATTERS, Dr. W. H. Howell, 232 W. Lanvale St., Baltimore.

SECTION 2.—MEDICINE AND ITS CLINICS, Dr. George Dock, 528 Walnut St., New Orleans.

SECTION 3.—SURGERY AND ITS CLINICS, Dr. J. M. T. Finney, 1300 Eutaw Pl., Baltimore.

SECTION 4.—PUBLIC HYGIENE, Dr. A. C. Abbott, 4229 Baltimore Ave., Philadelphia.

SECTION 5.—PHARMACY AND CHEMISTRY, Dr. D. L. Edsall, 1432 Pine St., Philadelphia.

SECTION 6.—SANITARY TECHNOLOGY, Dr. W. P. Mason, Troy, N. Y.

SECTION 7.—VETERINARY POLICE, Dr. S. H. Gilliland, Marietta, Pa.

SECTION 8.—DENTAL PATHOLOGY, Dr. G. V. I. Brown, 349 Prospect Ave., Milwaukee, Wis.

SECTION 9.—EXHIBITION OF HYGIENE, Dr. A. C. Abbott, 4229 Baltimore Ave., Philadelphia.

It will not be necessary for one contributing a paper or exhibit to be present in person. Arrangements will be made to have contributions suitably presented in the absence of the author. Members of the following professions are eligible to present papers or exhibits: medicine, pharmacy, chemistry, dentistry, veterinary medicine, engineering and architecture. Papers may be sent direct to the chairman of the particular section, or to Dr. Allen, secretary.

LONDON LETTER

(From Our Regular Correspondent)

LONDON, Jan. 8, 1910.

The Health of London

In the report of the Public Health Committee of the London County Council for 1908, which has only just been published, the marriage, birth and death rates are the lowest on record. For the past forty years the death rate has shown a decline. In 1905 the death rate was 15.1 per 1,000, the lowest then recorded; in 1906 it was the same; in 1907 it fell to 14.6, and

in 1908 it reached its lowest point, 13.8. With regard to infant mortality, the number of deaths per 1,000 births is the lowest recorded. Moreover, the infant mortality for the last decennium is lower than in all save one of the thirteen other large English towns, and in 1908 was lower than in any of them. In 1908 the notification of births act passed in 1907 was adopted in all but eight of the London boroughs. The houses in which the births had taken place were visited by women sanitary inspectors or "health visitors." In some districts this work was supplemented by that of a staff supplied by voluntary local health societies. In some of the boroughs "consultative centers" have been instituted, to which mothers bring babies who need special attention. Advice is given as to treatment and the progress of the child is watched. In 1908 the death rate from epidemic disease was also the lowest on record. No death occurred from smallpox, and the deaths from measles, whooping-cough, diphtheria, typhoid fever, diarrhea and phthisis were below the average for the last ten years, but the deaths from scarlet fever and influenza were above the average.

The Increase of Cancer

A gloomy feature of the registrar general's report on the vital statistics of England and Wales for 1908, which has only just been published, is the alarming increase in the death rate from cancer. From 0.55 per 1,000 of the population in the quinquennial period 1881-85, the rate has continually risen until it attained 0.92 in 1908. An international table of twenty countries is given, on which the following comment is made: This country occupies an unenviable position with respect to the mortality from cancer, the rate for England and Wales being exceeded in only two European countries—Switzerland and the Netherlands. Scotland occupies a slightly better position (fourth), and Ireland, notwithstanding its abnormal age constitution, a much better position (seventh, with a rate of 0.76). In all the countries from which returns have been received the mortality from cancer has shown a general tendency to increase in recent years. There is one satisfactory feature: there has been a cessation of the increase in women under 55.

The Medical Profession in 1910

The total number of physicians on the medical directory for 1910 is 40,558—an increase of 566 on the previous year. This number includes only those who have qualified in this country and not those who have done so at the colonial medical schools of Australia and Canada. In 1901 the number on the directory was 36,354, and the increase on the previous year was 703. Since that year the annual increase has fallen off, reaching a minimum of 289 last year, but, as the figures given above show, the annual increase again tends to rise.

The Administration of Anesthetics by Dentists

As shown in previous letters, the question of death under anesthetics has attracted much public attention, and legislation restricting the administration of anesthetics to qualified medical practitioners and ensuring better training in administration is foreshadowed. A controversy now exists as to whether dentists should be permitted, as they are at present, to administer nitrous oxid for dental operations. It is argued that as anesthetics are a necessary part of the dental curriculum, dentists are perfectly competent to administer nitrous oxid for dental operations, and that, moreover, they have much more experience and therefore greater skill in this administration than the average physician. A dental writer discussing the question in *Guy's Hospital Gazette*, says that the persons most desirable for the administration of an anesthetic for dental purposes are in the following order: First, the most desirable is the professional anesthetist. Second comes the operating surgeon, provided he is in the habit of administering anesthetics. He is essentially a practical man, his work is manipulative, and he is particularly adapted to tackle emergencies, such as those requiring laryngotomy or tracheotomy, which he can do even better than the professional anesthetist. Third, comes the dentist, provided he is in the habit of administering anesthetics. His work also is manipulative. He is used to manipulating the patient's mouth and can manage the gag well. Last comes the ordinary physician. Many of them do not know how to administer gas. They cause the patient to become badly cyanosed or too much clonic spasm, and they spoil the dental operation at "the change over," not being able to manage the gag.

The Diminishing Birth Rate: The Survival of the Unfit

Speaking at a diocesan conference the Bishop of Ripon dealt with the question of the diminishing birth rate. It was, he said, the stronger, the sturdier, the better men who refused

to have families. The dwindling population of England meant that we would become less and less a power of the first rank in the world. Those who were increasing the more rapidly were not the most desirable citizens. The unfit and the diseased were increasing rapidly, while the best classes were not increasing. If a man from a physical or moral deficiency was not likely to be a useful father of a family it was better that he should not be so. Most physicians agreed that the feeding, clothing and medical treatment of children although of great advantage to the individual, only perpetuated the evil and some went so far as to maintain that as the state is taking over the responsibility for these weaklings antenatal medical examination would have to be seriously considered. For if it was the duty of the state to look after the infant after its birth it should insist that its conception should take place under favorable circumstances.

The Recognition of a Special Class of Consultants

The central ethical committee of the British Medical Association has issued an important report on the recognition of a special class of consultants. The committee considers that the extraordinary development of specialism in the last 25 years ought, if properly organized, be of great advantage to the community. But without proper guidance a patient is able rarely to select the form of specialism best suited to his requirements. His difficulties are great, since medical specialism is determined not only by particular study of different parts of the body (such as the eye, ear, etc.), but of different therapeutic measures (such as surgery, pharmacology, electricity, etc.) of different therapeutic pathological processes (bacteriology and chemical pathology) and of different methods of diagnosis (hematology, radiography, etc.). It is therefore a very perplexing question for the patient what sort of specialist can best assist him. These questions would be much more easily answered if specialists would act as pure consultants and treat patients only in cooperation with their ordinary medical attendants. On the one hand, the ordinary attendant would much more freely confer in a difficult case with colleagues who would under no circumstances become his competitors. Moreover the patient would have the advantage that his medical attendant is a much better judge than he in the selection of a specialist. Such pure specialism is rare and seems to be growing only very slowly. Specialists of all sorts from the most eminent leaders of the profession downwards are in nearly all cases accessible to the direct call of the public. By concerted action of the British Medical Association it is hoped that the desired change could be brought about, which would be financially beneficial to both branches of the profession. For any loss of work by the specialist from abandoning non-consultative work would, it is contended, be counterbalanced by an increase in the number of consultations and, if necessary, by an increased fee. On the other hand, the general practitioner would be protected against the loss, temporary or permanent, of his most interesting cases. The relations which should exist between a class of pure consultants and their professional brethren could be defined by "regulations" drawn up by the association. The scheme has certainly much to be said in its favor but its difficulties do not seem to have received adequate consideration from the committee. Most specialists would object to the proposal that they should be forbidden to receive patients who wished to consult them unless the approval of some general practitioner had been obtained, and, on the other hand, the public would also object to such restriction. Further an increased cost of medical services would not be viewed by the public with the same satisfaction as the committee. No doubt by regulations fees could be standardized and made compulsory but the economic law that an increased cost diminishes the demand cannot be questioned. All but the wealthy would try to avoid the increased expense by usual methods—irregular practitioners, nostrums, etc.

Success of the Campaign Against Sleeping Sickness

The energetic campaign against the scourge of Uganda has borne fruit. Segregation camps were established for those suffering from sleeping sickness in order to stop the source of infection of the tsetse fly. But the clearing of the population from an area around the lake in which the fly was found to flourish proved more effective. Practically all the fly-infested places have been cleared and the population has been settled in healthy places. At the same time in many places the vegetation in which the fly thrives has been removed and the insect has disappeared. The result of these measures, which were carried out at a cost of \$90,000, is that while between 1898 and 1906 more than 200,000 natives died from sleeping

sickness in two of the Uganda kingdoms, only 5,000 died in 1907, 3,662 in 1908, and 459 in the first six months of 1909. On the other hand, the atoxyl treatment of Koch has proved a failure. The task of eradicating the disease, however, is far from complete. There are many thousands in the segregation camps who are neither dying nor being cured, and have to be maintained at great expense in strict isolation. Then there is the population, removed to its temporary abodes, which cannot yet be allowed to return to their lands, owing to the uncertainty as to how long the flies are capable of conveying infection. Nevertheless, the work done reflects great credit on the British colonial administration.

PARIS LETTER

(From Our Regular Correspondent)

PARIS, Dec. 31, 1909.

Laboratory for the Study of Radioactivity

The council of the University of Paris and the Pasteur Institute have agreed to construct, at the joint expense of the two institutions, a laboratory for the study of the phenomena of radioactivity and their therapeutic applications. The projected laboratory will comprise two parts: one for scientific researches under the direction of Mme. Curie, the other for medical applications under the direction of the Pasteur Institute. The latter will contribute towards the expenses of construction and equipment of the institution the amount of \$80,000 (400,000 francs) from the Osiris legacy.

Society of Pediatrics

The first annual meeting of the French Society of Pediatrics, which is now being organized under the auspices of the Paris Society of Pediatrics, is to be held July 29-30, 1910, at Paris.

May a Physician Give Consultations in a City Where He Does Not Reside?

Several medical societies (*syndicats*) have recently given consideration to the question stated above. The *Syndicat de Pont-Audemer* (Eure) has decided to permit its members to resume professional relations with a certain colleague only on condition that the latter discontinue the office that he has opened in a locality where he does not reside. The *Syndicat départemental de la Mayenne* has rendered the decision that every physician has the right to practice and to give consultations on stated days in any locality whatsoever. This creates no difficulty when the locality to which he goes is within the ordinary radius of his practice or nearer to his own residence than to that of any other physician, but in case the locality where he thus practices is within the radius of the practice of another colleague, the *syndicat* permits a physician to give consultations there on a stated day, provided that he does not take fees lower than those of the other practitioners.

Death of Professor Lortet

Dr. Lortet, former professor of medical natural history at the Lyons medical school, has died, aged 74. He was named dean of the school in 1876, and performed the duties of that position for thirty years. He was a correspondent of the Academy of Sciences and national correspondent of the Academy of Medicine. A few years ago Professor Lortet examined some skulls of monkeys which bore erosions in which he believed that he recognized signs of syphilis, and the assertion aroused lively controversy in the scientific world.

Prizes of the Paris Medical School

The Paris medical school has awarded the Barbier prize of \$400 (2,000 francs) to Dr. Pachon of Paris for his work on the mensuration of arterial pressure in man, and the Jeunesse prize of \$300 (1,500 francs) to Dr. Lassablière of Paris for his work on meat powders and on energy requirements in infancy.

Resident Fellowships at Foreign Universities

An anonymous donor has given to the University of Paris an annual income of \$6,000 (30,000 francs) to found resident fellowships at foreign universities in favor of young professors, or future professors of higher education. The council of the university has decided that the amount of each fellowship shall be \$600 (3,000 francs), and that there shall be ten of them. They will be awarded to doctors in medicine and in law, and to pharmacists who intend to give instruction.

Exposition of Social Hygiene

The exposition of social hygiene organized by the committee of patronage of low-priced dwellings, opened December 20, at the Grand Palais. The principal purpose of this exposition is

a competition between French and foreign architects, engineers, builders, contractors, and manufacturers, which will permit the selection of the most hygienic and economical methods and systems meeting the requirements of low-priced dwellings. The competition is divided into five classes: (1) economical and hygienic materials of construction; (2) heat; (3) lighting; (4) low-priced furniture; and (5) miscellaneous. A house completely built and furnished with all modern improvements demonstrates to the visitors the application of the various products shown. An economical laundry works in view of the public. To make the benefits of the improvements recommended by the committee still further appreciated a series of lectures will be held by the most influential members of the French Society for Low-Priced Dwellings, the League Against Alcohol, the associations for the protection of infancy, etc. In order to encourage the widest use of the hygienic inventions, the admission to the exposition is free.

BERLIN LETTER

(From Our Regular Correspondent)

BERLIN, Dec. 28, 1910.

The Puro Meat Juice Suit

It was established chiefly by Gruber of Munich more than a year ago that the food "puro" widely advertised as pure meat juice was nothing more than meat extract mixed with white of egg. On the basis of this publication the state's attorney instituted a suit for fraud against the manufacturer of puro, Dr. Scholl, and the trial took place a few days ago. Dr. Scholl at the trial claimed that it was his purpose to drive out the high-priced American meat extracts by cheaper preparations of equal value. As his attempts to prepare a permanent meat juice from raw meat failed on account of the high price of meat and on account of the disagreeable taste, he resorted to a combination of meat extract with white of egg, since the latter is physiologically equivalent to the albumin of meat. That the preparation was advantageous both on account of its taste and of its action, was shown not only by the favorable opinion of physicians but also by the large sale of the preparation which amounted to 495,000 bottles per year before the exposure by Professor Gruber. He endeavored to show that the profits were not exorbitant. A number of experts expressed the opinion that fraud has been perpetrated on the public by the statement made on the labels that the preparation was a meat juice obtained by high pressure from lean meat and that the contents of a flask contained the concentrated juice of five pounds of raw beefsteak. Other experts did not agree with this opinion as the nutritive value of the preparation had not been materially affected. The representatives of the accused brought out the fact that Professor Gruber was in the employ of the Liebig Co. The court sentenced Dr. Scholl to a month's imprisonment and a fine of \$750 (3,000 marks). The court decided the case on the evidence of fraud but gave no opinion as to the value of the preparation. This decision has still further reduced the sales of puro.

The whole transaction constitutes a satisfactory warning for the manufacturers of food preparations. What its effects will be remain to be seen. Many another preparation, especially among the so-called meat juices, would be subject to similar criticism if its composition was compared with the advertising circulars and its nutritive value estimated from the standpoint of price. [EDITOR'S NOTE: Those interested in American meat juices will find a report in THE JOURNAL, Nov. 20, 1909, p. 1754.]

Legal Regulations of Labor Hygiene

A new trade ordinance went into effect January 1 by which the hours of labor for men and particularly for women are regulated under certain circumstances in a better way than heretofore. An unbroken rest period of at least twelve hours must be allowed to youths and women. The permissible period of labor for women is ten hours and on the day before Sunday and the holidays is limited to eight hours. Women must not be employed after eight o'clock in the evening (formerly half past eight) nor before six o'clock in the morning (formerly half past five) and on Saturday and days before holidays the employment of women must cease at 5 p. m. The provision that women who keep house shall be allowed on request a half hour before the noon recess has been extended to girls under sixteen years of age. The provisions for the safeguarding of puerperal patients have been extended so that women before and after delivery must not be employed for a

total of eight weeks and may not be admitted to work after delivery until it is evident that six weeks have passed since labor. The carrying on of work outside of the factory on Sundays and holidays is forbidden. The permissible overwork for adult women in case of extraordinary pressure of work has been limited in three ways: It may not exceed twelve hours a day and must permit an unbroken rest period of ten hours; it may not extend later than nine o'clock in the evening and it must occur not more than fifty days in the year. In case of accidents the longest period of labor to be permitted for adult women is limited to twelve hours. Before the authorities can permit exceptions to the legal provisions regarding rest periods an opportunity must be given to the laborer to secure an official opinion from the labor committee with reference to the proposed exception.

Sanitary Statistics of the Army

The chief medical officer of the Prussian army has published a pamphlet elaborating the address which he delivered in July, 1909, on the "Sanitary Statistics of the People and Army." Schjerning reaches the conclusion that the military strength of Germany has not been remarkably reduced but that it requires every exertion to keep it at its present level or to improve it. The military strength is dependent on the birth rate and infant mortality. The latter is important because with a high rate of infant mortality, those who survive are often physically below grade. The occupation of those liable to military duty has a relatively smaller influence on their physical constitution and fitness for military service than their extraction and parentage. As a rule the rural population furnishes a greater proportion of suitable soldiers than the city, but the view frequently advanced that agriculture produces a better grade of men than industry is not tenable.

The number dismissed from the German army as unfit for service and invalided (pensioned) has indeed increased, but this does not justify the assumption that the supply is becoming poorer, for the increase in dismissals is explained by a number of circumstances, for instance the introduction of the two year service, more strict requirements in the service, and greater leniency in granting pensions. General weakness constitutes one of the principal reasons for unfitness being found in about one-third of the unfit. In estimating the influence of the school on military fitness v. Schjerning agrees with the conclusions of Schwiening which I have given in a previous letter (THE JOURNAL, Aug. 14, 1909, page 569). The entire amount of sickness in the Prussian army in the last thirty-five years has diminished about 35.2 per cent. Altogether contagious diseases (with the exception of tuberculosis, influenza, parotitis epidemica and tetanus) have diminished from 62.7 per cent. to 3.9 per cent. For decades smallpox has practically disappeared from the army. Nerve and ear diseases form an exception to this fortunate reduction, showing instead an increase. Part of this increase is due to better diagnosis by which the conditions are discovered earlier. As compared with other armies the record of the German army in regard to the morbidity from various infections is very favorable; only scarlet fever occurs more frequently in the German than in other armies with the single exception of that of France. Venereal diseases have fallen off in almost all armies and especially in the Prussian and Bavarian.

The mortality of the army has been reduced in the last thirty-five years about 73 per cent.; in the Prussian it amounts to 2 per 10,000. The suicide rate has been considerably diminished of late years, although it is still greater than in almost all other armies and is only exceeded by that of the Austria-Hungarian. Of every 10,000 men there died by suicide from 1900 to 1904 in the Netherland army, 1.2; in the Russian, 1.3; in the Belgium, 1.5; in the French, 1.8; in the Bavarian, 3.1; in the Italian, 3.2; in the Prussian, 4.2; in the Austria-Hungarian, 9.9. The death rate from suicide in the Prussian corresponds to the rate among men of the same age in the urban civil population.

In discussing the influence on the people of the compulsory military service Schjerning emphasizes its educative influence in sanitary and intellectual matters. The mortality of the male population is less during the third decade of life on account of the influence of army life. An immediate influence is also discernible through the assistance of the sanitary corps in epidemics, the discovery and treatment of physical defects and of unsanitary conditions in particular localities and in certain occupations. The period of service has also a demonstrably favorable influence on the intellectual and moral development of the soldiers by education to greater intellectual activity, clearness and decision in thought and action.

Pharmacology

THE AMERICAN DRUGGISTS SYNDICATE

Its Half-Million Advertising Campaign

The cooperative "patent medicine" concern, known as the American Druggists Syndicate—the A. D. S.—to which we called attention two weeks ago,¹ is consistently fulfilling the destiny of the nostrum exploiter, as we then intimated it would. Until within the past few weeks, the A. D. S. has confined its advertising practically to counter pamphlets, circulars, etc. Now, however, an advertising campaign in which it is said half a million dollars will be expended, has been inaugurated and the pharmacists belonging to this organization are frankly before the public not merely as dispensers of nostrums but also as manufacturers.

Printer's Ink, in describing the American Druggists Syndicate from the advertiser's standpoint and referring to its "patent medicine" department, says:

"There is a remedy for about every physical trouble flesh is heir to and for every phase of every trouble."

Of one of the specialties put out by the A. D. S. and the part this nostrum is expected to play in the "patent medicine" world:

"There is Pelvitone, designed to fight Lydia Pinkham's."

How the various members of this organization will contribute to the half-million fund for advertising is explained in *Printer's Ink* as follows:

"When any local druggist signs a contract for a year's membership, he binds himself to spend at least one dollar a week which shall go for advertising. Often he pays as much as two dollars a week for the fifty-two weeks. That means that in towns having 100 members, \$200 will be available weekly for pushing A. D. S. goods. Where possible, the names of druggists in each town are appended to advertising copy."

WHAT IS THE REAL REASON FOR THIS ORGANIZATION?

The advertising campaign is on and in the large metropolitan dailies full-page advertisements appear whose make-up out-peruna's Peruna. Addressed in scare-head type "To the Mayor and Citizens of Baltimore"—or some other city as the case may be—an advertisement tells the public why the American Druggists Syndicate was organized. The reasons given to the public are not altogether in consonance with those more frankly admitted in a small booklet sent out by the organization to the druggists whose membership is solicited. To make use of the "deadly parallel":

WHY THE A. D. S. WAS ORGANIZED

THE REASON GIVEN THE PUBLIC

"... twelve thousand prominent retail druggists . . . have successfully formed an organization under the title 'American Druggists Syndicate,' one of the purposes of which is to aid the local, state and national governments in their campaign for the protection of the public against impure and habit-forming drugs and medicines."

"This organization is the result of the startling revelations and complete exposé recently made by the leading magazines of the country covering the methods of some habit-forming nostrum manufacturers, who were willing to sacrifice life, honor and health for the gratification of their own selfish greed."

THE REASON GIVEN THE DRUGGISTS

"The patent medicine business is immensely profitable—but—Where do you come in? What percentage of profit are your sales of 'patents' netting you? How would you like to change places? The retail druggists of this country are losing thousands of dollars in profits which should belong to them. Why don't you keep your share? Could you, alone and unaided, and with limited capital put a 'ready-made' medicine of your own on the market, in opposition to any one of the big manufacturers, and make it a national success? No. Could you and five other retail druggists do so? No. Could you and five thousand like you? Yes. Now you have it."

"That is one of the many things the American Druggists Syndicate was organized for."

If we accept the heart-to-heart explanation given to prospective members, rather than the spectacular play to the gallery indulged in when addressed to the public, it seems on their own admission that the A. D. S. was organized to allow its members to participate more fully in the unholy profits of the "Great American Fraud."

1. THE JOURNAL A. M. A., Jan. 8, 1910, p. 145; see also Jan. 15, p. 221.

BORROWED DIGNITY

It is rather surprising to find prominently pictured in the most approved "patent-medicine" advertisement style a member of the New York State Board of Pharmacy and the dean of the Brooklyn College of Pharmacy—Dr. W. C. Anderson—as a director and second vice-president of the A. D. S. and the chairman of its so-called formula committee. That the A. D. S. possesses a good advertising asset in the person of a member of the State Board of Pharmacy and the dean of a college of pharmacy cannot be doubted; from a commercial standpoint it is to be congratulated. Those interested in the dignity of the profession of pharmacy as a profession, however, may well doubt whether a state board of pharmacy or a college of pharmacy is to be felicitated in being thus given publicity by such an organization as the American Druggists Syndicate.

Referring again to the "formula committee" of which Dr. Anderson is the chairman, this it should be remembered is the body which is alleged to pass on the value of the "thousands of prescriptions written by the most successful physicians in every state in the Union" and to "select the premium prescription and offer it to the public in a ready-made package." Do the members of the American Druggists Syndicate actually appropriate physicians' prescriptions and send them in to the "formula committee?" If they do, they are grossly betraying the trust which physicians repose in them and in addition are doing an illegal act; if they do not then they are humbugging the public.

ARE DRUGGISTS SOPHISTICATORS?

In another advertisement the A. D. S. attempts, by inference, to question the purity of the drugs dispensed by those druggists not numbered among its members. Reference is made to a sensational article which appeared in the yellow press having for its theme the charge that "the medicines dispensed by druggists are still largely adulterated or of inferior quality." The question is then propounded by the A. D. S.: "How is one to know when his doctor gives him a prescription that the druggist has filled it properly?" The answer is, of course, patronize a member of the American Druggists Syndicate! To attempt thus—even if only inferentially—to instill in the mind of the public a distrust for all druggists who have not seen fit to ally themselves with this cooperative "patent-medicine" concern is an uncalled-for insult to the retail druggists of the country.

But as an example of advertising casuistry the following is unique. It appears in the advertisement just referred to:

"Headache cures of all kinds are very numerous. With the 'guarantee' in the label they look very good to the sufferer. As a matter of fact very few of them are fit to be taken containing as they do *caffein*, *antipyrin* and other harmful drugs."—[Italics ours.—Ed.]

"The Government has seized many of these 'sure cures' but the manufacture and sale of them goes on merrily and it is safe to say that as a result more drug habits are contracted than headaches cured."

The full irony of this warning against "caffein, antipyrin and other harmful drugs" becomes manifest when it is appreciated that each of the "A. D. S. Headache Wafers" contains *caffein* and 4 grains of *acetanilid*.

EXTRAVAGANT STATEMENTS

What excuse does the American Druggists Syndicate offer for marketing "patent medicines?"

"All remedies compounded by the syndicate are truthfully represented and advertised."

"No alluring bait is held out to the sick—no extravagant statements or promises made."

How do the claims made for these nostrums measure up to the standard thus set? We give a few of the statements made regarding them and let the medical profession decide whether or not the bait is alluring or the statements extravagant.

PELVITONE: "For frail women who are too modest or too careless to see a physician."

"Is the prescription used by the most eminent and successful physicians." "Try one bottle and you will recommend it to your afflicted lady friends."

BRAIN AND NERVE TONIC: "A scientific nerve food." "It never fails."

HEADACHE WAFERS: "This prescription cures all headaches and relieves pain."

COLD AND GRIPPE TABLETS: "Will cure your bad cold or gripe very quickly."

RHEUMATIC REMEDY: "Counteracts effects of uric acid in the blood."

KIDNEY REMEDY: "Will restore healthy action to the kidneys."

EFFERVESCENT BROMO HEADACHE SALTS: "Always effective."

BLOOD MIXTURE: "Purifies the blood."

EX-Z-MO: "It will cure eczema."

BEEF, WINE AND IRON: "It makes good, rich blood."

CELERY COMPOUND: "Tones up the nerves and strengthens the brain."

As to the method of presenting the "alluring bait" we reproduce an advertisement—greatly reduced—which expounds the virtues of the "A. D. S. Cold and Grippe Remedy." The superiority—in the matter of conservative and truthful representation—of this advertisement, over those put out by Lydia Pinkham or Duffy's Malt Whiskey concerns may or may not be apparent.

THE KERNEL OF OUR CRITICISM

Once again let it be made plain that for cooperation *per se* there can be nothing but praise. It has always been believed that decent pharmacists have handled "patent medicines" not because they had any faith in them, but because economic conditions made that course practically imperative. Most physicians have thought that the attitude of the druggist toward nostrums has been that of ill-disguised contempt. What is to be thought now that the "patent-medicine" evil has received the stamp of official approval from thousands of druggists simply because

these same druggists are to profit therefrom? Are the retail pharmacists of the country about to sell their heritage of professional decency for a mess of pottage—a mess, too, that smells to high heaven?

UNICORN ROOT, WILD YAM AND WILD INDIGO

Report of the Council on Pharmacy and Chemistry

The Council has voted that recognition be refused to the following: Unicorn Root (*Aletris farinosa*), Wild Yam (*Dioscorea villosa*), and Wild Indigo (*Baptisia tinctoria*) and has authorized the publication of the following statements.

W. A. PUCKNER, Secretary.

UNICORN ROOT—ALETRIS FARINOSA

Unicorn Root (*Aletris farinosa*) contains a bitter principle and starch. Remarkable powers as a uterine tonic have been

of friendly... who... a tooth...

Married Tuesday—Cold Ends Fatally Friday

Boston Girl and St. Louis Man Have Same Tragic Ending—Profit by This Experience and Take No Chances With a Case.

Every year pneumonia and other diseases have their origin in neglected colds cost New York thousands of lives.

"Oh, it's only a cold; it will pass off," is an expression we hear every day. To the layman it means nothing, but to the trained mind—the physician or the pharmacist—it is the very embodiment of carelessness, a sheer invitation to disaster. To experiment with health, to flirt with diseases, to tempt sickness, are mistakes that are all too common and prevalent.

Recently a young lady of Boston, a girl in the best of health, sat out one October evening on the stone steps of her home, took a cold, laughed at its possibilities and three days later died of pneumonia.

A young business man of St. Louis got married Tuesday; went off on his honeymoon without an overcoat Wednesday; took cold Thursday; developed into gripe Sunday and died of pneumonia the following Friday.

A teamster in Brooklyn went to a smoker one evening, became overheated, took cold, paid no attention to it, run on for six weeks, grew worse, developed tuberculosis, from which he died in the hospital three months later.

Thus it goes—thousands of lives sacrificed annually because people carelessly neglect a cold.

Of all times this is the time of year when we need to be careful—and the American Druggists Syndicate cannot impress upon you too strongly the necessity of fortifying yourself with A. D. S. Cold and Grippe Remedy, so as to prevent or check a cold and ward off serious or possibly fatal illness later.

A. D. S. Cold and Grippe Remedy acts very quickly; while it acts quickly it is also harmless and leaves no bad after effect. Isn't that worth considering? While you take it you can also attend to your work or household duties without any unpleasant feelings.

The mere fact that A. D. S. advises you to put your confidence in this remedy ought to be sufficient assurance in itself of its value without it being necessary for us to elaborate upon the symptoms, causes and effects of colds or the merits of A. D. S. Cold and Grippe Remedy.

The A. D. S. has 12,000 members, who are large and small druggists all over the country, skilled pharmacists and men of responsibility. They know this remedy—each and every one—and they use it themselves in their own homes. Is there anything stronger or more dependable than that proof?

Get A. D. S. Cold and Grippe Remedy to-day at any A. D. S. drug store where you see the A. D. S. sign in the window and give it a trial—it won't be long before you know its value and the wisdom of the A. D. S. methods.

Look For the Sign

This card in a druggist's window means that he is a member of a National Association of retail druggists which makes, under the supervision of the National Formula Committee, 1,000 standard household remedies and toilet preparations guaranteed to be free from habit-forming drugs or whiskey.

MEMBER

A.D.S.

ASSOCIATION
With 12,000 Other Druggists.

PETER DIAMOND,
Well Known Pharmacist at 77 Lenox Avenue, New York City.

Here is what Peter Diamond, one of the best known druggists in New York City, and former president of the New York State Pharmaceutical Association, says of A. D. S. Cold and Grippe Remedy:

"It has been one of the most popular remedies I have ever handled. There are many families in my neighborhood who are never without it, and whenever they feel a cold coming on they take a few tablets and are soon as good as ever. It is a great boon to people who are subjected to severe climatic changes, as we are here in New York."

ascribed to it but have not been realized by reliable observers, the drug being practically valueless in these conditions. It enters into the composition of a number of nostrums. As a bitter it is superfluous and it should not be included among non-official drugs.

WILD YAM—DIOSCOREA VILLOSA

Wild Yam (*Dioscorea villosa*) has been little used in medicine. It contains a saponin and an acrid resin, and is said to possess expectorant, diaphoretic and—in large doses—emetic properties. It has been recommended as a remedy in biliary colic and in muscular rheumatism. Its value in such conditions has not been verified to an extent entitling it to consideration as a useful remedy.

WILD INDIGO—BAPTISIA TINCTORIA

Wild Indigo (*Baptisia tinctoria*) has been in use—chiefly by the eclectics—for about three-quarters of a century, but there is no satisfactory evidence that it has any therapeutic value. The following text-books on pharmacology do not even mention wild indigo: Cushy, Brunton, Dixon, Binz, Sollmann. It is not official in the United States or other leading pharmacopias.

A preparation of wild indigo is advertised with extravagant claims for its therapeutic action, but these claims are not supported by any substantial evidence. Other virtues ascribed to wild indigo are its properties as a cardiac and hepatic stimulant and its value in sepsis, particularly in typhoid fever. It actually has emetic and cathartic properties, but even these are inferior to those possessed by many other drugs.

It is very evident that a drug possessing the extraordinary merits that have been claimed for wild indigo would not have remained unnoticed by the leading authorities on pharmacology and therapeutics, especially after its prolonged use in medicine. Owing, therefore, to the lack of substantial evidence of its usefulness, baptisia is not considered as of sufficient importance to warrant its inclusion in the list of non-official drugs. It is probably entirely superfluous.

Correspondence

Revision of the Pharmacopeia

To the Editor:—The principles to govern the revision of the next Pharmacopeia suggested by Dr. Osborne in THE JOURNAL, January 1, are the best of the many that I have seen. I heartily approve of them but would like to add two more.

First: That no compounds be included in the Pharmacopeia. Those which have been will be permanently standardized by Dr. Osborne's second rule or principle which makes the standards of former editions of the Pharmacopeia permanent standards for drugs which are dropped from the new edition. Possibly it will be well to describe a few menstrea, pill masses, etc., and also well to indicate how each drug can be administered most agreeably.

Second: Standard abbreviations for all drugs should be given in an appendix. Almost every prescription is written in abbreviations and they should be standardized.

I hope the time will come when drugs in the Pharmacopeia will be defined by their physiologic action as well as by their physical and chemie attributes, because the possession of physiologic action is the only thing that makes them useful drugs. Therefore this is the best definition of them.

The Committee on Revision is entirely capable of compiling all that is authoritatively known on this subject. I appreciate the fact that some drugs in the Pharmacopeia have not been sufficiently studied to have their physiologic action known. But this lack of knowledge would be emphasized when stated in the Pharmacopeia and would lead to their systematic study or rejection.

If knowledge of this kind were added to the Pharmacopeia it would make it more serviceable to both physicians and pharmacists.

N. S. DAVIS, Chicago.

Alcohol Dangerous in Emergency Cases

To the Editor:—An incident which occurred in a prominent city in New York state has become the subject of some controversy, and has been referred to me for an opinion. The facts being of more than local interest, a reply through THE JOURNAL seems most practical.

A man of some prominence fainted in the street, and was taken to the office of a physician, who gave him brandy in large quantities to keep up the action of the heart. The patient died in the course of a few hours, the post-mortem revealing hemorrhage, and rupture of several cerebral arteries. It was contended by his friends that the brandy hastened his death by increasing the rupture of the arteries and perhaps flooding the brain with more blood than would have naturally passed through the fractures.

A case was cited, for comparison, of a middle-aged man who fainted and was found unconscious on the street, who was treated with water poured on the back of the neck, kept in a reclining position with hot bottles to his feet and no spirits given. He recovered with partial paralysis. The assertion was made that, had any form of alcohol been given, the increased action of the heart would have sent a blood-stream through the circulation with greater velocity, widening the ruptured artery and making the case fatal. In such cases a small break at first would be greatly increased by a sudden pressure of the blood, and nothing would be more unwise than to increase the heart's beats and the blood-pressure at this time.

Men found in the street in a state of coma, in whom the heart-beat is reduced and is hardly discernible are often given alcohol for the purpose of starting up the heart, and the supposition is that this is curative and without it the depression would naturally go on to death. In reality, in many cases of coma the action of spirits starts up the heart, and very soon afterward increased depression sets in and no further use of spirits has any influence other than a transient rise and increased depression, ending in death. It never occurs to the physician that rousing up the heart and increasing the flow of blood is increasing the danger and fatality of the case. It is also noted that fractures and extensive lacerations of the bones and muscles always heal more slowly and are more complicated when alcohol is given at the start to prevent shocks and to overcome heart depression. It is evident that in these cases alcohol drives the blood through the broken vessels into the tissue and greatly increases the inflammatory conditions which follow. A person found in the street unconscious, with a face intensely red, showing congestion, and vasomotor palsy, should never be given alcohol, for the reason that it increases the palsy and vasomotor paralysis, and is very likely to be followed by rupture of the cerebral arteries.

In apoplectic fits and head injuries the same danger exists. The increased action of the heart is always at the expense of the vitality, and it is a grave question whether anesthesia is the proper thing to produce in such cases. It is also noted that in bruises and contusions among drinking men, the congestion is greater, the inflammation is intense, and recovery slower.

In amputations or ligations of arteries alcohol increases hemorrhage and is an exceedingly dangerous agent.

In emergency cases in which the heart is depressed the patients should never be given alcohol because of the great danger and uncertainty of its physiologic action. Raising the blood-current and forcing it with greater velocity is followed by depression and unknown conditions which are hazardous to the last degree.

It may be asserted without question, in view of the wealth of clinical facts which has placed the subject beyond opinions or theories, that alcohol is one of the most dangerous of all drugs in emergency cases, and this is sustained by the fact that so many other measures and remedies are available that have no such physiologic action as alcohol.

It is not a matter of controversy, but one of facts which can be tested, and the physician should put aside all prejudices and theories of the past and examine the matter in the light of the present knowledge, and use only those means which are known to be safe and practical.

T. D. CROTHERS, M.D., Hartford, Conn.

Nastin Treatment of Leprosy—A Correction

To the Editor:—My attention has been directed to page 1124 of THE JOURNAL for Oct. 2, 1909, where my contribution to the Leprosy Conference is noted. I am represented as "greatly opposed to the use of nastin." The matter, I am aware, is not of much general interest, but at the same time I feel obliged to point out that these words misrepresent me altogether; all that I did was to report, with full clinical details, trial of nastin in four cases. The clinical details were very fully given and showed that no therapeutic effects, nor indeed effects of any kind, were produced; to such a statement I confined my remarks.

J. ASHBURTON THOMPSON, Sidney, N. S. W.

Miscellany

CLIPPINGS FROM LAY EXCHANGES

WILLING HANDS MAKE LIGHT WORK

Dr. ——— is dead. Just as he was crossing the rails the southbound Cape May express . . . came rushing down the track and caught the doctor, with his horse, wagon and dog companion, and threw them high in the air, death resulting instantaneously. All that remained of them was a mass of mangled humanity, cut in twain, a ground-up horse, dead dog and a demolished vehicle. Willing hands gathered up the fragments and "Coroner ———" was notified.—Cape May (N. J.) *Gazette*, Sept. 18, 1909.

LOST HEART BEAT, MAY DIE

Last Sunday Mr. ——— was taken violently ill, the first symptoms being shown when blood began to spurt from his nose. A physician was hastily summoned and on examination stated that Mr. ——— was suffering from hemorrhage, the result of his heart having lost one beat.—Waukegan (Ill.) *Gazette*, June 4, 1909.

TOO BAD—HORRIBLE EXAMPLE

The following heading is quoted from the Stockton (Cal.) *Evening Record*, Nov. 13, 1909:

ALCOHOLIC EPILEPSY

Dr. A. W. H. ——— Shows Effects of Liquor

His Paper Before Physicians' Convention Gives Drinkers Strong Object Lesson

THE STATE OF TENDER YEARS

Matrimony Hospital on Grill.— . . Steps are being taken . . . to investigate a maternity hospital at Beloit in which several wards of the state of tender years have been cared for.—Madison (Wis.) *Democrat*, Nov. 9, 1909.

POSTERIOR TRACHEOTOMY—PLEASE PUBLISH THE TECHNIC

. . . Resorting to tracheotomy, they made a small incision in the back of the lad's neck, and from the outside, and the burr was then removed, although with much difficulty, as it was firmly lodged and the throat was badly inflamed and swollen.—Eldora (Iowa) dispatch to Omaha *World-Herald*, Oct. 24, 1909.

A NEW NEUROSIS

A new disease has sprung up in San Francisco certainly unknown before to the medical profession. Yesterday an old German lady came to my office and in a pitiful tone complained that she was suffering terribly since the earthquake from nervous castration.—Personal communication from San Francisco physician.

INTESTINAL SYSTEM REMOVED AND RESET

One of the most remarkable surgical operations . . . was successfully carried through . . . by Dr. ———, chief surgeon . . . Almost the entire intestinal system was removed from the abdomen of a 12-year-old boy, cleansed of foreign matter, numerous lacerations stitched, and the intestines replaced and reset.—Philadelphia *Record*.

The Public Service

Medical Department of the Army

Changes for the week ending Jan. 15, 1910:

Reddy, John J., 1st Lieut. M. R. C., Jan. 7 ordered to active service and assigned to duty at Ft. Monroe, Va.

Brooks, Wm. H., capt., Presidio of San Francisco, Hopwood, Lucius L., capt., Army Gen. Hosp., San Francisco, Card, Daniel P., Lieut., Army, Gen. Hosp., San Francisco, ordered to report to the commanding officer Sixth Cavalry, on arrival of the Transport *Sheridan* at San Francisco, for duty with command to Ft. Des Moines, Iowa. On completion of this duty to return to their proper stations.

The following changes in stations and duties of officers of the Medical Corps and the Medical Reserve Corps are ordered:

Capt. Carroll D. Buck, to Alcatraz Island, Cal., relieving Capt. Robert M. Thornburgh, who will proceed to the Army Gen. Hosp., San Francisco. First Lieut. Edgar King to Ft. McDowell, Cal. First Lieut. Guy V. Rukke, to the Army Gen. Hosp., San Francisco. First Lieut. Frank E. Artaud, M. R. C., to Key West Barracks, Fla., relieving Capt. Henry K. Brown, who will proceed to Ft. Morgan, Ala., relieving 1st Lieut. Samuel A. Springwater, M. R. C., who will proceed to Ft. St. Philip, La. First Lieut. James C. Dougherty, M. R. C., to Ft. Bliss, Texas, 1st Lieut. Ernest K. Johnstone, M. R. C., from the Presidio of San Francisco to Fort Shafter, H. T., relieving 1st Lieut. Henry du R. Phelan, M. R. C., who will proceed to Ft. De Russy, H. T., relieving 1st Lieut. John P. Kelly, M. R. C., who will proceed to Schofield Barracks, H. T.

Shook, Jay R., capt., January 8, relieved from duty as attending surgeon at Chicago and ordered to Jefferson Barracks, Mo., for temporary duty for a period of one month, then to Ft. Logan, Colo., for duty.

Sherwood, John W., 1st Lieut., M. R. C., January 7, ordered to proceed from Ft. Williams, Me., to Ft. Andrews, Mass., for temporary duty.

Brown, Orville G., capt., January 4, granted 30 days leave of absence.

Brooks, William H., capt., January 7, granted 10 days leave of absence.

The following named officers of the Medical Corps and Medical Reserve Corps are ordered from duty at the stations designated after their respective names and will proceed to San Francisco and take transport to sail from that place about April 5, 1910, for duty in the Philippine Islands:

Capt. John W. Hanner, U. S. Military Academy, West Point, N. Y.

Capt. Leon T. Le Wald, Columbus Barracks, Ohio.

Capt. Orville G. Brown, Fort Robinson, Neb.

First Lieut. Morrison C. Stayer, Ft. McDowell, Cal.

First Lieut. Ralph H. Goldthwaite, Co. C, Hospital Corps, Ft. Niagara, N. Y.

First Lieut. Lewis A. Lavanture, M. R. C., Ft. D. A. Russell, Wyo.

First Lieut. William C. Lyon, M. R. C., Ft. DuPont, Del.

First Lieut. James A. Simpson, M. R. C., Presidio of Monterey, Cal.

First Lieut. Herman N. Bundesen, M. R. C., Ft. D. A. Russell, Wyo.

The following named medical officers will sail May 5, 1910, for duty in the Philippine Islands.

Capt. Herbert G. Shaw, Vancouver Barracks, Wash.

Capt. Jesse R. Harris, Ft. George Wright, Wash.

Capt. Theodore Lamson, Columbus Barracks, Ohio.

Capt. James D. Heysinger, Ft. Ethan Allen, Vt.

Capt. John B. Huggins, Walter Reed Gen. Hosp., Takoma Park, D. C.

First Lieut. Joseph O. Walkup, M. R. C., Ft. Snelling, Minn.

First Lieut. Thomas W. Penrose, M. R. C., Plattsburg Barracks, N. Y.

First Lieut. Edgar F. Haines, M. R. C., Ft. Moultrie, S. C.

First Lieut. James B. Van Horn, M. R. C., Ft. Mackenzie, Wyo.

McCaw, Walter D., Lieut. colonel; Darnall, Carl R., major; Russell, Frederick F., major, January 11, detailed to represent the Medical Department of the Army at the United States Pharmacopetal Convention to be held in this city May 10, 1910.

Public Health and Marine-Hospital Service.

Changes for the week ended Jan. 12, 1910:

Korn, W. A., P. A. surgeon, granted 10 days' leave of absence from Jan. 13, 1910.

Preble, Paul, asst.-surgeon, granted 2 days' leave of absence from Jan. 11, 1910.

Cleborne, A. B., acting asst.-surgeon, granted 7 days' leave of absence from Jan. 2, 1910, under paragraph 210, Service Regulations.

Delgado, J. M., acting asst.-surgeon, granted 6 days' leave of absence from Dec. 26, 1909, under paragraph 210, Service Regulations.

Dynan, N. J., acting asst.-surgeon, granted 4 days' leave of absence in December, 1909, under paragraph 210, Service Regulations.

Savage, Walter L., acting asst.-surgeon, granted 30 days' extension of leave of absence from Dec. 1, 1909, on account of sickness.

Thornton, M. J., acting asst.-surgeon, granted 6 days' leave of absence from Dec. 20, 1909, under paragraph 210, Service Regulations.

Vandiver, J. C., acting asst.-surgeon, granted 3 days' leave of absence from Dec. 26, 1909, under paragraph 210, Service Regulations.

Watson, H. J., acting asst.-surgeon, granted 11 days' leave of absence from Jan. 1, 1910.

BOARD CONVENED

Board of medical officers convened to meet at the Marine Hospital, San Francisco, Jan. 11, 1910, for the physical examination of an officer of the Revenue-Cutter Service. Detail for the board: Surgeon J. M. Gassaway, chairman; P. A. Surgeon R. E. Ebersole; Asst.-Surgeon S. C. Hotchkiss, recorder. Jan. 6, 1910.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

WORKS OF SYDENHAM

To the Editor:—I have in my library a volume of "The Entire Works of Thomas Sydenham," revised and corrected by Dr. John Swan and published by Edward Cave, of London, in the year 1749. It gives an account of "The Continued Fever of the Years 1661, 1662, 1663, 1664," and many other diseases. I desire information about this old book, how many volumes are in existence, its probable value, etc.

L. LEAMING, M.D., Otterbein, Ind.

EFFECT OF DENATURED ALCOHOL ON THE SKIN

To the Editor:—I notice a letter from Dr. Hottendorf, in THE JOURNAL, Jan. 15, 1910, p. 221, asking for the effect of denatured alcohol on the skin. A case in point occurred in my practice recently. A male patient had pediculus pubis pandemically, I presume he reinfects himself from uncleanly bed covering. My treatment has been an alcoholic solution of mercury bichlorid. He has used it with good results for the time being, and never had any ill effects. It occurred to me that as he was using so much, it would be cheaper to use denatured alcohol and so changed my prescription. The man applied it but twice and returned to me with marked burns of the root of the penis and scrotum. The skin was red and angry around the burns, which were superficial, and covered with a light crust. I treated the lesions as ordinary burns with happy results. It taught me the folly of false economy. I do not know the denaturing agent, but believe nitrobenzole is sometimes used.

FRANCIS SCHILL, JR., M.D., Johnstown, Pa.

ANTITYPHOID INOCULATIONS

To the Editor:—Please furnish references to the literature on antityphoid inoculations, and designate those dealing with the technic.

ANSWER.—In THE JOURNAL of May 8, 1909, p. 1518, under Queries and Minor Notes, will be found a number of references. In addition to those are the following:

Leishman: Antityphoid Inoculation in the British Army, *Military Surgeon*, June, 1908; abstr. in THE JOURNAL, Aug. 15, 1908, p. 623.

Stone: Typhoid Immunity and Typhoid Inoculation, THE JOURNAL, Oct. 16, 1908, p. 1253.

Editorials in THE JOURNAL, Dec. 12, 1908, p. 2063, and Dec. 7, 1907, p. 1922.

Nichols: Bacterial Inoculations in Typhoid, *Washington Medical Annals*, November, 1909; abstr. in THE JOURNAL, Dec. 11, 1909, p. 2038. This paper deals with the technic.

Editorial in THE JOURNAL, Jan. 1, 1910, p. 54. This deals with technic.

GRADUATE STUDY ABROAD

To the Editor:—Please give references to articles that have appeared in THE JOURNAL in the past few years concerning graduate medical study in America and Europe.

K. T.

ANSWER:—The answer to an inquiry in THE JOURNAL, Nov. 16, 1907, p. 1695, discusses fully the matter of graduate study at home and abroad, and sets out the advantages to be enjoyed in each of the large medical centers of Europe, London, Paris, Berlin and Vienna, giving information as to teachers, clinics, hospitals, fees, living expenses, etc., and also referring to other articles appearing in THE JOURNAL on the subject.

June 1, 1907, p. 1879, THE JOURNAL gave information concerning work in Vienna, courses, teachers, fees, living expenses, etc.

Oct. 27, 1906, p. 1391, we published a letter on Vienna from the medical student's point of view, which gives valuable information as to the hospitals, men, clinics, fees, living expenses, etc.

Other references are:

"Proposed International System of Graduate Courses," THE JOURNAL, July 17, 1909, p. 222.

"Medical Education in France and Germany," abstracted in THE JOURNAL, Aug. 28, 1909, p. 740.

"Information Regarding Teachers Abroad," THE JOURNAL, Jan. 9, 1909, p. 152.

"Graduate Courses in Germany," THE JOURNAL, Jan. 4, 1908, p. 62.

"Graduate Work in Mission Hospitals," THE JOURNAL, Feb. 29, 1908, p. 705.

"Graduate Work in Duesseldorf," THE JOURNAL, March 28, 1908, p. 1051.

"Psychiatry in Munich," THE JOURNAL, Jan. 1, 1910, p. 65.

Information may be obtained personally or by mail from the following:

LONDON: Secretary of the London Postgraduate Association, West Wing, Examination Hall, Victoria Embankment, London.

LONDON: Dean of the Northeast London Postgraduate College, Tottenham, London, N.

LONDON: Dean of the West London Postgraduate College, Hammersmith Road, London, W.

PARIS: Continental Anglo-American Medical Society, Dr. Charles G. Jarviss, Secretary, 81 Boulevard Malesherbes, Paris.

BERLIN: Medical Inquiry Office, Kaiserin Friedrich-Haus, Luisenplatz, 2, Berlin.

BERLIN: Anglo-American Medical Association, 73 Lutzowstrasse, Berlin.

VIENNA: Secretary of the American Medical Association of Vienna, Cafe Klinik, IX Spitalgasse, Vienna.

Articles on graduate study in the United States are rare, but it is stated that, in many subjects, one may receive better and more effective training in this country than abroad.

THE STERILITY OF URINE

To the Editor:—So far as I know from the literature at my disposal, urine collected under aseptic conditions from healthy individuals is sterile. I would like to know whether or not this is correct.

Dr. A.

ANSWER:—Text-books on the urine state that it is normally sterile while in the bladder, but becomes contaminated with micro-organisms in passing through the urethra, as this channel is practically never free from germs. The experiments from which this conclusion has been reached were performed a long time ago and the original sources are not quoted.

LITERATURE ON RHEUMATOID ARTHRITIS

To the Editor:—Please refer me to literature on the etiology, pathology and treatment of rheumatoid arthritis.

R. S. CUMMINGS, M.D., National City, San Diego, Cal.

ANSWER:—The following are some of the most important articles on this subject published since 1907:

Locke, E. A., and Osgood, R. E.: The Treatment of Non-Tuberculous Chronic Arthritis, THE JOURNAL A. M. A., Feb. 2, 1907, p. 388.

Hoffa, A.: Chronic Articular Rheumatism and Arthritis Deformans, THE JOURNAL A. M. A., May 11, 1907, p. 1586.

Midelton, W. J.: Treatment of Rheumatoid Arthritis, *Lancet*, London, Sept. 28, 1907; abstr. in THE JOURNAL A. M. A., Oct. 26, 1907, p. 1476.

Luff, A. P.: Pathology and Treatment of Rheumatoid Arthritis and Morbid Conditions which Simulate It, *Brit. Med. Jour.*, Oct. 26, 1907; abstr. in THE JOURNAL A. M. A., Nov. 23, 1907, p. 1808.

Muse, E. H.: A Case of Multiple Arthritis Deformans, THE JOURNAL A. M. A., July 11, 1908, p. 124.

Marshall, H. W.: The Etiology of Chronic Non-Tuberculous Arthritis, THE JOURNAL A. M. A., Sept. 12, 1908, p. 890.

Murrell, T. W.: Rheumatoid Arthritis and Its Treatment, *Med. Press and Circ.*, Dec. 20, 1908; abstr. in THE JOURNAL A. M. A., Jan. 30, 1909, p. 421.

Tubby, H. A.: Arthritis Deformans, *Lancet*, London, Dec. 26, 1908; abstr. in THE JOURNAL A. M. A., Jan. 23, 1909, p. 333.

Arthritis Deformans, Editorial in THE JOURNAL A. M. A., Dec. 4, 1909, p. 1919.

Nichols and Richardson: *Jour. Med. Research*, September, 1909, xxi, 149.

THE VACUUM BOTTLE IN PROCTOCLYSIS

In THE JOURNAL, December 25, 1909, p. 2160, were published two articles describing apparatus for the administration of salines by rectum or hypodermically, both of which made use of the vacuum bottle for maintaining the temperature of the solution used. One was by Dr. R. M. Harbin, Rome, Ga., and the other by Dr. John M. Garratt, Buffalo. Dr. Robert Coleman Kemp, New York City, calls attention to the fact that in the *New York Medical Journal*, August 14, 1909, he published a detailed description of an apparatus for saline infusion making use of the vacuum bottle, and therefore claims priority for this idea. On writing to the doctors above named, Dr. Harbin replies that he had no knowledge of Dr. Kemp's article, as does also Dr. Garratt. Both admit, however, that they had made no previous publication of their ideas, though Dr. Garratt states that the idea of the use of the vacuum bottle for the purpose named occurred to him in September, 1908, and his apparatus was perfected in December, 1908, and has been in use ever since. Drs. Harbin and Kemp do not state when they conceived the idea or first used the vacuum bottle. It would appear, therefore, that though the idea may have occurred separately to these gentlemen Dr. Kemp was first to publish a description of his apparatus. There are differences in the details of the three infusion outfits.

Medical Education and State Boards of Registration

COMING EXAMINATIONS

KANSAS: State House, Topeka, February 8. Sec., Dr. F. P. Hatfield, Olathe.
NEBRASKA: State House, Lincoln, February 9. Sec., Dr. E. Arthur Carr, 141 S. 12th Street.
NEW YORK: Albany, February 1-4. Chief of Examinations Division, Dr. Charles F. Wheelock.
WYOMING: State Capitol, Cheyenne, February 16-18. Sec., Dr. S. B. Miller, Laramie.

Oklahoma April and July Reports

Dr. Frank P. Davis, secretary of the Oklahoma State Board of Medical Examiners, reports the written examinations held at Guthrie, April 13-15, and July 12-15, 1909. The number of subjects examined in was 22; total number of questions asked, 150; percentage required to pass, 70.

At the examination held April 13-14, the total number of candidates examined was 38, of whom 23 passed and 15 failed. Three reciprocal licenses were issued. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
University of Arkansas.....	(1903)		71
Birmingham Medical College.....	(1908)		92
Northwestern University Medical School.....	(1897)		86
Central College of Phys. and Surg., Indianapolis..	(1905)		80
Keokuk Medical College, College of Phys. and Surg.	(1907)		71
Kansas Medical College.....	(1900)		79
University of Kansas.....	(1906) 79; (1907)		83
University of Louisville.....	(1907)		75
Louisville and Hospital Medical College.....	(1908) 80,		90
Kentucky University.....	(1902)		77
Louisville Medical College.....	(1906)		85
College of Physicians and Surgeons, Baltimore....	(1906)		83
Barnes Medical College.....	(1907)		75
St. Louis University.....	(1908)		91
North Carolina Medical College.....	(1906)		79
Syracuse University.....	(1905)		90
Jefferson Medical College.....	(1880)		82
Hahnemann Medical College, Philadelphia.....	(1907)		83
Vanderbilt University.....	(1907) 92; (1908)		88
Chattanooga Medical College.....	(1904)		90

College	Year Grad.	Per Cent.
College of Physicians and Surgeons, Chicago.....	(1908)	65
Bennett College of Eclectic Medicine and Surgery..	(1887)	*75
Chicago College of Medicine and Surgery.....	(1903)	*76
Keokuk Medical College.....	(1891) 45; (1898)	*70
Louisville and Hospital Medical College.....	(1900)	*81
Kentucky School of Medicine.....	(1894)	*74
University of Michigan, College of Medicine.....	(1893)	49
University Medical College, Kansas City.....	(1894)	34
St. Louis University.....	(1905)	*74
Beaumont Hospital Medical College.....	(1900)	62
Eclectic Medical Institute, Cincinnati.....	(1889)	60
Knoxville Medical College.....	(1908)	63
University of the South.....	(1908)	67
Gate City Medical College†.....	(1907)	64

College	Year Grad.	Reciprocity with.
Chicago College of Medicine and Surgery.....	(1909)	Illinois
Rush Medical College.....	(1903)	Illinois
St. Louis College of Physicians and Surgeons....	(1908)	New Mexico

At the examination held July 12-15, 1909, the total number of candidates examined was 46, of whom 26 passed and 20 failed. One candidate failed to complete the examination. Five reciprocal licenses were issued. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
University of Arkansas.....	(1909)		74
Northwestern University Med. School..	(1893) 80; (1909)		75
Illinois Medical College.....	(1898)		81
College of Phys. and Surg., Chicago..	(1903) 77; (1909)		80
University of Iowa, Homeopathic College.....	(1906)		76
Kansas Medical College.....	(1909)		71
University of Kansas.....	(1909)		83
University of Louisville.....	(1907) 72,		75
Flint Medical College.....	(1909)		77
Tulane University of Louisiana.....	(1908)		72
St. Louis University.....	(1909)		87
Barnes Medical College.....	(1898)		72
Beaumont Hospital Medical College.....	(1894)		75
Epworth University.....	(1908) 74; (1909)		73
Jefferson Medical College.....	(1909)		80
University of Texas.....	(1900)		70
Meharry Medical College.....	(1907) 75; (1909)		73
University of the South.....	(1908)		74
University of Nashville.....	(1909)		85
Vanderbilt University.....	(1900)		75

College	Year Grad.	Per Cent.
University of Arkansas.....	(1892)	57
Bennett College of Eclectic Medicine and Surgery..	(1887)	*72
Chicago Homeopathic Medical College.....	(1891)	*76
Keokuk Medical College.....	(1891)	57
Kentucky University.....	(1906)	60
Kentucky School of Medicine.....	(1894)	*74
University of Louisville.....	(1909)	*71
Tulane University of Louisiana.....	(1909)	69
University of Michigan.....	(1873)	51
Kansas City Hahnemann Medical College.....	(1908)	*71
St. Louis University.....	(1909)	*74
St. Louis College of Physicians and Surgeons.....	(1909)	65
University Medical College, Kansas City.....	(1894)	67
Eclectic Medical Institute, Cincinnati.....	(1889)	56
University of Pennsylvania.....	(1890)	*79
Northwestern Medical College, St. Joseph.....	(1893)	67
Tennessee Medical College.....	(1900)	63
University of Nashville.....	(1909)	66
Knoxville Medical College.....	(1908)	65
Chattanooga Medical College.....	(1902)	*71

College	Year Grad.	Reciprocity with.
Chicago College of Medicine and Surgery.....	(1909)	Illinois
Hahnemann Med. College and Hospital, Chicago.	(1900)	Illinois
Northwestern University Medical School.....	(1907)	Illinois
Indiana Medical College.....	(1906)	Indiana
Chattanooga Medical College.....	(1908)	Tennessee

* Fell below the minimum of 50 per cent. in one or more branches.
† Regarding the character of this school, see JOURNAL A. M. A., Oct. 19, 1907, p. 1385.
‡ Second examination.

North Carolina June Report

Dr. Benjamin K. Hays, secretary of the Board of Medical Examiners of North Carolina, reports the written examination held at Asheville, June 9, 1909. The number of subjects examined in was 14; percentage required to pass, 80 and not less than 35 in any one branch. The total number of candidates examined was 116, of whom 97 passed, 18 failed and 1 withdrew. Thirteen reciprocal licenses and 14 limited territory licenses were granted at this examination. The following colleges were represented:

College	PASSED	Year Grad.	Total No. Examined.
George Washington University.....	(1908)		1
Atlanta College of Phys. and Surg....	(1900) (2, 1909)		3
Atlanta School of Medicine.....	(1909)		5
University of Louisville.....	(1909)		1
College of Physicians and Surgeons, Baltimore..	(1909)		1
Woman's Medical College of Baltimore.....	(1909)		1
Baltimore Medical College.....	(1908)		1
University of Maryland.....	(1906) (1907) (10, 1909)		12
Johns Hopkins University.....	(1907) (1909)		2
University of Michigan.....	(1909)		1
Columbia University, College of Phys. and Surg.	(1909)		1
North Carolina Med. College..	(1907) (1908) (12, 1909)		14
University of North Carolina.....	(1909)		12
Leonard Medical School.....	(1908) (9, 1909)		10
University of Pennsylvania.....	(1909)		4
Jefferson Medical School.....	(1909)		8
University of the South.....	(1904)		1
Tennessee Medical College.....	(1896) (1908)		2
Medical College of Virginia, Richmond.....	(1909)		3
Univ. Coll. of Med., Richmond... (2, 1908) (12, 1909)			14

College	Year Grad.	Per Cent.
University of Maryland.....	(1904)	60
Leonard Medical School.....	(1909) 74, 75,	76
University of North Carolina.....	(1909)	74
Knoxville Medical College.....	(1908) 66; (1909)	60
University of the South.....	(1905) 42; (1909)	77
Chattanooga Medical College.....	(1900) 55; (1908) 62,	68
Tennessee Medical College.....	(1904)	50
University of Nashville.....	(1908) 67,	71
Meharry Medical College.....	(1905)	58
University of Tennessee.....	(1908)	62
Gate City Medical College.....	(1904)	52

College	Year Grad.	Reciprocity with.
George Washington University.....	(1906)	Maryland
Medical College of Georgia.....	(1894)	Georgia
College of Physicians and Surgeons, Indianapolis	(1898)	Indiana
University of Louisville.....	(1859)	Illinois
Tufts College Medical School.....	(1907)	Mass.
North Carolina Medical College.....	(1896)	Penna.
Columbia University, College of Phys. and Surg..	(1906)	New York
Tennessee Medical College.....	(1894)	Tennessee
Medical College of Virginia.....	(1905) (1907)	Virginia
Univ. Coll. of Med., Richmond.. (1905) (1906) (1907)		Virginia
Army Medical College.....	(1892)	U. S. Army

College	Year Grad.	Total Number
Tennessee Medical College.....	(1891)	1
University of Tennessee.....	(1905) (1906)	2
Non-graduates.....		11

Marriages

LEANDER J. NICKELL, M.D., Blaine, Ky., to Miss Ethel Coldiron of Relief, Ky., recently.

RICHARD MARION NELSON, M.D., to Miss Anna Moore, both of Colon, Panama, recently.

RICHARD A. BURKE, M.D., to Miss Libbie Cox, both of Ishpeming, Mich., December 29.

WILLIAM C. McREE, M.D., to Miss Sallie Mae Elder, both of Trenton, Tenn., January 7.

JAMES EDWIN RAY, M.D., Boston, to Miss Maude E. Murdock of Carthage, Mo., December 31.

GEORGE WARNER MOSHER, M.D., Chicago, to Mrs. Mary Isabelle Fixen of Racine, Wis., January 5.

E. J. HORAN, M.D., Glenwood Springs, Colo., to Miss Lucy M. McLearn of Rifle, Colo., December 29.

AUGUSTUS LEON BEIER, M.D., Chippewa Falls, Wis., to Miss Elizabeth Wilkins of Boyd, Wis., January 3.

HAMPDEN AULICK BURKE, M. D., Petersburg, Va., to Miss Ethel May Francis, at Petersburg, January 6.

HAROLD WELLINGTON JONES, M. C., U. S. Army, to Mrs. Evarts Ewing Munn in Pittsfield, Mass., January 1.

CHARLES P. VINCENT, M.D., Enoree, S. C., to Miss Essie Drummond of Lanford, S. C., at Woodruff, S. C., December 29.

Deaths

Washington Lafayette Schenck, M.D. Dartmouth Medical School, Hanover, N. H., 1849; formerly a member of the American Medical Association, and first vice-president in 1888; president of the Kansas State Medical Society in 1877; of the Kansas East District Medical Society in 1880; of the Warren County, Ohio, Medical Society in 1854; and a member of the Topeka Medical Society and the Kansas Historical Society; professor of hygiene and state medicine in the University of Kansas City; adjunct professor of practice of medicine and professor of hygiene and preventive and state medicine in Kansas Medical College, of which he was one of the organizers; surgeon of the Seventh Ohio Volunteer Infantry, later in charge of army hospitals Nos. 10 and 15, and on the staff of Major General Hamilton; and afterwards surgeon on the Board of Enrollment of the Third Ohio Congressional District during the Civil War; at the close of the war, deputy U. S. tax collector in Camden, Ark.; pension examiner for Osage county, Kan., and a member of the school board of Sage City and of Franklin, Ohio; for four terms a member of the Kansas State Board of Health; once mayor of Franklin, Ohio; a trustee of Antioch College, Yellow Springs, Ohio, and the Kansas Medical College; local surgeon for the Denver and Rio Grande Railroad and the Colorado Fuel and Iron Company at New Castle, Colo., in 1895 and 1896, and for the Santa Fe System and Missouri Pacific Railroad at Osage City from 1872 to 1890; died at his home in Topeka, January 4, from pneumonia, aged 84.

Peter Brough Montgomery, M.D. Bellevue Hospital Medical College, 1886; of Chambersburg, Pa.; formerly a member of the American Medical Association; a member of the Medical Society of the State of Pennsylvania; vice-president of the Cumberland Valley Medical Association; formerly president of the Medical Society of Franklin County; once coroner and twice a member of the city council; and a member of the staff of Chambersburg Hospital; died suddenly at Buena Vista, Fla., where he had gone for rest, from influenza, aged 47.

Howard Alden Reed, M.D. University of Pennsylvania, Philadelphia, 1903; Army Medical School, 1906; a member of the American Medical Association and Association of Military Surgeons of the United States; who enlisted in the army as a private in the artillery, and served during the Spanish-American War; was appointed first lieutenant in the Medical Corps June 20, 1906, and was retired with the rank of captain on account of disability incident to the service in 1909; died at Milford, Pa., January 2, from tuberculosis, aged 34.

James Wellington Byers, M.D. Atlanta (Ga.) Medical College, 1882; formerly secretary of the Charlotte (N. C.) Academy of Medicine; secretary of the city board of health; secretary and treasurer of the Mecklenburg county board of health; a member of the Medical Society of the State of North Carolina, and surgeon of the Fourth Infantry, N. C. State Guard; for a few months a resident of Milledgeville, Ga.; died in that city, January 3, aged 48.

William C. McCulloch, M.D. Albany (N. Y.) Medical College, 1897; a member of the American Medical Association; and for two terms president of the board of health of Gloversville; once president of the Gloversville and Johnstown Medical Society, and for two terms president of the board of health of Gloversville, N. Y.; died suddenly from cerebral hemorrhage, at the home of a patient while making a professional call, January 8, aged 38.

David W. Coon, M.D. Missouri Medical College, St. Louis, 1891; a member of the American Medical Association and formerly president of the Grundy County (Mo.) Medical Society; for four terms coroner of Grundy county and county physician twice; for two terms county treasurer, and for four terms city physician of Trenton; died at his home January 10, as the result of injuries received in a fall a few days before, aged 55.

Allen S. Heath, M.D. New York University, New York City, 1844; formerly a member of the Kings County Medical Society, and Brooklyn Pathological Society; surgeon in the U. S. Navy for fifteen months, and afterward chief surgeon of volunteers during the Civil War; said to have been the oldest graduate of his alma mater; died at the home of his daughter in New York City, January 2, from senile debility, aged 88.

Zachariah Carnes, M.D. University of Louisville, 1877; a member of the Indiana State Medical Association; a veteran of the Civil War; at one time president of the Johnson County Medical Society; for twenty years local surgeon of the Pennsylvania System, and for many years a member of the school board; died at his home in Greenwood, January from tuberculosis, aged 71.

William Jackson McHench, M.D. University of Michigan, Ann Arbor, 1858; acting assistant surgeon in the Army during the Civil War; of Brighton, Mich.; for many years division surgeon of the Pere Marquette Railway; died in Bradentown, Fla., where he had gone for his health for the winter, January 1, from heart disease, aged 78.

Charles Harrison Shackford, M.D. Harvard Medical School, 1849; a charter member of the Harvard Alumni Association, and for forty years a member of the American Medical Association; a member of the staff of Frost Hospital, Chelsea, Mass., for thirteen years; died at his home in that city, December 25, aged 85.

William Bradley Chase, M.D. Jefferson Medical College, Philadelphia, 1857; for several years a member of the school board of Swampscott, Mass.; a member of the board of selectmen, and for two years postmaster; died at his home in Lynn, Mass., January 4, from cerebral hemorrhage, aged 76.

Jefferson Davis Pryor, M.D. University of Louisville, 1890; a member of the Kentucky State Medical Association; of Mayfield; died at Riverside Hospital, Paducah, January 7, from meningitis, the result of severe burns received by the explosion of a stove in his office 27 days before, aged 47.

Leonard A. Kittinger, M.D. Hahnemann Medical College, Philadelphia, 1881; secretary of the Homeopathic Board of Medical Examiners of Delaware; and treasurer of the Homeopathic State Medical Society; died at his home in Wilmington, January 1, from cerebral hemorrhage, aged 49.

John L. Carson, M.D. Northwestern Medical College, St. Joseph, Mo., 1894; a member of the Medical Society of the State of California, and San Joaquin Valley Medical Association; local surgeon of the Santa Fe System at Bakersfield; died at his home, December 24, aged 48.

William Symington Brown, M.D. Penn Medical University, Philadelphia, 1854; a member of the Massachusetts Medical Society; assistant surgeon of the Thirty-third Massachusetts Volunteer Infantry during the Civil War; died at his home in Stoneham, Mass., January 6, aged 89.

Herman H. Dinsmore, M.D. University of Vermont, Burlington, 1897; of Enfield, N. H.; formerly pathologist to Notre Dame Hospital, Manchester, N. H.; and a member of the Manchester Medical Association; died at the home of his mother in Manchester, January 3, aged 36.

Alfred H. Headley, M.D. Albany (N. Y.) Medical College, 1886; a member of the American Medical Association; attending surgeon to Dickinson Hospital, Northampton, Mass.; died in that institution, December 29, from septicemia, due to an operation wound, aged 54.

James Russell Post, M.D. Philadelphia, 1871; formerly a practitioner of Pictou, Ont.; physician to the Rome, N. Y., jail, a city physician and a member of the staff of the Rome hospital; died at his home in Rome, December 22, from nephritis, aged 60.

Darius W. Loree, M.D. University of Michigan, Ann Arbor, 1860; a member of the Michigan State Medical Society; for half a century a practitioner of Ridgeway; died at his home in that village, January 9, from disease of the stomach, aged 76.

William A. Monnish, M.D. Atlanta (Ga.) Medical College, 1890; formerly of Atlanta, Ga.; died in his apartments in San Francisco, January 2, from the effects of chloroform, believed to have been self-administered with suicidal intent, while despondent, aged 48.

William T. Milstead, M.D. Louisville Medical College, 1890; a member of the Tri-State Medical Association of Mississippi, Arkansas, and Tennessee, died at his home in Hot Springs, Ark., December 29, from nephritis, aged 43.

John G. L. Gaedeke, M.D. Eclectic Medical College of the City of New York, 1881; formerly an examiner in lunacy of New York State; died at his home in New York City, December 25, from heart disease, aged 55.

Henry D. Shonts, M.D. Philadelphia; for nearly seventy years a practitioner of medicine; and for more than half of that time in Centerville, Iowa; died at his home in Chicago, January 10, from pneumonia, aged 86.

Charles L. Seip, M.D. Hahnemann Medical College, Philadelphia, 1882; Philadelphia College of Anatomy and Surgery, 1872; died at his home in New Bedford, Mass., December 30, from cerebral hemorrhage, aged 67.

C. M. Stewart, M.D. Cleveland Medical College, 1846; a charter member of the first medical society to be organized in Mercer county, Pa.; died at his home in Mercer, January 5, from senile debility, aged 85.

Montrose Mitcheltree Magoffin, M.D. University of Pennsylvania, Philadelphia, 1852; a member of the American Medical Association; died December 30 at his home in Mercer, Pa., from heart disease, aged 69.

Alexander Edwin Turner, M.D. University of Pennsylvania, Philadelphia, 1874; a member of the Tennessee State Medical Association; died at his home in Neboville, near Newbern, Tenn., January 4, aged 56.

George W. Scranton, M.D. Tulane University, 1874; of Scott, La.; a member of the legislature in 1894 from Lafayette parish; died at the home of his daughter in Youngsville, December 29, aged 60.

Sarah C. Brigham, M.D. Worcester (Mass.) Medical College; Eclectic Medical Institute, Cincinnati, 1857; died at her home in Fitchburg, Mass., December 15, from senile debility, aged 85.

William Murdoch, M.D. Cleveland University of Medicine and Surgery, 1873; a homeopathic practitioner of Akron, Ohio; died at his home in that city, January 2, from pneumonia, aged 67.

Alfred Mathias Spalding, M.D. College of Physicians and Surgeons, New York City, 1883; a member of the New York Academy of Medicine; died at Speonk, L. I., January 3, aged 53.

Henry M. Nipple, M.D. Jefferson Medical College, 1871; a member of the Snyder County (Pa.) Medical Society; died at his home in Selinsgrove, Pa., December 10, from pneumonia, aged 71.

Joseph Francis Hume, M.D. Cincinnati, 1854; a veteran of the Civil War; at one time postmaster of California, Mo.; died in Kansas City, Mo., September 19, from senile debility, aged 86.

John Lee Roach, M.D. Dallas (Texas) Medical College, 1904; a member of the Hunt County Medical Society; died at his home in Lone Oak, Texas, January 4, from pneumonia, aged 41.

Albert Simon, M.D. University of Berlin, Germany, 1849; a surgeon of volunteers during the Civil War; died at his home in Reading, Pa., December 30, from senile debility, aged 81.

William F. Clary, M.D. Castleton (Vt.) Medical College, 1855; a member of the Tennessee State Medical Association; died at his home in Bellbuckle, Tenn., January 9, aged 79.

Benjamin Bond Perkins, M.D. Jefferson Medical College, 1877; formerly of Chestertown, Md.; died at his home in Philadelphia, December 22, from heart disease, aged 82.

Solomon Williams (license, Texas, years of practice); a Confederate veteran; and for twenty years postmaster of Cove, Texas; died at his home, December 8, aged 64.

D. F. Morrison, M.D. Atlanta (Ga.) Medical College, 1891; died at his home in Brooksville, Fla., December 26, from the effects of an overdose of chloroform, aged 41.

William R. Jones, M.D. University of Virginia, Charlottesville, 1861; of Hawesville, Ky.; died in Louisville, December 27, after a surgical operation, aged 71.

Robert Edward Lee Rodgers, M.D. Jefferson Medical College, 1890; at one time a physician of Chicago; died at his home in Millsboro, Pa., January 2, aged 45.

B. H. Morehead, M.D. Kentucky School of Medicine, Louisville, 1866; a Confederate veteran; died at his home in Sacramento, Ky., December 31, aged 69.

H. M. Wagner, M.D. Columbus Medical College, 1879; died suddenly at his home in Newark, Ohio, January 3, from cerebral hemorrhage, aged 58.

Mary J. Taylor, M.D. Pulte Medical College, Cincinnati, 1881; died at her home in Greencastle, Ind., December 20, from senile debility, aged 84.

Thomas P. Seller, M.D. Rush Medical College, 1854; died at his home in Indianapolis, December 19, from senile debility, aged 84.

Amos L. Norris, M.D. Rush Medical College, 1872; died at his home in Farmer City, Ill., December 16, from paralysis, aged 62.

John K. Smith, M.D. Jefferson Medical College, 1875; died at his home in Harrisburg, December 25, from pneumonia, aged 65.

Lemuel J. Wood, M.D. Baltimore University, 1887; died at his home in Kelton, S. C., December 27, from acute gastritis, aged 46.

William E. Chappell, M.D. University of Nashville, 1878; died at his home in Kansas City, November 11, aged 68.

Society Proceedings

COMING MEETING

Medical Society of State of New York, Albany, January 25.

AMERICAN ASSOCIATION FOR CANCER RESEARCH

Annual Meeting, held in New York City, Nov. 27, 1909.

(Continued from page 228)

Retrogression of a Case of Lymphosarcoma After Laparotomy

DR. WARFIELD T. LONGCOPE, Philadelphia: The case was that of a man aged 33, who was admitted to the Pennsylvania Hospital on April 20, 1909. He had had swelling of his abdomen for 26 days before admission, with some pain; 10 days before admission three quarts of fluid were removed by tapping. Soon after admission the enormously swollen abdomen was tapped and six quarts of turbid yellow fluid were removed. This was alkaline and of 1024 specific gravity. On standing there was a heavy white precipitate, composed almost entirely of broken cells, the character of which could not be definitely made out. There were, however, a few cells which resembled lymphocytes. No tubercle bacilli were found, nor could other bacteria be demonstrated either in smears or by cultures. Since the sediment contained no proteolytic ferments it was thought probable that the exudate was composed principally of small lymphocytes. The hemoglobin was 88 per cent., white blood corpuscles 8,100. There was no fever. Considering the possibility of tuberculous peritonitis, an operation was performed by Dr. LeConte, at which large quantities of greenish, milky fluid escaped from the peritoneum. The peritoneal surface, the omentum, and the mesentery were found to be studded with small reddish nodules several millimeters in diameter, and in a loop of the small intestine there was a large tumor mass somewhat bigger than one's fist. The condition was supposed to be carcinoma with general carcinosis of the peritoneum, and since the case was considered hopeless the abdomen was closed. Two weeks after the operation fluid had reaccumulated in the abdomen and 54 ounces were removed by tapping. The patient gradually grew weaker, the temperature was exceedingly low, the respiration slow, emaciation marked, but until his death, about six weeks later, there was no marked reaccumulation of fluid.

At autopsy two liters of pale opalescent fluid were found in the peritoneum, but the peritoneal surfaces, though very

slightly thickened, were perfectly smooth and glistening, and at first sight nothing resembling the appearance at operation could be seen. On more careful examination, however, very minute fibrous tags were found extensively scattered over the peritoneum. There were besides a few definite raised tumor-like nodules 1 or 2 mm. in diameter. In the jejunum there were 3 small areas of thickening, which bore slight resemblance to the large tumor mass found at operation. In the pleural cavities there was opalescent fluid. No changes bearing particularly on the case were found in any of the other organs, except the intestines, kidneys and pancreas. Throughout the duodenum the mucous membrane of the intestines was thickened in patches and the mucosa was covered with what looked like a yellowish-green membrane. This was most marked in the regions of the localized thickened areas. On section through these portions the wall of the jejunum was rather tough, and fibrous in appearance, and showed yellowish streaks. The mesenteric and retroperitoneal glands were enlarged to the size of almonds. Sprinkled over both the surface and cut section of the kidney there were numerous small, flat, white areas. The pancreas was large and firm. Microscopic examination showed that the tumors in the jejunum were typical lymphosarcomata, such as has been described by Kundrat, Sternberg, MacCallum and others. In the large areas there was extensive degeneration of the tumor cells with much growth of connective tissue, which gave a scar-like appearance to the sections. In the retroperitoneal glands tumor cells were found through the section, but rarely involved the entire node. The small masses in the kidney proved to be typical secondary growths without any evidences of cicatrization. Small growths were also found in the pericardium, and fairly extensive growths in the pancreas which showed besides an extreme grade of chronic intra-acinar and perilobular pancreatitis. The only explanation for the autopsy findings is that there must have been extensive and widespread degeneration of the tumor masses covering the peritoneum and in the wall of the intestines, with partial healing by the formation of connective tissue. Exactly what caused this change in the tumor growth it is impossible to say, and it is doubtful whether the laparotomy exerted any influence in this direction. It is more probable that these tumors of themselves retrogressed.

The Present Status of Our Knowledge of Heredity in Tumors

DR. E. E. TYZZER, Boston: The conception of cancer as an inherited condition is apparently less generally held than formerly, and this aspect of the problem has been somewhat neglected during recent years. A great part of the investigation bearing on this question has been of a statistical nature, with the object in view of determining whether the incidence of cancer is greater in the parents or the antecedents of cancer patients than in the antecedents of non-cancerous patients. Such inquiries have furnished results that are often diametrically opposed. Most of the more recent statistical investigations have yielded results which fail to establish the importance of heredity in cancer. Pearson, working with data derived from the Middlesex Hospital, found a history of cancer in 359 out of 2,368 antecedents of cancerous patients as compared with cancer in 102 of 753 antecedents of non-cancerous patients. With an estimated probable error of .04, the coefficient of .0335 for the cancer heredity is of no significance apart from the fact that it tends to show that heredity is not an important factor in the incident of cancer. More recently Bashford and Guillot, each employing the statistical method, have obtained similar results. Another mode of inquiry has to do with the frequency of cancer in certain families. The great frequency of cancer in certain families is generally recognized, for example the famous family of "Madame Z." reported by Broca, in which there were 15 deaths from cancer in 26 offspring which attained the age of 30 years. Statisticians, however, point out the rarity of such families, and, from a consideration of the general distribution of cancer in the population at large, regard their occurrence as coming within the law of probabilities. The subsequent history of the above-named family is at the present time being investigated by Ledoux-Lebarde. The experimental side of the study of heredity in cancer has been for the most part neglected.

Whether epidemics of cancer in mice, such as have been reported by Borrel, Michaelis, Gaylord, and others are to be attributed to heredity remain undetermined. It would appear that, inasmuch as statistical inquiries with regard to heredity in cancer lack accuracy and are surrounded by almost insurmountable difficulties, the only solution of this problem lies in the experimental breeding of short-lived animals. In this way only will it be possible to control the conditions under which the animals live, and to obtain accurate data concerning the incidence of cancer. In one of the families of mice which I have kept under observation there were 65 offspring of a mouse with a tumor of the lung, and tumors developed in 20 or 32 per cent. of these. These results, although not conclusive, indicate that this subject demands further investigation.

DISCUSSION

DR. LEO LOEB, Philadelphia: It seems to me that the cases of the so-called endemic occurrence of tumors, as found by Hanau and myself, and later by other investigators, point strongly to the existence of hereditary factors in the etiology of cancer; they certainly cannot be ascribed to accident. The statistical studies of cancer in man take no account of the great differences that exist in different varieties of cancer; and until statistics take account of such variations and are made to refer more particularly to specific varieties of tumors, they will not have much value in deciding the importance of heredity. Dr. Tyzzer's breeding experiments, however, attack this problem in an exact manner.

DR. JAMES EWING: I think that Dr. Loeb's remarks have an obvious application to the field of heredity. Some tumors show a different relation to heredity from others.

Report on Rat Carcinoma

DR. SIMON FLEXNER, New York: At previous meetings of this association Dr. Jobling and I reported on a rat tumor which developed from the seminal vesicle. When the study of the tumor was first taken up it was regarded as a peculiar sarcoma, and when the tumor had undergone certain changes in the course of transplantation it was regarded as a probable carcinoma. The tumor has now been propagated for about four years and has passed through many generations. At present it presents the characteristics of an adenocarcinoma, of pure and beautiful type. The carcinomatous structure became dominant in the fifth generation, at which time the first lymphatic gland metastases appeared; but at that time and for many subsequent generations the tumor had not assumed a pronounced adenocarcinomatous form. Since about the twentieth generation, however, this form of structure has become established, but in the earlier generations the transplantations of a given tumor would yield in some rats a pure adenomatous growth, and in others an imperfect adenomatous or a mixture of adenomatous and simple carcinomatous growth. We have concluded from these observations that as the type of tumor was slowly changing toward adenocarcinoma, which has now become predominant, the change was affected by the individual animals in which the tumor was implanted. In other words, that two sets of forces affected the result; the one being latent in the tumor and the other being present in the organism of rats inoculated. A minute study of the original tumor showed the existence of definite carcinomatous alveoli within the mass arising from the seminal vesicle, and that these alveoli were located close to the original epithelium of the vesicle from which it was derived. The mass of the tumor, however, was of much less definite organoid structure. The minute study has also rendered it probable that the original tumor was of a feratomatous or embryonal nature.

Comparison of Conditions that Regulate the Growth of Transplanted Tumor and Transplanted Embryo

DR. PEYTON ROUS, New York: Much is now known of the behavior of transplantable tumors in the new host, of the conditions which regulate transplantation, and of the phenomena immediately concerned with growth or death of the introduced neoplasm. But there has been no successful attempt to determine what is here peculiar to tumor as apart from that common to transplanted tissues in general. Schöne

(*Beitr. z. klin. Chir.*, 1908-09, lxi, 1) has directed an investigation specifically to the point, but the method he employed—transfer of skin from the back of one mouse to another—proved ineffective. The transplantation was seldom successful except in blood-related animals. For experiments hashed mouse-embryo has been used. A host of workers have proved that embryonic tissue introduced into another animal fails to give rise to a true neoplasm; but they have also shown that for a period it will grow. Mouse embryo seemed especially favorable to my purposes because of its rapid development and retrogression, as well as because of the ease with which it can be handled. Since tumors of the mouse are transplantable, parallel observations were often conducted through the injection of a definite quantity of tumor in the subcutaneous tissue of an animal's one side and of embryo on the other side. In this way the following facts have been ascertained: 1. Mice differ much as hosts for transplanted embryonic tissue. In one it may grow excellently, in another not at all, and in a third but slightly. These variations in fate of the grafts are not due to variation in the elements composing them. The tissues which survive transplantation (mainly cartilage, squamous epithelium and connective tissue) are well distributed in the embryo-hash and can be found alike in the grafts that "take" and in those that do not. 2. The growth or failure of implanted embryonic tissue depends on the appearance or non-appearance of a reaction from the host-tissues analogous to that for implanted tumor. If the bit of neoplasm is to grow, the host furnishes it a stroma and vascularizes it. So too with embryonic tissue. When a tumor graft fails, all of it becomes rapidly necrotic except those cells at the edge, in contact with the host tissues, and presumably nourished by diffusion from them. The same is true for an embryo graft. 3. The conditions of age, nutrition, race and "soil," which play an important part in the success or failure of a tumor graft, play the same part for embryo grafts. Embryo grafts grow best in young animals, in well-nourished ones, in those of the same variety, and better in the subcutaneous tissue of the mother than in that of controls. When mouse-embryo is introduced into rats it survives for some days, and a vigorous connective-tissue reaction from the host appears, but despite this it fails to develop as it would in animals of its proper species. The same is known to be true for tumor. 4. An immunity to embryo grafts can be produced by injections of embryo, just as immunity against implanted tumor is obtained by tumor injection. Whether it is possible to immunize with tumor against embryo is a point I have not yet tested. But Schöne has found that the converse holds: animals can be immunized against tumor by embryo injections. These observations cannot be taken as evidence for Cohnheim's theory of tumor origin. They fail to touch on that property of continuous growth which ultimately distinguishes tumor grafts from embryo grafts and tumor from all normal tissue. But they show that the natural immunity of an animal to transplanted tumor is not the expression of a special tumor immunity but only an example of tissue immunity. The immediate mechanism of protection as well as the conditions (so far as we know them) which determine it are the same for a normal tissue and for tumor. Acquired immunity to transplantable tumors is not an unique phenomenon but an instance of acquired tissue immunity. These facts are difficult to reconcile with the theory of a parasitic origin for cancer.

DISCUSSION

DR. E. E. TYZZER, Boston: In my opinion the failure of a tumor-graft is consequent on a reaction in the surrounding tissues, inflammatory in its nature.

DR. C. R. STOCKARD, New York City: I have made many transplantations of the embryonic tissue of lower animal forms and have found the success of the graft to depend largely on the organ into which it is implanted. Liver tissue did better when transplanted into livers than elsewhere. I have further noted that the nearer the age of the part and that of the transplanted tissue are, the better are the results obtained. Embryonic tissue succeeded especially well when implanted in young animals, because these animals were more nearly of its age, developmentally speaking, than older

ones. I have also observed that embryonic tissues at different periods of development manifest differences in transplantability. I think that all these factors must be considered in interpreting Dr. Rous's results.

DR. P. ROUS, New York: In all my work the same site for implantation was used—the subcutaneous tissue of the side. Differences in transplantability, due to differences in the developmental period of the embryos, have been recognized by a number of observers. Because of this factor I employed mouse-embryos from 1.0 to 1.6 centimeters in length. Within the developmental limits thus assigned no important differences in transplantability are to be found. Only embryos of the same litter, and therefore of the same period of development, were taken for the hash used in a given experiment. Some of the most recent results are at variance with Dr. Stockard's finding, that the nearer the developmental period of host and implanted tissue are the better will be the results of the graft. An embryo-hash was injected into a number of mice born from one to three days previously into a series three-quarters grown and into some old ones. In those three-fourths grown the introduced tissue did better than in the old, as was to have been expected; but in the very young animals, practically no growth of it took place. The phenomenon is probably to be explained in terms of tissue avidity. The actively growing tissue of the very young mice may be supposed to take up with great avidity the nutritive stuffs of the body, and the introduced fragments of embryo are ill situated for competition. Fragments of the same sort in an older host have to compete with relatively inert tissues.

(To be continued)

PHILADELPHIA AND NEW YORK NEUROLOGICAL SOCIETIES

Joint Meeting, held in Philadelphia, Dec. 18, 1909

DR. T. H. WEISENBURG, President of the Philadelphia Society, in the Chair

Tic of the Tongue

DR. CHARLES S. POTTS, Philadelphia: According to Meige and Feindel, uncomplicated tics of the tongue are very rare. In this case while other muscles have been and are now at times affected, the movements of the tongue are those which are most prominent. The patient, A. G., is 45 years of age, married and is a house painter by occupation. One sister had chorea and his father was a man of very nervous temperament who treated the patient, when a child, very roughly. The man has used tobacco and alcohol moderately and until a year ago, coffee excessively. Until he was 20 years old he was in good health. At that time a skin eruption of some sort appeared on each side of the mouth; this annoyed him and he would draw up the corners of his mouth in an effort to relax the skin; this was followed by closing the eyes (blepharospasm). Then he began to have biting movements, bringing the teeth together with such force that a number of them were broken off. The muscles of the neck and shoulders also became affected. These various movements continued for five years, when they disappeared, and nothing of the sort was manifest for fourteen years, although during this period he had several spells of what he terms "nervous breakdown." Six years ago, without ascertainable cause, he began to have spitting movements, which were followed by paroxysmal protrusion of the tongue. At present at times there are quick contractions of facial and neck muscles, with at long intervals the emission of an explosive sound as is sometimes made in spitting. The most striking phenomenon, however, is a wide opening of the mouth with a quick protrusion of the tongue; usually this is so pronounced that the palatal arches are markedly drawn forward and at times the tip of the epiglottis is visible. The entire organ is hypertrophied, the papilla being much enlarged. Speech is not interfered with. At times while walking he makes a half turn to the right and elevates the right leg. Physical examination is negative, except that the knee jerks are increased and a chronic pharyngitis is present. The man conducts his business and sleeps

well. The movements are much worse at some times than others, being almost absent for days. They are always worse when he feels unwell from any cause.

Case of Amyotrophic Lateral Sclerosis, or Lead Poisoning

DR. JOHN K. MITCHELL, Philadelphia: The variations in the form of lead intoxication are many, ranging from the more common simple peripheral neuritis to cases like the present, which in advanced stages can in no way be distinguished from amyotrophic lateral sclerosis. In saturnine poisonings involving the spinal cord we see now and then some which altogether resemble chronic poliomyelitis, loss of power advancing steadily and equally with the wasting of the muscles. In another form motor weakness is the earliest symptom and atrophy occurs only as a later manifestation, with unchanged sensibility and the reflexes preserved or increased. The present case is of another type and from the first has progressed, so far as can be learned from the patient, in a manner impossible to differentiate from an amyotrophic lateral sclerosis. Indeed it is only the previous history of serious lead poisoning which suggests the probability that the trouble owes its origin to lead. The chief objection to this theory is the difficulty of accounting for the continued action of the poison so long after all possibility of its entering into the system has ceased. There is no evidence at this moment of the presence of lead in the body. In the history only a very slight ocular muscle enfeeblement is described, a point of difference from asthenic bulbar palsy. Dr. Cadwalader, who has been much interested in the case, has suggested, as favoring the probability of a saturnine origin, that the supinator longus has escaped any enfeeblement, as it usually does in lead neuritis. Gowers, Putnam, and, recently in the *Review of Neurology*, S. A. K. Wilson have described similar cases, some certainly caused by lead, others with a strong probability in favor of such a cause.

The patient is a house painter aged 53. He has never had wrist drop. He worked at painting until three years ago from this time. Until one year ago he had charge of kennels at Irvington-on-Hudson. About a year after recovery from the second attack of lead colic in 1907, the present difficulty began; the first symptoms were stiffness, soreness, and occasional cramps in muscles of the thigh and legs. Beginning in the autumn of 1907, these symptoms lasted about seven months. In the spring of 1908 he observed twitching of muscles of legs, arms and trunk, together with difficulty in walking. In October, 1908, he perceived a slight difficulty of speech. For three months there has been definite bulbar speech. He has lost much flesh; arms were weak for four months. There is no nystagmus—pupils react to light promptly. There is no bladder or rectal difficulty. Gait is spastic-paralytic; station—slight swaying. There is no facial paralysis, but there is faint tremor of facial muscles; the tongue cannot be protruded beyond the teeth nor elevated, it is tremulous and presents some fibrillary twitching but no atrophy.

Dynamometer: The right is 30 and the left 33; the man is right handed.

Examination: The patient is very thin, but there is no characteristic atrophy. Muscles are almost symmetrically wasted everywhere. Knee-jerk is exaggerated. Ankle-jerk is present and active; there is no ankle clonus; plantar reflex is normal; no Babinski. He has fibrillary tremors of muscles; no intention tremors. Muscles of hands are much wasted. He chokes when he takes liquids, but there is no regurgitation through nose. Pupils are equal, react well to light and accommodation. There is no impairment of ocular movement. Electric examination shows equal response to the negative and positive currents below the knees, but there is small faradic response above the knees, and in all the arm muscles, except the extensors of right hand, the response is less to faradic than galvanic current, but no reversal. In extensors of right hand the response is nearly gone to both currents, still no reversal. The face muscles give good response. The voluntary movement of the arms is free in all directions.

Second examination, after five weeks' treatment, Nov. 24, 1909, by Dr. Cadwalader: Condition is slightly improved over

first statement. Abdominal muscles are normal. All muscles of forearms, extensors and flexors are atrophied but equal. Possibly the extensors are more affected than the flexors, more so on right than on left side. Still there is no actual wrist drop. The interossei of both hands, also hypothenar muscles on both sides are much wasted, the right being worse than the left. All movements can be well performed, although weaker than normal. Biceps and triceps jerks are increased, but equally so on both sides. Muscles of legs below the knees are much atrophied, more so on right than left. There is no contraction or fibrillary twitching. The anterior tibial muscles are more affected than the posterior, so there is foot drop on both sides. There is flexion of toes on soles to irritation. Tendon Achilles jerk is present—both are diminished, poorer on right than left. Knee jerk is quicker and more active than normal, the left being more so than the right; but on account of the atrophy of the muscles there is very limited extension of leg. All movements are performed except dorsal extension of foot, but weaker and slower than normal. The muscles of the inner side of the plantar surface of the feet appear to be atrophied—more so on the right than on the left. There is fibrillary contraction. All muscles of the thigh show fibrillary contraction and are atrophied, the right more than the left. The right arm and leg are slightly weaker and more atrophied than the left. Speech is distinctly bulbar in character but clearer than on admission. Trouble swallowing, especially liquids. There are no clonus and sensory changes. The eyes show slight nystagmus on reacting the limit of conjugate movement, especially to right. There is some loss of capillarity. Vision and fields are normal.

DISCUSSION

DR. B. SACHS, New York: There can be no question about the involvement of the central nervous system. The appearance of the tongue alone would necessarily place it in the category of cases that involve the bulb, and, as such, there would be very little difficulty in acceding to the diagnosis that it is a lateral sclerosis. The reflexes are present without being very much exaggerated and I have often felt that in case of amyotrophic lateral sclerosis as in spastic paraplegia a balance is reestablished between the two diseases. In this case a balance is established between the amounts of affection of the gray matter and the two systems of tracts. In amyotrophic lateral sclerosis much more of the gray matter than the white matter is involved. This case could very well be a combination of two things, that is, involvement of the peripheral nervous system together with lead intoxication, which diminishes the value of some of the symptoms which would ordinarily appear in a general amyotrophic lateral sclerosis.

DR. M. ALLEN STARR, New York: I agree with Dr. Sachs in feeling that in this case we have the evidence of a lesion of the central nervous system, and am much more inclined to the diagnosis of amyotrophic lateral sclerosis with bulbar palsy than to lead neuritis or to lead poisoning. While we must admit that in the majority of cases of lead poisoning the effect of the lead is marked on the peripheral nerves, yet we must also admit that there is considerable effect on the central nervous system. Many cases are on record of autopsies following lead poisoning—notably those reported by Schulze in *Archiv. für Psychiatrie*, in which marked lesions of the anterior horn cells were found in connection with the lead palsy. In three severe cases of lead palsy under my care, involving both arms and legs, confining the individual to bed and putting them in a greater invalid state than the man exhibited by Dr. Mitchell, there were also marked cerebral symptoms, and in two cases severe headaches and in one very marked obscuration of mental action. It seems that were the degree of toxic effect sufficient we should also have the other symptoms of lead encephalopathy.

Case Presenting the Symptomatology of Paramyoclonus Multiplex

DR. D. J. MCCARTHY, Philadelphia: The patient is a laboring man, aged 29, with a negative family history except that his father was strongly alcoholic. Since birth he has been affected with marked muscular activity of the right upper

extremity. All the muscles are involved in irregular quick contractions causing the arm to move about in a jerky fashion. There is no atrophy or hypertrophy and no cranial nerve involvement; sensation is normal and station and gait good. There is some mental defect and it is probable that the motor restlessness manifested in the arm is of cerebral origin.

DISCUSSION

DR. J. RAMSAY HUNT, New York: I agree with Dr. McCarthy that the symptoms indicate a cerebral lesion. I am not inclined to call it even a symptomatic paramyoclonus multiplex. As I understand it, paramyoclonus multiplex is a disease in which muscles are represented and not movements. In other words, it is referable rather to the cellular processes of the spinal cord than the Rolandic area. Of the true paramyoclonus multiplex I have seen only two cases. One was in Europe and one was a case I have recorded and in which I had an opportunity of examining the central nervous system. In that case the patient showed while at rest absolutely no evidence of any involvement. As soon as the skin was exposed the muscles were seen to be jumping and vibrating in all directions independently of each other. That is, the supinator longus muscle would stand out in conjunction with the deltoid. I would be more inclined to regard this case as coming under the groups of congenital athetoid movements or tremor.

DR. MORTON PRINCE, Boston: I have always had the concept of paramyoclonus as involving the muscles rather than movements. The disease is very rare. A case which I once saw and which seemed to me to be a typical case of paramyoclonus, was a case of traumatic neurosis following an accident in which there was rhythmical contraction of the rectus femoris night and day. This case bore out the theory that paramyoclonus is a functional disease. The disease was apparently cured, at any rate the movements entirely ceased after manipulation which it would not seem possible could have any influence. The attending physician, without knowing what he would do, stretched the sciatic by the old method of doubling up the legs on the body, and almost immediately after that the movements ceased entirely.

DR. L. PIERCE CLARK, New York: My experience in these cases of paramyoclonus has been entirely confined to those associated with epilepsy. I have reported ten cases of this type and think that the type of movement Dr. McCarthy's patient exhibited is not dissimilar to most of those cases reported. The point about it is that it has not generalized itself more and has kept itself more or less confined to the proximal muscles. The more one sees of these movements the more he agrees with Oppenheim that they belong to the myoclonus type and that the slight differentiation in the type of movement is really in the mind of the observer rather than in the trouble itself. These movements vary considerably in their range and character. Sometimes they may be fibrillary, sometimes single muscle effects, sometimes enough to give a locomotive effect.

DR. MCCARTHY: The title was given as it was because I did not consider the case one of paramyoclonus multiplex. It was rather hard to present a title for the condition. The mere fact that the condition is congenital, whereas Friedreich's type is acquired, together with the type of symptomatic manifestation, practically excluded paramyoclonus multiplex.

(1) Athetosis and Astereognosis of Sudden Onset. (2) Athetosis and Astereognosis of Gradual Onset, Associated with Signs of Multiple Lesions

DR. F. X. DERCUM, Philadelphia: Both cases are anomalous and both are presented for purposes of diagnosis. The first patient is a man of about 35 who three years ago had headache and vomiting. In July, 1909, he became unable to use the left hand well and could not recognize objects with it. There is hyperesthesia and loss of sense of position up to the elbow, pressure sense is preserved. The hand also shows athetoid movements. There is slight involvement of the left foot, slight facial paresis and dilatation of the left pupil. The examination of the feces, urine and blood and the Wassermann test are negative.

The second patient is a woman above middle age who three years ago first noticed numbness of the feet and felt as if she

had stockings on even when the feet were bare. She could not use the left hand properly and could not recognize objects with it; she also showed athetoid movements in both hands but more markedly in the right. There is hypesthesia to touch only. There is also an area on the left side from the sixth to the ninth rib which shows loss of sensation. Both cases suggest multiple lesions of the brain and the second case of the cord also.

DISCUSSION

DR. SMITH ELY JELLIFFE, New York: It strikes me that the first case is a very interesting one of partial thalamic syndrome as described by Dejerine and Roussi, yet there is one characteristic symptom lacking, as there should be hemianesthesia, including loss of the deep sensibilities, muscle and joint sense. Dr. Dercum did not say anything about the tuning-fork test. The slight degree of hemiplegia here exists only in the facial muscles, practically disappearing in the other portions of the body, and conforms in large measure to the thalamic syndrome.

DR. MORTON PRINCE, Boston: In the first case there is similarity to the thalamic syndrome, but the patient unquestionably has tingling in the left hand. It is interesting, also, in this case to point out the marked disproportion between the loss of the sense of position, muscular sense and sense of localization and the loss of tactile sense.

Treatment of Spasticity by Resection of Posterior Spinal Roots

DR. WILLIAM G. SPILLER and DR. CHARLES H. FRAZIER, Philadelphia: The case presented is one in which extreme spasticity of the lower limbs had resulted from injury of the back. The motor power of the lower limbs had been excellent, but has been greatly interfered with by the spasticity. Sensation in these limbs had been normal. The patient had been unable to abduct the thighs, and had walked with extreme difficulty, supported by a cane and crutch, dragging the toes of one foot behind the heel of the other foot. He had been unable to put either heel on the ground because of the spasticity in the calf muscles. The second, third and fifth lumbar roots on each side were resected. Considerable pain was felt in the lower limbs following the operation, but after the degeneration of the cut roots became complete pain ceased. The operation was performed about three months ago. The man is now able to abduct the thighs and to flex and extend the legs on the thighs, almost in normal degree, but he still has some spasticity in the feet, as none of the sacral roots were cut. Sensation is lost in the distribution of the second and third lumbar roots of the right thigh, as given by Seiffer, and greatly impaired in the corresponding distribution of the left thigh, showing that anesthesia may be produced by division of two adjoining roots. The operation is permissible when spasticity is great and motor power is slightly or not at all diminished.

DISCUSSION

DR. L. PIERCE CLARK, New York: Dr. Alfred Taylor and I have adopted this type of operation for the past few months. Our first operation was done about the middle of August on a patient with cerebral diplegia. The two following were for hemiplegia of the upper extremity. We presented all three cases before the Pediatric Society in New York in November. It is an interesting thing to note the genesis of this idea of posterior root section. One will find in the literature of twenty years ago the statement that this operation may bring about a betterment in the state of spastic palsy, but apparently no one had cared to take the risk of operation, not knowing which particular segments should be attacked to overcome the spastic state. The most careful analysis of the work was done by Dr. Fraenkel in 1909 and 1903, in which practically the whole theoretical matter was brought to the point of actually applying it on the clinical side. An interesting point was Dr. Fraenkel's having under his control the administration of stovaine in a case of diplegia at the Montifore Home, where for a period of 45 minutes the patient was able to get up and walk about quite easily, something he had not been able to do before, and at the end of 45 minutes returned to his helpless state. That fact alone influenced me to ask Dr. Taylor to operate on some of my patients.

Division of the Auditory Nerve for Persistent Vertigo and Tinnitus

DR. CHARLES H. FRAZIER, Philadelphia: The patient was a woman of 56, who had suffered from tinnitus and vertigo for several years. There was some difficulty in separating the eighth nerve from the seventh, and although the seventh did not appear to have been injured there was for some time following the operation slight paralysis of the seventh nerve. In this case there was found a year after the operation to be very little relief from the tinnitus and vertigo. In all eight patients have been operated on by different surgeons. Three died as a result of the operation and only one has been much benefited.

WESTERN SURGICAL AND GYNECOLOGICAL ASSOCIATION

*Nineteenth Annual Meeting, Held at Omaha, Neb., Dec. 20-21, 1909
(Continued from page 230)*

Intestinal Suture

DR. ARTHUR E. BENJAMIN, Minneapolis: 1. Instruments or buttons for making an intestinal anastomosis have practically all been discarded for the suture, as there is less loss of tissue thereby. 2. The purpose of these instruments in the past was to facilitate making an anastomosis and to render the operation more safe. 3. The sutures are to prevent hemorrhage and to approximate like structures until a firm union has taken place, after which they should be absorbed or passed off into the intestines. 4. The side anastomosis is chosen because of the positive blood supply, its safety and ease of performance. 5. The preparation of the patient by careful selection of the diet, proper attention to waste-product elimination, stomach washings, etc., go a long way toward bringing success in these operations. 6. Pagenstecher's thread is largely used for the outside sutures in bowel work. As it is a foreign substance, it may provoke unnecessary adhesions and call for further operative procedures. 7. The linen thread can be used with safety for the inner line of suture, and, when properly placed, prevents hemorrhage or leakage and is soon eliminated. 8. This inner suture should be so placed as to prevent pursing or narrowing of the anastomotic opening. The through-and-through back lock stitch is suitable for this purpose. 9. The chromic catgut makes an admirable suture for the outer layer, and when used as a continuous Lembert suture, outside of the Pagenstecher lock-stitch, a safe and satisfactory union occurs. 10. Care should be observed in performing operations to avoid contamination. 11. The after-treatment of the case is very important. Food should not be given too early so as to avoid undue tension on the suture line.

President's Address: The Past, Present and Future of the Western Surgical and Gynecological Association

DR. A. L. WRIGHT, Carroll, Iowa: The conception of surgeons in the West uniting and forming an association for the sole purpose of discussing questions of interest to them only, originated with Dr. Milo B. Ward, a specialist doing abdominal surgery in Topeka, Kansas, who is reported to have said that to accomplish the purpose of its creation it was necessary that its membership should be limited; that it should be representative in character, and though its conditions of admission be exacting, they should not be used for a selfish motive. The intention was not to exclude meritorious candidates, but to prove their qualifications, and place a high value on the accumulative results of those associated and working together along scientific lines for a definite purpose, the increase of surgical knowledge and technique, the alleviation of suffering and prolongation of human life.

The initiative of the association was primarily the betterment of the members surgically and demanding from the public the respect and confidence their skill merited. This confidence in the ability of each other has done much to make it possible for the surgeon in the small town to relieve serious emergencies with minimum suffering and loss of life. Formerly the idea prevailed that special skill existed in the densely populated centers only. The tradition is rapidly passing away. Each and every man is better for having been a member of this association. His influence has aided materially in removing the evidence of weakness and in placing the

organization on so firm a basis. If this standard be maintained we must not lose sight of the fact that the honest and conscientious surgeon is not born, but gains his knowledge, skill and dexterity by persistent, painstaking labor and constant application to a science more sacred than life itself. The qualifications of surgeons differ in many respects, depending on education, environment, personal experience and individuality. I cannot refrain from mentioning the influence of young men specializing in surgery before their mental faculties have fully expanded. This injures the mind and warps the intellect of the student by depriving him of adequate medical and literary training, so essential to the thoroughly equipped surgeon.

In order that the present position of the association be maintained, the credentials of each applicant for membership should be carefully examined and only those admitted who are known to be proficient in the science and art of surgery through long service, wide experience and close application to the principles underlying an almost exact science. An effort should be made each year to infuse new blood. This will add vigor, strength and a new working element that will maintain the association in its present position.

A Deceptive Form of Appendicitis in Women

DR. H. S. CROSSEN, St. Louis: There is an unusual form of appendicitis that proves very deceptive when occurring in women, because in its clinical characteristics it closely resembles adnexal disease. The mass is situated in the tubo-ovarian region, and, furthermore, it develops so gradually and with so little acute disturbance that it is suggestive of a new growth rather than inflammation. These deceptive features are fully accounted for by the pathologic changes found at operation. The exact pathologic condition is not clear, however, when first exposed, for the mass seems to be within the cecum and involving its wall. The cecum with the contained mass is movable and may be picked up and palpated between the examining fingers, and gives the impression of a new growth or other intracecal mass extending from the ileo-cecal valve to the lowest part of the cecum. The appendix is nowhere visible. Within the last thirteen months I have had two cases of this character and both of the patients came under my care with a diagnosis of tumor (new growth) presumably adnexal. In each case the mass, when exposed and directly palpated, was suggestive of a serious lesion of the cecum and ileocecal junction, possibly requiring extirpation of the cecum. The two cases were practically identical in their peculiar features, and they are good examples of a distinct class. That is interesting when considered from the standpoint of diagnosis or from the standpoint of treatment.

The points of special interest are as follows: 1. The location of the mass in the tubo-ovarian region instead of in the appendix region. In the first case, palpation about McBurney's point showed no trouble there, and in the second case simply the edge of the mass extended to the appendix region. 2. The scarcity of inflammatory symptoms. Each patient was ill several months and quite a mass had formed before any acute symptoms appeared, and when they did appear they were comparatively mild. 3. The apparent intracecal character of the mass was a striking feature and was due to the folding of the cecal wall about the chronically inflamed appendix. Because of the special relation of the appendix to the cecum or because of the chronicity of the low grade inflammation, or both, the infiltration and adhesions affected principally the wall of the cecum adjacent to the appendix. The affected appendix was buried in the overlapped cecal wall. This is what gave the feel of a mass within the cecum and affecting its wall, and it was this also which made it so difficult to locate and expose the appendix. This peculiarity is important from the standpoint of treatment for, unless carefully investigated, such a condition might be treated by extirpation of the cecum under the mistaken supposition that the mass was intracecal and malignant or tuberculous. This peculiarity helps to account, also, for the dislocation of the mass. As the cecum with its mass was fairly movable it naturally dropped downward into the tubo-ovarian region. Later, adhesions formed, fixing it in the abnormal location. 4. The slow absorption of the infiltration

in the cecal wall, after removal of the affected appendix. In the first case, absorption of the infiltration in the wall of the cecum required nearly a year. In the second case in which pus was found the absorption of the infiltration was more quickly accomplished, requiring only about five months. Fortunately in both women the abdominal wall was thin and permitted of deep palpation; consequently the diminution of the cecal induration could be accurately followed. The fact that the condition described is likely to lead to mistakes, is illustrated by the following incidents: In an eastern museum a specimen labeled "Absence of the Appendix" showed on dissection the condition mentioned above, i. e., an overlapped cecal wall enfolding the inflamed appendix. Again, in a patient related to me, a cecum resected for supposed malignant disease, with fatal result, revealed on subsequent examination the condition above described, i. e., the supposed tumor consisted simply of the inflamed appendix surrounded and completely hidden by the cecal wall.

Surgical Treatment of Hyperthyroidism

DR. W. D. HAINES, Cincinnati, Ohio: After a review of the literature, embryology and anatomy of the thyroid gland, it may be stated that the syndrome called goiter is due to over-activity of the adrenals induced primarily by an excess of thyroglobulin in the blood. Discrepancies of opinion in the past have been due to lack of definite knowledge of the actual changes taking place in the gland at the time of observation. Laboratory study has shown a local hyperemia with increase in colloid and diminished staining reaction, but no gross changes in the glands in the first stage; this is followed by hyperplasia or the second stage. Imperfect alveoli lined with giant cells and great loss in colloid mark the third stage; while fibrosis, cell atrophy, sclerotic arterial walls, hemorrhage and cyst formation complete the final steps in destruction. Basing treatment on these findings, I advise diminishing the blood supply by ligating two or more of the thyroid arteries in preference to thyroidectomy in the management of cases of hyperthyroidism with moderately enlarged gland and active symptoms. In the operation for the removal of adenoma or partial thyroidectomy I keep within the thyroid capsule, thus avoiding injury to the parathyroids and recurrent laryngeals.

(To be continued)

Medical Economics

THIS DEPARTMENT EMBODIES THE SUBJECTS OF ORGANIZATION, POSTGRADUATE WORK, CONTRACT PRACTICE, INSURANCE FEES, LEGISLATION, ETC.

The Financial Rewards of the Physician

That the doctor is not a good business man has passed into a proverb. The explanation that "no man with business instincts and the desire to make money would dream of entering the medical profession," is both unusual and suggestive. This statement appears in the December number of the *New York State Journal of Medicine* in an editorial entitled "The Economics of Medicine." The conclusion that there is "no money in medicine and that no great fortunes can be won in a medical career," while not new, is important.

After discussing the average income of members of the profession and the fact that the cost of living has increased at least 50 per cent. in the last twenty-five years, while the fees for medical service have remained the same, so that the "purchasing value of a dollar which the doctor now gets for a visit is just half what it was twenty-five years ago," the editor calls attention to the additional fact that preventive medicine has in late years greatly decreased the amount of remunerative work for a physician. Pasteurized milk and hygienically prepared foods have greatly decreased the summer diseases of children. Antitoxin and quarantine have greatly reduced diphtheria. Typhoid fever epidemics are prevented or are short-lived. Medical inspection of school children has reduced zymotic diseases. Much of the work being done by physicians in the prevention and extermination

of diseases is done without hope or expectation of reward. Since this work is for the benefit of society, the *New York* editor is perfectly reasonable in saying: "We have a right to ask the public whether it has not also some obligation to the medical profession. Can society expect men to spend ten years in preparation for the most difficult and exacting of professions at a cost of at least \$7,500.00 and then reap a reward which is but little more than the cost of the education would earn if put out at legal interest? Medical men have families to support, children to educate. They must pay for their homes and at least strive to provide for their old age. How is it to be done in present circumstances? . . . How can men live decently and honestly whose incomes are decreasing and whose expenses are increasing? . . . Stern necessity in our large cities is driving our men to illegal and dishonorable means of raising money, dishonorable because secret and clandestine. . . . The entire economics of medicine must be placed on a different basis if we are to make any real progress in combating the evils of commercialism."

After discussing the proposition to raise the fees of the general practitioner as a remedy, which proposition he fears would not be successful, "as physicians would not be loyal to each other," and deciding that the end can only be obtained through organization, the *New York Journal* concludes: "We cannot protect ourselves as individuals. We cannot as individuals ameliorate our present condition. Why should we hesitate to make use of the only agency which is a power in the world to-day if we use it justly and with righteousness? In the words of a great statesman, we are confronted with a condition and not a theory. We need a remedy lest worse things happen to us. Is there a remedy? Is it capable of application? Who will suggest a better remedy? How can any remedy be applied without organization? These are serious questions and require reflection. The opinion of the profession is desired. . . ."

These are serious questions. The views of the profession, not only in New York, but throughout the country, will be of great value. Carefully, fairly and dispassionately these questions must be discussed and settled by the medical profession of the present generation or the profession and the people of future generations will suffer. The physicians of the United States must unite to enlighten the public on the danger of ignorant, ill-trained and poverty-stricken physicians and on the duty of the public to support and encourage, both legally and economically, a medical profession which can afford to be disinterested, unselfish and philanthropic. If this is not done, the next decade will see the standard of the medical profession lowered simply through force of economic pressure. The danger and the loss from such a change will fall far more heavily on the public than on the profession. It is the duty of far-sighted physicians, however, to sound a warning and to lead the way in enlightening the public.

POSTGRADUATE COURSE FOR COUNTY SOCIETIES

DR. JOHN H. BLACKBURN, DIRECTOR
BOWLING GREEN, KENTUCKY

[The Director will be glad to furnish further information and literature to any county society desiring to take up the course.]

Sixth Month—First Weekly Meeting

General Subject for the Month: *Surgery of the Liver and Gall Tract*

ANATOMY OF LIVER AND GALL TRACT

LIVER: Situation, shape, dimensions, surface markings. Surfaces, fissures, important relations. Blood vessels, nerves, lymphatics.

GALL-BLADDER: Shape, size, situation. Fundus, body, neck. Important relations. Microscopic anatomy. Cystic duct. Hepatic duct. Common duct, length, portions, size, relations. Relation of ducts to each other and to surrounding structures. Ampulla of Vater. Blood and nerve supply of bile passages.

LYMPHATIC VESSELS AND GLANDS.

PHYSIOLOGY OF LIVER AND GALL BLADDER

FORMATION OF BILE: Quantity, uses in normal digestion, reabsorption of bile. Function of gall-bladder.

Book Notices

PROCEEDINGS OF THE THIRD ANNUAL CONFERENCE OF THE AMERICAN ASSOCIATION OF MEDICAL MILK COMMISSIONS. [Secretary, Otto P. Geier, M.D., 124 Garfield Place, Cincinnati.] 1909. Stiff covers. Pp. 142.

In the report of the Atlantic City meeting of 1909 of the American Association of Medical Milk Commissions, a great amount of valuable information in reference to milk production is compiled. There are now, according to this report, 56 medical milk commissions in the United States, and these represent 22 states. Out of these 22 states only 3 protect the name "certified" as applied to milk of high standard. These states are New York, New Jersey and Kentucky. Attention is called to the necessity of other states following this example. Reports of the various milk commissions now in operation were read at the meeting. One of the points emphasized was that inspected milk, by which terms a second grade of milk is understood, should be produced and the sale encouraged. It has been the experience of many milk commissions that the general milk supply of a community is improved by the establishment of a milk commission. In one of the reports it is stated that the physicians are not interested in the production of certified milk. This not infrequent state of affairs is a great hindrance to the success of milk commissions. A similar statement is made in regard to the daily press, which is usually not willing to give space to a matter of such importance as a pure milk supply.

In a paper by Joseph S. Evans on "The Present Status of Commercial Pasteurization of Milk," the author says, "As to pasteurized milk producing scurvy, rickets, etc., that is practically ancient history." Same views on pasteurization, like the one quoted, should be more frequent.

The chemical requirements of certified milk are discussed. We miss the adoption of the Hart test for proteids, which is simple, accurate, and suitable for routine examinations. This test should be generally practiced. In the paper by Francis H. Slack on the bacteriologic methods of milk examinations, stress is laid on the importance of realizing that the bacteria in milk are of various nature and by proper temperature of incubation fecal bacteria can be differentiated from air bacteria in a rough way. It seems, however, that the statement of numbers obtained at 37° after two days being equal to the number obtained at 27° after three days and to the number obtained at 22° after five days has not met general assent. Usually a higher number is obtained at 22° after three days than at 37° after two days, and the lower temperature gives a better differential count. The use of Petri dishes with porous covers has not become general, as the porous covers interfere with the counting of the colonies.

In the report of certified milk contests by Clarence B. Lane, a table gives the records of the milks exhibited by 25 dairies at the Cincinnati exhibition (1909). The numbers of bacteria are from "no growth" to 440,000 per cubic centimeter. It is amazing to find a milk which shows no bacterial growth from one cubic centimeter!

Professor Conn presents a very interesting paper on the character of milk in small communities in which he calls attention to the rather surprising fact that the milk supply in small communities is not as good as in large cities. Professor Park states in a paper that the number of deaths due to the bovine tubercle bacillus in the city of New York is 1.6 per cent of the total number of deaths from tuberculosis. Such work is of special value at present, since the discussion about the value of eliminating all tuberculous cattle is carried on with much heat. The general impression is, however, that even with such small percentage of deaths from bovine tuberculosis—and the last word has not been said on this point—that tuberculous cattle must go. The educational value of showing the farmer that cattle with tuberculosis should be eliminated is not to be overlooked.

The report finally gives a list of all the milk commissions now existing in the United States, and the members.

The present status of the milk problem is well presented in this book and the preceding. The important points of production of certified, inspected and pasteurized milk are treated and the beneficial influence of medical milk commissions on

the general milk supply and on the relation of these commissions on infantile death-rates are emphasized and deserve close attention by the public at large, and especially by the practicing physician.

A MANUAL OF THE WORKING METHODS AND STANDARDS FOR THE USE OF THE MEDICAL MILK COMMISSION. Paper. Pp. 24. Compiled by the American Association of Medical Milk Commissions. [Secretary, Otto P. Geier, M.D., 124 Garfield Place, Cincinnati.] 1909.

The manual explains the purposes of inspection and examination of dairies producing certified milk, gives the standards adopted for chemical and bacteriologic examinations of certified milk, and an outline of the methods by which medical examinations of employees in certified milk dairies should be carried on. Other parts of this manual are reprints of various articles in the report of the proceedings of the Association of Medical Milk Commissions reviewed below.

GYNECOLOGY AND ABDOMINAL SURGERY. Edited by Howard A. Kelly, M.D., F.R.C.S. (Hon. Edin.). Professor of Gynecologic Surgery at Johns Hopkins University, Baltimore, and Charles P. Noble, M.D., S.D., Clinical Professor of Gynecology at the Woman's Medical College, Philadelphia. Cloth. Pp. 862, with illustrations. Price, \$8. Vol. II. Philadelphia: W. B. Saunders Co., 1908.

This work, embracing as it does not only all those operations which are peculiar to women, but also all those pertaining to the abdomen in general, including hernia and also diseases of the breast, marks a wide departure from all previous works on gynecology. It also breaks down that artificial barrier which was raised in an attempt to separate gynecology from general surgery. Of the thirty authors, all but three are from this country and in the list are found the names of some of our best general and special surgeons. The work contains a number of good features which are out of the ordinary. The chapter on "The Pathology of the Reproductive Organs" is one of these. In this chapter is considered the pathology of all of those organs in a consecutive manner. This not only saves much repetition but adds to clearness, as the pathology of one organ is often but an extension by continuity of that of another organ. The necessity for doing more than one operation at one sitting is a common one and a chapter has therefore been devoted to "Combined Gynecologic Operations" in which is considered the character of the various operations which may be combined or advantageously performed at the same time, together with the indications, contraindications, etc. The chapter on "Diseases of the Breast" is particularly good, especially that part relating to benign growths, while that on "Hernia in the Male," as perhaps might be expected, leaves something to be desired. Concerning the illustrations, which are numerous, it is sufficient to say that the most of them are by those master artists, Becker and Brödel.

INTRODUCTION TO PRACTICAL CHEMISTRY. For Medical, Dental, and General Students. By A. M. Kellas, B.Sc., Ph.D., Lecturer on Chemistry at the Middlesex Hospital Medical School. Cloth. Pp. 249. Price, \$1.35. New York: University Press, 1909.

As the title page has it, this is an "introduction to practical chemistry for medical, dental and general students, specially adapted to meet the requirements of the conjoint board's examination of the Royal Colleges of Physicians and Surgeons . . . etc." In other words, the book is intended to afford the student a means of a rapid general review of elementary chemistry, such as would be required of candidates for a medical degree in England.

The contents are divided into the five following parts: "I, Simple Preparations of Non-metallie Elements and Compounds;" "II, Preparations of Typical Compounds of the Metals;" "III, Tests for Electro-positive Radicles;" "IV, (a) Identification of Acid Radicles, (b) Identification of Metallie Oxids and Hydroxids;" "V, Qualitative Analysis."

Only a small part of the book is devoted to the teaching of general inorganic chemistry, and still less space is given to chemical theory, the main part of the book being taken up in teaching qualitative analysis. This is done by the help of extensive tables containing the properties and general reactions of the metals, acids and bases, usually met with in qualitative analysis. This device, presenting the facts in such a form as to enable students to make a rapid review of the most important properties and tests of the more common metals, acids and bases, is the only apparent advantage of this book over the many existing publications of its kind.

Medicolegal

Privileged Communications with Reference to Causes of Injury

The United States Circuit Court of Appeals, Eighth Circuit, says, in *Missouri Pacific Railway Co. vs. Castle* (172 Fed. R., 841), a personal injury case brought by the latter party, that it is obvious that the admissibility of evidence sought to be excluded under section 333 of the Civil Code of Nebraska, must be determined by the facts in each case. That statute provides that no physician, surgeon, etc., shall be allowed, in giving testimony, to disclose any confidential communication, properly intrusted to him in his professional capacity, and necessary and proper to enable him to discharge the functions of his office according to the usual course of practice.

In the case of *Union Pacific Railway Co. vs. Thomas* (152 Fed. R., 365), this court said: "The essential elements of a privileged or a confidential communication under the Nebraska statute are: (1) The relation of physician and patient; (2) information acquired during this relation; and (3) the necessity and propriety of the information to enable the physician to treat the patient skillfully in his professional capacity." In that case the injuries were internal. From what particular disease the plaintiff was suffering, and what was the proximate cause thereof, was in doubt. Under such a state of facts answers to questions as to how the plaintiff was injured, and as to what physical injuries she received were clearly necessary to enable the physician to prescribe, and hence were privileged.

In the case here before the court there was beyond question a crushed right leg about four inches above the ankle. The injury beyond question was caused by one of the defendant's cars passing over the plaintiff's leg. Whether the injury was caused by the plaintiff's or the defendant's negligence was the pivotal question in the case. It was impossible to imagine anything that the injured person could say to the physician in reference to the cause of the injury that would in any way throw any light on the manner of treating the same. How the leg came to be crushed was for the purpose of treatment absolutely immaterial. What the plaintiff told the physician about it was of no assistance whatever to enable him to discharge the functions of his office; and, it is held, was not privileged.

The statute is in derogation of the common law, and often excludes the best evidence. It should not, therefore, be extended to matters of evidence not coming clearly within its provisions, as the object and purpose of all trials is the development of the true facts in each case. The court finds no cases which under similar circumstances have held inadmissible testimony such as was offered in the present case, namely, that the plaintiff told the physician that his injury was sustained by having his foot slip off the brakebeam and onto the "T" rail of the track and having one of the car wheels pass over his foot. But the court finds a number of decisions which hold such evidence to be admissible under similar or like statutes.

Letter Rendering Sister Liable for Physician's Services— Right of Physician Conducting Hospital with Layman to Sue

The Supreme Court of Colorado says that the case of *Hall vs. Allen* (104 Pac. R., 489), was brought by the latter party against a sister of a patient who had been treated in a hospital operated by plaintiff, a physician, and one Waggoner, who was not a physician, to recover for medical and surgical services rendered to such patient, the defendant's brother. The defendant had written to the plaintiff physician a letter in which she expressed solicitude about the condition of her brother, asked to be let known every day or two just how he was doing, stating: "And we will gladly pay all expense. . . . All of his expenses will be paid later on and we want him to have everything to make him more comfortable," etc. Taken into consideration with the surrounding circumstances, the court is of the opinion that the letter authorized the medical and surgical services from that date

on so as to make the payment thereof an original promise on the defendant sister's part, the brother being a young man of 25 years, without means, who was seriously injured while away from his people.

It was contended that there was a defect of parties plaintiff; that error was committed in refusing to allow it to be shown that a partnership existed between the plaintiff and said Waggoner, who had no right to practice medicine, and in rejecting the partnership contract as evidence to establish those facts, but with this contention the court cannot agree. The partnership contract offered concerned the management of the hospital, and provided that the plaintiff, together with one other physician employed by the firm, should perform the medical and surgical work, and also provided for the disposition of all funds received, including those for the services rendered by the physicians. The services in question were the professional services rendered by the plaintiff in his professional capacity, and such an action could not lie in a partnership name, for, so far as Mr. Waggoner was concerned, he was not a physician, and did not attempt to practice or render such services. The Colorado statute prohibits any person from practicing medicine without a license.

It was immaterial to the defendant what contractual relation existed between the plaintiff and Mr. Waggoner, or what the plaintiff should do with moneys received for his services when procured. Neither did it concern the defendant, when suit was brought against her for services rendered by him in his professional capacity, what became of the money, where there was no claim that he assigned or otherwise disposed of it other than by a contract showing that he had a partner in the business covering the operation of a hospital, including the receipts from his professional services. The correct test of when a party is a necessary one, and when a defendant can raise the objection of a defect of parties, is where it appears that some other person than the plaintiff has such a legal interest in the obligation sued on that a recovery by the plaintiff would not preclude its being enforced by such other party and the defendant being thereby subjected to the risk of another suit on the same subject.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

Medical Record, New York

January 8

- 1 Protective Appendicitis. R. T. Morris, New York.
- 2 What may be Done to Improve the Hygiene of the City Dweller? S. A. Knopf, New York.
- 3 *Death in Epilepsy. J. F. Munson, Sonvea, N. Y.
- 4 *Observations Regarding the Finger Tone. G. O. Williams, Greene, N. Y.
- 5 Contact Infection in Amebiasis. W. Allan, Charlotte, N. C.
- 6 *Puerperal Septicemia Treated with Diphtheria Antitoxin—Recovery. E. M. Deacon, Birdsboro, Pa.

3. **Death in Epilepsy.**—While the duration of life in epilepsy may be several years, the net result, according to Munson, is death earlier than among normal persons. The causes of death are largely associated with the disease itself, and are either pulmonary or purely epileptic in character. Pulmonary edema is frequent in epileptics; exposure while helpless may cause lung complications, and frequent congestions and edema make the lungs susceptible to germ action. Death is always at hand during seizures, from traumatism, suffocation, or without any apparent cause. Epileptics will always show some signs of seizure after death. The epileptic should never be left to himself or allowed to walk out alone. Patients have fallen by the roadside and died from suffocation due to position, or may die in bed at night from the same cause.

4. **The Finger Tone.**—Finger tone is the term applied by Williams to the sound that may be heard with a phonendoscope by placing the end of the finger on the diaphragm while listening. This tone, says Williams, has something to do with the circulation. It may be heard on any portion of the body, is modified by pathologic conditions, is louder in the male than in the female, and in adult age than in youth, is absent in collapse, and in exposure to cold. A diminished

arterial current reduces the tone. Local arterial obstruction stops the tone. As to its significance, Williams says that an overloud tone in middle or early life should be regarded with suspicion. Overlound tones mean venous obstruction.

6. **Diphtheria Antitoxin in Puerperal Septicemia.**—Deacon reports a case of puerperal septicemia in which infection occurred somewhat late, and the temperature and general symptoms became modified after the use of large doses of diphtheria antitoxin. The patient recovered. The woman was profoundly septic when the antitoxin was given, and the effect of the serum was very prompt.

New York Medical Journal

January 8

- 7 *Treatment of Pneumonia. F. S. Meara, New York.
- 8 The Traumatic Neurosis—A Psychologic Mosaic. P. Bailey, New York.
- 9 *Experimental Studies on the Etiology of Acute Poliomyelitis. I. Straus, and F. M. Huntoon, New York.
- 10 Physiologic and Clinical Results of, and Indications for, Gastroenterostomy. S. Harris, Mobile, Ala.
- 11 *Two Signs of Diagnostic Value: one in Cholelithiasis, the other in Incipient Pulmonary Tuberculosis. R. Abraham, New York.
- 12 Trachoma. L. J. Goldbach, Baltimore.
- 13 Ruptured Triceps due to Direct Violence. D. P. Penhallow, Boston.
- 14 A Duodenal Tube. M. Gross, New York.
- 15 *The Avery Evacuator. J. W. Avery, New York.

7. This paper will be abstracted shortly in the Department of Therapeutics.

9. **Etiology of Acute Poliomyelitis.**—Straus and Huntoon made a very careful and thorough experimental investigation into the etiology of acute poliomyelitis, basing their work on the organs from a fatal case sent to them for study. They found that acute poliomyelitis can be produced in a *Macacus rhesus* by intraperitoneal inoculation of the cord of a fatal human case. Unsuccessful attempts to transfer acute poliomyelitis from one monkey to another by intraperitoneal inoculation seem to warrant the assumption that successful subinoculation by this method is an uncertain procedure. Straus and Huntoon found that the cerebrospinal fluid of acute cases does not contain the virus in an infective state, and therefore the reported bacterial findings in the cerebrospinal fluid are either contaminations, or secondary invaders. When the disease is clinically recognizable, namely, after the onset of the paralysis, the virus is probably no longer present in the blood or at least cannot be used to produce infection in the monkey by intraperitoneal and intradural inoculation. Histologically, the lesion in poliomyelitis is very similar to that in rabies. Furthermore, there occurs in rabies a type of ascending paralysis which is clinically identical with the ascending paralysis (Landry type) of acute poliomyelitis. The authors claim that acute poliomyelitis must now be classed among the infectious diseases. The only objection which can be made to this conclusion is that the disease may be of toxic origin. However, the lesions which the central nervous system present both in many and monkeys are of an inflammatory rather than of a purely degenerative nature such as toxins (diphtheria and tetanus) produce. Moreover, were the disease due to a toxemia, it would be difficult to explain the occurrence of a long and variable period of incubation after intraperitoneal inoculation.

11. **Two Signs of Diagnostic Value.**—The sign which Abraham has never failed to find in the many instances of gallstone disease which have come to his notice consists in a painful point midway between the umbilicus and the costal cartilage of the ninth rib in the right hypochondriac region. The method of eliciting it is as follows: Place the patient in the recumbent position with the arms and legs extended. Ascertain a point midway between the umbilicus and the ninth costal cartilage, then with a sudden thrust press the index and middle fingers of the right hand into that point. The effect on the patient is like an electric shock; there is either a grimace on the face denoting suffering or a quick involuntary jump of the abdomen as if it were struck with a pointed instrument. As often as the finger thrust is repeated just as often is the painful response obtained. In an acute attack with a diffuse area of hyperesthesia, the midway point mentioned is the point of maximum pain. In chronic cases the

painful point is present at all times while the whole area around it may enjoy freedom from sensitiveness. The absence of this point after its repeated presence in a case long under observation argues in favor of a gall bladder which has got rid of the stones.

The diagnostic sign in incipient pulmonary tuberculosis is designated "the cutaneous temperature." A reliable clinical thermometer is placed at the supraclavicular space of one side, covering the bulb snugly and completely with folds of skin. At the end of four or five minutes the thermometer is removed and the temperature noted. The same is done at the other supraclavicular space and then the temperatures compared. In case both apices are involved the temperature obtained in both supraclavicular spaces will be higher than the axillary temperature, and if one apex is more affected than the other, the cutaneous temperature at that apical region will yield a higher temperature.

15. **Avery Evacuator.**—The underlying principle of Avery's evacuator is that of suction produced by a vacuum, which is maintained by some form of pump. This latter may be operated either by hand or electricity. Avery has found this apparatus of especial value in operating on adenoids and tonsils under general anesthesia. Here the severe and rapid hemorrhage tempts and often compels the surgeon to undue haste, with the result of too little tissue being removed, or too much, including perhaps a tonsillar pillar or part of the soft palate and uvula.

Boston Medical and Surgical Journal

January 6

- 16 *Tuberculin Treatment of Tuberculosis Dispensary Patients. J. B. Hawes and C. Floyd, Boston.
- 17 *Therapeutic Administration of Tuberculin in Surgical Tuberculosis. H. F. Hartwell and E. C. Streeter, Boston.
- 18 Obstructive Calculous Anuria. F. S. Watson, Boston.
- 19 Influence of Resection of the Kidney on the Function of the Organ: (A) when the kidney wound is closed by sutures; (B) when the kidney wound is drained; (a) by a Rubber Tube; (b) by Gauze. J. H. Cunningham, Boston.

16. **Tuberculin Treatment of Dispensary Patients.**—Out of 143 patients with various forms of tuberculosis treated with tuberculin by Hawes and Floyd during the past four years, 19 have died, 16 have shown no improvement, while 108 have been benefited to a greater or less degree. In no instance have the authors been able to see that tuberculin has done the slightest harm; reactions have been rare and invariably of a very mild type. In incipient pulmonary tuberculosis, especially in children, the authors say that tuberculin is a factor in increasing body resistance and in maintaining this resistance so as to prevent relapses. In more advanced pulmonary disease tuberculin will alleviate distressing symptoms, prolong life, and occasionally help to arrest the process. In localized or "surgical" tuberculosis tuberculin has a marked beneficial effect. Its administration should always be combined with hygienic outdoor treatment, and in the vast majority of instances should be subservient to this. Dispensary patients can be treated with tuberculin not only with perfect safety, but with benefit, providing that there is a close personal cooperation between the patient and the physician.

17. **Tuberculin in Surgical Tuberculosis.**—Hartwell and Streeter believe that a radical excision is the procedure of choice in the majority of cases on account of the great saving of time and the immediate removal of infected tissue which may be a possible menace. They suggest that tuberculin may be resorted to when the operation is contraindicated or refused, and suggest its employment as an adjuvant to operation. As such, they would use it to prevent recurrence after operation. In extensive involvement of cervical glands they would remove the most prominent gland masses, leaving the smaller nodes to be taken care of by tuberculin. It may also be employed to take away periglandular infiltration so that the hard and freely movable glands can be more easily shelled out through an open incision.

Lancet-Clinic, Cincinnati

January 1

- 20 *Tuberculous Toxemia in Surgery. A. C. Wiener, Chicago.
- 21 *Pfannenstiel's Incision: Report of Cases. H. O. Walker, Detroit, Mich.

- 22 *Reflex Neuroses Arising from Ocular and Nasal Abnormalities. J. A. Stucky, Lexington, Ky.
23 *What Women Should Know in Regard to Uterine Cancer. J. H. Carstens, Detroit.

20. Abstracted in THE JOURNAL, Oct. 30, 1909, p. 1505.
21. Abstracted in THE JOURNAL, Nov. 13, 1909, p. 1677.
22. 23. Abstracted in THE JOURNAL, Nov. 20, 1909, p. 1770.

Medical Fortnightly, St. Louis

December 25

- 24 The Problem of a Federal Department of Health. L. H. Montgomery, Chicago.
25 Need for Education on the Questions of Sex and Venereal Diseases and the Problems Involved. M. Duggan, San Antonio, Tex.
26 Pain. W. F. Waugh, Chicago.

Virginia Medical Semi-Monthly, Richmond

December 24

- 27 *Etiology, Symptomatology and Palliative Treatment of Hypertrophied Prostate. J. S. Niles, Carbondale, Pa.
28 Pellagra—Its Etiology, Pathology, Diagnosis and Treatment. C. W. G. Rohrer, Baltimore.
29 *Sterilization of Habitual Criminals. C. V. Carrington, Richmond, Va.
30 Clinical Aspect of Enlarged Tonsils—Résumé of 850 Operations. J. J. Richardson, Washington, D. C.
31 *Ocular Manifestations Associated with Intracranial Lesions Complicating Aural Diseases. S. M. Smith, Philadelphia.
32 Surgical Treatment of Hepatic Ascites. W. L. Peple, Richmond, Va.
33 Tax Reform in Virginia. G. Bryan, Richmond.

27. **Palliative Treatment of Hypertrophied Prostate.**—The object of Niles' paper is: 1. By discussion to become more positive concerning the etiologic factor, then to enlarge on the prophylactic attention, and thus prevent or lessen the enlargement of this gland. 2. By discriminating observation of the earlier symptoms, to inaugurate prophylactic measures earlier and thus retard urinary obstruction. 3. To gain knowledge of palliative treatments that we may obtain the greatest good from these methods.

The following summary is offered in conclusion: 1. The inflammatory theory of the origin of hypertrophy of the prostate is the one most feasible. 2. Prophylactic treatment in certain cases may be used successfully to prevent an acute engorgement of the prostate, and thus prohibit permanent retention of urine.

29. Abstracted in THE JOURNAL, Oct. 23, 1909, p. 1420.
31. Abstracted in THE JOURNAL, Nov. 6, 1909, p. 1588.

Northwestern Lancet, Minneapolis

December 15

- 34 Tumors of the Cecum. W. J. Mayo, Rochester, Minn.
35 Diagnosis of Smallpox. J. M. Armstrong, St. Paul.
36 The Tuberculosis Problem. J. W. Bell, Minneapolis.
37 Plea for the Early Diagnosis and Early Surgical Treatment of Cancer. E. H. Beckman, Rochester, Minn.

Colorado Medicine, Denver

December

- 38 Diagnostic Value of Distention of the Renal Pelvis with Fluid Through the Urethral Catheter. L. Freeman, Denver.
39 Surgical Treatment of Prostatic Hypertrophy. F. N. Cochemis, Salida, Colo.

New York State Journal of Medicine, New York

December

- 40 *Infectiousness and Contagiosity of Acute Poliomyelitis. LeG. Kerr, New York.
41 Cancer of the Rectum. N. Jacobson, Syracuse.
42 Diseases of the Eye which the General Practitioner Should Know. F. H. Koyle, Hornell.
43 Injury to the Eyes from Exposure to Intense Light of Short Wave Length. W. T. Miller, Schenectady.
44 Case of Amebic Dysentery. H. W. Carey, Troy.
45 Study of the Peritoneum. T. L. Deaver, Syracuse.
46 Myelocytosis. A. L. Benedict, Buffalo.
47 Scarlet Fever in Country Practice. J. J. Montgomery, Luzerne.
48 Acute Iodothyroid Toxemia. F. S. Stannard, Troy.
49 Personal Experiences with Diseases of the Breast. J. W. Eddy, Oswego.

40. **Acute Poliomyelitis.**—From a study of 65 cases, Kerr is firmly convinced that in acute poliomyelitis, we are dealing with a hematogenic infection of a microbic agent of low virulence. That this infection is engrafted on a tissue susceptibility which is acquired through the agencies of local malnutrition, exhaustion and nerve impairment, and that this local condition is dependent on the two factors of functional activity and a general state of malnutrition, and that the most favoring factor of all is an individual susceptibility over which we have absolutely no control.

Journal Indiana State Medical Association, Fort Wayne

December

- 50 Foundations of Specialism. S. Coulter, LaFayette.
51 Analysis of Psychotherapy. B. F. Hutchins, Indianapolis.
52 The Psychic Element in the Causation of Disease. F. B. Wynn, Indianapolis.
53 Syphilis of the Nervous System. G. Van Sweringen, Fort Wayne.
54 Ten Cases of Brain Syphilis. C. F. Neu, Indianapolis.
55 Team Work, from the Standpoint of the Secretary. J. C. Wallace, Fort Wayne.

American Medicine, Burlington, Vt.

December

- 56 Résumé of the Progress of Surgery in Benign Conditions of the Stomach and Duodenum. W. A. Harroun, Kansas City, Mo.
57 *The Correct Solution of the Eye-Strain Problem—Where to Look for it. N. Roberts, Washington, D. C.
58 *When shall we Terminate Pregnancy? W. C. Schoenijahn, Brooklyn.
59 Frontal Sinusitis, Acute and Chronic, with a Plea for Early Diagnosis of Acute Cases. J. A. MacIsaac, New York.
60 Cervicobrachial Herpes Zoster. A. Gordon, Philadelphia.
61 Diet in Tuberculosis. J. A. Cutter, New York.
62 Infection and Immunity: A Suggestion. W. C. Abbott, Chicago.

57. **Correct Solution of Eyestrain.**—Roberts claims that in many, perhaps most cases, a single correction is not enough for a person whose eyes have rebelled under the strain of excessive and unavoidable near work. The functions of accommodation and convergence are being inordinately overworked. In any given case the stress should be reduced to such an extent that it will cause no further harm, local or remote, to the organism. Present-day measures are not adequate to this end, and the profession, to increase its power for good, should bury its dissensions, call in all available aid, and cooperatively study the problem in all its aspects. A sufficient number of medical men, says Roberts, should qualify themselves and take up the work of bringing the eyes of the race to their highest efficiency.

58. **Termination of Pregnancy.**—No one, says Schoenijahn, should assume such a responsibility as the performance of abortion on his own judgment alone. The case should be submitted to one or several medical men, if possible, first to specialists in the particular conditions existing, then to the obstetrician. The outcome of consultation should be recorded, signed by the consultants, and preserved by whoever is to perform the operation. It might be well, also, inasmuch as in our enlightened age malpractice suits are not uncommon, to acquire the written consent, properly witnessed, of both husband and patient. In the event of untoward results such documents might prove invaluable.

Northwest Medicine, Seattle, Wash.

December

- 63 Prophylaxis of Pulmonary Tuberculosis. E. A. Pierce, Portland, Ore.
64 Early Diagnosis of Pulmonary Tuberculosis by the Roentgen Ray. H. R. Nelson, Victoria, B. C.
65 A Layman's View of the Tuberculosis Problem. A. L. Mills, Portland, Ore.
66 Vaccines as Therapeutic Agents. R. C. Matson, Portland, Ore.
67 Tuberculosis of the Kidney with Special Reference to Diagnosis and Treatment. G. S. Peterkin, Seattle, Wash.
68 *Resection of the Sciatic Nerve; Neuroplasty; End-Results; K. A. J. MacKenzie, Portland, Ore.

68. Abstracted in THE JOURNAL, July 31, 1909, p. 408.

Laryngoscope, St. Louis

December

- 69 On So-Called Multiple Osteomata of the Tracheal Mucous Membrane. H. S. Muckleston, Montreal.
70 The Nose and Nasopharynx in Infants and Young Children. J. M. Ingersoll, Cleveland.
71 *A Modified Mikulicz Operation, whereby the Entire Lower Turbinate is Saved in Intranasal Operations on the Antrum of Highmore. G. Sluder, St. Louis.
72 Lupus of the Nose. D. A. Vanderhoof, Rockford, Ill.
73 Septicemia Following Submucous Resection of the Nasal Septum: One Death; One Recovery. H. Hays, New York.
74 Staphylococcus Rhinitis as a Cause of Folliculitis Exulcerans Serpiginosa Nasi. T. J. Reardon, Boston.
75 *Pathology and Treatment of Recurrent Quinsy. R. C. Myles, New York.
76 Removal of Two Pharyngeal Tumors (Fibroma and Lymphoma) with Ligation of the External Carotid in One Case. F. P. Calhoun, Atlanta.
77 Voluntary Aspiration of a Foreign Body into the Bronchi; Removal by Bronchoscopy. C. Jackson, Pittsburg.
78 The Intranasal Frontal Sinus Operation: The Accessibility of the Sinus: The Prognosis of the Operation. T. C. Worthington, Baltimore.

71. **Maxillary Antrum Operation.**—Sluder's procedure consists in cutting the lower turbinate from the lateral wall, as

far back as its posterior fourth and fifth, by means of scissors. The detached part is then pushed well upward, while the operator removes the lateral wall of the lower meatus. The detached part of the lower turbinate is next pushed down into the lower meatus, while he removes as much of the lateral wall of the middle meatus as he wishes. In this manner it is possible to remove the entire inner wall of the antrum as far forward as the nasal process of the maxilla. There will still remain the ridge on the nasal process for the reattachment of the lower turbinate, which is now replaced in its original position, carefully apposing the cut surfaces at the anterior end. Often the parts may be held in position by means of a little cotton or gauze. If this is found to be insufficient, one or two stitches suffice to hold everything perfectly in place.

In 53 cases he has never seen the bone fail to unite, or undergo degeneration. No subsequent hypertrophy has been observed. Some of his cases are of four years' standing. The replaced turbinate in no wise interferes with the drainage or with the final good result. It does away absolutely with any subsequent drying. This is an especial advantage in cases both of median and wide nostrils, where some drying is sure to follow any removal of the turbinate. It is especially advantageous also in cases in which the middle turbinate must be or has been removed to drain a frontal or ethmoidal empyema. In these cases it conserves the heat and moisture functions of the nose, which would be lost were both turbinates removed. In atrophic rhinitis it is especially indicated.

In noses whose caliber is a little too wide or a little too narrow, the angle of inclination of the turbinate may be altered in reattaching it, making it less acute for the former and more acute for the latter. This is readily done by tilting the bone upward by a pack of gauze or cotton put underneath its body after it has been sewed in place, or by pressing the body slightly outward by a pack between it and the septum. These packs must be continued throughout the healing, the bone afterward remaining in its new position.

75. Recurrent Quinsy.—The most satisfactory operative procedure, according to Myles, consists of dissecting the tonsils from the pillars with sharp, properly shaped knives, leaving enough of the capsule around the outlet of the tonsil cavity to prevent adhesion across the space between the pillars, then removing the tonsil as deeply as possible with the traction forceps and snare. After this, remove all of the median wall of the cavity that may be represented by the basic capsule of the tonsil. The fistulous tracts that lead from the main cavity can be incised with a curved bistoury as far as may be safe. In the cases in which the diverticulum extended down to the hyoid fossæ, a seton is used to cut through gradually and to convert the fistula into an open tract.

American Journal of Urology, New York

December

- 79 Bladder Hemorrhage Treatment. C. G. Cumston, Boston.
- 80 Removal of Wax Candle from Bladder by Means of Benzin. F. Weisz, Budapest.
- 81 Late Syphilitic Fever. H. J. Scherek, St. Louis.
- 82 Growths of Prostate and Bladder. R. H. Greene, New York.

Old Dominion Journal of Medicine and Surgery, Richmond

December

- 83 The State Medical Society. V. V. Anderson, Lynchburg, Va.
- 84 Angina Pectoris. F. Forchheimer, Cincinnati.
- 85 *Epidemic of Probable Paratyphoid Fever. A. W. Freeman, and H. T. Marshall, Charlottesville, Va.
- 86 Repair of the Torn Perineum. J. E. Cannaday, Charleston, W. Va.
- 87 A Means for Better Protection of our Communities from Disease, and by which our Aged Professional Brother can be Assisted. E. A. DeBordenave, Franklin, Va.

85. Paratyphoid Fever.—Freeman and Marshall believe that there prevailed at Weyer's Cave, Virginia, during the summer of 1909, an epidemic of a disease which was probably paratyphoid. They believe further that the epidemiologic studies failed to give any reasonable explanation as to the means of transmission of the disease, and that this condition was peculiar to the epidemic in question, as further studies in the same neighborhood disclosed the prevalence of a disease which was clinically and bacteriologically true typhoid.

Bulletin American Academy of Medicine, Easton, Pa.

December

- 88 *Congregational Practice. A. L. Benedict, Buffalo.
- 89 *Contract Practice. C. S. Sheldon, Madison, Wis.
- 90 *Contract Practice: Its Ethical Bearings and Relations to the Lodge and Industrial Insurance. H. T. Partree, Eatontown, N. J.
- 91 *Contract Practice in Rhode Island. G. S. Mathews, Providence.
- 92 *Physicians in Contract Practice with Mutual Benevolent Societies. A. Ravogli, Cincinnati.
- 93 *A Defence of Contract Practice. J. C. McManemin, Atlantic City, N. J.
- 94 *Why not Make Contract Practice Universal? W. Hutchinson, New York.
- 95 *Division of the Fee and Commissions to Physicians. A. A. Eshner, Philadelphia.
- 96 *Payment of Commissions by Specialist to General Practitioner. E. G. Edwards, La Junta, Colo.

88 to 94. Abstracted in THE JOURNAL, Aug. 7, 1909, p. 482.
95, 96. Abstracted in THE JOURNAL, July 17, 1909, pp. 224, 225.

Archives of Internal Medicine, Chicago

December

- 97 *Tuberculin Tests in Monkeys at the Philadelphia Zoological Gardens. C. Y. White and H. Fox, Philadelphia.
- 98 *Relation of Hypersusceptibility to Immunity. P. A. Lewis, New York.
- 99 *Protein Metabolism in Typhoid. P. A. Shaffer and W. Coleman, New York.
- 100 *Gonococcemia. E. E. Irons, Chicago.
- 101 *Tubercle Bacilli in the Blood. W. A. Sawyer, Berkeley, Calif.

97. Tuberculin Test in Monkeys.—The primary object of White and Fox's work was to protect the healthy monkeys by segregation of the infected ones. It was therefore diagnostic work, and the use of tuberculin for therapeutic purposes was not tried. They have been able to detect tuberculosis in 37 per cent. of 128 monkeys tested. No monkey which has passed the test—i. e., given a negative reaction since February, 1906—has shown as yet any evidence of tuberculosis, although some have died from other causes and others have been killed on suspicion. Ten of the 79 monkeys which were passed were subsequently found to be tuberculous, either in the exhibition cages or after having been returned to the laboratory for any reason. The authors claim that by careful consideration of the temperature, by rigid adherence to hygienic measures in quarantine, and by observation of the individual peculiarities of the animals, the tuberculin test will prove an efficient means of separating infected monkeys and preserving exhibition collections.

98. Relation of Hypersusceptibility to Immunity.—Lewis regards the evidence that there exists a condition of specific hypersusceptibility to the true toxins, such as diphtheria and tetanus toxin, as an underlying factor in antitoxic immunity, as not at all convincing. He says that processes, such as bacteriolysis, which seem to be of fundamental importance in the state of immunity against certain bacteria, may, if exaggerated, give rise to an apparent hypersusceptibility which is really an imperfect immunity. There is no good evidence for the occurrence of a specific hypersusceptibility to endotoxins. The questions involved are rendered still more complicated by the fact that the phenomenon of anaphylaxis may be developed with bacterial proteids which are probably not in themselves factors in the production of diseases. The results of experiments which have been supposed to show that specific hypersusceptibility can be induced against the hypothetical "pure tuberculin" are so complicated by the presence of admixed substances that no final conclusion can be drawn from them. These admixed substances, presumably thermostable bouillon constituents, may, under suitable conditions, give rise to a typical reaction of anaphylaxis.

99. Protein Metabolism in Typhoid.—The results of a very detailed and careful series of experiments made to determine the protein metabolism in typhoid are briefly summarized as follows:

1. By the use of diets of high caloric value and especially rich in carbohydrate it is possible to retard and, if the carbohydrate supply be sufficient, to prevent the febrile loss of body-protein-nitrogen in subjects of typhoid fever.
2. By such dietetic treatment the "toxic" destruction of body protein as well as the destruction due to simple pyrexia in this disease may therefore be either prevented or compensated for.
3. The behavior of creatin and of total sulphur in these experiments appear to show that the febrile destruction of body protein, including the action of pyrexia and of toxins, is actually retarded or

even wholly prevented by the intake of sufficient carbohydrate. The prevention of the febrile loss of body protein is therefore probably not to be explained by a mere compensatory retention of food protein.

4. The results support the belief that in fever there is a greater need for carbohydrate; that if the food does not contain sufficient carbohydrate the body protein is drawn on perhaps to supply energy in an available form; but that if sufficient carbohydrate be available from the food, the body protein is protected from the febrile destruction.

5. If, as seems probable from these results, the "toxic" destruction of body protein may be prevented by large carbohydrate intake, the mechanism of this "toxic" destruction cannot be a direct (poisonous) injury to body cells and proteins.

6. To maintain nitrogen equilibrium in typhoid the food must contain from 10 to 15 gm. nitrogen in addition to much carbohydrate. The experiments show no advantage from a further increase of food-protein.

100. Gonococcemia.—Irons reports 6 cases in which the gonococcus was isolated from the blood during life.

CASE 1.—The clinical picture is that of an exceedingly chronic type of gonococcus infection, from the initial urethritis ten years previously, with relapses or, possibly reinfections later, hydrocele and arthritis of recurring type, attacks of irregular fever with occasional chills, and finally a more severe attack of continued fever, arthritis, leucocytosis, and demonstrated gonococcemia. Doubtless the gonococcus could have been demonstrated in the blood much earlier had proper media been employed. During the early days of observation the case presented several points of difficulty in diagnosis in spite of the evident rôle which the gonococcus had played in the previous history. The continued fever, with relatively slight remissions, together with the abdominal maculopapules, some of which at least could not be distinguished from rose-spots, suggested the possibility of typhoid complicating some other infection. Signs of dry pleurisy were noted at the onset. Acute articular rheumatism, tuberculous, and, later, ulcerative endocarditis of possibly pneumococcus or streptococcus origin were considered. During the period of observation in the hospital the patient presented no definite evidence of endocardial lesion. The subsequent history of cardiac difficulty and irregular fever almost two years later suggest strongly the presence of an ulcerative gonococcus endocarditis which may have had its origin at the time of hospital observation, or possibly months before. The value of vaccines in the case is problematical. The gradual fall of temperature and improvement in the joints which followed the use of vaccines without other medication may have occurred coincidentally, and not as a result of the therapy.

CASE 2.—The history of illness extending over a period of eight months at least, characterized by gradually increasing palpitation, dyspnea, irregular fever and chills, the physical signs of a progressive lesion of the aortic valve, enlarged spleen, and the absence of other foci of suppuration suffice for the diagnosis of ulcerative endocarditis involving the aortic valve. The history of a preceding gonorrhea and the absence of other illness, such as tonsillitis, or pneumonia, are suggestive of the nature of the infection. The isolation of the gonococcus in pure culture from the circulating blood demonstrates the true character of the infection. The use of autogenous vaccines in this case was not followed by any observable benefit. The leucocyte counts are lower than those usually found in gonococcus infections.

CASE 3.—One week after the onset of gonorrhea a young man suffers a severe chill, followed by pain in several joints. The joint symptoms subside, but the chilly sensations and fever recur irregularly, with gradually increasing weakness, dyspnea, and loss of weight. Glycosuria without polyphagia or marked polyuria is found, and the patient is brought to the consultant. The history, weakness, fever, chills and anemia suggest a septic process, and the gonococcus is isolated from the blood. The gradually changing endocardial murmur, together with other signs of cardiac involvement, leave but little doubt that acute ulcerative endocarditis is also present.

CASE 4.—A woman, aged 37, an alcoholic, who for some time has suffered from a genital gonococcus infection, is taken suddenly ill with multiple arthritis, fever and symptoms of severe infection, clinically not unlike acute articular rheumatism. Aside from a faint systolic murmur (possibly hemic) there is no definite evidence of endocarditis or pericarditis. The fever from the fifth day ranges between 101 F. and 103 F., later gradually rising to 106 F. and death.

CASE 5.—A man, aged 39, alcoholic, the subject of chronic gonococcus urethritis, suddenly suffers from multiple arthritis, fever, and symptoms of severe infection. Careful and repeated examination of the heart show no definite evidence of endocarditis. Over the abdomen and lower chest are a number of small slightly raised reddish maculopapules which partially fade on pressure. There is a leucocytosis of 21,000. The gonococcus is isolated from the blood in numbers of 2 and 3 colonies per cubic centimeter of blood. The fever curve is sustained, with only slight remissions. The pulse in the third week of the illness is rapid. Aside from the laboratory findings and the arthritis of the knee, the clinical course, appearance of the patient, rash and temperature curve are somewhat suggestive of typhoid.

CASE 6.—During an exacerbation in the course of gonococcus arthritis in a young man the gonococcus is isolated from the blood and from the joint fluid in pure culture. There is no clinical evidence during the entire course of the illness of any endocardial lesion.

101. Tubercle Bacilli in the Blood.—In 167 preparations made by Sawyer from the blood of 39 bleedings from 21 tuberculous cattle no tubercle bacilli were found in 110.9 hours' search; 133 of the specimens, made from gravity sediments of blood-citrate mixture, were searched 88.9 hours; the remaining 34 slides, made from laked and centrifugalized blood, were searched 22 hours. In one instance tubercle bacilli were recovered by both methods of examination from blood drawn twenty-five minutes after inoculation of the arterial blood-stream. Guinea-pig inoculations with the blood sediments of 20 tuberculous cattle failed to produce tuberculous.

In experiments in which tubercle bacilli had been introduced into the blood, either in the circulation or in test-tubes, the examination of laked and centrifugalized blood proved much more effective in the detection of the organisms than did the search of gravity sediments from unlaked mixtures of blood and citrate solution. Sawyer found that the upper portions of gravity sediment from mixtures of blood and citrate solution are much more apt to contain bacilli than the lower parts, and that tubercle bacilli which have been experimentally thrown into the blood stream are rapidly removed from the circulation. Experiment suggests that the capillaries of the lungs are more efficient in arresting bacilli than the peripheral capillaries. Chronic tuberculosis may produce a marked partial immunity against fresh inoculation with tubercle bacilli.

Dominion Medical Monthly, Toronto

December

- 102 Hemorrhagic Pneumococcus Septicemia. H. B. Anderson, Toronto.
- 103 Alcoholism a Symptom of Constitutional Psychoneurosis. S. Soukhanoff, St. Petersburg, Russia.
- 104 Epithelioma of the Skin, Especially its Treatment. G. Chambers, Toronto.

Maryland Medical Journal, Baltimore

December

- 105 Surgery of the Thyroid (continued). R. Winslow, Baltimore.
- 106 Unusual Cases of Disease of the Salivary Apparatus. J. R. Winslow, Baltimore.
- 107 Sanitary Supervision an Aid to Commercialism. H. B. Wood, Philadelphia.
- 108 Van Helmont, Des Cartes, Sylvius, Borelli. H. M. Cohen, Baltimore.
- 109 *Why Does Ophthalmia Neonatorum Continue to Cause so much Blindness? J. J. Carroll, Baltimore.
- 110 Surgery of the Kidney (continued). A. McGlannon, Baltimore.

109. Ophthalmia Neonatorum.—Carroll does not agree with those writers who claim that blindness from ophthalmia neonatorum has been very much reduced since the Credé method of prophylaxis. He says that while a slight decrease has been observed in some quarters, an actual increase has been noted in others. On July 31, 1901, Professor Cohn of Breslau stated before the Tenth Congress of Teachers of the Blind that in twenty-five years there has been a reduction of only 8 per cent. in the ophthalmia blind in Germany. It should be noted here that twenty-one of these twenty-five years had the advantage of the Credé prophylactic. In the United States the much-desired decrease has not yet materialized. For four years, ending in 1905, the annual proportion of children blind from ophthalmia entering the New York State School for the Blind was 25 per cent.; in 1906 the new class had 26 per cent.; in 1907, 30.7 per cent. In the Pennsylvania Institute for the Blind the percentage of ophthalmia

blind admitted in 1900 was 44; in 1901, 35; in 1902, 23; in 1903, 50; in 1904, 25; in 1905, 50; in 1906, 31; in 1907, 33.3, the average for the eight years being 36.4. Comparing the average number during the first period of four years with the average of the second period of four years, we have a decrease of only 3.2 per cent.

In regard to the Maryland School for the Blind, statistics seem to indicate that blindness from ophthalmia neonatorum is decidedly on the increase. In 1890, of 94 pupils then in the school, 17.9 per cent. were blind from ophthalmia. During Carroll's connection with this institution during the past four years, he has examined 128 pupils and found 25.8 per cent. blind from this same disease. The histories of the ophthalmia pupils of the Maryland School for the Blind go to show that 29 per cent. of them are from the private practice of general practitioners, while Carroll has been unable to trace a single case to a regular lying-in-hospital. In view of this fact it must be said that there are still some physicians who do not give as much attention to the proper treatment of ophthalmia neonatorum as they should. The best means of prevention is the use of silver nitrate. The essential part of the Credé method is the instillation of one drop of silver nitrate solution into the eyes of the new-born infant, the original strength of the solution being 2 per cent., the accepted strength to-day being 1 per cent. Whether this is done as soon as the head is born, as advocated by some obstetricians, or immediately after the first bath, as advocated by others, is immaterial. Care should be taken, of course, not to let the water of the baby's first bath come in contact with the eyes, and it is well to use a small glass rod, as suggested by Credé, in the instillation of the drops. It goes without saying that the eyelids should be carefully washed with clean water and cotton before the drops are used.

California State Journal of Medicine, San Francisco

December

- 111 Acute and Postoperative Dilatation of Stomach. W. S. Thorne, San Francisco.
- 112 Points in the Treatment of Infants. L. Porter, San Francisco.
- 113 Treatment of Flat and Pronated Feet. G. A. Barker, Oakland.
- 114 Development of Medical Education in California. H. Gibbons, San Francisco.
- 115 Practical Points in the Diagnosis of Every-Day Skin Diseases. E. D. Chipman, San Francisco.
- 116 Three Non-Tuberculous Joint Lesions. J. T. Watkins, San Francisco.
- 117 Roentgenographic Findings in Fractures about the Elbow Joint. A. Soiland, Los Angeles.

Cleveland Medical Journal

December

- 118 Some Activities of the Public Health and Marine-Hospital Service in Relation to Scientific Investigations. J. W. Kerr, U. S. P. H. and M.-H. S.
- 119 Tests of Insanity in the Civil Court. B. A. Gage, Cleveland.
- 120 Idem. W. B. Laffer, Cleveland.
- 121 *Inflammation and Suppuration of the Omentum. C. A. Hamann, Cleveland.
- 122 Treatment of Placenta Prævia. A. H. Bill, Cleveland.
- 123 Technic of Cesarean Section. G. W. Crile, Cleveland.

121. **Inflammation of the Omentum.**—Inflammation and tumor formation following ligation of portions of the omentum are not mentioned as possibilities in the vast majority of works dealing with hernia, or at any rate Hamann says they do not seem to be as well known as they should be. His attention was attracted to the subject by the case of a middle-aged man, operated on for the radical cure of an inguinal hernia; a portion of the omentum had been tied off with catgut. The wound healed in a week or ten days by first intention, and without complications. The patient then began to complain of abdominal pain and soon a tender swelling could be felt in the hypogastrium. This reached the size of an orange and the temperature remained elevated for a week or more, 102.6 being the highest. The symptoms and physical signs then gradually subsided and the patient made a complete recovery. The diagnosis is easily made, says Hamann, if one bears in mind the possibility of such inflammatory swellings occurring after ligation of the omentum and can then elicit the physical signs and the symptoms outlined above. In some cases they have been mistaken for ovarian cysts, enlarged spleen and malignant growths, and the diagnostic difficulty will be increased if they occur a long time after operation. The treatment need not at first

be operative; rest in bed of course is essential; locally, heat and moisture in the form of wet packs may be applied. If the progressive increase in the size of the swelling, fever, parietal adhesions and leucocytosis indicate the presence of pus, an incision is to be made and the abscess cavity evacuated and drained. The ultimate results in the majority of cases are favorable. An effort should be made to prevent the condition by absolute asepsis in the operation and of the ligature material, by ligating only non-inflamed omentum and by including only small portions of the omentum in each ligature.

Southern California Practitioner, Los Angeles

December

- 124 Present Status of Medicine and Surgery. A. S. Lobingier, Los Angeles.
- 125 The Barlow Sanatorium, Los Angeles, Cal. R. L. Cunningham, Los Angeles.
- 126 *Two Apparently New Physical Signs, whereby Normal Organs may be Outlined, and Diseased Conditions Diagnosed, Particularly within the Chest, by Palpation. F. M. Pottinger, Monrovia.
- 127 Diagnosis of Gastric and Duodenal Ulcer. D. J. Frick, Los Angeles.
- 128 Etiology of the Venereal Plagues and some New Methods of Prevention. W. L. Holt, Banning, Cal.

126. Published in the *Lancet Clinic*, Dec. 11, 1909.

Philippine Journal of Science

August

- 129 Medical Survey of the Town of Taytay: Introduction. R. P. Strong, Manila.
- 130 Geology and Water Supply of Taytay. G. I. Adams, Manila.
- 131 Bacteriologic Analyses of the Water Supply of Taytay. M. T. Clegg, Manila.
- 132 Chemical Analyses of Taytay Waters. G. F. Richmond and V. Q. Gana, Manila.
- 133 Principal Foods Utilized by the Natives in Taytay. E. D. Merrill, Manila.
- 134 Food of the People of Taytay from a Physiologic Standpoint. H. Aron, Manila.
- 135 Mosquitoes and other Insects of Taytay. C. S. Banks, Manila.
- 136 Vital Statistics of Taytay. P. Clements, Manila.
- 137 General Sanitary Conditions of Taytay. P. Clements, Manila.
- 138 Animal Parasites of Intestine in Taytay. P. E. Garrison, R. Leynes and R. Llamas, Manila.
- 139 Table of Physical Examinations of Inhabitants of Taytay. F. B. Bowman, L. Lopez, V. E. Manapat and V. Rivera, Manila.
- 140 Examinations of the Blood with Special Reference to Malaria in Natives of Taytay. L. Guerrero and V. Sevilla, Manila.
- 141 Filariasis, Malaria, Tuberculosis, Typhoid, Goiter, Beriberi, and Venereal and Skin Diseases in Taytay. H. J. Nichols, U. S. Army.
- 142 Disposal of Human Excreta in Taytay. P. E. Garrison, U. S. Navy.
- 143 Summary and Conclusions of Medical Survey of Taytay. R. P. Strong, Manila.

Bulletin Medical and Chirurgical Faculty of Maryland, Baltimore

December

- 144 Relation of the Medical Profession to the Public. G. M. Lanthicum, Baltimore.

Journal Oklahoma State Medical Association, Muskogee

December

- 145 Gonorrhea as seen by the General Practitioner. F. E. Waterfield, Holdenville.
- 146 The Nasal Septum as a Factor in Nasal Catarrh. S. H. Barnes, Enid.
- 147 Enterostomy. A. A. West, Guthrie.
- 148 Acute Gastric Catarrh. J. W. Ousley, Kansas City, Mo.

Journal of Biological Chemistry, Baltimore

December

- 149 The Iodin Complex in Sponges (3, 5-Diodotyrosine). H. L. Wheeler and L. B. Mendel, New Haven, Conn.
- 150 The Preparation and Properties of Iodomucoids. G. M. Meyer, New York.
- 151 Lactic Acid in the Autolyzed Dog's Liver. T. Saiki, Albany, N. Y.
- 152 Liquid Extraction with the Aid of Soxhlet's Apparatus. T. Saiki, Albany.
- 153 The Chemistry of Cancer. T. Saiki, Albany.
- 154 The Estimation of Purin Nitrogen in Urine. S. R. Benedict and T. Saiki, Albany.
- 155 Neutrality Equilibrium in Blood and Protoplasm. L. J. Henderson, Boston.
- 156 *The Influence of Lactic Acid Ferments on Intestinal Putrefaction in a Healthy Individual. H. Baldwin, New York.
- 157 *The Catalytic Action of Aminoacids, Peptones and Proteins in Effecting Certain Syntheses. H. D. Dakin, New York.
- 158 Urorosein Reaction. H. D. Dakin, New York.
- 159 *The Action of Sodium Benzoate on Multiplication and Gas Production of Various Bacteria. C. A. Herter, New York.

156. **Lactic Acid Ferments and Putrefaction.**—Baldwin experimented with a healthy man who received in addition to a mixed diet, various preparations containing lactic acid

bacilli, especially the *Bacillus bulgaricus*. These bacilli were cultivated from the feces in two instances, showing that they survived the action of the intestinal contents and were presumably active throughout the intestinal tract. The ethereal sulphates were estimated and were found to be lower in proportion to the nitrogen in the urine when an ordinary mixed diet was given with no additional fermented milk or malt. The amount of indican, indolacetic acid, and phenols in the urine were so small that definite conclusions could not well be drawn. When biscuits and milk were the only foods taken the ethereal sulphates were very low and this was also the case when zoolak and biscuits were the only food taken for lunch, but when a liter of zoolak was taken in addition to three meals daily of a mixed diet, the subject's condition became less satisfactory than when no fermented milk was added to the diet. The results show also that the addition of a liter of plain milk with biscuits to the usual mixed diet increased the intestinal putrefaction. The observations have no bearing on the use of fermented milks alone, or with a diet free from meat. In certain cases the fermented milks may be more appetizing and better borne than plain milk, but when added to a general mixed diet including meat they exerted no specially favorable influence on intestinal putrefaction.

157. Catalytic Action of Aminoacids.—As it is probable that the syntheses occurring in the animal cell metabolism are brought about by the action of catalytic agents, Dakin undertook to determine whether similar changes could be experimentally demonstrated under the influence of catalyzing agents, especially the aminoacids and proteins. He has been able to demonstrate the catalytic action of glycocoll (aminoacetic acid), leucin (amino-caproic acid), peptone, albumose, etc., in affecting the synthesis of furfuracrylic acid, cinnamic acid, and similar products. While a number of the products formed are ordinarily formed in the living organism, analogous products are formed and it seems probable that aminoacids may play a part in such biochemical syntheses.

159. Action of Sodium Benzoate on Bacteria.—Herter reaches the general result that sodium benzoate in fluid media, in concentration of 0.1 per cent., cannot be regarded as an effective antifermentative agent, in the sense of checking the multiplication of bacteria. On the other hand, sodium benzoate in this concentration is not without some influence on the course of fermentation, for, in addition to some restriction in multiplication, there may be a distinct effect in diminishing the production of gas. In experiments on the feces sodium benzoate and benzoic acid diminished the production of gas, and inhibited to some extent the growth of organisms of the *B. coli* type but the coccal form of bacteria were relatively increased.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal, London

December 25

- 1 *Indications for Immediately Opening the Abdomen in Acute Cases. W. G. Spencer.
- 2 *Uses of Catgut in Surgery. C. Y. Pearson.
- 3 Removal of Foreign Bodies from the Esophagus by Means of Bruning's Direct Esophagoscope. J. G. French.
- 4 Dislocation of a Cervical Vertebra; Operation; Recovery. Dr. Hill.
- 5 Diver's Paralysis. G. Blick.

1. Indications for Opening the Abdomen.—The various conditions for which, in Spencer's opinion, an immediate operation is required in abdominal cases are: An irreducible femoral or umbilical hernia, the inguinal hernia which comes down suddenly in a strong man and causes marked pain; appendicitis; gastroduodenal ulceration and perforation; gangrene of the gall bladder; acute pancreatic abscess; a twisted ovarian cyst; suppuration supervening on an ovarian dermoid, salpingitis, or hematocele; some cases of extrauterine fetation; acute infective pelvic peritonitis; acute gonorrheal pelvic peritonitis; intestinal obstruction; abdominal injuries; cases for Cesarean section; renal obstruction and suppression of urine.

2. Iodin-Formalin Catgut.—For about 2 years Pearson has been using the iodine-formalin catgut wherever delayed absorption was desirable, with most satisfactory results. The method of preparation is as follows: The gut is prepared with an alcoholic solution of iodine. At the end of 8 days it is taken from the iodine solution with sterile forceps, placed in a sterile glass jar, and washed with either a weak solution of carbolic acid or with running sterile water to remove the alcohol and iodine from the outer layers, so as to permit more freedom for the action of the formalin. Next it is placed in a 3 per cent. formalin solution for from 24 to 48 hours according to the thickness of the gut. It is washed in running water for a few hours to remove the formalin, and then it is placed in 50 per cent. alcohol containing 0.5 per cent. iodine and 5 per cent. glycerin, this latter rendering the gut more pliable. In this solution it may be kept indefinitely, being taken from it only shortly before being required for use to allow the alcohol to evaporate. Catgut prepared in this way is said to possess the combined advantages of iodine and formalin gut without any of the disadvantages of formalin gut prepared in the ordinary manner.

Lancet, London

December 25

- 6 *Effect and Use of Radium. D. Turner.
- 7 Vaccine Treatment of Pyorrhea Alveolaris (Alveolar Osteitis). K. Goadby.

6. Effects and Use of Radium.—Among the conditions in which Turner has found radium useful are rodent ulcer, angiomas, keloids, cicatrices and fibrous contractions, warty growths, simple ulcers, malignant growths, and pruritus. Illustrative cases are reported.

Medical Press and Circular, London

December 15

- 8 Prognosis and Etiology of Mitral Incompetence. Sir J. F. H. Broadbent.
- 9 The Peritoneum and Peritonitis (concluded). E. R. Carling.
- 10 Early Diagnosis of Suppurations of the Mastoid. A. Jansen.
- 11 Scarlet Fever from Cows. G. de G. Griffith.
- December 22
- 12 Varicocele. D'A. Power.
- 13 Trachoma. A. H. Benson.
- 14 Abdominal Hysterectomy Sixty-three Hours after Labor for a Necrosed and Suppurating Sub-Peritoneal Fibroid. P. D. Turner.
- 15 Cystic Tumor of the Right Broad Ligament Springing from the Uterus, and Apparently Developed from Gärtner's Duct. A. H. N. Lewers.
- 16 Recent Advances in Bacteriology. C. C. Douglas.
- 17 Problems Relating to the Evolution of the Brain. G. E. Smith.

Clinical Journal, London

December 22

- 18 Fistula-in-Ano and Foreign Bodies in the Rectum. H. Cripps.
- 19 Aspects of Thyroid Insufficiency. L. Williams.
- 20 *Perforation of the Small Intestine. H. Lett.

20. Perforation of Small Intestine.—The first patient was suddenly seized with severe pain in the upper half of the abdomen; this was soon followed by vomiting. She vomited repeatedly during the night and the next day, and the abdominal pain and tenderness became very severe. She had suffered from dyspepsia for years, but had never had hematemesis, otherwise her health had been very good. When the abdomen was opened the jejunum was carefully examined, and eighteen inches beyond the duodeno-jejunal junction a small perforation was found, situated on the free border of the intestine, away from the mesentery. The wall of the intestine was thickened and infiltrated around the perforation, and its characters suggested that a chronic ulcer had given way. A hasty examination of the rest of the small intestine revealed nothing abnormal. Lett believes that the case may be correctly considered one of a perforated peptic jejunal ulcer.

The second patient also had a sudden attack of severe abdominal pain; this was accompanied or shortly followed by a shivering fit, the temperature rose to 104 F., and the patient vomited several times. He stated that he had not felt well for five weeks. He had been at work, though he felt drowsy and good-for-nothing. The bowels had been opened daily, but there had been no diarrhea. He presented an emaciated appearance, and looked very ill. The tongue was dry and red, pulse 110, respirations 40, temperature 101 F. The abdomen was uniformly rigid and painful and hardly moved on respira-

tion. Laparotomy was immediately performed. A small perforation was found in the ileum two inches from the ileocecal valve; there was no induration of the intestine around the perforation, and the wall appeared to be rather thinner than usual. The case was considered to be one of ambulatory typhoid with perforation. The history of malaise and drowsiness during the preceding five weeks and the emaciated condition of the patient seemed to confirm the diagnosis; and lastly, the symptoms followed the perforation, namely, the rigor with a temperature of 104 F., the vomiting and the development of typical signs of peritonitis were quite consistent with the perforation of a typhoid ulcer.

Practitioner, London

December

- 21 Pasteur, Science and Medicine. F. M. Sandwith.
- 22 *Relief of Headaches by Correction of Errors of Refraction. D. M. Mackay.
- 23 Recent Work on the Diseases of Children. J. H. Thursfield.
- 24 *Delay or Retardation of the Pulse as a Sign of Aneurism. L. Findlay.
- 25 Disorders of Gastric Secretion. F. C. Moore.
- 26 Comfortable Words about Poisoning. S. S. Sprlgge.
- 27 Ancient Superstitions that Still Flourish. F. H. Pickin.
- 28 Labor Complicated by Uterine Prolapse of Second Degree with Supravaginal Elongation of the Cervix. B. R. B. Truman.
- 29 Strangulated Hernia—Herniotomy—Supplementary Spleen Found in Great Omentum at Operation. F. L. Wood.
- 30 Physical Explanation of Certain Auscultatory Signs Heard in Connection with Morbid Conditions of the Lungs or Pleura. H. A. Haig.

22. Relief of Headaches.—The attitude of ophthalmologists toward the relief of headaches is stated by Mackay as being that every patient with headache in whom the headache is not removed by other means should be suspected of refractive error, and that this suspicion should only be dismissed if refractive error is proved to be absent. Doubtless, in many cases, the spectacles fail to relieve the headache; but this only indicates that other conditions may coexist with the error of refraction, and be of more importance in the causation of the trouble. A sufficient number of successful cases have been observed to encourage one in the expectation of relieving the headaches in this way.

24. Delay or Retardation of Pulse.—In view of the diversity of opinion regarding even the mere existence of the phenomenon, but more especially in the light of its possible value as a physical sign, and also as he had the opportunity of observing two cases which presented some delay of the right radial pulse, it occurred to Findlay that by approaching the subject from the purely physical aspect, and carrying out experiments with artificial aneurisms and rubber tubing, much might be learned regarding the phenomenon. He employed an artificial circulation constructed from rubber tubing, a thick and wide portion representing the aorta, and a similar portion acting as the main venous trunks. He found that in cases of thoracic aneurism delay or increased retardation of one of the radial pulses does occur. The same delay may or may not be present in the cases of corresponding carotid pulse. If the idea, based on experimental physics, be correct, that delay of the pulse wave is only produced as the result of the wave passing through the aneurism, then, says Findlay, the phenomenon of delay should be a most important diagnostic aid in the localization of the aneurism. Digital examination is not a reliable test of the presence or absence of delay. The finger may miss the delay when present, and may diagnose it when absent. A more delicate instrument, such as the clinical polygraph, is necessary.

Dublin Journal of Medical Science

December

- 31 Relations of Physic to Physics and their Bearing on Therapeutics. W. G. Smith.
- 32 Diseases of Animals Communicable to Man. A. E. Mettam.
- 33 Teaching of Practical Midwifery in the Past and at the Present Time. H. Jellett.

Journal of Obstetrics and Gynecology of the British Empire, London

December

- 34 The Antiautolytic Action of Blood Serum and Its Relation to Hyaline Changes in Uterine Fibroids. L. Murray.
- 35 *Unilateral Hematometra of Long Standing Forming a Large Abdominal Cyst. G. B. Smith.
- 36 Inguinal Hernia of the Uterus. H. B. Robinson.
- 37 Accidental Hemorrhage and Chronic Uremia in which the *Bacillus Proteus* was Found. A. Stockes and E. E. Glynn.

35. Unilateral Hematometra.—Ten months after a miscarriage the patient, aged 41, was admitted to the hospital on account of an abdominal tumor with acute pain. She had been ill for rather more than a week before admission, and the tumor in the abdomen had been discovered for the first time during this illness. The diagnosis made before admission was one of ovarian tumor with twisted pedicle. Smith hesitated about confirming this diagnosis owing to the shape and fixity of the tumor. It bulged down into the pelvis like a broad ligament cyst or an encysted peritoneal collection of fluid. At the operation he found filling the lower half of the abdomen a large cyst with a wall discolored by blood, and similar to that seen in the case of an ovarian cyst with twisted pedicle and extravasation of blood into its interior. The cyst had no pedicle, and was seated largely in the cellular tissue, being covered by peritoneum on its upper and anterior surfaces only. In its growth it had expanded the mesosigmoid, so that the sigmoid flexure was applied tightly to the front of the cyst. A trochar and cannula were inserted and the contents, which consisted of dark altered blood, were withdrawn. The wall of the cyst was thick and did not collapse. The opening into it was enlarged and the interior washed out with normal saline solution. It was then found to be a unilocular cyst with thick walls. There seemed to be no doubt that the cyst had resulted from the dilatation of the left horn of a bicornute uterus. The most interesting feature is the age of the patient at which it was first detected. She was 41 when admitted to the hospital, and the swelling had been discovered only within the week previous to admission. She had, however, noticed herself getting stouter since she had a miscarriage. Another interesting feature is the subsequent return of the parts to a condition but little distinguishable from the normal. The sac contracted with great rapidity on to the uterus, and two months later nothing was to be felt of the inflamed thick-walled cyst outside the uterus, the horn having again returned to something like its original condition. All that was felt was a broad, somewhat uneven uterus, such as one might expect to find in a bicornute uterus.

Annales de Médecine et Chirurgie Infantiles, Paris

December 15, XIII, No. 24, pp. 829-860

- 38 Methods of Examination of Breast Milk. (Le lait de femme.) J. W. Troitsky.

Archives Générales de Médecine, Paris

November, LXXXIX, No. 11, pp. 805-868

- 39 Primary Cancer of the Lung. (Cas de cancer primitif du poumon; forme métatypique d'origine alvéolaire; avec pleurésie hémorragique et métastase encéphalique.) J. Rieux and P. Savy.

Lyon Surgical, Lyons

December, II, No. 7, pp. 765-886

- 40 *Orthopedic Corsets and Supports. (Le corset orthopédique. Autrefois et aujourd'hui.) P. Vignard and G. Monod.
- 41 *Symptoms of Adherent Pericardium, and Its Operative Treatment. (Quelques points de séméiologie de la médiastino-péricardite, d'après les observations de cardiolyse.) G. Mouriquand.
- 42 Congenital Pseudoarthroses of the Leg and their Treatment. A. S. Papadopoulos.

40. Orthopedic Corsets, Old and New.—Vignard commends perforated celluloid as the best material, and describes the improved technic for making the corset, giving some illustrations of the deplorable results that have followed the wearing of ill-made supports in the past. He adds that if France is fifty years behind the rest of the world in orthopedics, it is because practitioners and surgeons give up the making of orthopedic corsets to others instead of making the cast with their own hands and superintending the fitting of the corset. An important point to bear in mind is that the body does not grow in straight lines, but according to definite curves, and consequently it is worse than useless to make provision for lengthening the corset in a straight line for prolonged use.

41. Chronic Adhesive Pericarditis.—Mouriquand comments on the saying that there are two forms of adhesive pericarditis, that which we diagnose but of which no traces can be found at autopsy, and that which we do not recognize during life, but which is a striking post-mortem finding. Hitherto it did not make much difference whether the affection was duly

diagnosed as treatment was merely medical and symptomatic. But now that surgical intervention has been proposed and cardiolysis performed in 18 cases, early differentiation is of great importance. Mouriquand states that analysis of these 18 cases shows that the best results were obtained in the tuberculous variety with or without left pleurisy and mediastinitis. Preceding serous pleurisy was mentioned in 8 of the 15 cases reported in full. Rheumatism was known in the history of only 2 of the patients. As a rule, rheumatism attacks the entire heart, not the pericardium alone, and the rheumatic cases are not favorable for operative intervention. Only two of the patients failed to benefit by the cardiolysis, that is, the resection of ribs and breaking up of adhesions. (The technic was described in THE JOURNAL, July 20 and Sept. 21, 1907, pages 285 and 1061.) Setting the heart free from its fusion with pleura or chest wall relieves it of a large amount of excessive and unnecessary labor and conditions improve at once. Bulging of the precordium was noticed only in one of the cases; it is exceptional in adults. Pain in the precordium is an important and frequent sign, also the tugging retraction of the chest wall accompanying systole, and the diastolic rebound or shock. Both of the latter seem to persist after the operation. Increased area of dullness over the heart was noted in 7 out of 15 cases and jaundice in 2; ascites was a prominent symptom in 10 cases and a hard and enlarged liver in 11. The spleen was also enlarged in a few cases. In the child these latter findings exclude tuberculous peritonitis while the absence of drinking habits in the adult speaks against the assumption of cirrhosis of the liver which the syndrome otherwise suggests. Dropsical swelling of the legs was frequently observed, and occasionally cyanosis for which no cause in the lungs could be discovered. Diastolic collapse of the jugular vein was another frequent symptom but the *pulsus paradoxus* was only exceptionally encountered, although sought for in every instance. There is generally also habitual oliguria and considerable albuminuria, while traces of the primary pleurisy can usually be discovered. The age of the patients ranged from 8 to 50 but the best results of operative intervention were obtained in 10 patients between 15 and 30.

Presse Médicale, Paris

December 5, XVII, No. 10, pp. 897-904

- 43 Otogenous Meningitis. (Prévision de la méningite otogène.) M. Lermoyez.
- 44 Drug Addictions. (La toxicomanie.) L. Viel.

Semaine Médicale, Paris

December 8, XXIX, No. 49, pp. 577-588

- 45 *Circumscribed Serous Meningitis of the Brain Cortex. (Méningite séreuse circonscrite de la corticalité cérébrale.) F. Raymond and H. Claude.

December 15, No. 50, pp. 589-600

- 46 Momburg Belt Tourniquet in Gynecology and Obstetrics. R. de Bovis.
- 47 Experimental Research on Relations between Shock and Infection. G. Gibelli.

45. **Circumscribed Serous Meningitis of the Brain Cortex.**—Raymond and Claude expatiate on the differentiating points and the advantages of prompt operative treatment. The inflammation is unable to heal spontaneously and it is not benefited by lumbar puncture, but draining away the compressing fluid is liable to be followed by a rapid and permanent cure. The symptoms may be those of a brain tumor or abscess or diffuse meningitis—all affections in which the outlook for surgical intervention is far from promising, while the circumscribed serous meningitic lesion promptly subsides after incision of the cyst-like protuberance of the meninges. The authors consider that the possibility that the trouble may be of this nature should encourage surgical interference even in the most apparently desperate cases of brain lesions. They describe a case personally observed, the first on record with complete operative and autopsy findings. The patient was a man of 38, not seen until the brain had suffered severely from the compression induced by an accumulation of a serous fluid between the arachnoid and pia mater, localized in the lower Rolandic region and part of the fissure of Sylvius. This external serous meningoencephalitis of the cortical region of the brain may be accompanied by ventricular meningitis, especially when the inflammation originates in the ear, or it may occur as an isolated, easily accessible and curable cir-

cumscribed lesion. Several cases of an analogous affection of the spinal meninges have been reported in the last eight years, but only two or three involving the cerebral meninges. Axhausen's recent case is a typical example of the latter; the patient, a girl of 11, was cured by his prompt and twice repeated trephining and incision of the dura mater, which permitted the escape of a serous fluid under high pressure; the symptoms recurred at first when the incision healed. The fluid was sterile and he ascribes the trouble to a blow on the head from a stone a few days before. Finkelstein has reported a similar case which he classed as circumscribed adhesive arachnitis at the base of the brain, the patient recovering after the operation, as also in Unger's case, in which a localized syphilitic meningitis caused a collection of serous fluid in the cerebellopontine angle with corresponding symptoms. There was no constitutional taint in the case reported by Placzek and Krause recently: a young woman presented the syndrome of a tumor in the posterior cerebral fossa, but the operation revealed merely an accumulation of cerebrospinal fluid between the layers of the arachnoid and some thickening of the dura mater which was adherent to the pia. Recovery was complete after the operation in two sittings, but the temperature continued to fluctuate from above to below normal for three months afterward. All the reports mention the rising temperature and pulse rate and the sudden drop of temperature on evacuation of the fluid, but the clinical signs vary with the localization. The absence of choked disc is an important aid in differentiating the process from a brain tumor as also the high temperature which is rare with the latter. In Axhausen's case the symptoms suggested an acute meningitis but in the case reported the slow and gradual development of symptoms through several months suggested a tumor growth.

Archiv für Gynaekologie, Berlin

LXXXIX, No. 2, pp. 245-443. Last indexed October 30, p. 1519

- 48 Operations for Tumors Complicating Pregnancy or Delivery. (Intraperitoneale Operationen bei Schwangerschaft oder Geburt complicirenden Tumoren.) E. Clemenz.
- 49 *Treatment of Uterine Myomas at the Menopause. H. Palm.
- 50 *Melena Neonatorum. Vassmer.
- 51 Elastic Fibers and Vessels of the Uterus. (Ueber die elastischen Fasern und die Gefässe des Uterus.) O. Feis.
- 52 Solid Tumors in Umbilical Cord. (Solid Nabelschnurtumoren.) R. Herweg.
- 53 *Pregnancy after Ventrofixation for Retroflexion of the Uterus. (Schwangerschaft nach Ventrofixation wegen Retroflexio uteri fixata.) R. Birnbaum.
- 54 Blood Findings in Prognosis of Puerperal Fever. (Prognosenstellung beim Kindbettfieber mit Hilfe der Blutuntersuchung.) F. Kirstein.
- 55 *Substitution of Salt Solution for Escaped Amniotic Fluid after Rupture of Fetal Membranes. (Die Erneuerung des abgelaufenen Fruchtwassers nach der E. Bauer'schen Methode.) Schallehn.
- 56 *The Country Doctor as an Obstetrician. (Der praktische Arzt als Geburtshelfer auf dem Lande.) F. v. Winckel.
- 57 *Eclampsia and Meteorologic Conditions. (Eklampsie und Witterung.) R. Schlichting.
- 58 Tubo-uterine Pregnancy. (Ueber tubo-uterine Gravidität nebst Bemerkungen zur Anatomie der Tube.) E. Lehmann.
- 59 Action of Colon Bacillus on Uterine and Vaginal Mucosa. (Experimentelle Untersuchungen über die Einwirkung des *Bacterium coli commune* auf die Schleimhaut der Gebärmutter und der Scheide.) G. Heinricius.
- 60 Suprasymphysal Cesarean Section. (Erfahrungen bei dem suprasymphysären Kaiserschnitt.) E. Runge.

48. **Uterine Myoma at the Menopause.**—Palm describes a typical case of myomatous uterus in which slight symptoms were first noticed during the forties and under expectant and palliative treatment continuing until the age of 60, when the tendency to hemorrhage seemed to be arrested. After five years, however, it was found that a carcinoma had developed at which time conditions were by no means favorable for a major operation. He cites the case as one argument among others in favor of prompt operative treatment of uterine myoma whenever it causes symptoms, especially hemorrhage.

50. **Treatment of Melena of the New-Born.**—Vassmer tabulates the details of 67 cases he has found on record during the last 23 years. The mortality was 32.8 per cent., but it was only 10 per cent. in the 20 cases in which blood was found in the stools alone; 83.3 per cent. in the 6 cases in which it was found in the vomitus alone. Only 8.8 per cent. succumbed in the 34 cases in which gelatin was systematically given, mostly by the mouth and subcutaneous injection. A 1 or 2 per cent. solution was generally used, twice a 5 per cent., and once a

10 per cent., injecting 10 c.c. at a time, the injection of the weaker solutions repeated three or four times a day. As the 10 per cent. solution seemed to be tolerated without harm, he thinks that a small amount of this would be better than larger amounts of a weaker solution. In his own successful case reported in detail he injected 20 c.c. of 2 per cent. solution of gelatin, half in each scapular region, with more by the month, with 3 drops of adrenalin 1 to 1,000. This was repeated twice; there was no albuminuria afterward and the child developed normally.

52. Pregnancy After Ventrofixation for Retroflexion of the Uterus with Adhesions.—Birnbau states that four women have borne children since without mishap or disturbance of any kind out of 20 treated by ventrofixation for a retroflexed and bound-down uterus. In the other cases the peritonitic adhesions and inflammatory changes found in the adnexa amply explained the sterility. When such are found there is not much hope of conception later.

55. Substitution of Salt Solution for Escaped Amniotic Fluid.—Bauer called attention in 1902 to his special inflatable bag with a central open tube through which he injected salt solution to take the place of the amniotic fluid lost by premature rupture of the bag of waters. Peters has also recently made use of a similar procedure. Schallehn here reports 5 cases in addition to the 5 previously recorded in which this measure was applied. In 6 of the cases it was done on account of increasing irregularity in the fetal heart sounds, and the desired effect was realized in 3 of the cases. In a number of others the measure was applied to facilitate version and the result was satisfactory in some. The labor contractions at once grew stronger in nearly every case. He has been timid about applying the measure from fear of inducing atony and atonic hemorrhage. This occurred in one case of contracted pelvis in his experience. Serious atonic hemorrhage developed after delivery which had been preceded by introduction of 500 c.c. of salt solution into the uterus. The immediate effect of the latter was excellent, the heart sounds became regular and labor more vigorous.

56. The Country Doctor as an Obstetrician.—In concluding this practical talk on the exigencies of obstetrics in country practice, von Winckel urges carefully written notes of the various cases. "This will transform your memories into experiences of great practical value," he declares. "No one who has not tried it will believe how important this is and how much can be learned in this way. It is an education in itself to read over and compare carefully written notes and records of this kind."

57. Eclampsia and the Weather.—Schlichting states that damp, bleak weather and the sultry and humid weather seem to have an influence on the incidence of eclampsia, as he shows by tables of the 262 cases of eclampsia at the Berlin Charité in the last four years compared with the weather charts. The cases in which the women present symptoms suggestive of toxemia but without actual eclampsia should be taken into account in study of the connection between meteorologic conditions and eclampsia. The two or three days preceding the actual disease should be included. (All but three of the articles in this number of the *Archiv* had been destined for a *Festschrift* on the occasion of Max Runge's sixtieth birthday, but he died just before this date.)

Archiv für Kinderheilkunde, Stuttgart

LII, Nos. 1-3, pp. 1-240. Last indexed November 13, p. 1698

- 61 Thirty European Cases of Mongolian Spot. (Ueber den sogen. Mongolenfleck auf Grund von 30 Fällen.) A. v. Koos.
- 62 Repeated Attacks of Scarlet Fever. (Wiederholte Erkrankung an Scharlach.) H. Weissenberg.
- 63 Syndrome after Vaccination against Scarlet Fever. (Vaccin-Syndromata.) G. E. Wladimiroff.
- 64 Multiple Malignant Chloromas in Boy of Four. (Zur Casuistik der multiplen bösartigen Geschwülste im Kindesalter.) J. Winocouroff.
- 65 Rubella Simulating Scarlet Fever. (Scharlachähnliche Röteln.) J. Barannikow.
- 66 *Importance of Lime in Pathology of Rachitis. (I. Der Mineralgehalt gesunder und rachitischer Knochen. II. Der Physiologische Kalkbedarf und Rachitis infolge von unbefriedigtem Kalkbedarf.) J. A. Schabad.
- 67 *Diagnosis and Prognosis of Appendicitis in Children. J. E. Zimmermann.
- 68 Autovaccination with Vaccine. L. Wolfer.

- 69 Etiology of Congenital Inspiratory Stridor. J. Rothschild.
- 70 *Pathology of Parasyphilis in Children. A. Baginsky.
- 71 *Elimination of Salt in Nephritis and Edema of Renal Origin. (Kochsalzausscheidung bei Nierenentzündung und die nephrogenen Oedeme.) C. Manshardt.

66. Importance of Lime in the Pathology of Rachitis.—As a further contribution to this subject, Schabad relates the results of research which has shown that the proportion of water in rachitic bones is exceptionally high and that of dry substance exceptionally low. The proportion of ash is also unusually low while the proportion of organic elements is abnormally high. He found that the weight of the skeleton in the first years of life approximates 16 per cent. of the total body weight and the lime proportion of the bones 1.25 per cent. of the total weight, about 7.7 per cent. of the weight of the skeleton. The highest proportionate deposit of lime occurs during the period of most active growth, that is, between the second and fourth month for breast-fed and second and sixth months for artificially-fed infants. About 70 per cent. of the lime in breast milk is retained, but only 30 per cent. of that in cow's milk, owing to the readier assimilability of the breast milk. Although cow's milk contains four times as much lime as breast milk, yet a much larger proportion of the lime in the latter is utilized. Consequently bottle-fed infants are liable to suffer from a lack of sufficient lime, especially when they are given cow's milk much diluted. Even in breast milk there is liable to be a deficit in lime unless it contains the maximal physiologic proportion, the range being from 0.036 to 0.047 per cent. The experimental rachitis induced in animals by depriving them of lime cannot be distinguished either chemically, clinically or macroscopically from spontaneous rachitis, but the microscope shows that it is what he calls pseudorachitic osteoporosis. It is probable that besides genuine rachitis in children there is also a pseudorachitis resulting from inadequate intake or utilization of lime. It cannot be differentiated clinically from true rachitis but it presents certain features characteristic of the experimental type.

67. Appendicitis in Children.—Zimmermann states that operative treatment was required in 60 of the 64 children with appendicitis in Mertens' service at Bremen. The mortality of appendicitis in children is higher than in adults—in his series it was 11.7 per cent.—but he ascribes this to the fact that the affection is not recognized so early in children.

70. Parasyphilis in Children.—Baginsky reviews the field covered by the term parasyphilis, and declares that it is too loose and too broad for further acceptance now that the discovery of the spirochete and serodiagnosis permit accurate differentiation of true acquired syphilis in its second or third stage as well as of the manifestations of inherited syphilis. Only the cases with positive findings should be classed as true syphilis; this will exclude many affections hitherto loosely called parasyphilitic. Recent research has confirmed their various etiology, even when they closely simulate the manifestations of syphilis. This applies particularly, he says, to infantile spinal paralysis, infantilism, hydrocephalus, blood affections, such as hemophilia, severe anemia, congenital heart and other defects, aplasia, etc.

71. Elimination of Salt in Nephritis.—Manshardt tabulates the metabolic findings in ten cases of nephritis in Starck's service at the Kiel hospital for children, and gives for comparison a number of similar series published by other writers. The findings confirm the assumption that the elimination of salt is to a certain extent a reliable index of the functional capacity of the kidneys and of the amount of injury from the nephritis. The retention of salt seems to be the primary phenomenon; water is not retained until after there has been considerable retention of salt in some cases. Then large amounts of water may be retained before any tendency to edema becomes evident. In one such case the weight increased over 13 pounds before the dropsical condition became manifest. The primary retention of salt is thus an important element in the development of dropsy although other factors may cooperate, such as disturbances in the circulation, anatomic changes in the osmotic membranes, altered nutritional conditions in the cells throughout the body in general, and inability of the kidneys to eliminate water.

Archiv für klinische Chirurgie, Berlin

XCI, No. 1, pp. 1-244. Last indexed November 13, p. 1698

- 72 Pathology and Treatment of Umbilical Hernia in the Adult. (Nabelhernien der Erwachsenen.) E. Ruge.
- 73 Snapping Hip Joint. (Schnellende Hüfte.) F. Staffel.
- 74 Ethyl Chlorid-Oxygen General Anesthesia. (Aethylchlorid-Sauerstoff-Narkose.) Lotheissen.
- 75 The Muscular Extension Apparatus of the Knee in Health and after Fracture of the Patella. (Untersuchungen über den normalen Kniestreckapparat mit Rücksicht auf die bei der Patellarfractur bestehenden mechanischen Verhältnisse.) O. v. Frisch.
- 76 *Ultimate Results of Kukula's Method of Fixation of Wandering Kidney. S. Kostlivy.
- 77 *Inflammation of the Cecum. (Acute primäre Typhlitis.) W. Röpke.
- 78 *Operative Treatment of Inguinal Hernia in Children. (Kindliche Leistenbrüche.) P. Kovacs.
- 79 Fracture of the Cuboid. (Isolirte Fractur des Os cuboideum pedis.) C. Goutermann.
- 80 Importance of Suture Technic for Asepsis. (Bedeutung der Suturechnik für die Wundaseptik.) C. E. Heerfordt.
- 81 Volvulus of the Empty Intestine in Starvation. (Volvulus intestinorum als Krankheit des hungernden Menschen.) S. Spasokukozky.
- 82 Numerous Free Bodies in Isolated Deforming Arthritis of the Sigmoid Cavity. (Zahlreiche freie Gelenkkörper bei isolirter Arthritis deformans der Fossa cubitalis.) E. Ruge.
- 83 *Technic and Results of Tendon Transplantation for Quadriceps Paralysis. (Endresultate der Sehnentransplantationen bei Quadricepslähmung.) W. Böcker.

76. Kukula's Method of Fixation for Wandering Kidney.—Kostlivy has been examining the ultimate outcome in 21 cases in which Kukula fastened the wandering kidney by slitting the quadratus lumborum from the twelfth rib down to the junction of the middle and lower thirds of the muscle, and inserting the lower pole of the kidney in this slit nearly to the hilus. An illustration shows the details of the operation, the kidney riding freely in the slit in the muscle. All but one of the patients were women, and in 3 cases the disturbances were first noted just before 20; in another case the kidney became displaced by a trauma after 50; in the others the disturbances developed during the third decade. Trauma was incriminated in 5 cases and childbirth in 2. In only 2 cases was the left kidney affected, including one case in which the left kidney also required fixation after an interval of nearly two years. Complicating appendicitis was observed in 5 cases, once four days after the fixation. In one case with severe general enteroptosis acute fatal arterio-mesenteric incarceration of the stomach followed the second day after fixation. All the other patients were freed from all disturbances. The good results and the simple and rapid technic—the operation requiring only 20 or 25 minutes in all—commend it. Kostlivy asserts, for all cases of wandering kidney causing disturbances. The kidney is fastened a trifle lower than its normal position but this has not proved any drawback. As the kidney bulges each side of the slit it is impossible for it to slip out, and it is held further by the suturing of the edge of the muscle to the fibrous capsule and by the adhesions which form in consequence of the denudation of the surface by stripping off the adipose capsule where the kidney fits into the slit. The detached ends of the fatty capsule thus loosened from the surface of the kidney are brought together behind the slit muscle and sutured together again.

77. Primary Inflammation of the Cecum.—Röpke reports from Riedel's clinic at Jena four cases of this kind and reviews similar cases in the literature.

78. Operative Treatment of Hernia in Children.—Kovacs states that 143 of 144 children have been completely cured of their tendency to inguinal hernia by an operation in Alapy's service at Budapest, and special circumstances were responsible for the one failure. The interval since has been from six months to a year up to several years, and the perfect results encourage operative intervention in every case of inguinal hernia in a child and even in infants unless they are kept scrupulously clean so that a truss can be safely worn. A few minor modifications of the Bassini technic are described and recommended.

83. Ultimate Results of Tendon Transplantation for Quadriceps Paralysis.—Böcker gives the history to date of ten children thus operated on, the results, he asserts, confirming the superiority of the periosteal method of tendon transplantation for quadriceps paralysis and of the Lange and Krause technics.

Berliner klinische Wochenschrift

December 13, XLVI, No. 50, pp. 2225-2280

- 84 Congenital Dislocation of the Hip Joint in Infants. (Diagnose und Behandlung der angeborenen Hüftverrenkung im Säuglingsalter.) G. Joachimsthal.
- 85 Nitrites, Nitrous Acid and Nitric Oxid as Cholera Toxins. (Nitrit, salpetrige Säure und Stickoxyd als Choleragifte.) R. Emmerich.
- 86 Causes of Meat Poisoning. (Zur Frage der Aetiologie der Fleischvergiftungen.) Ridder.
- 87 *Facial Neuralgia. (Behandlung der Gesichtsneuralgie.) W. Alexander.
- 88 Meningomyelitis Simulating Spinal Cord Tumor. K. Mendel.
- 89 Treatment of Placenta Prævia. A. Dührssen.
- 90 Fluctuations in Antitrypsin Content of Human Blood in Disease. (Schwankungen des Antitrypsingehaltes im menschlichen Blut während des Krankheitsverlaufes.) Klug.
- 91 Syndrome of Pseudotumor in the Brain Recurring during Three Pregnancies. (Fall von zuerst in der Schwangerschaft auftretendem und in zwei nachfolgenden Schwangerschaften jedesmal rezidivierendem "Pseudotumor Cerebri.") W. Nolen. Commenced in No. 49.

87. The General Practitioner and Facial Neuralgia.—Alexander remarks that the general practitioner never sees a case of severe chronic trigeminal neuralgia as such patients seek the specialists and surgeons. He describes the pitiable desperate condition of the sufferers, shrinking from eating, bathing and even talking, as liable to bring on an attack, underfed and eczematous, their condition almost excusing the frequent morphin addiction or suicide. He draws the picture from life to emphasize the importance of curing the neuralgia when the general practitioner encounters it in an early stage, and then reviews the present status of treatment after removal of all possible causes, examining the fundus of the eye more than once to exclude optic disturbances. Treatment should begin with a vigorous purge, a general sweat, supplemented by salicylates internally, rest in bed and light diet. These measures should be enforced systematically in all recent cases of neuralgia of the face. If recovery does not follow in a few days the sweating procedure should be repeated and local heat applied for from four to eight hours daily, with a repetition, still more energetic, of the above medication, and perhaps application of galvanic electricity. If benefit is not apparent, the strength of the current can be increased and the sittings lengthened beyond the ordinary dosage. If no improvement is apparent after a week he advises aconitin, pushed to the limit of tolerance, and always accompanied by vigorous purging. The latter benefits by reducing the blood pressure which has a favorable action always on pain, besides clearing the system of elements for antointoxication which is now regarded as a very important factor in the etiology of neuralgia. If this course of treatment fails, there is not much prospect of relief from internal measures, and the patient should be given arsenic for a general tonic while a trial may be made of local injection of large amounts of saline solution (Schleich), but this should not be repeated more than two or three times. Lange's success with local injection of a large amount of a dilute anesthetic mixture in sciatica encouraged its application in trigeminal neuralgia, and the impression to date is favorable although the records include too few cases for decisive judgment. About 30 c.c. of the fluid is injected at the emerging point of the nerve; the foramen is readily found and this measure does not require special skill. It is ineffectual for recurrences after an operation as the scar tissue will not stretch sufficiently to answer the desired purpose. The benefit is generally only transient but the procedure can be repeated often. If all these measures fail, the only recourse is to destroy the nerve, and as injection of alcohol is easier, simpler and less dangerous than neurectomy, it should be given the preference, especially as it can be repeated if the effect wears off in time. It has the further advantage that if the wrong branch was thus treated, it is easy to remedy the mistake. If the peripheral alcohol injection does not prove successful the alcohol should be injected deeper, at the base of the skull. If an injection for each branch still fails to cure, then an intracranial operation should be considered. Even when this becomes necessary, the preceding alcohol injections have allowed such a respite that the patient has been able to take more nourishment and his general health has been so much improved that he is in much better shape for the operation. The latter is indicated when recurrences can no longer be warded off with the alcohol. (The alcohol technic and

experiences with it have been described in THE JOURNAL during the last two years. See especially Patrick's article, Dec. 11, 1909, page 1987, also summaries of articles by others, THE JOURNAL, June 5, 1909, pages 1867 and 1890, and June 13, 1908, page 2029.)

Correspondenz-Blatt für Schweizer Aerzte, Basle

December 15, XXXIX, No. 24, pp. 833-872

- 92 Case of Calcification of the Liver and Other Viscera. E. Hedinger.

Deutsche medizinische Wochenschrift, Berlin

December 16, XXV, No. 50, pp. 2201-2248

- 93 *Myoma and Conception. (Myom und Fertilität.) A. Martin.
94 *Potassium Chlorate in Serodiagnosis of Syphilis. (Chlorsäures Kall bei der Serodiagnose der Syphilis.) L. Brieger and H. Renz.
95 *Anatomic, Clinical and Operative Study of Chronic Posterior Parametritis. L. Fraenkel.
96 Pneumococcus Sepsis and Serotherapy. E. Rodenwaldt.
97 Findings in Central Nervous System of Mice under Arsacetin Treatment: Artificial Dancing Mice. (Weitere Untersuchungen am Zentralnervensystem von mit Arsacetin behandelten Mäusen; sogen künstlichen Tanzmäusen.) P. Röthig.
98 Lipuria. W. Voit.
99 Technic for Production and Use of Compressed Air in Hospitals. (Der Luftkompressor im Krankenhaus.) F. Kuhn.
100 Dental Protheses for Facial Defects. (Anwendungsweise zahnärztlicher Prothetik im Bereich des Gesichts.) H. Schröder.

93. **Myoma and Conception.**—Martin is convinced that neither the presence, location, size or multiplicity of myomas in the uterus has any influence in preventing conception. Rather the reverse, the reaction on the part of the adnexa to the presence of the myoma in the uterus favors conception and explains the delayed menopause and the pregnancies occurring late in life in women with myoma. In his experience the husband was responsible for the sterility in a large proportion of the childless marriages. He has encountered 14 cases in which conception followed removal of the myoma, and he knows of 13 other cases, but several of the women did not marry until after the operation.

94. **Potassium Chlorate in Serodiagnosis of Syphilis.**—Brieger states that in 65 syphilitic and non-syphilitic patients potassium chlorate used in the place of the serum of rabbits prepared by preceding injection of sheep blood corpuscles, gave exactly the same findings as when the classic Wassermann technic was used. The substitution of the potassium chlorate for the specific hemolysin hitherto deemed indispensable materially simplifies the serodiagnosis.

95. **Chronic Posterior Parametritis.**—Fraenkel remarks that this title is a misnomer as there may be no evidences of existing or past inflammation. The trouble is rather a posterior fixation of the lower segment of the uterus from changes in the connective tissue behind the cervix and vagina, the elastic fibers and muscle elements being replaced by connective tissue, especially in the sacrouterine ligaments. The result is a retraction of the ligaments drawing up and fastening the lower part of the uterus and thus entailing various disturbances. He has encountered this condition in every second patient with gynecologic disorders elsewhere and as the chief source of the trouble in every tenth case, out of 9,561 gynecologic patients examined. The diagnosis is facilitated by functional tests of the posterior ligamentary apparatus, especially the lack of relaxation as the uterus is retroverted. When the condition cannot be remedied by removal of the cause, tonics and various measures to promote absorption, etc., he severs the retracted ligament holding the uterus in this abnormal position, and interposes a piece of omentum to prevent the stumps growing together later, which otherwise almost inevitably occurs. His research on animals and on the cadaver has shown that the omentum can be drawn down to the bottom of Douglas' pouch without undue traction. He fastens the omentum to the cervix and vagina on one side and to the rectum on the other, and reports complete success from this intervention in two cases with an interval of nearly four years since. The cause of the condition is very often, he says, the result of the abnormal muscular reaction to masturbation, and abstention from this alone is frequently sufficient to restore conditions to approximately normal under general tonic measures.

Deutsche Zeitschrift für Chirurgie, Leipsic

November, CII, Nos. 4-6, pp. 301-604

- 101 Value of Blood Examination in Surgical Diagnosis. (Wert der Blutuntersuchung in der chirurgischen Diagnose.) F. E. Sondern.
102 *Surgery of the Biliary Apparatus. (Zur Chirurgie der Leber und der Gallenwege.) A. Jenckel.
103 Spontaneous Hemophilia. M. Matsuoka.
104 *Operative Treatment of Facial Paralysis. (Chirurgische Behandlung der Facialislähmung.) A. Jianu.
105 Fracture of Sesame Bones in Thumb and Big Toe. (Beitrag zu den Brüchen der Daumen- und Grosszehen Sesambeine.) R. Moriau.
106 Origin and Treatment of Exostosis of the Calcaneus. (Zur Entstehung und Behandlung des Kalkaneusspornes.) R. Sarrazin.
107 Sarcoma of Rectum. E. Schumann.
108 Advantages and Indications for Appendicostomy. M. Wilms.
109 Some Technical Difficulties in Urethral Distention in Treatment for Hypospadias. (Ueber einige technische Schwierigkeiten, welche der Verlagerungsmethode bei der Hypospadie und anderen Harnröhrenzuständen anhaften: Ausziehungsmethode.) C. Beck.
110 Experiences with Amputation of the Thigh by Gritti's Technic. Mesus.
111 Bismuth Poisoning. (Wismutvergiftung nach Injektion.) M. Matsuoka.
112 Case of Paget's Osteitis Deformans. (Osteomalacia chronica deformans hypertrophica nach Recklinghausen.) Id.
113 Fracture of Outer Condyle of the Tibia. (Fraktur des Condylus externus tibiae.) H. Meerwein.
114 Plastic Periosteum Operation for Abdominal Wall Hernias. (Zur Verwendung der freien Perlostplastik bei der Operation von Bauchwandhernien.) A. Lauen.
115 Operative Treatment of Gastroptosis. S. Weiss.
116 Removal of Lung under Both Differential Pressure Procedures. (Untersuchungen über die Lungenexstirpation unter vergleichender Anwendung beider Formen des Druckdifferenzverfahrens.) S. Robinson and F. Sauerbruch.
117 Spontaneous Laceration of Tendon of Extensor Pollicis. (Spontane Zerreissung der Sehne des langen Daumenstreckers.) zur Verth.
118 Volitional and Habitual Dislocations of the Knee. (Willkürliche und habituelle Luxationen im Kniegelenk.) Id.

102. **Surgery of the Biliary Apparatus.**—Jenckel analyzes the experiences at Braun's Göttingen surgical clinic during the last thirteen years, and the lessons therefrom.

104. **Surgical Correction of Facial Paralysis.**—Jianu gives an illustrated description of a method of fastening to the corner of the mouth a strip of muscle slit up from the masseter, or the strip can be slit and sutured in turn to the superior and inferior orbicularis oris. Jonnesco has performed this operation in a case of facial paralysis following a blow from a board on the left side of the face. The results have been very satisfactory. The saliva no longer drools from the mouth and mastication proceeds normally. The operation is indicated more for paralysis of the lower facial nerve, or this technic might be combined with other procedures.

Fortschritte der Medizin, Leipsic

December 10, XXVII, No. 34, pp. 1281-1312

- 119 *Parotitis with Pneumonia. D. G. Zesas.
120 Treatment of Pathologic Conditions in New-Born Infants. (Therapie der Erkrankungen der Neugeborenen.) P. Sittler.

119. **Parotitis with Pneumonia.**—Zesas has collected 27 cases of parotitis as a complication of pneumonia and adds to the list a case personally observed. The parotitis developed the third day of the disease with a rigor and the temperature ran up to 40.5 C. (105 F.). The swelling spread to include the neck around to the back but there was no aggravation of the pneumonia symptoms. Several deep incisions were made in the region of the parotid gland, but no pus was found and no relief followed, the patient, a woman of 62, succumbing sixteen hours later. No autopsy. In 7 of the cases on record the parotitis was bilateral and led to suppuration with pneumococci in the pus. The prognosis of this complication seems to be graver the earlier its onset. Zesas' advice is not to rely on possible resolution, and not to weaken the patient by letting him lose blood unnecessarily.

Jahrbuch für Kinderheilkunde, Berlin

December, LXX, No. 6, pp. 667-794

- 121 *Severe Digestive Insufficiency in Children after Weaning. (Ueber schwere Verdauungsinsuffizienz beim Kinde jenseits des Säuglingsalters.) O. Heubner.
122 Complements in Breast Milk. (Ueber die Komplemente der Frauenmilch.) W. Koiff and C. T. Noeggerath.
123 Proportion of Hemolytic Complement in Infant's Blood Serum Not an Index of Child's Constitution. (Ist der hämolytische Komplementgehalt des Blutes ein Mass der Säuglingskonstitution?) L. Findlay, R. Fua and C. T. Noeggerath.
124 Importance of Comparing Curves of Weight and Height in Infants and Weakly Children. (Zur Pathologie des Längenwachstums bei Säuglingen und über das Wachstum debiler Kinder.) W. Freund.

121. **Severe Digestive Insufficiency in Children After Weaning.**—Heubner has encountered 10 cases of a chronic nutritional disorder, the same type which Herter in older children calls "infantilism from chronic undernutrition." Herter's views were summarized in *THE JOURNAL*, March 13, 1909, page 913, and Heubner accepts his research as a most valuable contribution to science but rejects his conclusions as to the origin of the disturbances. Five of Heubner's little patients were so severely affected that one died; the others presented disturbances in a milder form. He explains the condition as a congenital defective or feeble state of the digestive apparatus. So long as the child is nursing it is able to cope with the digestive demands, but when it is weaned the insufficiency of the digestive apparatus is soon revealed. His patients were all of the upper classes and each was surrounded with the most scrupulous and devoted care. The digestive apparatus seems to be unable to tolerate milk and carbohydrates; the ferments that normally take charge of the carbohydrates seem to be lacking; the stools are of the lime-soap or fermentation dyspepsia types, but the most striking feature is the repeated sudden drop in weight. The child draws on its own reserves and although every change in diet may cause some slight improvement, yet this is speedily followed by a sudden decline in weight and signs of digestive disorder. The lack of recuperating power is the most serious element; all the organs seem to be objectively sound. He describes the clinical picture in detail and the varied dietetic treatment with which he was able to bridge over this threatening period of months and years, finally bringing the children into a fairly healthy condition. In some cases breast milk was the only anchor that held; one boy of 5 was given a wet nurse and was tided along on breast milk until past 7. He is now, twenty years later, strong and hearty. This was the severest case with a favorable outcome. In all the cases a neuropathic or other morbid inheritance was evident. Schütz has encountered 143 adults and 12 older children with this same syndrome; his experience and conclusions were summarized in *THE JOURNAL*, Aug. 21, 1909, page 662. Like Herter, he ascribes the trouble to a change in the intestinal flora, but Heubner thinks that this is subordinate, the insufficiency of the digestive apparatus being ample to explain the disturbances, and serving as a guide through the months of dietetic treatment.

Medizinische Klinik, Berlin

December 12, V, No. 50, pp. 1877-1916

- 125 *Perforated Gastric Ulcer. (Perforation des Ulcus ventriculi rotundum und seine operative Behandlung.) Steinthal.
- 126 Direct Visual Inspection of Upper Air Passages. (Die direkte Laryngo-Tracheo-Bronchoskopie und ihre Bedeutung für Diagnose und Therapie.) T. Albrecht.
- 127 Modern Diagnostic Methods as Applied to the Stomach. (Magendiagnostik.) K. Kretschmer.
- 128 High-Frequency Currents in Therapeutics. L. Freund.
- 129 Intravenous Injection of Diphtheria Antitoxin. H. Fette.
- 130 Nitrites Not Essential Factor in Cholera. V. R. Stühlern.

125. **Perforation of Gastric Ulcer.**—Steinthal reports 15 cases in which operation followed the perforation within twelve hours in all but 2 instances. In none of the cases was any attempt made to excise the ulcer and the spot was merely drawn up and sutured. Unless the ulcer was in the vicinity of the pylorus, thus creating a tendency to obstruction of the pylorus later, the suturing was not supplemented by a gastroenterostomy. In 4 cases there had been gastric disturbances for years, refractory to long continued treatment, and he urges the necessity for considering operative intervention in such cases without waiting for perforation. One patient in this group had been obliged to use the stomach-tube semi-occasionally for years; she succumbed to a secondary hematemesis while convalescing from the operation for the perforation. Another patient had suffered for years from repeated vomiting daily; a secondary gastroenterostomy was required later in this case. He insists that every case of manifest pyloric stenosis, regardless of the degree of obstruction, should be referred to the surgeon.

Monatsschrift für Geburtshilfe und Gynäkologie, Berlin

December, XXV, No. 6, pp. 675-818

- 131 *The Centennial of Ovariectomy. A. Martin.
- 132 Development of the Hymen. F. J. Taussig.

- 133 Blood Picture in Parturients. (Hämoglobingehalt und Anzahl der roten und weissen Blutkörperchen bei Wöchnerinnen.) J. Ogata.
- 134 The *Bacillus aerogenes capsulatus* in Infections in Obstetric Cases. F. Scheidler.
- 135 Transperitoneal Vaginal Supravaginal Amputation of the Uterus or Hysterectomy. (Eine neue Methode.) A. Rieck.
- 136 Desmoid Vaginal Tumors. E. Kehrer.
- 137 *Clinical Importance of Thrombosis and Present Status of Surgical Treatment. A. Hoffmann.

131. **The Centennial of Ovariectomy.**—The *Monatsschrift* opens with a portrait of the "father of ovariectomy" and Martin adds a historical sketch of the way in which the operation was introduced into Germany and its career there since. He pays high tribute to the courage of McDowell and his imitators at that early day.

137. **Thrombosis.**—Hoffmann's article is a compilation of what has been written in late years on the origin, diagnosis and surgical treatment of thrombosis in otology, gynecology, obstetrics and surgery in general, concluding with an alphabetical list of references filling twelve pages.

Münchener medizinische Wochenschrift

December 7, LVI, No. 49, pp. 2505-2560

- 138 Transmission of Acute Anterior Poliomyelitis to Monkeys and from Monkey to Monkey. (Zur Ätiologie der epidemischen Kinderlähmung.) P. H. Römer.
- 139 *Advantages of Plaster Cast in Early Stage of Acute Anterior Poliomyelitis. (Zur Behandlung des Frühstadiums der Poliomyelitis anterior acuta.) G. Hohmann.
- 140 *Successful Prophylaxis of Postoperative Peritonitis. O. Hoehne.
- 141 Designation of Colors as Test for Intelligence in Children. (Das Farbenbenennungsvermögen als Intelligenzprüfung bei Kindern.) F. Warburg.
- 142 Prevalence of Gastric Ulcer at Munich. C. Kayser.
- 143 Comparative Tests of Methods for Disinfecting Rooms. (Vergleichende Untersuchungen über Raumdesinfektion mit Formaldehyd-Kaliumpermanganatverfahren.) B. Hannes.
- 144 Granular Form of Tubercle Bacilli in Sputum. S. Rosenblatt.
- 145 Advantages of Addition of India Ink to Specimen in Search for Spirochetes. (Ueber den Nachweis der Spirochaete pallida mittels des Tuscheverfahrens.) R. Frühwald.
- 146 Immunity of Hedgehog to Snake Venom, and Lack of Special Resistance to Ordinary Poisons. (Die Immunität des Igels gegen echte Toxine, seine Widerstandsfähigkeit gegen banale Gifte.) A. Strubell.
- 147 *Acute Cryptogenous Gonorrheal Arthritis. O. Mayer.
- 148 *Reply to Criticisms of Ehrlich's Side-Chain Theory. (Kritiker der Seitenkettentheorie im Lichte ihrer experimentellen und literarischen Forschung.) P. Ehrlich and H. Sachs. Concluded in No. 50.
- 149 *Demoralizing Influence on Practical Medicine of Present Tendencies of Manufacturing Chemists and Druggists. (Ueber den verderblichen Einfluss der gegenwärtigen Richtung in den chemischen Fabriken und Apotheken auf die praktische Medizin.) W. Jaworski and E. Miesowicz.

December 14, No. 50, pp. 2561-2616

- 150 *Etiology of Diabetes Insipidus. A. Schwenkenbecher.
- 151 *Influence of Charcoal on Cancer Cells. (Findet eine Beeinflussung des Krebses durch Kohle statt?) A. Sticker.
- 152 Importance of Fibrin for Arrest of Postpartum Hemorrhage. (Experimentelles über die Bedeutung der Gerinnungskomponente für den postpartalen Blutstillungsmechanismus.) M. Neu.
- 153 Relative Indications for Forceps in Delivery. (Bedeutung der relativen Zangenindikation für Unterricht und Praxis.) H. Fehling.
- 154 *Deep Local Application of Heat. (Diathermie, Transthermie, Thermopenetration.) F. Nagelschmidt.
- 155 *Improved Means of Roentgen-Ray Dosage. G. Schwarz.
- 156 Advantages of Ichthyol in Treatment of Furuncle in Outer Ear. D. Bruch.

139. **Immobilization in Treatment of Early Stage of Acute Poliomyelitis.**—Lange has applied a plaster cast in two cases of acute poliomyelitis in children between one and two years old. The paralysis developed suddenly in the night, after a febrile phase. A week or so later the pain was still severe and the children screamed at the slightest touch. The plaster cast was applied as for spondylitis and the relief was prompt.

140. **Successful Prophylaxis of Postoperative Peritonitis.**—*THE JOURNAL* has previously mentioned the good results attained by Glimm with prophylactic injection of camphorated oil into the peritoneum directly after an operation to ward off peritonitis. His experimental and clinical research demonstrated the feasibility and efficiency of this measure. Hoehne here reports further work in this line, confirming the facts but improving on the technic. He found by experimental tests that the success of the measure was due to the production of an aseptic inflammatory reaction to the injection of a harmless substance. By giving the substance time to induce the maximum of the reaction the effect was immeasurably enhanced. Consequently in the clinic he makes the intraperitoneal injection three or four days before the contemplated operation. He now has a record of 42 cases in which this was done, including 24 of cancer of the uterus or vagina, 6 of

pyosalpinx, and the others of various suppurative processes. Of the different substances tried, camphorated oil proved the most satisfactory, and he injects 30 c.c. of warmed, 10 per cent. camphorated oil, under local anesthesia, directly into the peritoneal sac, on the median line, just below the umbilicus, the trocar and technic generally being about the same as for lumbar puncture. A case is described here in detail to show the workings of this prophylactic measure. The patient reacted to the injection with only moderate abdominal pain and slight tenderness, the pulse and temperature being unmodified. At the laparotomy four days later the cancerous uterus was removed and the peritoneum was seen to be covered with a whitish coating, readily wiped off, while there were only minimal accumulations of oil in the lowest recesses. The microscope showed that the oil was sterile but clogged with fibrin and polynuclear leucocytes gorged with particles of oil. Two loops of the peritoneal exudate were transferred to an agar plate culture of colon bacilli and it displayed a marked influence in inhibiting the growth of the bacilli.

147. Acute Gonorrheal Polyarthrititis.—The case here reported shows that this affection may deceptively simulate acute articular rheumatism in its onset and course. Seven joints were affected from the first and the swelling and inflammation in the environment became constantly more pronounced. One joint developed a suppurative process. No trace or history of previous gonorrhea could be discovered; the patient was a young soldier, and differentiation was possible only by the high agglutinating power of the serum, 1 to 2,000, for the strain of gonococci cultivated from the patient's finger lesion. The case emphasizes the importance of bacteriologic as well as microscopic examination of suppuration occurring in the course of supposed articular rheumatism, especially when there is a possibility of claim for damages from occupational injury.

148. The Side-Chain Theory to Date.—Ehrlich and Sachs explain the side-chain theory by the light of their latest experimental and literary research, mostly in reply to the criticisms of Bang and Forssmann.

149. Deplorable Influence on Medical Practice of Present Tendencies Among Manufacturing Chemists and Druggists.—This article was the oration at the Polish congress for internal medicine held at Cracow last year. Jaworski goes over much the same ground as that traveled by the Council on Pharmacy and Chemistry and presents the matter in an impressive manner. He emphasizes particularly the great harm done by the manufacturers choosing names for their pharmaceutical preparations which proclaim their destined uses. No one except a physician, he says, would think of calling for phenolphthalein, for instance, when needing a purgative, but when it is labeled "purgin" and the advertisements of it face one on every hand, the sales run up. The only two drugs which actually deserve a name of this kind, he asserts, are quinin and mercury; they might appropriately be termed "anti-malarin" and "antisiphilitin" if it were not for the fact that these drugs are useful in many other conditions than malaria and syphilis. He gives a long list of over a dozen different groups of proprietaries whose names suggest the disease for which the manufacturers claim they are specifics. Physicians feel, he adds, that they must prescribe the newest and latest proprietary to show that they are "up to date." He asks why the same unfavorable criticism should not be applied to those who are lauding to the skies these products of the manufacturing chemists as to physicians who practice unethical advertising methods. The manufacturers regard the advertising and landing of their products in the medical press as an authoritative endorsement of their efficiency. But in reality physicians cannot rely on the quality, dosage or on the action of the proprietaries so extravagantly advertised, and they should throw all their influence against this pharmaceutical swindle, even if they know that by so doing they expose themselves to the danger of a damage suit brought by the manufacturers for thus injuring their business. Physicians, he declares, are allowing outsiders to step in and take out of their hands the weapons they need for the battle against disease and death, and manufacturers take and use these weapons merely for commercial purposes for their own

selfish benefit. This evil of our day can be effectually combated by passive resistance and silence, but it has assumed such dimensions now that active measures are necessary at first. He then proposed a series of resolutions for the vote of the congress protesting against specifically descriptive names for proprietaries, insisting on the publication of the formula and chemical composition, and on the exclusion from the medical press of all substances advertised to the public, denouncing the prescribing of any proprietary whose formula is not published, and also denouncing the getting up of scientific articles or writing testimonials, by any physician, on any remedy whose composition is not known or whose composition may be known but its specific action is lauded in advance. Samples of such a remedy sent to the physician should not evoke a response. Druggists who compound such specific remedies or sell them should be regarded as pandering to quackery. Efforts should also be made to secure legislative restriction of the sale of alleged specific commercial remedies.

The congress voted affirmatively on these resolutions and also for the organization of state institutes for testing, controlling and publishing the results of investigation of all the new remedies. It was voted further that the code of ethics of the various medical organizations should be modified to conform to the above resolutions and that they should be brought up for discussion at the next international medical congress. Teachers in medical schools were also urged to call the attention of medical students to the evils complained of.

150. Diabetes Insipidus.—Schwenkenbecker describes a severe and typical case of what was supposed to be idiopathic diabetes insipidus but which turned out to be a polydipsia of psychic origin. He warns that this form should be suspected whenever the patients drink more than 10 liters of fluid a day, and drink soiled water, urine, etc., when drinking water is denied them. Another sign of this form is increased or perverted hunger and when the thirst can be quenched only by cool water.

151. Influence of Charcoal on Cancer.—Sticker relates a number of experiences in which rapidly growing round-celled sarcomas in dogs were completely checked in their further growth by application of charcoal. Mouse cancer was not affected to the same extent. The German cancer research central committee in 1902 started a collective inquiry in regard to the prevalence of cancer in coal miners, but the data are not sufficiently uniform for comparative study and Sticker urges further investigation in this line, noting separately the various kinds of coal and charcoal, the various kinds of cancer and the different modes of contact with the coal among the various workers.

154. Thermopenetration.—Nagelschmidt reviews the indications for this method of applying graduated heat to tissues at any given depth. It was mentioned in *THE JOURNAL*, Dec. 18, 1909, page 2139.

155. Improved Means and Terms for Roentgen-Ray Dosage.—Schwarz is in charge of the Roentgen institute connected with v. Noorden's clinic at Vienna, and he announces a new method of dosage for the x -rays as much more reliable and simpler than others in vogue. It is based on the fact that the Fowler-Eder fluid (a mixture of 2 parts concentrated solution of ammonium oxalate and 1 part of a concentrated solution of mercury bichlorid) is decomposed by the x -rays, with precipitation of calomel. He applies this by using a small capillary tube with a rubber top, something like a medicine dropper. The capillary filled with the fluid shows the effect of the rays by becoming turbid at one-third of the dosage which induces falling out of the hair on the scalp without inflammatory phenomena. He calls this dose a "kalom" (from *Kalomel*) and has no other gradation. When the fluid registers one kalom, that is, is beginning to become turbid, the fluid is ejected and fresh taken, repeating this until the required number of kaloms has been reached. There is no scale; limpid and turbid are the only grades.

Wiener klinische Wochenschrift, Vienna

December 16, XXII, No. 50, pp. 1737-1776

- 157 Mouse Cancer. (Mäusekarzinom.) H. Albrecht and V. Hecht.
158 Present Status of Trachoma Research. (Trachomforschung.) K. Lindner.

- 159 *Serotherapy of Typhoid and Influence on Agglutination Findings. (Beobachtungen bei der Serumbehandlung des Abdominaltyphus mit besonderer Berücksichtigung der Gruber-Widalschen Reaktion.) A. Herz.
- 160 Fibromas in Nasopharynx. (Ueber Nasenrachenfibrome.) H. Koschier.
- 161 Experimental Research on Phytotoxins and Agglutinins. (Zur Kenntnis der Immunantiphytalbumine.) H. Raubitschek.

159. Serotherapy of Typhoid and Its Influence on Agglutination.—Herz does not attempt to draw any decisive conclusions from his experience with serotherapy in twelve cases of typhoid but his impressions are favorable. He used the antitoxic serum prepared by Kraus' technic and calls attention to the increase in the agglutinating property of the patients' serum noticed regularly after injection of the curative serum. Nothing of the kind was observed in a corresponding number of controls. It seems possible, he says, that this increase in the agglutinating properties after injection of antityphoid serum, perhaps also of normal horse serum, may prove a differentiating sign available in the earliest stages of typhoid before the ordinary test elicits a positive response. There were no positive findings in any febrile infectious disease except typhoid.

Zentralblatt für Gynäkologie, Leipsic

December 18, XXXIII, No. 51, pp. 1729-1752

- 162 Cesarean Section by Incision in the Flank. (Der Flankenkaiserschnitt.) E. Solms.

Zentralblatt für Chirurgie, Leipsic

December 18, XXXVI, No. 51, pp. 1745-1776

- 163 Bloodless Correction of Traumatic Coxa Vara and Coxa Valga. (Das unblutige Redressement in der Behandlung der Coxa vara und valga traumatica.) Sprengel.

Gazzetta degli Ospedali e delle Cliniche, Milan

December 12, XXX, No. 148, pp. 1561-1576

- 164 Formation of Accessory Foci in Typhoid and Connection with Agglutinating Power of Serum. (Considerazioni sul problema immunitario nel corso dell'infezione tifica.) C. Quadrone.

December 14, No. 149, pp. 1577-1584

- 165 Perforation of Gastric Ulcer Simulating Liver Colic. V. Baiocchi.

Riforma Medica, Naples

December 13, XXV, No. 50, pp. 1373-1400

- 166 Kala-azar in Sicily. R. Feletti.
- 167 Insular Sclerosis in Girl of 3. (Caso di sclerosi a placche infantile.) S. Cannata.
- 168 Traumatic Separation of the Sutures in Infant's Skull. (Disgiunzione suturaria fronto-parietale traumatica del cranio infantile.) G. Diatti.

Hygiea, Stockholm

November, LXXI, No. 11, pp. 1137-1248

- 169 Syphilitic Stenosis of Trachea or Bronchus. (Om syfilitisk tracheobronchialstenos.) J. Tillgren.
- 170 Sympathetic Ophthalmia. (Två fall af sympatisk oftalmi med ovanlig etiologi.) A. Troell.

Ugeskrift for Læger, Copenhagen

November 25, LXXI, No. 47, pp. 1279-1312

- 171 *Germ Carriers and Prophylaxis of Transmissible Diseases. (Om Infektionsbærere.) T. Madsen.

December 2, No. 48, pp. 1313-1346

- 172 Diphtheria Epidemic Arrested by Preventive Injections of Antitoxin. Struckmann.
- 173 Removal of Adenoids and Enlarged Tonsils Effectual in Curing Certain Diphtheria Bacillus Carriers. (Om Uskadelligjørelse af Difteriinfektionsbærere.) H. Sygind.
- 174 Veronal in Delirium Tremens. A. Friedenreich.

171. Healthy Bacillus Carriers and Distributors.—Madsen gives an interesting historical sketch of what has been learned in regard to the persistence of typhoid, diphtheria and plague bacilli, meningococci and of cholera germs after recovery from the disease or in persons who have never had it. He relates a number of instances of epidemics from this source in the Scandinavian countries and then discusses what shall be done with these germ carriers. For the community, the ideal would be to isolate the infection carriers until the microbes can no longer be found in them, and this can be done with cholera and plague as the longest interval in which germs have been found was 94 days. But the persistence of germs in the other diseases renders this impossible. The only measures that can be taken are to have all persons with infectious diseases placed in isolation hospitals and detained there until they lose the germs. Especially after diphtheria, the Danish hospitals seek to retain the patients until three inoculations

with two-day intervals show freedom from bacilli, which will be the case in a month in 80 per cent. After the month the patient is discharged on his demand, after careful instruction including the parents, as to the possible danger of infection in case of persisting bacilli. Especial pains are taken to learn whether the discharge of the patient will prove a danger only to the immediate family and small circle. In this case the patient is warned of the possible peril and taught how to render the dejecta harmless, to wash the hands after defecation and before preparation of food, and is warned of the peril in kissing, coughing, etc. This applies also to healthy bacillus carriers. A great and important task thus rests on physicians and hospitals; it requires much tact as it is necessary to impress the directions so forcibly as to ensure their being followed, while on the other hand avoiding frightening too much the persons involved. The affair assumes another aspect when the bacillus carrier is liable to contaminate a larger circle, as for instance in the case of a teacher, a nurse, a cook, or employees in dairies, bakeries, etc. In these cases the community has a right to insist on abstention from these occupations until free from the germs. The hospitals must also watch over their subordinate personnel that they do not spread infection; some of them must be germ carriers. Chronic bacillus carriers should be carefully trained in precautionary measures and cleanliness, and he quotes from the German regulations which keep careful record of all known typhoid bacillus carriers, with efforts to warn them away from occupations liable to contaminate large numbers. This police oversight is scarcely possible to the same extent elsewhere, but the district physicians should keep bacillus carriers in view and physicians should endeavor to find out the bacillus distributors who are responsible in many cases for infection. Systematic search for the source of infection in every case and discovery of germ carriers will certainly prove an important aid in the prophylaxis of infectious diseases. The idea that the healthy germ carrier question is beyond practical solution is unworthy of a physician, and it will soon have to be discarded both by the community and the medical profession. In Germany, after the bacillus carriers had been sought and trained, the number of infections from this source dropped to a fifth of what it had been before, showing that such efforts are not fruitless.

Books Received

All books received are acknowledged in this column and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender. A selection will be made for review in the interests of our readers and as space permits.

SPONDYLOTHÉRAPIE: Spinal Concussion and the Application of Other Methods to the Spine in the Treatment of Disease. By Albert Abrams, M.D., Consulting Physician to the Mount Zion and French Hospitals, San Francisco. Cloth. Pp. 420, with 100 illustrations. Price, \$3.50. San Francisco: The Philopolis Press, 1909.

MEDIZINISCHES TASCHENLEXIKON IN 8 SPRACHEN (deutsch, englisch, französisch, italienisch, japanisch, russisch, spanisch, ungarisch). Bearbeitet und herausgegeben von Dr. J. Meyer, Arzt in Berlin. Flexible leather. Pp. 788. Price, 16 marks 61 pfennige. Berlin: Urban and Schwarzenberg, N. Friedrichstrasse 105b, 1909.

LA CURE RADICALE DE LA HERNIE INGUINALE: Leçons professées à l'Hôtel-Dieu. Par le Docteur Lucas-Championnière, Chirurgien Honoraire de l'Hôtel-Dieu, Membre de l'Académie de Médecine. Paper. Pp. 192, with 53 illustrations. Price, 3.50 francs. Paris: G. Steinheil, Editeur, 2 Rue Casimir-Delavigne, 1909.

FUNDAMENTALS AND REQUIREMENTS OF HEALTH AND DISEASE. By Thomas Powell, M.D., Member of the American Public Health Association. Half Morocco. Pp. 602, with illustrations. Price, \$5. Los Angeles, Cal.: Powell Publishing Company, [1909].

SMALLPOX AND VACCINATION IN BRITISH INDIA. By S. P. James, M.D., London, D.P.H., Major, Indian Medical Service. Cloth. Pp. 105, with 14 diagrams. Price, 7 shillings 6 pence. London: W. Thacker & Co., 2 Creed Lane, 1909.

FOURTH ANNUAL REPORT OF THE NATIONAL FIRST AID ASSOCIATION OF AMERICA. [Executive Office, 6 Beacon Street, Boston.] Incorporated under the Laws of the District of Columbia. Paper. Pp. 38. Boston, 1909.

THIRTEENTH ANNUAL REPORT OF THE LOOMIS SANATORIUM FOR THE TREATMENT OF TUBERCULOSIS. For year ending Oct. 31, 1909. Paper. Pp. 77, with illustrations. Liberty, Sullivan County, New York.

ANNUAL REPORT OF THE ASYLUM FOR CHRONIC INSANE Milwaukee County. For the year ending Sept. 30, 1909. Paper. Pp. 51, with illustrations. Milwaukee.

VITAL ECONOMY. By John H. Clarke, M.D. Cloth. Pp. 119. Price, 50 cents net. New York: A. Wessels, Newold Publishing Co., 1909.

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Original Articles

A PLEA FOR MORE CONSERVATIVE TREATMENT OF SARCOMA OF THE LONG BONES *

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Two years ago¹ I published a paper on sarcoma of the long bones based on seventy-one personal observations. In this paper I gave a brief summary of the results of modern methods of treatment of sarcoma of the long bones. These results were by far the most disappointing in the whole field of modern surgery. Taking the femur for example, Butlin found 68 cases of sarcoma of the femur (subperiosteal), in which amputation at the hip-joint or just below the trochanter had been performed, and only one patient remained well beyond three years, which is sufficient proof of the practical failure of surgery alone in this condition.

In my former paper¹ I proposed a new method of treatment with the hope, not only of saving more lives, but, in a certain proportion of cases, of saving the limbs as well. The number of cases so treated up to that time was far too small to be convincing. The older cases have now been under observation for a longer time, and I have been able to add nineteen new cases, making a total of ninety cases of sarcoma of the long bones, which forms the basis of the present study.

My results in the cases treated by the older and more radical methods of exarticulation or high amputation correspond very closely to those of the gloomy statistics of Butlin. The six patients on whom I performed amputation at the hip-joint for sarcoma of the femur, although they all recovered from operation, died, with one exception, from local or general recurrence within a few months to a year and a half after operation, and the sixth case was not traced. Dr. Nanerède,² of Ann Arbor,

has performed fifteen amputations at the hip-joint for sarcoma of femur, with not a single cure.

The results in cases of sarcoma of the humerus have been nearly as bad.

I cannot agree with the opinion of Dr. Bloodgood, that myeloid sarcoma of the long bones is comparatively benign, nor do I believe that it is possible to make a fairly accurate prognosis from the microscopic findings in the various types of sarcoma of the long bones. While it is true in a general way that infiltrating periosteal sarcomas of the femur and humerus are the most malignant of all known tumors, a careful analysis of any extensive statistics will show that the final results in the myelogenous or central sarcomas in these particular bones are but little better than in the periosteal type. This has been my experience and is strikingly confirmed by the results at Bruns' clinic, published by O. Kocher.³

While in carcinoma it is not possible to consider a patient cured who has remained well less than three years, the after-histories of collected cases of sarcoma show that in sarcoma of the long bones, if recurrence does occur, it usually takes place within a comparatively short time, in a very large percentage within the first six months and a very small percentage after the first year. There are a few exceptional cases in which recurrence has taken place a long period after operation. Nasse reports two cases recurring after periods of four years eight months and two years four months; Reinhardt published three cases which recurred two, three and four years after operation. Borek reports a case of sarcoma of the humerus, recurrent after eleven years.

I have observed one case of myeloid giant-celled sarcoma of the tibia in which the patient died of lung metastases five years after operation, and one case, primary in the bones of the foot, recurrent in the humerus twelve years afterward.

KOCHER'S STATISTICS OF CASES AT BRUNS' CLINIC

That the prognosis of sarcoma of the long bones depends, as Bloodgood believes, largely on the microscopical type of growth, being very good in myelogenous and extremely bad in periosteal sarcoma, is not confirmed by the very carefully prepared statistics of O. Kocher³ covering ninety-three cases observed at Bruns' clinic from 1860 to 1903. Of a total of 93 cases of sarcoma of the long bones, 28 have to be excluded because the origin of the sarcomas is not definitely stated in the histories. This leaves 65 cases, of which 33 were of myeloid and 32 of periosteal origin. Of the 33 cases of myelogenous sarcoma observed, 4 have to be excluded because they were either too far advanced for operation or the patients refused it. Of the remaining 29 cases, 17 were treated by amputation, 7 by exarticulation, 4 by resection.

* Read in the Section on Surgery of the American Medical Association, at the Sixtieth Annual Session, June, 1909. Owing to lack of space the article is here abbreviated. It appears in full in the Transactions of the Section and the author's reprints.

1. Coley, W. B.: *Ann. Surg.*, March, 1907.

2. The terrible malignancy of sarcoma, not only of the long bones, but of other bones as well and the disheartening prognosis from operative treatment, has never been more strongly emphasized than by Dr. C. B. G. De Nanerède, of Ann Arbor, Mich., in his presidential address before the meeting of the American Surgical Association in Philadelphia, on June 3, 1909. After a most careful examination of all the recorded cases in the literature, he was able to find 66 cases of primary excision of the scapula for sarcoma which were reported with sufficient detail for the purpose of a study. In this series of cases only one patient was known to have been permanently cured, and this one, as Dr. Nanerède told me after the meeting, he had then just learned, would have to be excluded, as an interscapular thoracic amputation was performed instead of a simple excision of the scapula. Dr. Nanerède stated that these results had been entirely contrary to what he had anticipated in the beginning of his investigations—that he had had no idea that the prognosis was so absolutely bad.

3. Kocher, O.: *Beitr. z. klin. Chir.*, 1906, 1, 113.

Of the 17 cases of myeloid sarcoma treated by amputation, the final results are known in only 11, namely:

- Case 1.—Femur; amputation; death fifteen years afterward, of another trouble.
- Case 2.—Tibia; amputation of femur; death four and one-quarter years later, from pleurisy; "probable recurrence."
- Case 3.—Tibia; amputation; death twelve days after operation.
- Case 4.—Femur; amputation; death one month later, due to metastases of liver, lung and dura mater.
- Case 5.—Tibia; amputation of femur; death within two months, lung metastases.
- Case 6.—Tibia; amputation of femur; death within two months, lung metastases.
- Case 7.—Femur; recurrence within seven months in lymph-glands and lungs; death within nine months.
- Case 8.—Tibia; amputation of femur; death after eleven months, of metastases.
- Case 9.—Femur; amputation; death within two years; tumor in arm.
- Case 10.—Tibia; amputation of femur; death within five years; metastases in spine.
- Case 11.—Tibia; scraping; recurrence within one month; amputation of femur; death after twenty years; suicide.

The foregoing abstracts show four patients to have remained free from recurrence from four and one-quarter to twenty years; two of these are known to have died of other diseases.

In the seven cases of myeloid sarcoma of the extremities in which exarticulation was performed the results were as follows:

- Case 12.—Femur; exarticulation hip-joint; death on day of operation from collapse.
- Case 13.—Femur; exarticulation; death same day; collapse.
- Case 14.—Femur; first amputation; two years later exarticulation for recurrence; death on day of operation, collapse.
- Case 15.—Humerus; exarticulation; recurrence in two months; death within four and one-half months; metastases.
- Case 16.—Humerus; exarticulation; death one-half year later of local return.
- Case 17.—Humerus; exarticulation; recurrence in two months; death in six and one-half months, of lung metastases.
- Case 18.—Humerus; exarticulation; death two years later of recurrence.

It will be seen that all of these patients died either in direct consequence of the operation, in collapse or of recurrence within a short time after operation.

In the four cases in which the conservative operation was done the results were as follows:

- Case 19.—Radius; resection of radius and ulna; patient well twenty-seven years without recurrence.
- Case 20.—Ulna; resection; patient well, seventeen years without recurrence.
- Case 21.—Tibia; resection of tibia and fibula; death three weeks later from sepsis.
- Case 22.—Fibula; resection; amputation of femur one year later for local recurrence.

In another case (23), a myelogenous sarcoma of the tibia, the tumor was curetted out; the patient was well three years later.

Of the 32 cases of periosteal sarcoma of the extremities, three have to be excluded for various reasons, leaving 29. In 25 of these amputation was performed, in 2 exarticulation, and in 1 each, resection and excision.

Of the patients subjected to amputation, four remained free from recurrence upward of three years; two, three months and nine months, respectively, too

recent to be considered. All of the remainder have died of the disease despite operation.

- Case 24.—Femur; amputation; patient living six years later.
- Case 25.—Fibula; amputation; patient living and free from recurrence eight years later.
- Case 26.—Femur; amputation; patient free from recurrence four years later.
- Case 27.—Tibia; amputation of femur; patient free from recurrence three and one-quarter years later.
- Case 28.—Femur; amputation; patient free from recurrence nine months later.
- Case 29.—Tibia; first extirpation, then amputation for local recurrence; no recurrence three months later.
- Case 30.—Tibia; amputation of femur; death within sixteen days from metastases in lung.
- Case 31.—Humerus; amputation; death within eighteen months.
- Case 32.—Tibia; amputation of femur; death within four months.
- Case 33.—Femur; amputation; death four months later from lung metastases.
- Case 34.—Femur; amputation; death from metastases.
- Case 35.—Tibia; amputation of femur; death within six months of "pleurisy."
- Case 36.—Femur; amputation; death within nine months of lung metastases.
- Case 37.—Tibia; amputation of femur; death six months later.
- Case 38.—Tibia; amputation of femur; death within six months of lung metastases.
- Case 39.—Fibula; amputation; death one and a half years later.
- Case 40.—Femur; amputation; death after one year from local recurrence.
- Case 41.—Femur; amputation; death within one and a half years of "consumption."
- Case 42.—Radius, amputation antebrachial; death, two and a half years later from lung metastases.
- Case 43.—Humerus; amputation; death after one and a years.
- Case 44.—Tibia; amputation of femur; death from local recurrence within ten months.
- Case 45.—Tibia; amputation of femur; death within one and a quarter years, local recurrence.
- Case 46.—Radius; antebrachial amputation; death within four and a half months.
- Case 47.—Tibia; amputation of femur; death within two and a half months.

In two patients on whom exarticulation was done both died within three months; one had a sarcoma of the femur, the other of the humerus. Also the two patients treated by conservative methods, i. e., resection and extirpation, died, one, at the end of seven months, of local recurrence; the other, twelve days after operation, of tetanus.

Summing up, we find that in 53 cases of sarcoma of the long bones there were 9 cures, or 17 per cent., after three years. Of these, 5 were myelogenous and 4 periosteal sarcoma. In the former, 2 cures resulted after amputation; 2 after resection and 1 after curetting, while in periosteal sarcoma cures were obtained only after amputation. Of these cures only three referred to the femur and none to the humerus, which agrees fully with the experience of Butlin, that sarcoma of the femur and humerus are among the most hopeless of all conditions. No less than eight of the 33 cases of myeloid or central sarcoma died of metastases.

DIAGNOSIS

While I do not think it necessary to take up in a general way the question of the diagnosis of sarcoma of the long bones, as it was rather fully discussed in my earlier

papers,⁴ there are certain points on which further experience has forced me to lay greater emphasis. These I will consider briefly:

About two years ago I was inclined to regard the *x*-ray photograph of but minor help in making the early diagnosis of sarcoma of the long bones. I now believe that there are certain conditions in which it is of greater aid than I at that time realized. One of these conditions is myositis ossificans, which, in the two instances which have come under my personal observation, very closely simulated sarcoma. In both cases the *x*-ray plates helped me very much in making the differential diagnosis of this condition from sarcoma. These cases are of sufficient interest to warrant a more detailed report. The first case I referred to briefly in my paper, read before the American Orthopedic Association, Washington, May 8, 1907, was as follows:

The patient, a boy of 19, had always been in good health up to November 17, 1906, when he received an injury to his right thigh while playing football. There was no external evidence of the injury noticeable that night, but the next day there was some swelling; two to three days later the leg became stiff, and the stiffness seemed to be confined to the region of the quadriceps muscle, greatly limiting the flexion at the knee. There was no pain at any time, but the swelling steadily increased in size. The patient at first believed the swelling to be in the muscle rather than the bone. The swelling slowly began to get hard and contract; the patient's general condition remained unimpaired. He was examined by a number of prominent physicians and all agreed that the trouble was sarcoma and amputation was advised. My opinion was asked by letter, and I replied that if the trouble was sarcoma I would advise a course of the toxin treatment before amputation. Thereupon the toxins were administered for about four weeks with little reaction and no apparent effect on the size of the tumor. I declined to give further advice without seeing the patient, and he consulted me early in April, 1907. Physical examination showed a tumor situated in the middle and lower thirds of the anterior portion of the shaft of the left femur. The consistency of the tumor was extremely hard, much harder than usual in periosteal sarcoma. The *x*-ray photograph showed a sharp line of demarcation between the tumor and the shaft of the femur along the periosteal line, with no indentations in the periosteum. I made the diagnosis of myositis ossificans, which was confirmed by exploratory operation under ether. I advised no further treatment. The patient has continued in good health up to the present time, two and a half years later.

The second case came under my observation a short time ago.

The patient, Miss A., aged 26, had always been in good health; negative family history. Three years ago, while tobogganing she received a very severe blow on the lower and outer part of the left thigh, just above the knee. After the immediate effects of the contusion had subsided she noticed nothing unusual until about two years later, when, on bathing, she saw that the left thigh just above the knee was somewhat larger than the right. There was no pain; no soreness, no lameness, the increase in size being the first sign she noticed. She consulted a physician who found a slight bony enlargement above the outer condyle of the left femur and an *x*-ray photograph was taken at that time, which showed a small bony tumor projecting about half an inch beyond the normal border of the shaft of the femur, not extending to the joint. This increased in size very slowly, was not painful and caused her no trouble. On Feb. 9, 1909, the patient consulted a very prominent surgeon of the middle West, who pronounced it subperiosteal sarcoma and advised hip-joint amputation. She was made very nervous by this decision and went abroad for two months to get in better physical condition. On her return, on May 3, she again consulted another very prominent physi-

cian who stated that she was suffering from a fibrosarcoma of the femur of periosteal origin. He stated that there was no possible doubt of the diagnosis and advised immediate amputation below the trochanter and urged this being done without a day's delay. She came to me for advice on May 5, 1909. Physical examination showed the patient in good general condition; examination of the left thigh showed a hard, bony tumor in the lower third of the left femur, smooth in outline, extending upward about two and a half inches, most marked on the outer side. Although it extended apparently nearly around the bone, the skin was perfectly normal in appearance and there were no enlarged veins. Comparison between the *x*-ray taken a year ago and that of a few days ago showed some increase in size and extension across toward the other side of the femur; no involvement of the joint.

In both these cases there was a well-defined sharp line of demarcation between the bone and the tumor, differing strikingly from the irregular indentation almost always present in the case of sarcoma. The consistency of the tumor, too, was much harder and more bony in character than in true sarcoma. I believed the tumor to be some type of myositis ossificans originating from the trauma, and not sarcoma. I advised an exploratory incision under general anesthesia and removal of a section of the tumor for microscopic examination. This was done on May 7. An incision three inches in length was made over the external condyle, the most prominent part of the tumor; on cutting through the fascia overlying the muscles and separating the latter, no periosteum could be recognized, a hard, bony tumor was found in close proximity to, almost infiltrating the muscles. A portion of this was removed with a chisel. Macroscopically it had every appearance and the consistence of cancellous bone tissue, deep red in color and in no way resembling the grayish-white appearance of sarcoma. This was sent to Dr. James Ewing, professor of pathology at Cornell University, who, after decalcification, made a careful examination and reported as follows:

"Seven different portions of the material received are under examination. In none of them is there the slightest trace of any form of sarcoma. The tissue shows chronic osteitis and myositis, such as commonly arises after traumatism to the bone or periosteum. The changes in the muscle are not those typical of myositis ossificans and yet new bone appears to be forming in close proximity to the atrophying muscle. I should prefer to give the diagnosis of chronic formative osteitis."

While I am a firm believer in the local infectivity of cancer of all varieties and for many years have emphasized the importance of taking precautions against infecting freshly cut surfaces during operations for removal of malignant tumors, or in exploratory operations for diagnostic purposes, there is at present a tendency to overestimate this danger. Although I cannot say that there is no danger from such exploratory incisions, I believe that such danger is infinitely less than the danger of waiting until the clinical diagnosis of sarcoma, especially of the long bones, has become certain.

This danger, however, by no means warrants the amputation of a limb, as might have been done in the two cases I have narrated, had not an exploratory operation been performed. In both cases the positive diagnosis of sarcoma had been made by surgeons of large experience.

It might be said, on the other hand, that if an exploratory operation has to be performed, the patient should be prepared for the amputation should examination of frozen sections made on the operating table confirm the diagnosis. There are two objections, however, to this procedure. 1. The highest authorities in pathology are unwilling, in many cases, to make a positive diagnosis from frozen sections. 2. Such a procedure would have been impossible in the two cases which I have described, for the reason that no examination at all could be made without decalcification, which requires upward of a week before sections can be made.

4. Coley, W. B.: Surg. Gynec. and Obst., February, 1908.

FINAL RESULTS OF SARCOMA OF THE LONG BONES PERSONALLY OBSERVED

FEMUR CASES (FORTY-SEVEN)

- CASE 1.—Female; periosteal hip-joint amputation; patient not traced beyond a few months.
- CASE 2.—Female; myeloid; hip-joint amputation; metastases; death in one and a half years.
- CASE 3.—Male; periosteal; hip-joint amputation; death six months later.
- CASE 4.—Male; myeloid; hip-joint amputation; death from metastases eight months later.
- CASE 5.—Female; periosteal; hip-joint amputation; death from metastases within eight months.
- CASE 6.—Male; myeloid amputation upper third; recurrence in stump; hip-joint amputation for recurrence; toxins before and after second operation; death six months later, from general metastases.
- CASE 7.—Female; periosteal; hip-joint amputation; metastases; death within six months.
- CASE 8.—Female; myeloid; hip-joint amputation; patient well five years later.
- CASE 9.—Male; Periosteal; hip-joint amputation; recurrence; toxins; metastases; death one year later.
- CASE 10.—Male; periosteal; hip-joint amputation; toxins for three months after operation; recurrence; death one year later.
- CASE 11.—Male; periosteal; hip-joint amputation; recurrence; toxins; not traced; patient probably died.
- CASE 12.—Male; periosteal; spindle-celled; middle third; amputation below trochanter; followed by toxins; later hip-joint amputation; recurrence; metastases; death two years later.
- CASE 13.—Female; myelogenous; mixed-celled; high amputation; death four months later; metastases in lungs.
- CASE 14.—Female; myeloid, round-celled, giant-celled; amputation below trochanter; toxins after operation; patient gained thirty-nine pounds; death, from metastases, one and a half years after operation.
- CASE 15.—Female; myeloid, round-celled; amputation below trochanter; toxins for four months after amputation; patient gained thirty pounds in weight; well at present, three years afterward.
- CASE 16.—Female; myeloid, round-celled; amputation below trochanter; toxins for four months after operation; patient well at present, three years afterward.
- CASE 17.—Male; periosteal, round-celled; hip-joint amputation; recurred in six months; toxins three weeks; patient died six months later.
- CASE 18.—Male; myeloid, round-celled; amputation below trochanter; toxins after operation for six months; patient well at present, three years afterward.
- CASE 19.—Male; doubtful, probably periosteal; round-celled; too extensive for amputation; toxins for a few weeks with little effect.
- CASE 20.—Male; periosteal; amputation advised but refused; no treatment; patient not traced.
- CASE 21.—Female; periosteal; round-celled; hip-joint amputation advised; refused; patient recovered under some vegetable compound from a cancer specialist; well five years later. Microscopical section made by the pathologist at the Norwegian Hospital; specimen lost; diagnosis doubtful.
- CASE 22.—Myeloid, round-celled, giant-celled; tumor of enormous size, extended into groin and iliac fossa; affected thigh measured seven inches more than other; growth too extensive even for hip-joint amputation; toxins six weeks; rapid improvement; large masses of tumor sloughed out; tumor nearly disappeared; patient gradually grew weaker and died within two months from time treatment was begun. (Case of Dr. Foote, treated under my direction.)
- CASE 23.—Male; periosteal, round-celled; amputation below trochanter; metastases in face and head four months later; died seven months after operation.
- CASE 24.—Female; periosteal, round-celled; inoculation with living cultures of erysipelas, July, 1891; no attack of erysipelas produced; rapid progress of the disease; death four months later.
- CASE 25.—Female, aged 21 months; tumor periosteal, round-celled, involving ilium; no treatment; death three months later.
- CASE 26.—Female; myeloid, round-celled; too far advanced for amputation; toxins a few weeks; little effect; death a few months later.
- CASE 27.—Female; periosteal, round-celled; hip-joint amputation (Walker); patient reported well ten years afterward.
- CASE 28.—Female; doubtful; too far advanced for hip-joint amputation; toxins four weeks; slight improvement; patient not traced.
- CASE 29.—Male; periosteal, round-celled; amputation at hip-joint advised and refused; x-ray, followed by extensive metastases in the pectoral and ilio-lumbar regions; recovery under systemic injections with the toxins; patient well at present, seven years later.
- CASE 30.—Female; myeloid, round-celled, giant; tumor too extensive even for hip-joint amputation. Microscopic examination by Dr. Mandelbaum, pathologist, Mount Sinai Hospital, confirmed by Dr. T. Mitchell Prudden, professor of pathology, College of Physicians and Surgeons. Toxins by Dr. Elsberg for three months; final recovery; spontaneous fracture united; patient well six years later.
- CASE 31.—Female, aged 34 years; upper third of femur; no microscopic examination; toxins; patient improved; not traced.
- CASE 32.—Male, aged 10 years; periosteal, small round-celled; exploratory operation; mixed toxins given for nine months; almost complete disappearance of the tumor of the femur; metastases developed in the brain; large retrobulbar tumor, causing death a year later.
- CASE 33.—Male; periosteal; operation refused; toxins a few weeks; no improvement; patient not traced.
- CASE 34.—Male; periosteal; no microscopic examination; amputation advised; refused; patient not traced.
- CASE 35.—Male; myeloid, round-celled; exploratory operation by Dr. L. S. Pileher; amputation of thigh advised but refused; microscopic examination by Dr. George Biggs, pathologist of the New York Hospital; slow disappearance of growth following curetting; patient well two years.
- CASE 36.—Male; periosteal, small round-celled; exploratory operation; toxins two weeks; temporary improvement; amputation below trochanter two weeks later, followed by toxins; local recurrence; lung metastases; death four months from date of the blow which, apparently, was the exciting cause of the tumor.
- CASE 37.—Female, aged 80; tumor periosteal, round-celled; partial excision of tumor; very rapid growth; toxins for a few weeks; no effect; death within four months.
- CASE 38.—Male; myeloid; no operation; toxins; temporary improvement; not traced.
- CASE 39.—Male; periosteal, involving ilium; no operation possible; toxins a few weeks; no improvement.
- CASE 40.—Male; chondrosarcoma; inoperable; toxins for three weeks; slight improvement; not traced.
- CASE 41.—Male; periosteal, round-celled; partial operation; toxins; temporary improvement; death following extension of the disease.
- CASE 42.—Female; periosteal; inoperable, enormous size; toxins administered under my direction for about two months; no improvement; death from exhaustion.
- CASE 43.—Male; periosteal; middle and upper thirds; toxins for four months; marked improvement; finally spontaneous fracture; amputation at hip-joint by another surgeon; patient recovered; well at present, a year and a half later.
- CASE 44.—Female; periosteal; extremely rapid growth, following trauma; toxins two weeks; no improvement; amputation below trochanter; toxins after operation; death from lung metastases four months from receipt of injury.
- CASE 45.—Female; periosteal, round and spindle-celled; amputation below trochanter; toxins November, 1909, continued with intervals up to the present time; patient in perfect health August, 1909.
- CASE 46.—Male; periosteal; round-celled, inoperable; toxins; temporary improvement.
- CASE 47.—Male; periosteal, round-celled; middle and upper third; partial excision of tumor; curetting; then put upon

the toxins for two periods of about six weeks each; severe reactions; circumference of thigh diminished two inches under treatment; tumor practically disappeared; patient has been working since; practically well, a year and a half later. Treatment carried out by Dr. Wilmoth of Louisville, Ky.,⁵ under my direction.

TIBIA CASES (FIFTEEN)

CASE 48.—Female; myeloid, round-celled; recurrent after three conservative operations in spite of toxins; amputation; toxins after operation; patient well a year and half later.

CASE 49.—Female; periosteal, round-celled; vascular tumor; amputation urged, but refused; patient not traced.

CASE 50.—Female; myeloid; amputation lower third of thigh; patient well ten years later.

CASE 51.—Male; periosteal, spindle-celled; mixed toxins before operation in the hope of saving limb; entire disappearance; patient well ten and one-half years later.

CASE 52.—Male; periosteal, round-celled; amputation of thigh; patient not traced.

CASE 53.—Female; myeloid, round-celled, giant-celled; rapid recurrence after two conservative operations; mixed toxins combined with x-ray for a short time; under six months' treatment the tumor disappeared; patient well at present, four years later.

CASE 54.—Male; myeloid, round-celled; toxins three months; no improvement; patient not traced.

CASE 55.—Female; doubtful, spindle-celled; amputation above knee; metastatic recurrence in spine; death within seven months.

CASE 56.—Male; adult; middle and upper thirds; amputation advised; refused; patient not traced.

CASE 57.—Male; adult; myeloid; amputation advised; refused; no treatment; patient not traced.

CASE 58.—Male; myeloid, round-celled; amputation of upper third; local and general recurrence, pleura and rib, four months later; died six months after operation.

CASE 59.—Female; adult; round-celled amputation above knee; patient not traced.

CASE 60.—Female; myeloid, round-celled with giant cells; amputation middle of thigh; (Bull) metastases six months later; death within a year; toxins used after generalization with little effect.

CASE 61.—Male; aged eleven months; no microscopical examination, but clinical diagnosis beyond doubt; tibia and fibula; general metastases within four weeks after original trauma; death six weeks later.

CASE 62.—Female; myeloid; tibia and fibula; very rapid growth; amputation four weeks after first noticed; joint involved; toxins begun four weeks after operation, given for a short time; patient died of metastases one year later.

HUMERUS CASES (FIFTEEN)

CASE 63.—Female; amputation; recurrence in five months.

CASES 64.—Male; periosteal, round-celled; amputation shoulder-joint (Bull); recurrence within five weeks; toxins; tumor disappeared; patient died five months later of metastases.

CASE 65.—Male; periosteal, round-celled; amputation; metastases within a few weeks with development of similar growth in opposite humerus; patient died a few weeks later.

CASE 66.—Male; myeloid, round-celled; amputation shoulder-joint (Bull); metastases, other humerus and lungs; death a year after first operation.

CASE 67.—Male; periosteal (no microscopical examination); amputation advised, but refused; patient died ten months from beginning of first symptoms.

CASE 68.—Male; periosteal, round-celled; tumor of four months' duration, enormous size; amputation of shoulder-joint, portion of clavicle and scapula; developed metastases in three months; death seven months from beginning of disease.

CASE 69.—Female; chondrosarcoma; excision of tumor; recurrence from operation; patient not traced.

CASE 70.—Male; adult; upper end of humerus; no microscopical examination; doubtful whether periosteal or central;

amputation of shoulder-joint advised; refused; patient not traced.

CASE 71.—Male; periosteal, round-celled; inoperable; no treatment; death in five months from beginning.

CASE 72.—Female; periosteal, round-celled; upper end; preliminary use of the toxins; temporary improvement; amputation advised; refused; patient left hospital and died three months later.

CASE 73.—Female; periosteal; amputation at shoulder-joint advised; operation performed by another surgeon; death from shock.

CASE 74.—Female; myeloid, round-celled; partial operation; removal of head of bone, part of coracoid process glenoid cavity; disease not completely removed; mixed toxins after operation; entire recovery; patient shown before Suffolk County Medical Society November, 1908—ten years later—in perfect health; perfect use of arm. (Case of Dr. J. Babst Blake.)

CASE 75.—Male; periosteal; exarticulation (Dr. Goodman, August, 1907); mixed toxins given after operation for five weeks; patient gained 9 pounds and remained well for six months; then showed evidence of lung metastases; died a few months later.

CASE 76.—Male; periosteal, round-celled; enormous size; exarticulation by Dr. Brackett, Boston; toxins before and after operation; patient well at present, sixteen months later.

CASE 77.—Female; periosteal, round-celled; preliminary use of toxins for two weeks; slight improvement; operation advised; at first refused; performed two weeks later; sarcomatous thrombi present in the subclavian vein, severed beneath clavicle; axillary glands extensively involved; local recurrence shortly after operation in pectoral region; disappeared under toxins; patient regained normal weight and strength; eight months later developed metastases in lungs and pleura; rapid decline; death in a few weeks.

RADIUS CASES (FIVE)

CASE 78.—Female; periosteal; lower third; operation refused; patient not traced.

CASE 79.—Female; myeloid, round-celled, giant; lower third; two conservative operations by Dr. Hibbs, first in 1900; second January, 1902; amputation advised by several surgeons; but refused; patient alive and well at present, seven years later.

CASE 80.—Female; periosteal, round-celled; lower end; amputation September, 1906; toxins three months after operation; patient well at present, nearly three years later.

CASE 81.—Male; 70 years old; spontaneous fracture May, 1907; patient shortly afterward developed numerous bony tumors in the skull; death three months later; no autopsy; toxins given for a few weeks, with little effect. Tumor possibly hypernephroma or myeloma. The clinical diagnosis was for cancer.

CASE 82.—Female; myeloid; lower end; spontaneous fracture; setting by Drs. Hartley and Pool; amputation strongly advised, but refused; toxins for five weeks; patient perfectly well at present, sixteen months later.

FIBULA CASES (THREE)

CASE 83.—Female; spindle-celled; upper end, joint not involved; toxins six weeks before operation; tumor decreased in size; improvement temporary; amputation; death from lung metastases two years later.

CASE 84.—Female; (?); upper end of fibula; amputation advised; refused; patient not traced.

CASE 85.—Male; periosteal, round-celled and spindle-celled; upper third of fibula; excision July, 1908, by Dr. Gerster; local recurrence eleven months later; toxins six weeks; temporary improvement; patient not traced.

ULNA CASES (TWO)

CASE 86.—Female; periosteal; lower end ulna; no treatment; metastases in lung and pleura; died less than one year from beginning of symptoms.

CASE 87.—Male; periosteal; spindle-celled; middle, following green-stick fracture; amputation middle of arm in 1899 (Tully Vaughan of Washington); remained well for seven years; then recurrence in abdomen; October, 1906, entire abdomen filled with tumors; marked distention; mixed toxins begun in November, 1906; very marked decrease in size of

5. This case was not observed personally by me but was treated under my direction.

tumors; nearly disappeared in February, 1907; patient has been at work up to the present time, nearly three years; advised to continue the toxins regularly, but did not do so; there has recently been increase in size.

METACARPAL BONE

CASE 88.—Female; periosteal, round-celled; third metacarpal; exploratory incision; amputation middle of forearm; metastases in both breasts and abdomen within four weeks; patient died eight weeks later.

METATARSAL BONE

CASE 89.—Female; periosteal, round-celled; second metatarsal; exploratory operation; amputation of leg; mixed toxins for six months after operation; patient well at present; eight years later.

CLAVICLE

CASE 90.—Male; periosteal, round-celled; excision of clavicle by Dr. Maurice H. Richardson, May, 1908; toxins immediately after operation, continued for eight months, with a few short intervals of rest; patient at present in perfect health, August, 1909, sixteen months later.

SUMMARY OF FINAL RESULTS

Femur Cases.—Eight patients have remained well from three to ten years. Three of these cases were periosteal and five myelogenous. The mixed toxins were used in 5 of the successful cases, after operation in 3 and before operation in 2. In both the disease was too far advanced for hip-joint amputation. The patients are both well, upward of six years afterward.

Tibia Cases.—Three patients have remained well beyond three years. Of these cases one was of periosteal, two of central origin. In the periosteal case the patient was cured by the toxins without amputation and has now been well for ten years.

Radius Cases.—Three patients have remained well from a year and a half to seven years. Two cases were myeloid and one periosteal. One patient on whom operation and curetting was done has been well for seven years. The second patient was treated by amputation, followed by the mixed toxin treatment, and has been well for three years. In Case 3, curetting was done; amputation advised and refused; toxins used; patient has been well for a year and a half.

Ulna Case.—One patient, well more than three years after treatment. The tumor was spindle-celled sarcoma; amputation was done. The patient remained well seven years; then developed extensive abdominal metastases nearly filling the abdomen. Toxins were administered; tumors nearly disappeared under six months' treatment. The patient was advised to continue the toxins, but neglected to do so. He resumed his work and has continued up to the present time, but there is evidence that the tumors are again increasing.

Humerus Case.—One patient, well more than three years after treatment. The tumor was a round-celled, infiltrating sarcoma of the upper end (containing giant cells), involving the scapula. Partial excision was done, followed by the toxin treatment. The patient has been well ten years.

Metatarsal Bone.—The tumor was a periosteal round-celled sarcoma. Amputation of leg was performed, followed by toxin treatment. The patient has been well eight years.

Not a single one of my successful cases treated with the toxins has been a true giant-celled sarcoma in the proper sense of the term, meaning an encapsulated endosteal tumor. It is only necessary to divide sarcomas of the long bones in two main groups, namely, periosteal and central or myelogenous, and it is the relative malignancy of these two groups that we have discussed. The pure endosteal sarcoma that has not broken its capsule and not begun to infiltrate the surrounding tissue, if discovered and operated on at this stage, may very well be treated as a nearly benign growth, and amputation should never be advised. Such favorable case, however, has never come under my observation; my experience has been limited to the periosteal and to that type of central or myelogenous sarcoma which has broken the capsule and has become a large infiltrating tumor.

Many cases of inoperable sarcoma of other bones successfully treated with the toxins furnish additional reasons for advocating their use in sarcoma of the long bones.

The final results in this group of cases, while far from ideal, are certainly much superior to the results in other series of cases in which no toxins were used. In making comparisons with other groups, it must be considered that my series is far different from the ordinary series of cases of sarcoma of the long bones observed at a single large clinic or series of cases collected from the surgical literature. The majority of my cases have first been through the hands of other surgeons who regarded them as hopeless when sending them to me. Two cases alone of this group furnish conclusive evidence of the curative value of the toxins and justify us in advocating the treatment for a brief period before resorting to amputation.

In one case (Case 51), a spindle-celled sarcoma of the tibia, which recurred promptly after excision and in which the diagnosis had been confirmed by microscopic examination made by Dr. John Caven, professor of pathology, University of Toronto, and amputation had been advised, disappeared under two months' treatment with the toxins and the patient remained perfectly well for ten years and was shown before the New York Surgical Society in February, 1909.

The second case (Case 29) was one of periosteal round-celled sarcoma of the femur, involving two-thirds of the shaft with extensive metastases in the pectoral and ilio-lumbar region, in which amputation, advised before metastases had occurred, was refused. The tumors disappeared under the mixed toxins and the patient is well at present, seven years later. The diagnosis in this case had been confirmed by Dr. B. H. Buxton, professor of experimental pathology, Cornell University Medical School, and Dr. E. K. Dunham, professor of pathology, Bellevue Medical School.

In addition to these cases there have now been fourteen others in which an arm or leg has been saved by preliminary toxin treatment.

DETAILED REPORT OF THE MORE IMPORTANT CASES

CASE 15.—*Summary.*—Mixed-celled periosteal sarcoma of the lower end of the femur; amputation; followed by mixed toxins for four months; patient well three years later.

History.—S. D., female, aged 18; no trauma; admitted to the Hospital for Ruptured and Crippled with the following history: One year ago first noticed pain in the right knee; first treated for rheumatism; later, at another hospital the condition was regarded as of tuberculous origin and plaster splints applied. This treatment was continued for seven months. The last two months before she was admitted to the Hospital for Ruptured and Crippled, she had become very emaciated and extremely weak. The right knee showed a fusiform swelling just above the joint with 4 inches enlargement; the knee was acutely tender and motion very painful. The x-ray showed the lower 6 inches of the femur nearly twice the normal thickness. From the previous history and the x-ray the condition was regarded by Dr. Gibney as tuberculous, and it was decided to excise the joint. On opening the joint

he found it in perfectly healthy condition, while the femur above was much thickened and presented several softened areas purplish in color. The lower end of the femur had become almost entirely disorganized, shaft and condyles being connected only by three narrow bridges of bone. Microscopic examination made by Dr. Jeffries, pathologist to the Hospital for Ruptured and Crippled, showed the growth to be a mixed-celled sarcoma of the myeloid type. The case was referred to me by Dr. Gibney. I advised immediate amputation and performed the operation on April 7, 1906, 4 inches below the trochanter. The patient was put on the mixed toxins April 26 and showed very rapid increase in weight, rising from 69 pounds on June 12, to 92 pounds October 24. The toxins were continued from April 26 to the latter part of August. The patient has been in perfect health up to the present time, a little over three years.

CASE 16.—*Summary*.—Periosteal, round-celled sarcoma of the femur; amputation below the trochanter; toxins four months; patient well three years.

History.—C. L., female, aged 12; swelling of lower end of femur noted in January, 1906, two weeks after an injury to the right knee from a fall. Patient entered the Hospital for Ruptured and Crippled in August, 1906. The entire lower third of the femur was involved, the entire bone being apparently enlarged. An exploratory operation was performed, showing a periosteal round-celled sarcoma. A few days later amputation 4 inches below the trochanter was performed and the patient was put on the mixed toxins as soon as the wound was healed. The treatment was continued until Jan. 15, 1907, four and one-half months. She has remained well up to the present, October, 1909, that is, for three years.

CASE 29.—*Summary*.—Round-celled periosteal sarcoma of the femur involving lower two-thirds of the shaft, with extensive metastases in the pectoral and ilio-lumbar region, successfully treated with the mixed toxins; patient well over five years.

History.—A. G., aged 19; first noticed swelling in the lower portion of the left femur in November, 1901. This gradually increased in size, being accompanied by loss of weight and deterioration of general health. The patient was referred to me by Dr. W. R. Townsend, and was admitted to the General Memorial Hospital on Feb. 8, 1902. At this time there was a large tumor, extending from the condyles of the left femur to the junction of middle and upper thirds. There was a fusiform enlargement of the lower two-thirds of the femur. An exploratory incision under ether was made and a specimen of the tumor removed. Microscopical examination made by Dr. E. K. Dunham of Carnegie Laboratory and B. H. Buxton of Cornell Medical School, showed the growth to be a round-celled sarcoma—not giant-celled. Amputation at the hip-joint was strongly advised, but refused. The patient was put on the *x-ray*, which was continued for several months, with temporary improvement, both local and general. In December, 1902, however, there developed a large metastatic tumor in the left pectoral region, which grew with great rapidity and was highly vascular. It was partially removed under ether anesthesia. At about the same time there developed a much larger metastatic tumor in the right ilio-lumbar region, which grew to the size of a child's head. This was firm in consistency and, apparently, of retroperitoneal origin. At this time the mixed toxins of erysipelas and *Bacillus prodigiosus* were given systemically, into the gluteal region, no local injections at all being given. A few weeks later the tumor of the ilio-lumbar region began to soften the breakdown, and when fluctuation became evident it was opened and between a pint and a quart or necrotic tumor tissue evacuated. A large drainage-tube was left in the ilio-lumbar region and the sinus remained open for more than a year. The patient recovered perfect health and is alive and well at the present time, nearly seven years later.

CASE 51.—*Summary*.—Large, recurrent spindle-celled sarcoma of the tibia (periosteal); operation; treatment with toxins; patient well ten years later.

History.—J. F., male, aged 40 years; farmer by occupation, Ontario, Canada; family history good; operated on July 28 and Nov. 25, 1898 (excision of tumor); microscopical examination was made by Dr. John Caven, professor of pathology at the University of Toronto, Canada; diagnosis, spindle-celled

sarcoma. The disease quickly recurred. Amputation was deemed necessary, but a preliminary trial with the mixed toxins was advised. The patient entered the general Memorial Hospital Feb. 12, 1899, for the treatment with the toxins. Result: Entire disappearance of the tumor. The patient has remained in perfect health since; he is now well upwards of ten years. He was shown before the Medical Society of Greater New York, February, 1909.

CASE 30.—*Summary*.—Round-celled myeloid sarcoma of the femur, too extensive for hip-joint amputation; treatment with toxins; entire recovery; the patient perfectly well more than six years afterward.

History.—R. L., female, aged 19, was admitted to Mount Sinai Hospital on May 24, 1898, and remained until July 24, suffering from spontaneous fracture of the femur. The diagnosis of malignancy was not made until her readmission on Dec. 24, 1898, when it was found that there was a shortening of 2.5 cm. The trochanter was 2 cm. above Nélaton's line, false motion in all directions. The upper and outer aspects of the thigh were occupied by a large swelling of semisolid consistency. There was no tenderness. The patient's general condition was only fair. On Jan. 5, 1899, Dr. A. G. Gerster made an incision into the tumor, which was found to be soft and intimately connected with the bone, apparently springing from the medulla of the femur. The tumor was considered inoperable, and a specimen was removed for pathologic examination, and pronounced giant-celled sarcoma by Dr. Mandlebaum, the hospital pathologist. On January 25 the administration of the mixed toxins of erysipelas and *Bacillus prodigiosus* was begun. The initial dose was 1 minim, which was gradually increased up to 3 minims, daily injections being given. The injections caused severe reactions, with pronounced chills and a temperature up to 105. A large portion of the tumor became necrotic, the patient's general condition grew markedly worse, and she was transferred to the Montefiore Home for Incurables. Shortly after her admission the tumor began to decrease in size; large masses of broken-down tumor tissue were discharged every few days. In May, 1901, the greater part of the tumor had sloughed away and the patient began to gain a little in flesh and strength. On May 29, 1901, the opening was enlarged by Dr. John Rogers, the large cavity of the bone was exposed and curetted and the wound packed. The sinus not having entirely closed on Feb. 29, 1902, the wound was again enlarged and curetted by Dr. Elsberg. The bone cavity was filled with iodoform and paraffin. The material removed at this last curetting showed no sarcomatous element. The patient rapidly improved in general health, and the femur became firmly reunited. The patient was well when last heard from, four years ago, when she was shown before the New York Surgical Society in perfect health and with perfect restoration of the function of the limb.

The diagnosis in this case was further confirmed by microscopic examination made by Dr. T. Mitchell Prudden, professor of pathology to the College of Physicians and Surgeons.

CASE 53.—*Summary*.—Round-celled sarcoma (myeloid) of the tibia, rapidly recurrent after two operations. Entire disappearance under the mixed toxins of erysipelas and *Bacillus prodigiosus* combined with a short period of *x-ray* treatment.

History.—K. K., female, aged 17; good general health with no family history of malignant disease, was treated at several metropolitan clinics from Sept. 29, 1904, to March, 1905. At these various clinics the disease was regarded as tuberculous in nature. The first symptom noticed was pain in the ankle; later a small swelling appeared over the internal malleolus, which was painful on pressure. This was first treated with a rubber plaster strap, later with the application of salves and, in May, 1904, a plaster-of-Paris splint was applied. In September, 1904, the patient was unable to walk; the lower end of the tibia became enlarged and an area of softening, which was regarded as pus, appeared over the internal malleolus, with slight effusion in the joint. There was also marked atrophy of the muscles of the leg. On Oct. 11, 1904, the patient was operated on by Dr. V. P. Gibney. An incision 2¾ inches long was made over the lower and inner side of the tibia and 8 ounces of thick, reddish-brown soft material were removed from the bone. The entire lower third of the tibia was apparently involved, only a thin outer shell remaining. There

was no evidence of involvement of the fibula, and the ankle-joint itself did not appear to be invaded. A microscopic examination was made by Dr. F. M. Jeffries, pathologist to the hospital, who pronounced it myelogenous giant-celled sarcoma. The disease very quickly recurred and a second operation was performed on Jan. 3, 1905. The very large local recurrence was again curetted and chiseled out. The patient was then put on the mixed toxins of erysipelas and *Bacillus prodigiosus*, the injections being made partly in the vicinity of the disease and partly in the buttocks. There was a beginning recurrence of the tumor in spite of the treatment, but on increasing the dosage the tumor soon appeared to reach a quiescent stage. The patient was admitted to the General Memorial Hospital in April and toxins and x-rays were pushed vigorously until July. During this period the tumor slowly retrograded, and when she was discharged in the latter part of July, 1905, there was very little of the tumor remaining. I made a subsequent examination in October, 1905, at which time the tumor seemed to have entirely disappeared, but there was a small area of granulation, the size of a silver quarter, which remained unhealed. I examined the patient at intervals thereafter, but there always remained a sluggish ulcer which did not yield to local treatment. As there was no evidence of a return of the disease, a year ago, the patient was readmitted to my service at the General Memorial Hospital and the ulcer, which by this time had become the size of a silver dollar, was covered with skin grafting. The grafts took perfectly and the patient has been entirely well up to the present time. The fact that no recurrence has taken place within four years since the treatment was discontinued, justifies us, I think, in regarding the patient as probably cured.

CASE 18.—Summary.—Periosteal small round-celled sarcoma of the femur; antecedent trauma; amputation below the trochanter by Dr. J. F. Erdman; toxins administered after operation and continued for four months; patient in perfect health three years later.

History.—W., aged 35, male, in the spring of 1906 had "rheumatism for a number of months; the pain increased; general health deteriorated; shortly afterward there appeared a bony swelling in the lower end of the femur; clinical diagnosis of sarcoma was made and confirmed by exploratory incision in September, 1906. Microscopic examination proved it to be small round-celled sarcoma. In view of the patient's poor general condition, I advised amputation below the trochanter to be followed by the use of the toxins. The operation was performed a few days later by Dr. J. F. Erdman, and as soon as the wound had healed, the patient was put on the toxins. He was extremely nervous and his general condition was bad. The toxins were continued in gradually increasing doses for five months. The patient has been perfectly well, attending to his business up to the present time, three years later.

CASE 80.—Summary.—Round-celled periosteal sarcoma of radius; amputation; mixed toxins administered after operation and continued for about four months; patient well nearly three years later.

History.—L. M. L., aged 31, female, first noticed pain in the left hand and wrist in the fall of 1905; was treated for rheumatism for several months. In January, 1906, a lump appeared in the lower end of the left radius; this increased slowly in size and was attended with a moderate amount of pain. The patient came under my observation in September, 1906; examination showed the lower end of the left radius occupied by a tumor about the size of an orange. The tumor had so completely destroyed the radius that spontaneous fracture had taken place with considerable displacement, giving the appearance of a Colles' fracture. Amputation was advised and done by me Sept. 14, 1906. The patient was at once put on the mixed toxins and the treatment continued by her family physician for about four months. She has remained well up to the present time, nearly three years later.

CASE 79.—Summary.—Giant-celled central sarcoma (myeloid) of the radius, involving periosteum, successfully treated with the mixed toxins of erysipelas and *Bacillus prodigiosus*, without amputation.

History.—M. F., female, aged 26, with no family history of malignant disease, several years ago fell and injured her left wrist. On Easter Sunday, 1908, she tripped and fell again,

injuring the same wrist. The patient saw a local physician, who told her that the wrist was broken. She was then sent to the New York Hospital, where the condition was at first regarded as a fracture, but two days later an x-ray plate was taken which showed, in addition, a pathological condition of the bone. An operation was performed by Dr. Eugene H. Pool and Dr. Stewart, at the New York Hospital, on May 1. The periosteum was found covered with soft reddish tissue; the central portion of the bone was also filled with the same material. This was curetted out on either side and the fractured edges were approximated. The fracture, which was evidently of pathological origin, due to sarcomatous degeneration of the bone, was about two inches above the lower end of the radius. On May 18, 1908, no evidence of union had appeared and amputation was advised by Drs. Hartley and Pool, but absolutely refused by the patient, and she was discharged from the hospital. On May 22, four days later, she was admitted to my service at the General Memorial Hospital and was immediately put on the mixed toxins of erysipelas and *Bacillus prodigiosus*. Physical examination at that time showed the following condition: The left wrist was considerably thickened about three inches upward from the lower end of the radius. Two inches above the lower end there was a point of motion, showing a fracture. The toxins were given four to five times a week, the injections being made chiefly into the pectoral region and arm; no local injections were given. The swelling about the lower end of the radius slowly but steadily subsided and decreasing mobility showed that union was gradually taking place. No other treatment of any kind was given. After the patient left the hospital, union gradually became more firm, and when I examined the patient last, in August, 1909, she was in perfect health and there was no evidence of metastases. The pathological report by Dr. Elsner, pathologist to the New York Hospital, shows the tumor to be a round-celled, giant-celled sarcoma of the lower end of the radius. This patient was shown before the meeting of the Medical Society of Greater New York in 1909.

DISAPPEARANCE OF SARCOMA OF THE HUMERUS FOLLOWING INJECTIONS OF COLEY'S FLUID

Dr. Ashdown,⁶ surgeon to the Metropolitan Hospital of London, reports the disappearance of a tumor, probably periosteal sarcoma, of the humerus following injections of Coley's fluid. The following is a brief abstract of the case:

Patient, a woman, aged 45; no trauma; tumor of seven weeks' duration in the lower portion of the right humerus. Pain and weakness; no involvement of the joint; no fluctuation or egg-shell crackling; superficial veins prominent in one enlarged gland of the axilla. A radiograph showed a condition very characteristic of periosteal sarcoma. The tumor steadily increased under administration of potassium iodine, as shown by measurements and x-ray pictures. The toxins were begun in ½-minim doses and gradually increased up to 9 minims; continued from May until August, 1908, when the tumor had practically disappeared. The structural outline of the bone had become normal, as shown by the radiograph. Another radiograph, taken Feb. 1, 1909, showed the improvement to have continued.

To show the value of the use of the mixed toxins after operation, as a prophylactic against recurrence, the following case may be of interest:

CASE 90.—Summary.—Periosteal round-celled sarcoma of the clavicle; excision; mixed toxin administered for a year; patient well thirteen months after operation.

History.—J. W., male, aged 34; trauma six or seven years ago, a plank striking on his left clavicle, nearly knocking him down. Father died of cancer of stomach. Patient noticed a swelling of the left clavicle Jan. 19, 1908; no pain; the tumor grew steadily in size. It was operated on by Dr. Maurice H. Richardson, of Boston, May 15, 1908; excision of entire clavicle. Dr. Richardson referred the patient to me for the toxin treatment as soon as the wound had healed, two weeks later.

6. Ashdown: Lancet, London, May 22, 1909.

Examination at that time showed an indurated area over the entire lower cervical region, which was suspicious of a return of the disease. The patient was put on the mixed toxins, which were continued by his family physician, Dr. Truworth of Dixmont, Me. The toxins were given in the pectoral region and the dose was gradually increased up to the point of causing a severe reaction. During the first four months they were given four times a week; then their frequency was gradually reduced until he received only one injection per week. At the end of one year he had had eighty-six injections; the largest dose was 30 minims. At the end of four months he had recovered his normal weight and strength and has been continuing his work ever since. Examination in June, 1909, showed the patient in perfect health with no trace of recurrence. In a recent letter Dr. Richardson states: "If the patient remains well I will give the toxins the entire credit. I shall hereafter use the toxins in all cases of sarcoma as a prophylactic after operation."

In a series of cases in which the toxins have been used systematically after primary operation for sarcoma, I have observed less than 25 per cent. of recurrences, whereas in cases not treated the average per cent. of recurrences has been above 75 per cent.

The facts I have set forth in the foregoing are sufficient, in my judgment, to justify the giving-up of the traditional method of treating all cases of sarcoma of the long bones by immediate amputation. In most cases I believe it safe to wait for two or three weeks, the time required for a trial with the toxins, before sacrificing the limb. Sarcoma cases of extremely rapid growth will probably show little or no effect from the toxins, and one might naturally say valuable time had been lost by the preliminary use of the toxins. It is my opinion, however, that early operation in these cases would not have been of the slightest avail, as shown by the long, almost unbroken list of recurrences and deaths in cases treated by operation alone. On the other hand, in certain cases—probably a small number—the limb will be saved by the preliminary use of the toxins. In those in which early improvement is not marked, operation can then be performed with even greater chances of ultimate success than if toxins had not been first used.

The greatest value of the toxins in sarcoma of the long bones will, I believe, be shown to lie in a judicious combination with conservative operative treatment. By such procedure a hip-joint amputation, which has been the almost uniform rule for sarcoma of the femur, will give place to an amputation below the trochanter, which will leave a stump of sufficient length to permit the wearing of an artificial limb, and this is no small gain. The toxins will be administered for a considerable period of time after amputation with the hope of destroying the cells which are left behind and which, with operative treatment alone, cause the local and metastatic recurrences. The same rules will apply to sarcoma of the humerus.

Coming to sarcoma of the tibia, fibula and radius and ulna particularly of the myeloid type, in place of amputation as formerly advised and still advocated by the great majority of surgeons, we can safely substitute either curetting or partial resection, followed by a thorough course of the mixed toxins. While good results have been obtained from operation alone in a very limited number of cases in this group, I am convinced that the number of successes will be greatly increased by combining the toxin treatment with conservative operation, as I have suggested, and my series of cases strongly supports this opinion.

As earlier diagnosis is steadily but surely coming, owing to increased knowledge of this disease coupled

with more correct interpretation of x-ray plates and the use of earlier exploratory operations, the conservative treatment along the lines I have mentioned will soon show results much superior to those obtained by the radical and maiming operations thus far almost uniformly practiced.

5 Park Avenue.

ABSTRACT OF DISCUSSION

DR. JOSEPH C. BLOOEGOOD, Baltimore: I cannot agree with some of the conclusions made by Dr. Coley. I am of the opinion that giant-cell sarcoma is relatively one of the least malignant of the sarcomas of bone and Dr. Coley should not include such tumors in the percentage of cures with his extracts. In the surgical pathologic laboratory I have a record of sixteen cases of medullary giant-cell sarcoma of bone. All the patients are well to-day. It is twelve years since the date of operation in the oldest case. In none of these patients was a serum employed. The operations have varied from curetting to amputation. During the same time there have been three cases of periosteal giant-cell sarcoma, one situated around the ulna, two near the head of the tibia. These patients have remained free from recurrence for from eight to twelve years. To these nineteen cases of giant-cell sarcoma of the long pipe bones I may be permitted to add about twenty patients with giant-cell sarcoma of the upper and lower jaw which have also remained well since removal. In addition, with the assistance of Mr. Schapiro, we have failed to find in the literature a case of pure giant-cell sarcoma which had given metastasis, and there are recorded cures even after two or more operations for recurrence. In the case of medullary giant-cell sarcoma in which I operated in December, 1902 (*Bull. Johns Hopkins Hospital*, May, 1903, vol. xiv, p. 133) the patient has remained free from recurrence up to date—six and one-half years.

The giant-cell sarcoma should not be included in any group of cases in which, in addition to operative measures, other treatment such as Coley's serum or the x-ray has been employed, and cures can be accomplished in this group by the most conservative means without the aid of any sera or the x-ray. The other forms of the less malignant sarcomas of bone are relatively less frequent than the giant-cell sarcoma. For example, I have observed but eight cases as compared with nineteen giant-cell sarcomas of the long pipe bones. To this less malignant group belong the periosteal osteosarcoma (three cases, two cures) the chondromyxosarcoma (four cases, two cures) and the periosteal fibrosarcoma—a recent case. But if we include tumors of this variety originating in the upper and lower jaw we can increase the number of osteosarcoma, myxosarcoma and fibrosarcoma by about ten cases, in all but two, of which the patient's have remained well; these two died from postoperative complications.

However, when we compare the results in the treatment of the more malignant periosteal and medullary sarcoma with and without the use of the Coley serum we find a great difference. In my experience and in the literature no one has accomplished a number of cures in the round-and-spindle-cell sarcoma equal to Dr. Coley. In view of Dr. Coley's experience I feel that his method of treatment should be tried in all these more malignant sarcomas, so that we may get quickly a large accumulated experience in the hands of numerous investigators. An observation like Dr. Coley's should receive confirmation. In regard to Dr. Coley's statement that a low amputation should be performed rather than a high one, if the serum is employed in addition to operation I would go further. Amputation is only indicated when the complete excision of the tumor would leave a limb without function. It is the extent of the local growth that justifies amputation.

It is a rather remarkable and suggestive observation, which has been commented on by many writers, that among the cures of the more malignant sarcomas of bone there have been about as many resections as amputations. In sarcoma of bone the cause of death is metastasis, not local recurrence. In regard to the question of exploratory incision, I do not see how it can be answered in more than one way. We must

explore all early doubtful bone lesions. It would be unjustifiable to amputate or to resect without first ascertaining the nature of the lesion by an exploratory incision. For this reason surgeons who assume the responsibility should educate themselves to recognize either from the gross appearance or a rapid frozen section the nature of the different surgical diseases. The surgeon must be his own pathologist, just as will be demonstrated that in surgery of the chest he must be his own physiologist.

DR. ARTHUR DEAN BEVAN, Chicago: I think that we ought to commend and congratulate Dr. Coley for the persistence with which he has pursued this subject and advocated the use of the mixed toxins in sarcoma. At times I have been very enthusiastic about them. I have employed them in thirty or forty cases and I have seen distinct and marked effects from their use, large masses of tumor tissue diminishing considerably in size. I want to say, however, that I have never seen a cure. I believe that has been the experience of a number of other surgeons who will agree with me that the use of these toxins is advisable in inoperable cases. Many hopeless cases come to us for relief and we ought to feel thankful that there is something which we can use which will give these poor people relief for a time at least. It is in these cases that the mixed toxins and other agents like the Roentgen-ray and radium should be employed. And yet when we come to analyze the results as presented, for instance, by Dr. Coley from the treatment of these tumors by operation and serum, or as presented by Dr. Bloodgood, where I imagine operation only was employed in the majority of cases, I am rather inclined to believe that we must come to this conclusion, that although the toxins offer a possibility of benefit, that possibility is distinctly small. If I were to present my impressions of the value of the toxins on the one hand and the value of operative procedure on the other where the two were employed in a given case I should say that the toxins offered about 1 or 2 per cent of possibility of permanent cure while the operation offered 98 or 99 per cent. Still I believe that the use of the toxins should be continued and it is possible that more permanent results and a larger percentage of good results may be obtained in the future.

DR. HENRY S. WIEDER, Philadelphia: I believe a splendid opportunity would be lost if we did not call attention especially to the two cases which Dr. Coley referred to as cases of myositis ossificans. It is important to differentiate this condition from sarcoma. I am especially impressed with this subject because of a case which came under my observation through the kindness of Dr. Rodman. The man had been on a jaunt, became intoxicated and apparently took part in a street brawl. When he recovered after two or three days he found that he had a sore thigh. He said that at the time there was some ecchymosis. He did not notice that there was anything else wrong nor that there was a fracture. After three or four weeks he presented himself for treatment of a tumor on the femur. The condition was not diagnosed immediately, but he was kept under observation for a while until he became restless and sought aid in another hospital, where he came under the care of Dr. Rodman. Dr. Rodman thought that the growth was a sarcoma, but not being altogether satisfied he made an exploratory incision and sent a small piece of the tumor to me for examination. I examined it and concluded that it was probably a proliferative osteitis, but I would not make a definite diagnosis from so small a specimen. However, as a result of my examination, Dr. Rodman performed a secondary operation. Portions of the growth, both deep and superficial, were removed, and we could find no evidence of sarcoma, but only a proliferative osteitis and also some muscle fibers. We were unable to say whether this was a case of myositis ossificans or whether it was the result of trauma during the previous operation. We were positive, that is was not a case of sarcoma. The man was sent home and as we have not heard anything more from him we may take no news for good news. These cases should cause us to be very careful in making a diagnosis, and we must never think of performing an amputation in doubtful cases without having first submitted a piece of the tumor mass to a thorough and careful microscopic examination.

DR. JOHN B. ROBERTS, Philadelphia: We must not forget the influence of Roentgen-ray treatment on sarcoma when given in large dosage. I have used Coley's toxins a considerable number of times in recent years, but I regret to say that I have never seen any benefit from their use. The Roentgen-ray, however, has given me some unexpected results. Recently I saw a large infiltrating sarcoma of the neck which I did not dare touch with the knife. Under Roentgen-ray treatment a considerable portion of it was absorbed and the remainder became surrounded with a fibrous-like capsule from which I have scraped away a mass of sarcomatous tissue. Dr. George F. Pfahler has done this work for me in an excellent manner, giving large doses of the Roentgen-ray. I do not know what will be the final outcome because the patient is still under treatment.

DR. WILLIAM B. COLEY, New York: In replying to Dr. Bloodgood, the statistics of a single large surgical clinic, such as Bruns', extending over a long period of time (thirty-four years) give a much more accurate idea of the final results obtained in the treatment of sarcoma of the long bones than any collection of single cases found in the literature which are often reported because unusual. The fact is that Dr. Bloodgood referred to cases of sarcoma in various localities, while my paper is confined to a study of sarcoma of the long bones. He does not state how many cases of sarcoma of the long bones of the myeloid type he has known to have been cured by conservative treatment. My paper contains an abstract of all the cases of sarcoma of the long bones treated in Bruns' clinic during thirty-four years, 93 in number, in 65 of which the origin is definitely stated. While time did not permit me to read them I will now give a brief résumé:

There were 33 cases of myelogenous sarcoma of the long bones observed; 4 had to be excluded because they were either too far advanced for operation or operation was refused. Of the remaining 29, 17 patients were treated by amputation, 7 by exarticulation, 4 by resection and 1 by curetting. Of the 17 treated by amputation the end-results are known in 11 and of these 8 patients died of metastases, 5 within less than a year, 3 within from 2 to 5 years. Yet Dr. Bloodgood stated that he had never seen a case of giant-celled sarcoma followed by metastases. All of the 7 patients on whom exarticulation was performed died either in direct consequence of the operation or of recurrence within a short time after operation. Of the 5 patients conservatively treated 3 remained well, 3, 17 and 27 years respectively. Of the 32 patients with periosteal sarcoma of the extremities 3 had to be excluded for various reasons, leaving 29, in 25 of whom amputation was performed, in 2 exarticulation and in 1 each resection and excochleation. Only 4 remained well over 3 years after amputation. That the final results in the two classes of cases were not so strikingly different is shown by the fact that in the myelogenous group there were 5 in 29 patients who remained well over 3 years; in the periosteal 4 in 29 cases. My statistics, based on 94 personal observations, confirm the results obtained at the Bruns clinic. These cases (which will be published in the paper itself) represent the most malignant types of sarcoma, many of them periosteal, none of them pure giant-celled sarcoma in the true sense of an encapsulated endosteal tumor. I have never recommended the toxin treatment as a substitute for operation. At first I advised the method only in hopeless, inoperable cases, but later, after its value in such cases had been fully proved, I extended its use to a preliminary course in cases of sarcoma of the extremities, in which operation meant the sacrifice of the limb. The fact that a limb was saved by such preliminary treatment in fourteen cases would seem sufficient ground for adopting it as a routine measure. The subject of my paper is really: "A Plea for More Conservative Methods in the Treatment of Sarcoma of the Long Bones" and Dr. Bloodgood fully agrees with me in the main point; he even goes further in advising conservative methods also in the periosteal group of cases. While there will probably always be some people who will try to explain the successes from the use of toxins in inoperative sarcoma on the ground that the diagnosis was wrong and that the cases recovered spontaneously, the number of successes at the present time has been so great that such explanation can hardly

receive serious consideration. Besides, spontaneous cures in carcinoma or sarcoma are so extremely rare that there are probably few in the audience who have ever seen a single authentic case. I have cited examples of some of the most desperate cases of inoperable sarcoma, in which the diagnosis was confirmed by the most competent pathologists, which strikingly improved coincident with the beginning of the administration of the toxins and went on to a complete cure, the patients remaining well for many years thereafter. I have thus far had 52 patients with sarcoma, inoperable and hopeless as far as surgery was concerned, which were successfully treated with the toxins; of these 35 have remained well from 3 to 15 years and I think that over 100 have been successfully treated by other surgeons. In 3 or 4 cases in which the tumor had disappeared and the patient had remained well for a considerable time, the growth returned and caused the death of the patient. These cases are perhaps most important of all, inasmuch as they absolutely establish the correctness of the diagnosis.

THE CLINICAL USE OF PHENOLPHTHALEIN *

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The clinical use of phenolphthalein, so far as our present knowledge goes, is that of a purgative, and as such it is a valuable and efficient remedy. It is a yellowish powder, being soluble in alcohol and in aqueous solutions of hydroxids and carbonates, and but very slightly soluble in water. Phenolphthalein is a definite chemical compound, belongs to a class of bodies known as phthaleins, and is obtained by the action of phenol on phthalic-acid anhydrid. It is colorless in acid solutions and red or pink in alkaline liquids, and, owing to its characteristic color with alkalies, it has long been used by chemists and clinicians as an indicator of alkalinity in determining the acidity of gastric contents, urine, etc.

Its introduction into therapeutics was accidental in that it had been used in artificial Hungarian wines to prevent their substitution for the genuine wines. Individuals who drank the wine soon suffered from diarrhea, and the diarrhea continued as long as the wine was consumed. This led to a careful examination of phenolphthalein with regard to its action on the bowels, and it was clearly demonstrated by Vámosy that it invariably acted as a purgative. Following these observations, it was introduced as a proprietary remedy under various names: "urgen konfekt," "paraphthalein," "purgatol," "purgatin," "purgo," "purglets," "purgella," "purgoad," "purgylan," "laxieonfekt," "laxine," and "clermae."¹

Vámosy² explains the *modus operandi* of phenolphthalein as follows: The probability is that in the acid medium of the stomach it remains unchanged, but on reaching the intestines it becomes converted into its sodium salt, which is more soluble and more active than phenolphthalein itself. This salt is, according to the observations of Vámosy, possessed of a low power of diffusion; and this property explains the purgative

action of the substance in that, being indiffusible, its presence in the intestine occasions a high osmotic pressure and consequently a copious accumulation of fluid in the intestine.

Ott and Scott³ report the result of their study of the effect of phenolphthalein on peristalsis in cats and dogs. They used two methods: one with the Cambridge intestinal plethysmograph and Dr. Schlayer's (Tübingen) recording apparatus. The second method was that of Dr. Magnus, of Heidelberg. An injection of the drug into the jugular vein showed by the plethysmograph that peristaltic contractions of the intestines were increased in number and also in strength. With the excised intestines immersed in a modified Ringer solution, after the addition of phenolphthalein, a decrease in the tonus of the intestine was noted, while the force of the peristaltic movements was greatly increased. These writers explain the action of phenolphthalein on intestinal peristalsis as being either "on the unstriated muscle or the reflex center of peristalsis—the plexus of Auerbach." Ott and Scott also state that it is possible that phenolphthalein has some effect on the nervous plexus; further, they say: "As the intestinal movements are largely due to the unstriated muscular fiber itself, we are inclined to believe that this drug acts mainly on the unstriated muscular fiber in producing peristalsis." Vámosy found that the purgative action of phenolphthalein was much more marked in man than in animals, and he believed this to be due to the fact that in animals the conversion of this substance into its sodium salt either does not take place at all, or only to a very slight extent.

The effect of phenolphthalein on blood-pressure was also studied by F. W. Tunnicliffe, Ott and Scott, and others, and shown to have a slightly depressant action on the circulation, but not so much as magnesium sulphate. The drug does not appear to possess any other physiologic property than that of a purgative.

It was thought that the drug was capable of acting in jaundice, but its effect seems to be due to its purgative action only; it apparently has no influence on the flow of bile. Nor does it seem to irritate the kidneys; it may, therefore, be administered as a cathartic in cases with renal disease. I have used it a number of times in cases of interstitial nephritis without any ill effects. Tunnicliffe used it in patients suffering from albuminuria without any increase in the albumin in the urine.

According to Vámosy and Tunnicliffe, phenolphthalein does not appear in the urine unless very large doses have been taken. Its presence in the urine is easily demonstrated by taking some urine and adding an alkali—sodium hydrate; in the presence of phenolphthalein the urine becomes at once either rose-red or purple, depending on the quantity of phenolphthalein present.

Tunnicliffe says that phenolphthalein is not excreted in the urine to any extent, either as such or as an immediate derivative; he says further that this observation confirms that of Vámosy, who also found no increase in the aromatic sulphates of the urine after the administration of this drug.

Vámosy did find, however, that a very large amount of phenolphthalein, 87.17 per cent. of the ingested quantity, appeared in the feces. The presence of phenolphthalein in the feces can be demonstrated by adding a small quantity of alkali to the stool. The feces will quickly develop a purple color. The reaction will continue to be present for two or three days after the admin-

* Read in the Section on Pharmacology and Therapeutics of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

1. Department of Therapeutics, THE JOURNAL A. M. A., March 6, 1907, xlviii, 1133.

2. Vámosy: Ueber neues Abführungsmittel, Therap. d. Gegenw., May, 1902; quoted by F. W. Tunnicliffe, Brit. Med. Jour., Oct. 18, 1902, p. 1224.

3. Ott and Scott: Med. Bull., March, 1908.

istration of a large dose of the drug, but it usually disappears with the cathartic effect of the drug.

It was also believed that the quantity of this substance absorbed into the body when it is administered by the mouth was a negligible quantity; but we know now that the drug must be absorbed more readily than formerly supposed from the fact that poisoning has occurred after the administration of 15 grains.⁴

Clinical experience has confirmed the early investigations of Vámosy, Dornblüth, Tunncliffe, and others, which show that phenolphthalein is a safe cathartic. It usually acts without pain in about six hours, and it is not followed by a tendency to sluggishness of the bowels. I have had a few patients in whom the administration of the drug was followed by griping, but this, I believe, is more attributable to the idiosyncrasy of the patient than to any irritating effect of the drug. In those cases I added a small dose of belladonna to the phenolphthalein. One must also bear in mind that, while this is an excellent cathartic and that it usually produces purgation, some patients do not respond to its administration. Constipation, of course, requires other treatment besides the giving of drugs. Tunncliffe states that the drug does not lose its effect when administered over a prolonged time. This does not agree with my experience; in several cases the bowels responded by free purgation when the drug was first given, but later even an increase in the dose was without effect. These latter instances are, however, not common and the administration of the drug is usually followed by satisfactory results. The drug may be prescribed in powder, pill or capsule. It is easily obtained, almost tasteless and not expensive, and some drug manufacturing companies put it up in the form of 1-, 2-, and 3-grain tablets. The dose for adults is from 1 to 5 grains. It is well to begin the treatment by prescribing a small dose, which may be increased to meet the requirements of the individual case. A dose of 3 or 5 grains (19 to 32 cg.), one, two or three times a day, will purge the average patient. The larger dose may be necessary in patients with obstinate constipation. To adults with a moderately severe constipation I give a prescription as follows:

R.	gm.
Phenolphthalein	4| or 3i
Div. in capsulae No. xii.	
Sig. One capsule three times a day.	

I prefer to give the drug put up in capsules. If the taking of three capsules a day causes too free purgation, the dose may be reduced to one capsule at bedtime. Some patients do very well by taking a 5-grain capsule every two or three days. For these latter cases it is better to give a smaller dose; that is, one or two grains at night. If the administration of 5 grains three times a day does not produce the desired effect, I prefer to give another purgative in addition to the phenolphthalein.

Tunncliffe recommends as high as 15-grain (1-gm.) doses in cases of obstinate constipation, but, in view of the fact that a dose of 15 grains produced poison, a dose of that size is too large. I think that 5 grains is as large a dose as it seems safe to give a patient, especially as some patients possess an idiosyncrasy to phenol preparations.

Tunncliffe has used the drug in children from two months to seven years of age, also in babies. Babies under eighteen months were given from $\frac{3}{4}$ to $1\frac{1}{2}$ grains (0.1 to 0.05 gm.) pulverized in one or two teaspoonfuls

of milk at night. I have not prescribed the drug for children. If I were to prescribe it for children, however, I would begin with a small dose, say half a grain given at night.

My experience with the drug, aside from using it in the clinical laboratory, has been in its clinical use, and this in the treatment of constipation in adults. It has usually given satisfaction, and its administration was followed by soft-formed stools; whereas the use of a number of other purgatives in these patients gave very unsatisfactory results. In a few patients whom I have treated, the prolonged use of phenolphthalein was followed by diarrhea, in some instances lasting several days after the drug was discontinued; in other cases (and these patients had formerly suffered from constipation) the diarrhea lasted for a period of upward of a week or until the diarrhea itself was treated. Owing to this effect, two patients could not take the drug for subsequent attacks of constipation.

There is no doubt that in phenolphthalein we have a valuable purgative, and I wish to take this opportunity to recommend it to the United States Pharmacopeial Committee for adoption as a drug. A number of the manufacturers are sampling to the physician and are doing their best to have trade-marked preparations of the drug fall into the hands of the public so that the patient may purchase the remedy over the counter. In view of this fact, I would also recommend that physicians, in prescribing this remedy, write for it under its proper name—"phenolphthalein"—and not by one of the many proprietary names.

1934 Chestnut Street.

SUBCUTANEOUS PURGATIVES

A CLINICAL STUDY ON PHENOLTETRACHLORPHTHALEIN *

L. G. ROWNTREE

BALTIMORE

Since the introduction of the hypodermic needle by Alexander Wood of Edinburgh in 1853, a constant and growing tendency to rely more and more on the subcutaneous method of administering drugs has existed because of the fact that this method insures more complete and more rapid absorption and more accurate dosage.

Medicine stands in need of a subcutaneous purgative. The physician and surgeon alike have recognized its necessity. Pharmacologists and experimental therapeutists have repeatedly attempted to supply this demand, turning successively to the salines, to the vegetable purgatives, and to the alkaloids. But still the need is felt, for no preparation suggested has as yet fulfilled the numerous requirements demanded of it. Such a body must act on the intestinal tract and on the intestinal tract only without any untoward effect on any other organ or system, must act with certainty, must be readily soluble, preferably in water, in order that the amount of fluid to be injected may be small, and it must be non-irritant locally. As a rule it should produce its effect within a short time, although in some conditions an action delayed in onset but prolonged in character is to be preferred.

* From the pharmacologic laboratory of the Johns Hopkins University and the medical clinic of the Johns Hopkins Hospital.

* Read in the Section on Pharmacology and Therapeutics of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

4. Department of New and Nonofficial Remedies, THE JOURNAL A. M. A., April 20, 1907, xlviii, 1351.

In this connection it is interesting to review the literature dealing with the subcutaneous and intravenous administration of the saline purgatives. Aubert¹ stated in 1851 that intravenous injections of sodium sulphate produce purgative effects. Claude Bernard² made a similar statement in 1857 and Headland³ in 1859, though neither of the last writers gave any experimental proof for his claim. Buchheim,⁴ Wagner,⁵ and Hay⁶ concluded, after a considerable amount of experimentation, that sodium sulphate exerts no purgative action if given intravenously or subcutaneously, and this has been the conclusion of practically all investigators in this field until the appearance of a paper by J. B. MacCallum,⁷ which created a new interest in this subject.

MacCallum introduced solutions of the various salines into the veins or under the skin of rabbits, and then studied the effect on movements of the intestines either by observing the movements of intestines through the opened abdominal wall or by observations made on these animals confined in separate metabolism cages. He concluded that all those salts which act as purgatives when introduced into the stomach or intestines have the same action when injected subcutaneously or intravenously. He also stated that barium chlorid possesses this purgative property to the greatest degree, but all of the other salines possess it to a less degree, that the purgative effect is produced by increased secretion as well as increased peristalsis, and that the purgative effect can be counteracted or abolished by calcium chlorid.

Auer⁸ investigated in the same field, but could not obtain MacCallum's results, and claimed that in his experiments sodium citrate used intravenously caused constipation, while magnesium sulphate inhibited intestinal movements.

Bancroft⁹ repeated MacCallum's work and stated that sodium citrate or barium chlorid subcutaneously and sodium sulphate intravenously act as purgatives, but that it is easier to produce fluid feces by administering sodium sulphate or sodium citrate by mouth.

Eckardt¹⁰ gives an excellent review of the work done in this field up to 1905 and presents also the results of his own experiments, which conclusively prove that the salines will not furnish us the sought-for subcutaneous purgative.

Although these investigations are of academic and scientific interest, they help to throw some light on the method of action of salines, and, although intestinal peristalsis is undoubtedly increased by some at least of these salts, yet the increase in activity is not sufficiently marked to result in purgation unless toxic or lethal doses are injected. The salines, therefore, are of no practical importance to medicine as subcutaneous purgatives.

Barium chlorid, however, will produce purgation administered either subcutaneously or intravenously, and it is frequently used as such by veterinarians, 1 gm. being sufficient to purge a horse weighing 1,000 pounds. But barium is the most poisonous of the alkaline earths and it affects many organs. It accelerates the heart, enormously raises blood-pressure, and in large doses, besides purging, causes vomiting and sometimes tonic

and chronic convulsions. The widespread nature of its activity and its toxicity preclude its general adoption in this field.

VEGETABLE PURGATIVES ADMINISTERED SUBCUTANEOUSLY

Similar investigations have been carried on with the vegetable purgatives, aloes,¹¹ colocynth and cathartine acid having been tested. Hiller¹² regards colocynth as the most suitable for this purpose. No doubt can exist as to their efficacy when so used, but all these bodies are strongly irritant and the local reaction at the point of injection is frequently extremely severe. They cannot be used in this way except in very exceptional instances where the indications are imperative, and then only with a grave possibility of sloughing occurring at the point of injection.

An effort was made to see if croton oil greatly diluted could be used subcutaneously. Two drops of croton oil were added to 5 c.c. of olive oil and under aseptic precautions introduced beneath the skin of a dog. On the following day a painful swelling was found at the point of injection. This increased in size, became very tender, and persisted for several days. No evidence of an action on the intestine was noted until the fifth day, when a large amount (100 gm.) of fluid feces was passed. The stools remained soft for three days and then returned to a normal consistency.

An experiment with castor oil yielded a very similar result. A dog was injected with 25 c.c. of sterile castor oil on December 12. No purgative effect was obtained until December 18, but this was so slight in degree that it was doubtful. A large painful swelling occurred at the point of injection, which persisted until December 21. It is scarcely possible that any serviceable subcutaneous purgative will be obtained from this class of drugs.

APOCODEIN

The work done with apocodein, however, has been more fruitful. This is an alkaloid corresponding in derivation to apomorphin from morphin, obtained by dehydrating codein. It was first carefully studied by Guinard.¹³ He noted that it produced no nausea or vomiting, and following its administration he observed the increased peristalsis through an open abdominal wall. Murrel¹⁴ used it as an expectorant in 1891, Toy¹⁵ as a sedative in maniacal cases in 1895. Combemale¹⁶ introduced it as a purgative by mouth in 1900. He interested Raviart and Barton,¹⁷ who in the same year administered it subcutaneously in 34 cases of constipation with very encouraging results. Giraud,¹⁸ 1903, used it in 8 cases of constipation, also with satisfactory results. In the same year Heinze¹⁹ tested it in a series of 30 cases of constipation. He had 47 per cent. of successful cases and in 53 per cent. it utterly failed. From his experience he concludes that apocodein is unsatisfactory in that it is uncertain in action, but admits that it works very well in many instances.

The dose of this drug is small, .02 gm. of the hydrochlorate being usually sufficient, while .05 gm. is the maximal dose. Most of the writers claim that the first evacuation follows shortly after the administration of the injection, frequently within one to two hours.

1. Ztschr. f. rat. Med., 1852, II, 225.

2. Substances Toxiques et Medicamenteuses, 1857, p. 85.

3. Action of Medicines, 1859, p. 459.

4. Arch. f. physiol. Heilkunde, 1854, XIII, 217.

5. Inaug. Diss., Dorpat, 1853.

6. Jour. Anat. and Physiol., XVI, 243.

7. Am. Jour. Physiol., X, 191.

8. Am. Jour. Physiol., XVII, 15.

9. Jour. Biol. Chem., III, 191.

10. Inaug. Diss., Giessen, 1905.

11. Hans Meyer: Arch. f. exper. Path., XXVIII, 186.

12. Ztschr. f. klin. Med., IV, 480.

13. Lyon méd., 1893, pp. 21 and 23.

14. Brit. Med. Jour., 1891, I, 455.

15. Semaine méd., 1895, p. 346.

16. Semaine méd., 1900, p. 422.

17. Echo méd. du nord, December, 1902.

18. Thèse de Lyon, 1903.

19. Psychiat.-Neurol. Wchnschr., 1903-4, V, 297.

Heinze, however, states that the average time is from ten to twelve hours.

The objections to apocodein are worthy of consideration, for it certainly does not represent the ideal subcutaneous purgative as outlined above. According to Dixon²⁰ it lowers the blood pressure, dilates the arterioles, increases peristalsis by its sedative action on the inhibitory ganglia of the sympathetic system, increases the rate of the heart beat, and increases nerve reflexes. Its actions are too numerous and complex and involve too many symptoms. Unfortunately, although readily soluble in water, it is irritant, locally, many of the patients having complained of pain and an abscess having followed its use in one case. Its action is also short in duration, constipation usually returning in a day or two.

Notwithstanding these drawbacks apocodein is, however, a serviceable hypodermic purgative. Personal experience has been limited to animal experimentation. On one occasion an evacuation of the bowels followed within an hour of the injection of 0.04 gm. subcutaneously in a dog. In other instances movements occurred within ten or twelve hours, but the stools were not soft and no prolonged action was obtained.

ESERIN

Eserin or physostigmin has also been investigated. Dickerhoff²¹ first suggested its use, and since then it has been tried clinically by many investigators, von Noorden,²² Packard,²³ Pankow,²⁴ Craig,²⁵ Jewett,²⁶ particularly by surgeons and obstetricians. It is not given solely for its purgative effect but most frequently to prevent or overcome intestinal paresis following surgical operations, or to overcome intestinal atony following parturition, or to expel gas from a distended intestine. Craig has used it extensively, and he administers it immediately after opening the abdomen provided no contraindication presents itself. He claims that it is of more value in preventing or warding off threatened intestinal paresis than it is in curing this condition when once established. He advises large doses, 1/35 gr. of the acetate administered early subcutaneously, and he regards this as essential for successful results, attributing Pankow's lack of results to the smallness of the dose utilized. Jewett's results confirm those of Craig. But all these authors find that though preventing paresis eserine is not always sufficient to produce purgation, thus rendering necessary the administration of other purgatives by mouth.

Eserin is an exceedingly powerful alkaloid and must be handled judiciously. Undoubtedly it has its place when used in conditions described above, but it is not of wide practical application and will never come into general use alone as a subcutaneous purgative.

SODOPHTHALYL

Fleig²⁷ in a recent publication states that he has prepared a soluble salt of phenolphthalein which he has named sodophthaly, and which according to his account is being used successfully as a hypodermic purgative in the clinics in Montpellier. His account of the mode of preparation and of the chemical properties of this derivative are so exceedingly meager that no definite idea

of its chemical constitution can be formed. I assume here that it is the disodium salt of phenolphthalein which has also been described by Meyer and Marx,²⁸ and which is made by the addition of sodium hydroxid to phenolphthalein. This salt is very soluble, and, being a combination of a very weak acid with a very strong base it is readily hydrolyzable and acts like a solution of the alkali itself; that is, it is decidedly irritant.²⁹ It is with great interest that we await the report of the therapeutic application of sodophthaly in the clinics of Montpellier; and if this substance is identical with the disodium salt of phenolphthalein, it is difficult to see how it can be used on account of its irritating effect at the point of injection.

In April, 1908, Abel and Rowntree³⁰ started an investigation of the phthalein group with particular reference to the excretion, the absorption, and the purgative action of different members of this family, and also as to the effect of substitution of different parts of the phthalein radicle on the pharmacologic action of the drug.

It was proved that olive oil when heated would dissolve phenolphthalein and many of its derivatives, and that this oil preparation possessed some value as a purgative when injected beneath the skin of dogs. But it was soon observed that more prolonged purgative action was obtained when phenoltetrachlorophthalein was employed than when any other phthalein at their command was used.

METHOD OF PREPARING OIL SOLUTION

The solution of phenoltetrachlorophthalein employed throughout this investigation is prepared in the following way: Neutral olive oil is slowly heated to 210 C., and when this temperature is reached finely powdered phenoltetrachlorophthalein is added with stirring. The heating is continued for not longer than five minutes and the temperature is not allowed to exceed 220 C. In order to remove any traces of foreign matter or undissolved phthalein, the oil solution is filtered hot into sterilized flasks and set aside for use. Olive oil thus treated will dissolve the chlor body to the extent of about 0.2 gm. to every 10 c.c. of oil, while it will dissolve phenolphthalein itself to a slightly greater extent at a slightly lower temperature.

Analytical experiments were made which show that no appreciable saponification of the oil takes place during this procedure. Nevertheless, in order to lessen the risk of saponification, the custom was adopted of preparing only 40 c.c. of such a solution at a time, though doubtless larger volumes of the solution might be prepared at one operation.

Phenolphthalein exhibits a greater tendency to come down out of such a solution, but a properly prepared solution of the chlor body will stand some days without any precipitation whatever.

ABSORPTION, EXCRETION AND MODE OF ACTION

Before entering on the report of the clinical application of this substance a few words concerning its absorption, its fate in the body, its channels of excretion and its mode of action will not be out of place.

Practically all the drug is absorbed from the local seat of injection into the general circulation in from

20. Jour. Physiol., xxx, 97.

21. Wehnschr. f. Thierb. u. Viehz., 1882, xxxvi, 309.

22. von Noorden: Berl. klin. Wehnschr., 1901, p. 1057.

23. Philadelphia Med. Jour., May 24, 1902.

24. Zentralbl. f. Gyn., June, 1904.

25. Am. Jour. Obst., April, 1904. Am. Jour. Obst., September,

1904. New York Med. Jour., 1905, lxxxi, 527.

26. Brooklyn Med. Jour., xix, 42.

27. Arch. internat. de pharmacod. et de therap., xviii, 327

28. Ber. d. deutsch. chem. Gesellsch., 1908, xli, 2446.

29. In animal experiments Abel and Rowntree used the disodium salts of both phenolphthalein and its tetrachlor derivative for injecting subcutaneously in dogs. Irritation, infiltration, and sterile abscesses followed in many of the animals so that these preparations were abandoned.

30. Abel and Rowntree: Jour. Pharmacol and Exper. Therap., 1909, I, 231.

sixteen to twenty-four hours. It appears in the bile in the conjugated form, and later in both the free and conjugated condition, and continues to be excreted in the bile of a biliary fistula dog for from forty-eight to seventy-two hours and in the feces of a normal dog as long as five and six days. Part of the drug is reabsorbed again from the large intestines, and the purgative action produced is consequently very prolonged in nature. No traces of the drug can be detected in the urine; it thus differs from phenolphthalein, which after being injected under the skin escapes to a considerable degree by way of the kidneys.

After a prolonged period of experimentation in a series of forty injections in dogs it was learned that injections of this body in neutral olive oil were not followed by any untoward results either locally at the point of injection or systemically, and that no system other than the alimentary was influenced by this substance. Its introduction into the dispensary and wards of the hospital for further investigation was therefore considered justifiable and advisable. A study to determine its clinical value was accordingly undertaken at the suggestion of Dr. Abel.

ADMINISTRATION TO OBSTETRICAL PATIENTS

The first series of injections were made in the obstetrical wards by the permission of Dr. Williams and with the kind assistance of Dr. Storrs. The cases represent women in the puerperium, some of whom received the injection in place of the usual initial purgative, while others received it when a purgative was indicated later during the lying-in period. This table also includes the result of one injection of 12 c.c. of the oil preparation given to a dispensary patient (No. 3, Mrs. R.). This case is included here because of the smallness of the dose administered.

SUBCUTANEOUS INJECTIONS OF PHENOLTETRACHLORPHTHALEIN

DOSE.	PATIENT.	Day	Days						
		of injection.	1	2	3	4	5	6	7
Patients receiving 0.2 gm. in 10 c.c. of oil.	1 Mrs. H.	1	0	1	0				
	2 Mrs. A.	1	2	0	0	1			
	3 Mrs. R.	1	1	1	0	1	0	1	
Patients receiving 0.3 gm. in 15 c.c. of oil.	4 Mrs. A.	1	2	0	1	2	2	2	
	5 Mrs. C.	3	1	0	1	1	0	1	
	6 Mrs. F.	0	1	0	1	1			

These results are not entirely satisfactory, but in the light of later experiences this is thought to be due to the fact that the dose administered was too small, and probably had the dose been larger the results would have been correspondingly more favorable. However, a decided laxative effect was obtained. The stools became softer and in some instances semifluid or of the consistency of a porridge, and in one instance contained the drug as late as the fifth day. In none of the cases did local irritation or inflammation follow the injection, nor were griping pains or colic complained of by any patient at any time following the administration. The urine and the milk were collected from the mothers, but no drug could be detected in either secretion.

A glycerin suppository was given at the end of thirty-six hours when necessary for the first movement, and repeated if thirty-six hours again intervened without an evacuation.

RESULTS OF ADMINISTRATION TO DISPENSARY PATIENTS

The results just presented, though not entirely satisfactory, were, however, sufficient to justify a further investigation as to the value of this subcutaneous laxative, particularly in view of the prolonged nature of the action excreted throughout a period of several days.

The patients, indicated on the table presented below, were selected cases of chronic constipation obtained from the medical dispensary of the Johns Hopkins Hospital through the courtesy and assistance of Dr. McCrae and the other members of the dispensary staff. Only male patients were selected in whom the symptom "chronic constipation" constituted the chief cause of complaint. This symptom varied in the different individuals to all degrees of severity, and had persisted for periods varying from weeks to twenty years. Many of the patients had been returning to the clinic for months or years, never having a bowel movement without resorting to drugs. Some responded well to daily doses of cascara, to pills, or to various forms of teas, while others had derived little or no benefit from any form of previous treatment.

Under aseptic precautions each of these patients was given 0.4 gm. of phenoltetrachlorphthalein, 20 c.c. of the freshly prepared oil preparation, subcutaneously in the gluteal region. Each one was also supplied with two glycerin suppositories and was asked to follow these rules: (1) Drink water freely; (2) eat some fruit each day; (3) take walking exercise every day; (4) go to toilet night and morning and stay five to ten minutes if necessary; (5) use a glycerin suppository at the expiration of thirty-six hours if the bowels have not moved, and use the other suppository later if thirty-six hours again pass without an evacuation.

PATIENTS RECEIVING 0.4 GM. OR 20 C.C. OF OIL PREPARATION

Patient.	Day of injection.	Days following injection.							2d week.	3d week.	Final result.
		1	2	3	4	5	6	7			
7 M. K.	..	1	1	1	0	1	1	..	..	..	Constipation returned.
8 H. C.	1	1	2	1	1	1	1	1	4	3	Constipation returned.
9 J. C.	..	1	2	1	2	1	1	2	7	7	No return of constipation.*
10 I. B.	..	1	0	1	1	1	2	1	8	7	No return of constipation.*
11 J. S.	..	1	1	1	1	2	1	1	4	3	Constipation returned.
12 H. G.	1	2	2	3	2	2	2	1	7	7	No return of constipation.*
13 J. L.	..	0	0	0	..	..	..	..	..	..	No effect.
14 I. W.	..	1	1	2	0	1	0	1	3	2	Constipation returned.
15 L. L.	..	2	1	0	1	0	1	..	3	3	Constipation returned.
16 J. S.	..	1	1	0	1	1	0	1	12	8	No return of constipation.*
17 L. K.	1	1	0	1	1	1	0	1	6	7	Constipation returned.
18 J. B.	..	3	1	1	1	1	0	1	7	7	No return of constipation.*
19 F. T.	1	1	0	1	1	1	1	1	5	6	No return of constipation.*
20 †	1	2	2	2	2	2	2	0	..	..	Result not known.
21 O. N.	..	1	1	1	1	1	1	1	..	..	Constipation returned.
22 J. W.	1	1	1	1	1	1	1	1	7	7	No return of constipation.*
23 W. H.	..	1	2	2	1	..	..	..	..	..	No return of constipation.*
24 B. W.	1	2	2	3	Took cascara				..	..	Constipation not relieved.
25 L. M.	..	1	1	0	0	..	..	..	..	..	Constipation not relieved.
26 A. B.	1	2	1	1	1	1	1	2	8	8	No return of constipation.*
27 J. W.	..	2	2	2	2	2	2	1	14	14	Constipation returned.
28 W. B.	..	0	0	0	..	..	..	..	..	..	No effect.
29 W. B.	1	1	1	1	1	1	1	1	7	7	No return of constipation.*
30 J. J.	..	1	1	1	0	0	..	..	..	..	..

* No return of constipation after periods varying from two to six months.

† Dr. Rosenthal's patient.

One of the most striking phenomena revealed by the study of this table is the prolonged nature of the action produced by this drug. It is not claimed that one injection will produce purgation for more than four or five days, but that it will do this, and that without the aid of psychotherapy, has been proved by numerous experiments on dogs.

It was hoped that the success attending the observance of the hygienic and dietetic rules outlined above, during the period in which daily movements of the bowels were being induced by the chlor body, would encourage the patients to continue in the observance of these rules, and that they would thus obtain a permanent cure without further resort to drugs. This was realized in ten patients out of the twenty-five cases of chronic constipation. That the total results recorded during the first week following injection are not due to psychic, hygienic and dietetic treatment is proved by the fact that many of these same patients were old dispensary cases who had probably had the same suggestions and advice on numerous previous visits as well as by the similar results, already mentioned, which were obtained in animals.

It is very evident that phenoltetrachlorphthalein is not an ideal purgative. Several serious objections at once present themselves:

1. The insolubility of this drug in water.
2. The slight degree of its solubility in oil necessitating a large volume for injection.
3. The long time elapsing before the onset of its laxative action, which appears usually eighteen to twenty-four hours after administration of the drug.
4. The mild character of its action, which is rather laxative than purgative.

At the same time several redeeming features which make this substance of peculiar value must not be overlooked:

1. The prolonged nature of its action.
2. The absence of crampy pains and colic throughout the period of its action.
3. The constancy, at least in the cases so far studied, with which it has produced results.

Phenoltetrachlorphthalein, then, is efficient, non-toxic and non-irritant when administered as a subcutaneous purgative, but its insolubility in water and its low solubility in oil stand in the way of its wide application as such in practical therapeutics but do not detract from its efficiency when a subcutaneous purgative is indicated. It may prove of considerable value in certain conditions, as (a) in coma; (b) in marked gastrointestinal irritability which contraindicates the administration of a purgative by mouth; (c) among the insane, who often refuse to take any medicine by mouth and who fight vigorously against the administration of enemata; (d) in certain cases of chronic constipation, combined with hygienic, dietetic and psychic treatment.

Phenoltetrachlorphthalein is worthy of a trial in the field of abdominal surgery, when its introduction beneath the skin can be accomplished during the anesthesia without any pain whatever, where its mild prolonged laxative effect, e. g., a soft daily stool, starting on the day following the operation and continuing for a period of from four to six days, may possibly entirely dispense with the necessity of administering any other purgative by mouth during the first week subsequent to the operation.

ABSTRACT OF DISCUSSION

ON PAPERS OF DRs. GILBRIDE AND ROWNTREE

DR. H. C. WOOD, JR., Philadelphia: Dr. Gilbride referred to a case of poisoning following injection of 15 grains of phenolphthalein. I would like to know whether he ever succeeded in tracing the authority for this report. I believe that Schwartz states that phenolphthalein is a compound of phenol and therefore a poisonous body. It is, however, a pure

assumption that the phenol radicle will be liberated in the body; on the contrary, it seems to be a very stable compound and escapes through the kidney unchanged. I have injected intravenously into dogs doses equivalent from 60 to 100 grains in the human being without causing toxic symptoms; so I think we are justified in concluding that the drug is perfectly safe, except possibly in so far as some slight irritation of the kidney might follow its prolonged use. Dr. Gilbride quoted some authorities who believed that the action was due to a heightening of the osmotic function and a diffusion toward the intestinal tract. Others believed that because it acted, when administered hypodermically, it increased peristalsis. The evidence is strong against increase of peristalsis. My own experiments on dogs, and the fact that it does not gripe, both go to show that it does not have much effect on peristalsis. I have injected it into isolated loops of intestine in the dog and found practically all the phenolphthalein two hours later, showing that it is not absorbed to any great extent. I found that there was always a determination of fluid to the loop into which the phenolphthalein was injected and I conclude the action of phenolphthalein is a direct stimulation of the intestinal gland and consequent increase of the intestinal secretion.

I have observed one other fact, which is of practical importance; that is, an apparent great variation in the specimens of phenolphthalein. I have seen patients obtain phenolphthalein from one manufacturer and continue for two or three months to take half-grain doses with perfect satisfaction and then obtain another bottle and find that it takes three or four grains to obtain the same effect. This suggests that there is a great difference in the quality of the phenolphthalein of different manufacturers.

DR. L. G. ROWNTREE, Baltimore, Md.: So far as toxicity is concerned I cannot believe for a moment that 15 grains of pure phenolphthalein ever poisoned anybody. As Dr. Wood states, large doses can be introduced intravenously. Dr. Abel and I introduced enormous doses in our experimental work and never saw any effect except purgation. Tunnicliffe's observation on the depressive effect on the circulation we cannot bear out. We obtained a slight rise of blood-pressure following intravenous administration which continued for some time, probably a rise of 10 to 15 mm. In regard to the effect on animals as compared with the effect on man, many of the previous writers have pointed out the difficulty of purging animals. We could not purge rabbits, but we satisfied ourselves that we could purge dogs. Mention has also been made of the influence on flow of bile. There is no influence on the flow of bile, or any other secretions, intestinal secretion excepted, so far as we could make out in our studies. Its appearance in the urine is very constant after subcutaneous injection. This is markedly different from its tetrachlor derivative. This does not appear in the urine, no matter how large the dose. In connection with impurity of the drug we have had no experience. Our standard was Kahlbaum's.

DR. REID HUNT, Washington, D. C.: Professor Cushny, in discussing the origin of drugs, said that in the last forty years every new drug, with one or two exceptions, had come from a definite method of study and by experiments on animals. Only the antiseptics and purgatives had come in by direct clinical observation. It seems now that in the case of purgatives also the experimental method, the method pursued by Dr. Rowntree, is going to be of great value. Whether this tetrachlorphthalein is the purgative for which surgeons and physicians have been looking so long, Dr. Rowntree is certainly on the right track. I do not wish to disparage the contributions that manufacturers have made to the materia medica, but it is gratifying to know that the object of Dr. Rowntree's study was science. Dr. Rowntree has nothing to sell. His paper is the contribution of science. It is to be hoped that other pharmacologic laboratories will take up similar lines of work.

DR. JOHN J. GILBRIDE, Philadelphia: I did not trace out that case of poisoning from 15 grains of phenolphthalein to which Dr. Wood has referred, but I accepted the statement made in THE JOURNAL.

SUTURE OF BLOOD-VESSELS WITH
HUMAN HAIR*F. V. GUTHRIE, A.M., AND C. C. GUTHRIE, M.D.
PITTSBURG, PA.

One drawback to suture of blood-vessels is the difficulty of obtaining proper suture material, as silk of suitable fineness and smoothness and tensile strength is not readily procured. To meet this difficulty we decided to test a material universally distributed, namely, human hair.

Light brown hairs of medium fineness about 8 inches long were tested as to tensile strength and found to be stronger than the silk previously employed. One of the carotid arteries of a recently killed dog was divided and the ends reunited with the hair as suture material. Hair proving satisfactory in this preliminary operation, a number of hairs were then threaded, and tied into sterile needles (No. 14 cambrics) and placed in 10 per cent. aqueous formalin.

A medium-sized dog was anesthetized and the left common carotid artery and corresponding internal jugular vein were exposed and divided. The peripheral end of the artery and the central end of the vein were ligated and the remaining two free ends were united by means of the needles and hairs sterilized in the forma-

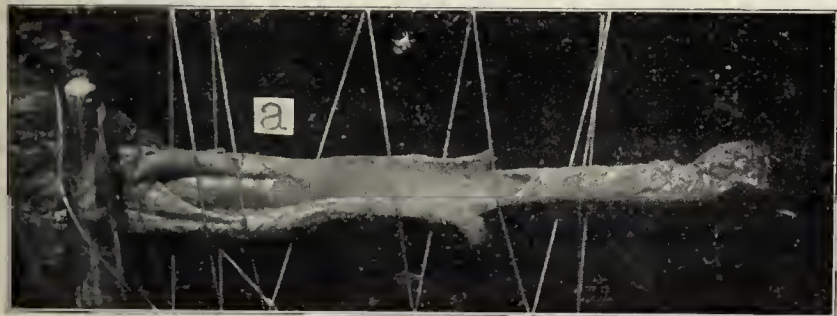


Fig. 1.—Central end of left common carotid artery anastomosed to the peripheral end of the left inferior jugular vein with human hair.

lin solution. The encircling suture was continuous and all of the coats of the vessel were penetrated and included in each stitch. No difficulty was experienced in using the hairs as sutures, and the result was good, the wound healing *per primam intentionem*. The pulse remained good.

Five and one-half months later the animal was chloroformed. On exposure the walls of the vessels appeared to be continuous. The circulation was active. The specimen was removed, slit open longitudinally and photographed (Fig. 1). The line of suture (a) could hardly be seen as the intimal surface was perfectly smooth and glistening. The longitudinal creases in the venous portion of the segment indicate clearly the line of anastomosis.

A few remarks on technic may be of interest.

No. 12 cambric needles can usually be obtained at dry-goods stores, and on medium-sized vessels may be used with good results, though for end-to-end suture we prefer No. 14, while for small vessels No. 16 needles. In purchasing such needles the common small-eyed variety should always be insisted on.

Figure 2 shows manner of tying thread or hair in needle and mounting on small slip of paper for convenience in handling, sterilizing, etc. The perpendicular dotted lines indicate where the paper may be folded over the needle and thread for protecting them. For

immediate use, we have found an ordinary microscope objective box quite satisfactory as a container for the needles during sterilization and on the operating table until ready for use. The box is filled about two-thirds full of paraffin oil and the papers holding the needles as shown are dropped in with or without folding. The box top, which is fitted inside with a tight-fitting disc of cork, is then screwed on and the whole placed in the sterilizer, and boiled and handled with the instruments.

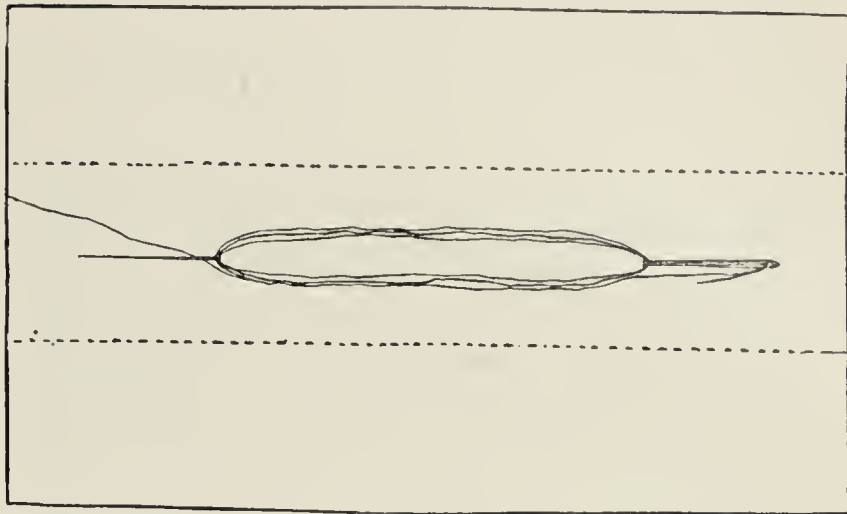


Fig. 2.—Thread or hair tied in needle and mounted on small slip of paper for convenience. Dotted lines show where paper may be folded over needle and thread to protect them.

Shortly before use the threads are unwrapped and, with the needles and papers, laid parallel on a smooth cloth, or, better still, a small square of black rubber sheeting or oilcloth. Contact with lint is carefully avoided, especially if silk or other spun thread is used.

Figure 3 shows the paper package containing needle and thread as prepared in Figure 2, sterilized and placed in glass tube containing sterile (or antiseptic)

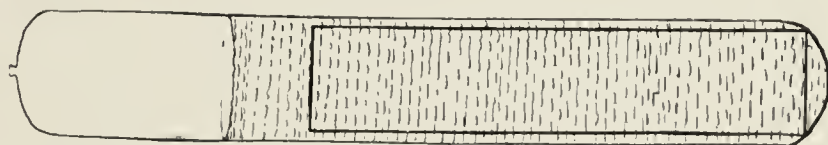


Fig. 3.—Paper package containing needle and thread, prepared as in Figure 2, in sealed glass tube containing sterile or antiseptic paraffin oil.

paraffin oil and the tube sealed. Thus prepared it may be kept indefinitely. When wanted for use the tube can be broken at the file mark and the contents removed in the ordinary way. Three or more such needles and thread may be placed in a tube, three being the number ordinarily required for making a complete circular vascular suture.

In conclusion, we desire to state that the use of human hair for the above purpose was suggested to the senior writer C. C. G. in 1905, by Dr. A. W. McAles-ter of the University of Missouri.

Artery Anesthesia.—Mention has previously been made in these columns of Goyane's method of regional anesthesia by injection of the anesthetic into an artery between two tourniquets after winding the limb from below to expel the blood. The principle is similar to Bier's vein anesthesia. Goyane reported in November, 1908, both experimental research and the application of the method in two and now has an experience of twenty cases. The *Siglo Medico*, Oct. 9 and 16, 1909, has republished his first communication on the subject to the Madrid Medical Academy. He says he has had no mishaps since and thinks the absence of valves in the artery renders the technic superior to the vein method (described in THE JOURNAL, May 1, 1909, page 1466).

* From the Physiological Laboratories of Washington and Pittsburgh Universities.

A METHOD OF AMELIORATING RENAL COLIC

REPORT OF AN ILLUSTRATIVE CASE *

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ST. LOUIS

Few who have practiced in genito-urinary surgery for any length of time have escaped the soul-harrowing descriptions of the tortures of renal colic, as given by sufferers from that condition. It will, therefore, be needless to present any apology for rehearsing an experience that occurred to me during the recent winter, if the

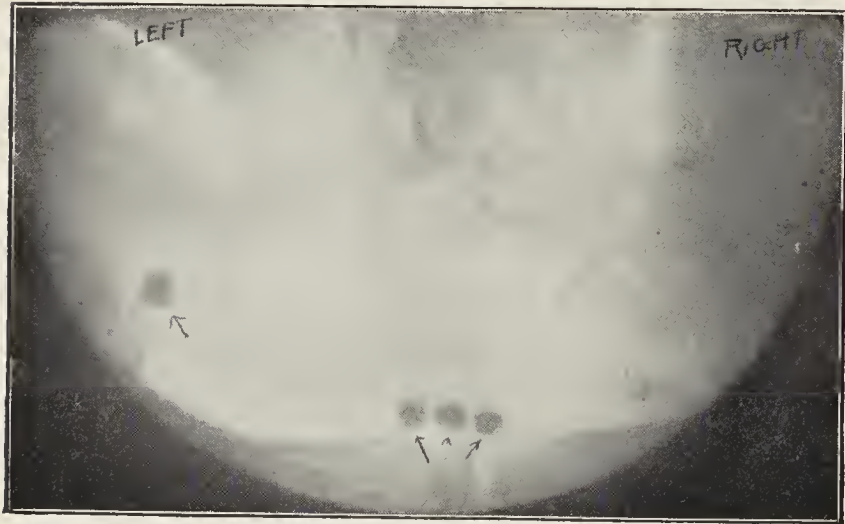


Fig. 1.—First radiograph taken, not accompanied by ureteral catheterization, showing four shadows, apparently three in the bladder and one in the left ureter.

plan of action adopted at that time serves others as well as it did me. In effect, it promptly and readily cleared up a situation that was rapidly becoming serious, if not dangerous; and postponed for a more eligible time an operation that, if done earlier, might have brought calamity to the patient, instead of the relief that it finally occasioned. A brief history of the case follows:



Fig. 2.—Second radiograph, with ureteral catheterization and styletted catheters; showing three stones in the bladder, and the fourth shadow three-fourths of an inch from the ureter, instead of within it.

History.—A. D., an unmarried woman, aged 25, nurse, previously strong and healthy, began in the fall of 1907 to suffer from severe pain in the right side of the abdomen, embracing the uretero-appendiceal regions. After a time, during which there was much suffering, elevation of temperature, chills, etc., the condition was diagnosed as appendicitis and the appendix was removed by a capable surgeon early in 1908. But the

operation evoked no relief, and for the following nine months there was repetition of the previous suffering. Occasionally there was hematuria.

Radiographic and Cystoscopic Examination.—In September, 1908, a radiograph was taken by Dr. R. D. Carman, a print of which is herewith shown (Fig. 1). As will be observed, it shows three shadows in the median line, close together, and a fourth to the left, low down, in a region that might readily embrace the lower end of the left ureter. As a result of this finding, apparently indicating calculi in the lower urinary tract, three in the bladder and one in the left ureter, I was called into the case, in September, 1908. Not accepting the delineation of the *x*-ray as positive or final, I insisted on the use of the cystoscope, styletted ureteral catheters, plus the *x*-ray. The point proved well taken. Immediately on introducing the cystoscope, three stones about the size of a pea were plainly seen lying in the *bas fond* or retrotrigonal fossa of the bladder. Then, ureteral catheters containing copper wire stylets were passed up the ureters, and Dr. Carman took another *x*-ray picture. The result, shown in Figure 2, is impressively instructive. The four shadows are there, as in the previous negative, but the fourth one is removed at least three-quarters of an inch from the left ureter, as indicated by the shadow of the wire, and is not in that organ at all. Its outline and general appearance are very similar to the shadows of the three genuine stones contained in the bladder, so that, so far as the *x*-ray is concerned, no differentiation was made by it; but by proof of cystoscope, styletted catheter and *x*-ray, it was clearly shown to be no ureteral calculus, but probably was only a phlebolith or a calcified gland—nothing of import. In addition to showing the three stones that had descended from the upper tract, the cystoscope showed whence they had come. The left ureteral orifice was normal in



Fig. 3.—The three stones after removal through the operative cystoscope.

appearance, while the right was large and patulous and had plainly been the avenue of egress for the stones; which finding was further confirmed by analysis of the two urines separately drained. That from the left was approximately healthy, while that from the right contained blood and pus corpuscles and non-gonorrheal diplococci.

The diagnosis then made was of small stones in the bladder, with pyelo-ureteritis on the right side resulting from their having existed in the upper tract for a year or more previously.

Treatment and Course of Disease.—The three stones were first removed, by means of my operative cystoscope and alligator forceps, no preliminary cutting or dilating having to be done. They are illustrated, full size, in Figure 3. Afterward, prompt, marked and prolonged relief followed the regular irrigation of the right renal pelvis and ureter with argyrol solutions of varying strength. The patient visited her home in the country, gained in weight and general health, and experienced no more pain in the side; so it was deemed permissible for her again to pursue her occupation of nursing, which she resumed in December. This, however, proved unfortunate; the pyelitis was reawakened, hematuria reappeared, the temperature became elevated, urinary chills and infected urine indicating the infection that had recurred. Pelvic lavage would apparently do good for a time, but relapses continually recurred. Moreover, her old enemy, severe renal colic on the right side, returned and became worse than ever, requiring repeated hypodermatic injections of morphin for even temporary relief. She was soon taking from two to four grains in twenty-four hours. But, worse still, her urine dropped to ten or fifteen ounces in twenty-four hours, and the conditions became precarious. She was not deemed strong enough at that time to make lumbar nephrotomy attractive, and she had not previously given her consent to the measure. A half or three-

* Read before the American Urological Association, Atlantic City, June 6, 1909.

quarters of a grain of morphin gave relief only for an hour or two; and sleep had been reduced to about one or two hours in twenty-four. Something radical and effective, evidently, had to be done, and shortly, I applied a measure that occurred to me in the midst of my perturbation, and which, so far as I am aware, has not been previously employed. The patient was placed on the cystoscopic table, a catheter was passed to the right renal pelvis, and 1 per cent. solution of alypin was injected directly into the pelvis, 20 minims in amount. Within ten minutes the patient expressed herself as being greatly relieved; by fifteen minutes no pain remained. The catheter was withdrawn and she had the first good sleep she had obtained for several days or nights. On the following day the renal colic returned, but in somewhat lessened severity; nevertheless, in order to prevent a recurrence of the siege of pain that had formerly prevailed, the ureteral catheter was reintroduced and 1 per cent. alypin solution was again injected, fifteen minims, promptly producing the same marked relief as on the previous day. This time, in order to avoid the necessity of repeated introduction of the ureteral catheter, it was allowed to remain in the ureter, held there by means of adhesive plaster, emerging from the urethra and draining into a sterile receptacle between the legs. When pain threatened to recur, one of the nurses present would inject ten minims of the alypin solution, which attained the desired result in every instance. After three days the crisis seemed to be over; the attacks ceased in their frequency and intensity; the catheter was withdrawn and all menacing conditions disappeared. In February, with a recurrence of the pelvic inflammation, the patient's consent to an operation was obtained; exploratory nephrotomy was carried out on the right side. The renal pelvis was found sharply inflamed and moderately dilated, but no foreign body or stone was found in it, and there was no obstruction to the passage of a catheter downward into the bladder (none had previously been discovered in passing the catheter upward along the same tract). The pelvis was drained by cigarette tube, the kidney being attached to the adjacent muscles. Reoperation was satisfactory, the urine cleared of infection and clouding, and the patient again was able to be about. At the writing of this report, April, 1909, there was no disturbance from the kidney or ureter of any kind. From forty to fifty ounces of clear, healthy urine were being secreted daily.

Aside from the interesting features of diagnosis in this case, the one that I wished to present for attention was the expedient adopted for relieving the excruciating renal colic that recurred, persisted and actually threatened the life of the patient, through the debilitated condition to which she had been reduced. The plan was easily applied, without the least difficulty or objection on the part of the patient; and after she had experienced her first relief from it she was highly in favor of it. The release from pain seemed to have a beneficial effect on the renal secretion, the amount of urine soon afterward reaching thirty-five or forty ounces, instead of fifteen, the amount she was passing during the painful period. Used in the amount finally adopted, from ten to fifteen minims of 1 per cent. solution, the alypin caused no depression or bad effect, and yet gave the relief in each instance.

1050 Century Building.

The Thyroid in Cretins.—In the true cretin the gland histologically presents marked overgrowth of fibrous tissue, with a corresponding disappearance of the epithelial elements, while in the preclinical stage the gland presents a marked epithelial hyperplasia with relatively slight increase in the supporting fibrous tissue. Thus with the progressive epithelial hyperplasia finally giving way to the fibrous overgrowth as typifying the anatomic changes in the cretin, or myxedema thyroid, it may be said that the symptom-complex varies with the degree of epithelial hyperplasia and fibrotic atrophy.—D. Marine and C. H. Lenhart, in *Archives of Internal Medicine*.

PSEUDOPERITONEUM, VARICOSITY OF THE PERITONEUM AND SCLEROSIS OF THE MESENTERY

WITH A PRELIMINARY NOTE ON DEVELOPMENT OF FIBROUS TISSUE *

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It was formerly common to compare the peritoneal cavity with a lymph space. This comparison was unfortunate, as it led to a misconception of the nature of the peritoneum. Thanks to the researches of Dr. Sabin and others, our understanding of the lymphatic system is

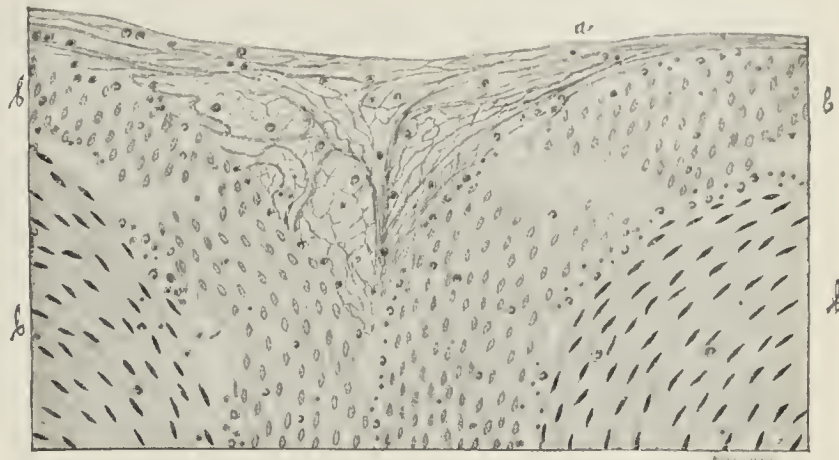


Fig. 1.—Intestine of dog: specimen removed after twenty-four hours: a, fibrin bundles extending from one intestinal layer to another; b, b, longitudinal muscle layer; c, c, circular layer.

now much more complete. The comparison of the peritoneum to the lymphatic system was due to the fact that there is a close resemblance in structure between the endothelium of the lymphatics and that of the peritoneum. Functionally the comparison is not apt. The peritoneum is the protective covering of the abdominal viscera—nothing more. In order that this function may be fulfilled, the peritoneum must not only serve as an



Fig. 2.—Fibrin bundles forming about a corn-pith sutured to intestine of a half-grown rabbit. Specimen removed after six hours. Mallory's aniline-blue stain; a, endothelial cells; b, b, fibrin bundles.

efficient covering, but provision must be made for the movements of the abdominal viscera. This is accomplished by the viscid fluid with which the peritoneum is constantly covered. The peritoneum, therefore, if it must be compared with any other structure of the body,

* Read in the Section on Surgery of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

can with greater justice be compared with the synovial membrane of the joints.

The correct understanding of the pathologic changes of the peritoneum with which this paper deals is so intimately connected with certain fundamental processes relative to the formation of fibrous tissue in general, and wound healing in particular, that it seems desirable to



Fig. 3.—Half-grown rabbit; specimen removed after six days. Van Gieson stain. A, connective tissue fiber bundles extending within and from corn-pith (c) to intestine (b); d, endothelial cells.

preface my remarks on the peritoneum with a somewhat extended preliminary note on my researches in the formation of connective tissue fibrillæ.

The prevailing theories of the formation of fibrous tissue, it will be remembered, are (1) that connective tissue is formed within the cell (fibroblast) and afterward becomes extracellular; (2) that the fibers are primarily extracellular, being formed by the cells by a process analogous to cell secretion. My researches have con-

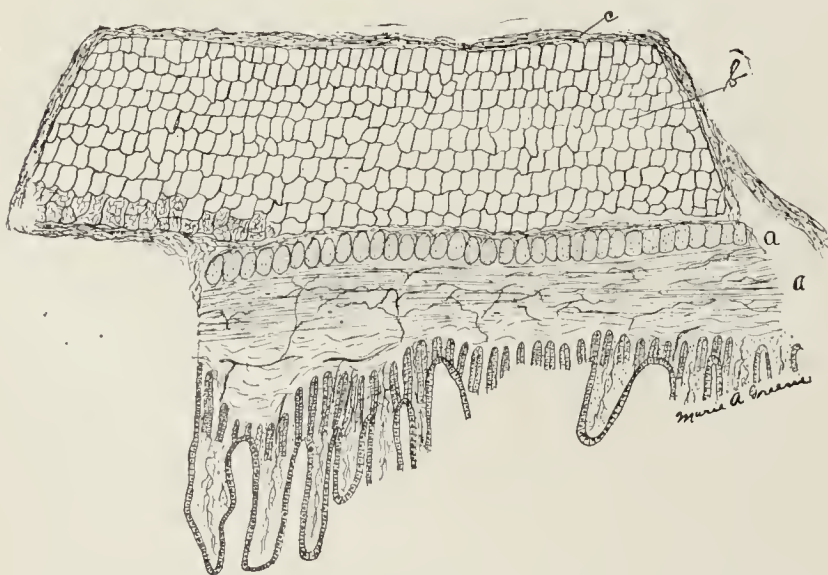


Fig. 4.—Schematic drawing of a four weeks' old specimen of half-grown rabbit. Endothelium not shown. Corn-pith stitched to the peritoneum and covered with amorphous exudate; a a, intestine; b, corn-pith; c c, fibrillæ covering the corn-pith.

vinced me that the cell is not primarily the active agent, but that the initial processes are chemical and are identical with those of blood coagulation, the cell playing an entirely secondary rôle.

My chief material for study has been the formation of fibrous tissue in wound-healing, particularly of wounds of the peritoneum. Embryonic material has been studied for comparison. Several anatomists who have followed my studies have urged the claims of embryonic material as the most suitable for these studies. But in such tissue the deposition of the fibrils and their change into fibrillæ are, to a very great extent, simultaneous processes which obscure the fundamental process at work. The formation of fibers in wound-healing, on the other hand, progresses with great rapidity and is less complicated than in embryonal tissue and is, therefore, more easily followed. Since the initial process of all wound-healing is instituted by the substance beneath the endothelial cells, the healing of peritoneal wounds should give us the best material for the study of wound-healing. Experience has proved this to be the case. The chief process in wound-healing is the formation of fibrous tissue. The formation of higher types of tissue occupies a less important place. Each separate step in the formation of fibrous tissue should stand out more clearly in wound-

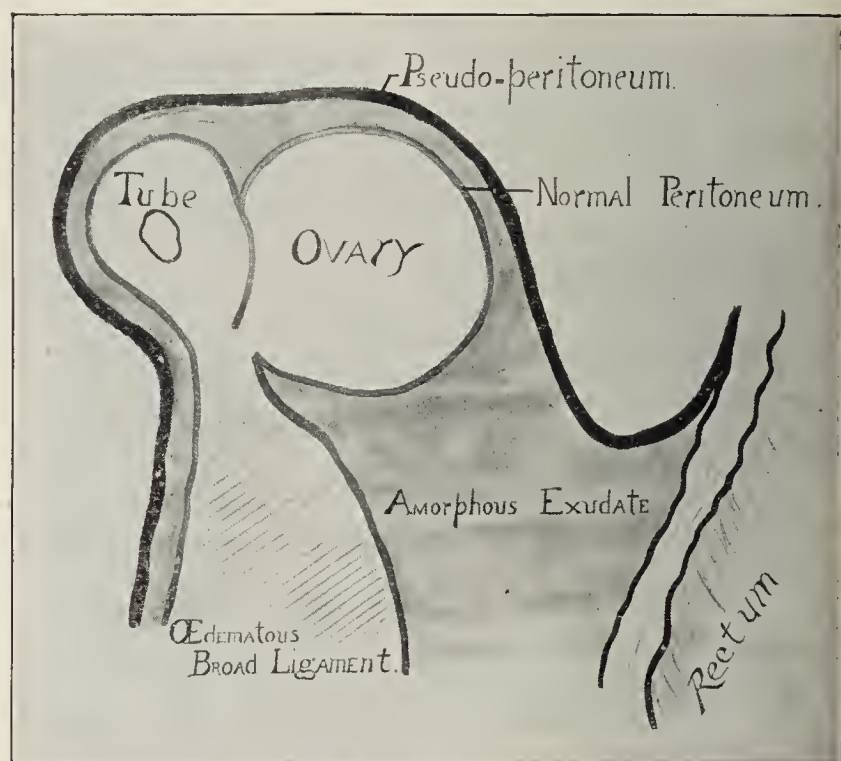


Fig. 5.—Schematic drawing representing a cross-section of an ovary and tube with acute gonorrheal salpingitis of two weeks' standing. The inflamed organs are represented as being covered by an exudate which is covered by a pseudoperitoneum.

healing, therefore, than in the developing embryo. The relation of the formation of fibrous tissue in wound-healing and the formation of identical or similar tissue in the ordinary course of development need not concern us here.

The healing of the peritoneum after an intestinal anastomosis has been made is the peritoneal process which has been most studied in the past and may, therefore, be selected as the one most likely to be understood. When an anastomosis is made the angle resulting from the approximation of the two peritoneal surfaces quickly fills with an amorphous exudate. After a short time, beginning within a few minutes and becoming well developed in one or two hours, this amorphous exudate is converted into fibers. These fibers extend from peritoneal surface to peritoneal surface with mathematical exactness (Fig. 1). Similarly, when a foreign body (a bit of corn-pith or cork) is stitched to a peritoneal surface, it is quickly covered with a similar amorphous exudate (Fig. 4), which also soon forms into fibers. These fibers cover the foreign body without interruption.

The character of this amorphous exudate has not been determined. Its chief source is immediately subendothelial; it is very rich in chlorids and is, as stated in a previous paper,¹ the substance which caused so many failures in the surgery of blood-vessels.

With the formation of the exudate and its conversion into fibers the cells appear to play no part, for the process may take place before the advent of cells. Usually, however, sooner or later cells appear. The number of cells varies greatly, depending on the amount of reaction undergone by the surrounding tissue. The important point is that these bundles appear fully developed morphologically before the advent of cells. Early these bundles stain characteristically by both Mallory's and Weigert's stain and may be regarded without hesitation as fibrin bundles. The gradual change of the fibrin bundles into adult connective tissue fibrillae can be followed best by means of Mallory's stain. Certain bundles, usually those nearest the surface, change first from the yellowish color characteristic of fibrin to the blue characteristic of fibrous tissue. The fibers which first appear are not replaced by the cells, but those fibers nearest the cells usually undergo the changes earlier. It would seem



Fig. 6.—Empty capsule of pseudoperitoneum, the mass which it encapsulated having been absorbed. Postmortem specimen; P., pseudoperitoneum; F. T., Fallopian tube; O., ovary.

from this observation that the cells are active in producing the changes manifest by the changed tinctorial reaction. In some regions the changes appear to take place without immediate contact with cells.

The number of cells present vary in number and character. In Figure 2, a six-hour specimen, they are more numerous than in Figure 1, a twenty-four-hour specimen. Their character likewise varies. If the irritation is very slight they are nearly all mononuclear in character, but if there has been rough handling of the tissue the ordinary polynuclear cells may predominate. The former, it seems certain, are the important ones. It is they, at least, that assume a place on the surface (Fig. 2, a) and by a gradual metamorphosis become the endothelial cells of the new peritoneum, and are those intimately associated with the tinctorial changes in the fibrin fibers. As to the nature and origin of these cells it may suffice for the present purpose to say that my studies have confirmed, in a great measure, the studies of Maximow.

In a previous paper² I called attention to the fact that the factors which cause the blood to lose the power of

coagulation likewise prevent wound-healing. Briefly restated, I found that by poisoning with phosphorus or by the injection of peptone according to the direction of physiologists for the destruction or inhibition of the coagulability of the blood, wound-healing is prevented. In intestinal anastomosis, for instance, made immediately before or after an animal receives 0.3 gm. per kilo



Fig. 7.—Specimen from patient operated on at Southside Hospital. Pseudoperitoneal membrane binding the sigmoid to the broad ligament and the rectum to the uterus. The tubo-ovarian abscess on the right is covered with a pseudoperitoneum A., abscess; S. F., sigmoid flexure; P. P., bands of pseudoperitoneum; F. T., Fallopian tube; U., uterus; B., bladder.

weight of peptone intravenously or intraperitoneally no attempt at healing takes place. The same is true, it may be stated as a matter of practical interest, after the use of fresh pancreatic extract, or by the formation of a crushing wound of the pancreas during the course of the abdominal experimentation. I have recently repeated these experiments with a complete confirmation of my former results. These experiments, it seems to

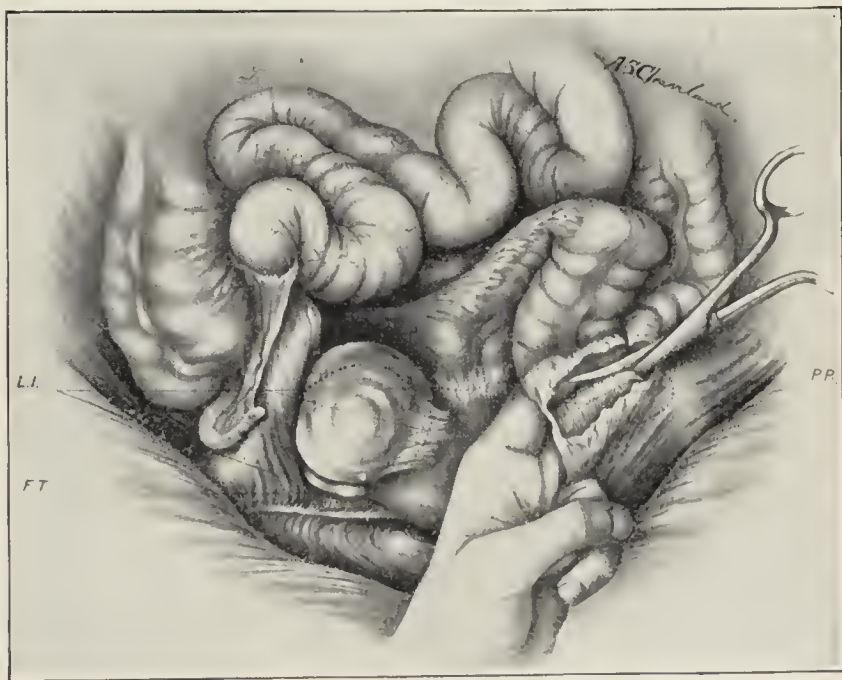


Fig. 8.—Method of identifying the separate layers of peritoneum and line of incision for the removal of the tubo-ovarian abscess. L. I., dotted line of incision for formation of peritoneal flaps; F. T., Fallopian tube; P. P., anterior and posterior layer of the pseudo-peritoneum.

me, materially strengthen the evidence of the positive tinctorial reaction with Mallory's and Weigert's stains and leave no doubt as to the identity of the preliminary process of wound-healing and blood coagulation.

1. Hertzler, A. E.: Tr. West. Surg. Assn., 1903, xiii, 265.
2. Hertzler, A. E.: Tr. West. Surg. Assn., 1904, xiv, 76.

I. THE PSEUDOPERITONEUM

As previously stated, when a foreign body is stitched to the peritoneum an exudate soon covers the body and coagulating weaves over it a network of fibrin bundles (Fig. 4). These by the changes above noted become adult connective tissue fibrillæ, the new cells covering the surface become endothelium, and new blood-vessels form from the border and ramify over the surface. In this manner there is formed over the foreign body a new membrane, identical with the peritoneum in structure and in function, but entirely distinct from it. This membrane I have called the pseudoperitoneum.

A great variety of pathologic processes simulate the action of the foreign body in the experiment. The purulent exudate about a gonorrheal tube, as represented schematically in Figure 5, is a familiar example. The purpose of the exudate is protective, but when this protective character is negated by toxins it becomes a foreign body. This foreign body institutes the same series of processes that took place in the experiment with the corn-pith and ultimately a fibrin layer is formed over the entire mass of exudate. If surrounding

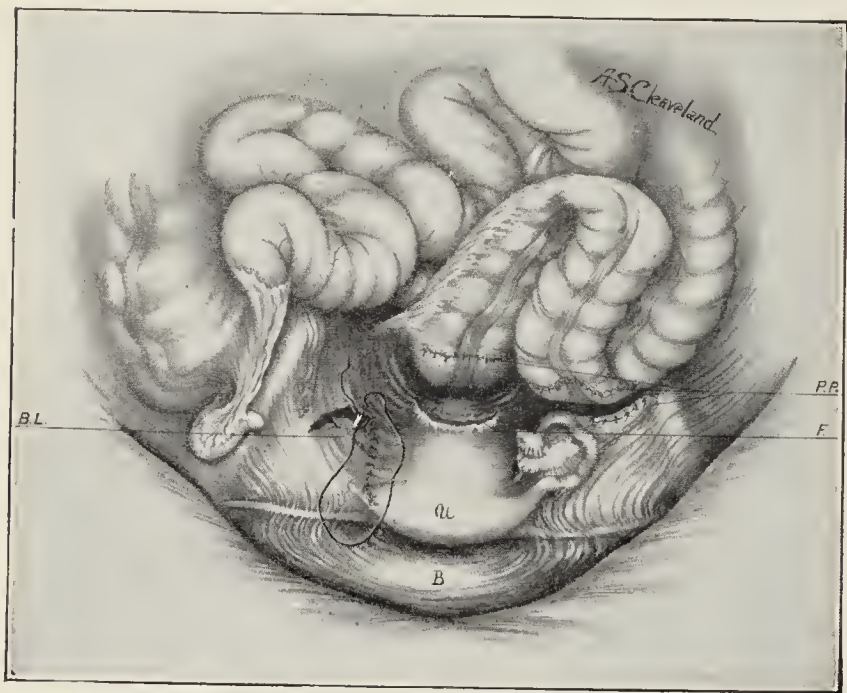


Fig. 9.—Closure of wound after severing of the pseudoperitoneal planes and the removal of the diseased tube and ovary. B. L., broad ligament in process of closure; P. P., two layers of pseudoperitoneum inverted by Lembert suture; F., flaps not yet united, but ready for closure; U., uterus; B., bladder.

intestines and omentum are involved in the process, this involvement is accidental and does not affect the underlying principles. The fibrin layer undergoes the same series of changes as indicated in the experiment, forming a membrane, that is to say, a pseudoperitoneum, which surrounds the mass; in other words, encapsulation has taken place. The foreign body once so encapsulated may become absorbed, leaving the capsule (i. e., adhesions) as a useless or deleterious structure (Figs. 6 and 10), but when the foreign body remains permanently, as in a tubo-ovarian abscess (Fig. 7), the new membrane continues in its protective capacity. Processes similar to those about the ovary occur wherever inflammatory processes appear (Fig. 10).

Parenthetically, it may be noted that when the irritation is just sufficient to cause an exudation of the fibrin-forming material, but where no toxins are produced to destroy the fibrin-forming elements, permanent union of the neighboring structures will appear. On the other hand, when the exuded material is acted on by toxins, precipitation of the fibrin-forming elements takes place instead of the formation of fibrin. In this way a me-

chanical agglutination of the opposing surfaces may result, forming a temporary walling-off but not of fibrous union—at least, not according to the process detailed, that is, with a pseudoperitoneum. The precipitated mass is afterward absorbed and the agglutinated organs become free. This corresponds to the division of fibrin into the fibrinous and the granular as made by the physiologists. The fibrinous alone is capable of formation into fibrous tissue. The granular is always absorbed. But if the power of forming even a precipitate is lost there is no walling-off of the infective process and a diffuse inflammation is the result. In harmony with these observations is the action of bacterial exudates. Certain bacteria (gonococcus, pneumococcus) favor fibrin formation, while others (streptococcus, colon bacillus) prevent it. This explains why infection in the presence of digestive ferments (wounds of the upper portion of the intestinal tract and pancreas) are so little likely to form adhesions.

The clinical behavior of the pseudoperitoneum depends on whether or not the protective function is permanently required; that is, whether or not the foreign body it was formed to cover remains. If no longer of use because of the absorption of the foreign body—that is, the exudate—it exerts a deleterious effect just in proportion as it limits the function of the structures to which it is attached (Figs. 6 and 7). If by such limitation of motion it causes a disturbance it should be removed (Fig. 8). In this removal its peritoneal character should be remembered. The various layers should be identified in order that all raw surfaces may be avoided by inverting the severed edges, as indicated in Figures 8 and 9. When, however, the pseudoperitoneum is still exercising its protective function, that is, when the exudate has not been absorbed, and it becomes necessary to remove the object which has made protection necessary (Fig. 7), the membrane must be dealt with in order that the defect resulting from such removal of the foreign body can be covered by the pseudoperitoneum (Fig. 9). If it is kept in mind that such coverings are really peritoneal in structure and function, the expression “tearing up adhesions” will not be heard so often. If properly planned, the removal of these membranes or the removal of the foreign body beneath them can nearly always be accomplished without leaving a surface denuded of peritoneum (Figs. 7, 8 and 9). Each surgeon will employ the technic which corresponds most nearly to his usual custom. I have recently employed the very fine material used by Carrel for vessel work instead of the 00 gut formerly employed.

II. VARICOSITY OF THE PERITONEUM

Closely resembling the preceding in appearance, though very different in its pathogenesis, is a condition of the peritoneum in which the chief changes are in the blood-vessels. The peritoneum appears as a veil of blood-vessels which obliterate more or less the anatomic structure beneath, as, for instance, the tenia of the colon is obscured in Figure 11. The connective tissue is affected in varying degree, but always the vascular changes are of chief importance, a fact which does not appear in the figure because the drawing was made from a post-mortem specimen. If there is no increase in the connective tissue the peritoneum simulates a mesentery to the distended veins. This appearance is familiar to every one, as it occurs in a slightly modified form in the omentum when it is attached to an ovarian cyst with twisted pedicle or to a crippled fibroid. The vessels which are dilated are the peritoneal or omental vessels

as distinguished from those of the mesentery (Fig. 11) and are the result of the distention of what were normally very minute vessels. As seen in the figure, the general direction is from the periphery of the abdomen toward the mesenteric root. Usually the peritoneum is freely movable on the underlying structures because of the changes which have occurred in the subperitoneal connective tissue.

The causative factors may be divided into three classes:

1. When seen in the process of formation these varicosities are observed in the region of active inflammatory processes. There is, in addition to the dilatation of the vessels, a subperitoneal exudation, lifting up the membrane from the underlying organs, forming, in fact, a subperitoneal edema comparable to similar conditions under the skin. We might speak of it, therefore, as an acute subperitoneal cellulitis (as seen about the cecum in appendicitis).

2. As the result of obstructive processes about the root of the mesentery, there may be a simple obstruction, as when a benign body is obstructing the mesenteric root, or the process may be a reactive one as seen when inflammatory (cholecystitis, gastric ulcer) or cancerous processes are located in that region. In this type the mesenteric vessels are as likely to be affected as the peritoneal. We might speak of this type as "milk-leg" of the peritoneum.

3. In some instances—and those are the majority—the causative factor is no longer plainly apparent. There is, however, nearly always, an appendix which presents some of those minute changes, capable, perhaps, of detection by the microscope only, which are generally regarded as expressions of a previous acute process. In the upper abdomen there is usually a gastric scar or quiescent gall-stones with tell-tale adhesions. This is the type from which the term "varicosity of the peritoneum" was suggested and is quite analogous pathologically to varicocele elsewhere. This type includes the two preceding, the difference being that the causative factor is no longer active, and the lesion is no longer an active process, but a final result.

The pathology is expressed in a hyaloid degeneration of the subperitoneal connective tissue. The vessels may have thin walls, or the walls may be thickened, if a reactive factor was prominent in the course of the development of the process. Whichever obtains, there is a hyaloid change in the connective tissue of the vessel-walls as determined by connective-tissue stains. There is frequently a colloid-like exudate in the meshes of the subperitoneal connective tissue which causes the peritoneum to be lifted from the underlying organs (Fig. 11). Sometimes there is in this tissue a production of fat characterized by the small size of the globules and the indifferent staining by Sudan III.

The clinical symptoms are in harmony with the pathologic anatomy. There is evidence of local passive congestion which may find expression in disturbance of function of the underlying organs, for instance, auto-intoxication, as indicated by indican in the urine, or by constipation or diarrhea or the two alternating. The most pronounced symptoms are due, however, to splanchnic irritation, usually manifesting itself at the peripheral nerve plexus or at the ganglia from which the nerves spring (*dyspepsie appendiculare*, Longuet) or, which is the most important of all, in a pronounced splanchnic neurosis (appendiceal neurasthenia, Schauman).

The treatment is dependent on the etiology. If, as is the case in the vast majority of instances, the condition

is due to an affection of the appendix, its removal, as advocated by Howard Hill³ several years ago, and since then by Longuet and Carles, relieves the symptoms. If there is disturbance about the mesenteric root, usually due to cholecystitis, the removal of the cause of disturbance whenever possible is indicated. In some instances the removal of the causative factor is insufficient, for the changes in the vessel-walls may be permanent. In these instances the general principles applied to varicosities in general, the obliteration of the vessels, may be applied. I have sought to accomplish this by means similar to those employed in varicocele of the scrotum and broad ligament. By excision of a segment of the vessel-bearing membrane and covering the defect with peritoneum a permanent obliteration of the vessels is accomplished without leaving a denuded area. In the few cases in which this method has been employed the

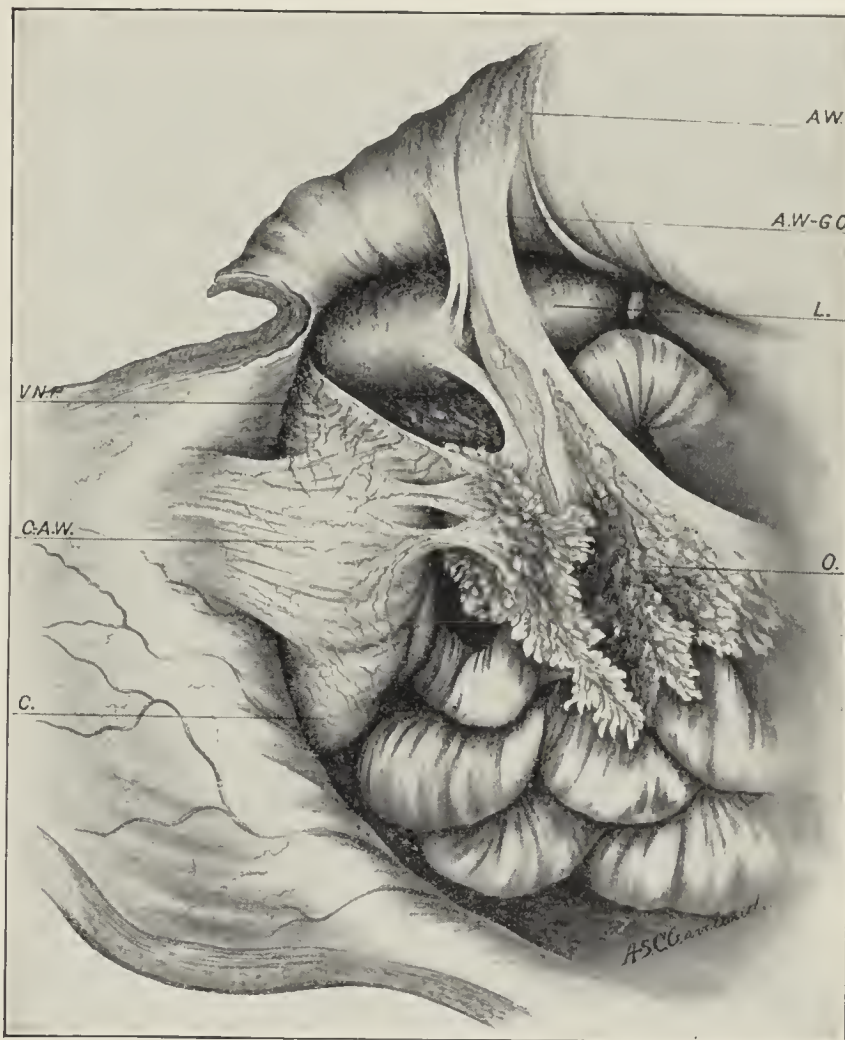


Fig. 10.—Pseudoperitoneums extending from colon to abdominal wall, colon to mesentery, mesentery to liver and from liver to abdominal wall. Over the cecum and at the hepatic flexure of the colon vascular dilatation (varicosities) are shown. V. N. P., vascularized normal peritoneum. C. A. W., pseudoperitoneal bands from cecum to abdominal wall; C., cecum; A. W., abdominal wall; A.W.-G.O., pseudoperitoneal bands from abdominal wall to great omentum; L., liver; O., omentum.

intestinal as well as the nervous symptoms have been relieved. Probably the simple removal of the appendix would have accomplished the same result (Carles). J. N. Jackson has recently⁴ proposed the removal of the entire peritoneum involved. Because of the changes in the subperitoneal tissue above noted, the technic is easy and alluring, but, since such removal leaves the colon devoid of a protective covering, few operators will care to imitate the procedure.

3. There has just come to my hand a reprint of an article by Dr. J. F. Binnie, reprinted from the *Monthly Cyclopaedia of Practical Medicine*, 1905, viii, 341, in which he describes under the title "Pericolitis Dextra" the condition here under consideration. It seems from this paper that this author is the first to describe clearly and definitely this condition.

4. Jackson, J. N.: *Tr. West. Surg. Assn.*, 1908, xviii, 287.

III. MESENTERIC SCLEROSIS

The condition was first described by Virchow⁵ under the term *Mesenterialschrumpfung*. He regarded it as a chronic peritonitis of the mesentery. In this condition there is an increase of the connective tissue of the mesentery resulting in a contraction with a subsequent distortion of the intestine. The sigmoid is the portion of the intestine usually involved, but any part of the large or even the small intestine may be involved. The mesentery, normally thin and elastic, becomes thick and opaque, even tendon-like (Brehm). The vascularity disappears and all elasticity is lost.

The chief interest here centers about the question of the pathogenesis. Most writers agree that the beginning is along the line of attachment of the mesentery to the intestine. The point of beginning, according to Graser, is at the point where the vessels enter the intestine.

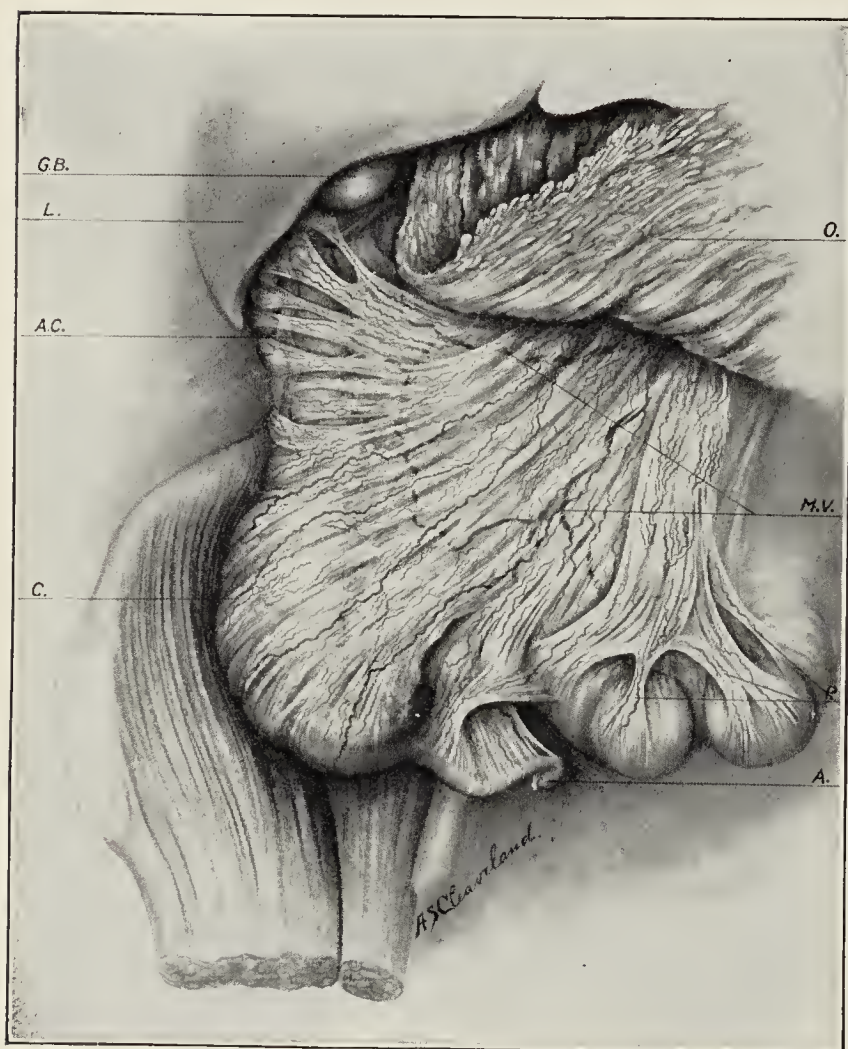


Fig. 11.—Varicosities of the peritoneum covering the lower right quadrant. At the hepatic flexure of the colon and over the ileum the peritoneum is raised up in bands which simulate pseudoperitoneal bands. The appendix was sclerotic and adherent to the pelvic floor. G. B., gall-bladder; L., liver; A. C., ascending colon; C., cecum; O., omentum turned up to show mesentery; M. V., mesenteric veins; P., thickened bands of true peritoneum; A., sclerosed appendix.

Here small diverticula are present, which, from irritation of fecal masses, cause ulceration and infection of the mesentery (Hanse mann). The only dissenting voice of note is that of Riedel. He believes that the process begins at the mesenteric root. In one patient observed by me the chief point of involvement was over the ureter in a case of chronic periureteritis from stone. Usually the processes about the mesenteric root, as I have seen them, gave rise to passive congestion and I have fallen under the second group of my classification.

The important point, on which all are agreed, is that the process is an increase with subsequent contraction of the connective tissue of the mesentery. It is important to bear in mind that the mesentery is made up not of

peritoneum but of connective tissue, being covered merely by peritoneum. The peritoneum is not necessarily involved in the process, and in the early stages is not. When the process is extensive, it is true, the peritoneum is involved. But in the beginning, let it be repeated, the condition is a subperitoneal process.

The importance of a proper comprehension of the various pathologic processes to which the peritoneum and the underlying structures are liable is made acute, now that operations, most radical in their nature, have been proposed and carried out. The rough classification here tentatively proposed is an attempt to harmonize the results of the research laboratory, the dissecting-room and the clinic-room. The pseudoperitoneum, being an adventitious product, may remain as a mischievous structure requiring removal. On the other hand, it may still be performing the function for which it was originally produced. In each instance which of these conditions obtain must be determined before it is attacked. In any event, these pseudoperitoneums are not to be "torn up," but to be dealt with as peritoneum with the object of preventing the reformation of mischief-makers equal to those originally existing. The varicosities are the expression of a lesion elsewhere. The removal of such lesion may result in a cure. If not, an obliteration of the lumen of the vessels must be brought about. This must not be attempted by the removal of the entire membrane involved, because it is not a pseudoperitoneum and its removal leaves the underlying organ without protection. In the third type (the mesenteric sclerosis), if obstruction of the lumen is caused, a resection of the intestine may be necessary. If the offending tissue is band-like, subperitoneal section of such band will be possible if the peritoneum is not involved. In the first two groups (the pseudoperitoneums and varicosities) intestinal resection is not justified.

The clinical differentiation of the three types of disease indicated in this paper is not always easy. Subperitoneal exudation may raise up the peritoneum, causing a simple varicosity to simulate a pseudoperitoneum in a very confusing manner, but the topographic relation is distinctive. Mesenteric sclerosis may be complicated by vascular congestion simulating varicosity, or varicosity may be attended by a productive process which extends to the mesentery proper, and vascular dilatation and pseudoperitoneal formations are often combined with primary mesenteric sclerosis in a very confusing manner. The surgeon's knowledge of topographic anatomy and his ability to judge of the acuteness of a vascular dilatation and its relation to an active or slumbering lesion must be his guide in dealing with such problems.

Argyle Building.

Progress in Clinical Pathology.—The time is past when the physician is satisfied merely to examine the urine of his patients for albumin and sugar, for it is being appreciated that the more thorough analysis of this excretion will often give important information in other directions. In order to detect orthostatic albuminuria, or mild cases of diabetes mellitus, it is necessary to examine both evening and morning specimens. A case of neuralgia, on diabetic basis, proved amenable enough to treatment when after several months the etiology was recognized by an examination of the evening instead of the morning sample. The detection of indican, skatol, acetone, bile, and urobilin will often materially aid in establishing a diagnosis. The quantitative estimation of chlorids is a very simple procedure, and should be done more frequently, especially in view of the relation of salt to the pathologic retention of fluid.—O. Hensel, in *Merck's Archives*.

5. Virchow: Virchow's Arch. f. path. Anat., 1861. v. 335.

THE EARLY SYMPTOMS OF UPPER ABDOMINAL DISEASE *

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PHILADELPHIA

We should be loath to admit that there is any class of diseases in which a diagnosis is rarely made until the nature of the malady is manifested by the occurrence of a complication; yet it is hardly an exaggeration to say that, until very lately at least, this has been the case in the diseases of the upper abdomen. Particularly is this true of the pathologic conditions within the surgical field, the very ones which are most grave, and in which delay in resort to proper treatment is attended by the most serious consequences.

The reasons for this state of affairs are easily found. The surgery of the upper abdominal organs has lagged far behind that of the pelvic organs or the appendix, partly because of the very diagnostic difficulties, which are, in turn, caused largely by the absence of precise surgical data, and partly because of the inherent difficulties in the technic of the operations required. The pathology of the viscera concerned has been based on postmortem studies in which are found, not mild or incipient processes, but the results of long-continued destruction and change of tissues; often, indeed, the disease which is itself under investigation has been allowed to go untreated to a fatal termination. Moreover, the physiology of the stomach, duodenum, biliary system and pancreas, with which we are concerned in this region, as well as that of other portions of the digestive tract, has been made clear only in comparatively recent times. We are just beginning to realize that in the digestive tract we have not a number of separate and incoordinate units; but that they are all in most intimate connection and that disease in one portion may manifest itself primarily by symptoms referred to an entirely different part. There are also some symptoms common to disease in almost any portion of the digestive tract—symptoms which, because of their very universality, have in times past generally been considered as neuroses due in some occult way to anything or to nothing in particular.

The intimate anatomic relationships of the organs of the upper abdomen, the stomach, duodenum, pancreas and biliary apparatus, are well known; and there is also an equally intimate physiologic coordination. In view of these facts, it is easy to understand why the symptomatology of their diseases should in many ways be similar and confusing, and why so many diseases of this region should fail of recognition in their early stages. Yet I can safely assert that this diagnostic uncertainty is gradually giving place to a comparatively clear differentiation of the various diseases of this region, and that we are now able by careful study of the history and physical signs to recognize many of the pathologic processes in their incipency.

Before considering these more in detail, I want to emphasize the importance of a careful history in all of these cases. It has far more weight than anything we can elicit in the way of physical signs, and always merits our closest attention. Apparently minor points often are of the greatest value in diagnosis, though we may fail to recognize their importance until they are placed in proper relation to the other data at hand. In too many instances the medical attendant approaches

the case with a preconceived idea of the diagnosis, based on a hasty summing up of the most striking symptoms. The patient's own description of his case is then distorted unconsciously perhaps to conform to a diagnosis already considered as definite. Moreover, there is often a disposition on the part of the physician to pay attention to the supposed cardinal signs and as a result the patient forgets or neglects to mention the very facts, apparently trivial, which are of most moment. Careful, definite questioning is of prime importance in eliciting a history of illness, but it should not be so directed that the patient is led to give his answers in accordance to the ones which are apparently wanted. A leading question is often a good one, but it can be made a misleading one by too much insistence on it.

I have found it to be of just as much value to follow a routine method of history-taking as to follow a regular method of physical examination.

In a consideration in detail of a few of the conditions with which we have to deal, gallstones furnish us with one of the classical examples of delayed diagnosis. Their occurrence has been noted for centuries, and the description of their symptomatology has remained unchanged for the last seventy-five years, until within the last few years. As given in most standard text-books of medicine or surgery of even recent date we find that they are those, not of the presence of gallstones, but either of impaction of the stones or of the accompanying acute inflammation of the gall bladder or ducts. When the pathologic revival took place some fifty years ago, enthusiastic investigators found biliary calculi in numberless instances in which the so-called "classical signs" were absent during life. The statement was at once made that gallstones produce no symptoms in 90 per cent. of cases. So eminent and careful an investigator as Naunyn, whose pathologic investigations on this subject are still of standard value, believed that most people with gallstones never had symptoms, and his belief has been accepted and reiterated without question ever since he set forth his ideas, some twenty years ago. Yet it is certain that practically every person who has gallstones suffers from them more or less continuously, if not always acutely. In the course of some statistical investigations on this subject which I made about two years ago, on a series of over 200 of my own cases, it was found that jaundice had been present in but 75 per cent., an even higher percentage than that found in the experience of Kehr, Mayo Robson, Moynihan or Mayo. My most recent statistics show about the same percentage. Indeed, Moynihan, in his recent volume on gallstones, has said that he considered jaundice as a symptom of little value, and Mr. Waterhouse¹ has stated that it is absent in 85 per cent. of his cases. Yet our text-book description would lead us to believe that a diagnosis of gallstones without a history of jaundice is impossible. Similarly, the sharp and excruciating pain in the right epigastrium referred to the back or right shoulder is a standard symptom of gallstones; yet in how many instances do we find but a mild or sub-acute pain or only a dull ache in the right upper abdomen.

But even before these symptoms come on, are there no signs by which the gallstones make their presence known? Most assuredly. In practically every case in which I have operated for gallstones the patient has given a history of long-standing "dyspepsia," a capricious appetite, constipation, marked flatulence, largely

* Read in the Section on Surgery of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909

1. Waterhouse: *Lancet*, London, 1909.

independent of the taking of food, together with discomfort on an empty stomach and comparative comfort at night only after eating a little.

It will at once be noted that all these symptoms would be referred by the patient to the stomach, or perhaps to some hepatic disorder. The periods of discomfort are usually described as "bilious attacks" or "only slight attacks of indigestion." The only symptom during a long period of time may be a sense of tightness or constriction in the epigastric region. This is a rather characteristic feature of gallstone cases, as distinguished from other lesions of the upper abdomen. There is flatulence, with its attendant discomfort, which is often relieved by the eructation of gas, but the sense of tightness is more or less peculiar to gallstone disease. Relief from it is often obtained by pressure in the epigastrium or in other cases by the loosening of the clothes about the waist.

On cursory examination such a case would be classed as one of "dyspepsia." But it is to be noted that the "dyspeptic" symptoms become more and more annoying. As the case progresses the feeling of constriction becomes at times one of more or less actual pain, and after such an exacerbation there may be noted a soreness in the right side. It may never progress further than this. On the other hand, it may go on, if we allow it to do so by failure to institute proper treatment, until we have acute attacks of pain in the right upper abdomen and finally an unmistakable biliary colic.

We should not be deceived because these symptoms occur in a patient below middle age. Recent careful studies of over 400 of my cases have convinced me that gallstone disease begins in most cases before the fortieth year and often much earlier.

At times there occurs in association with this pain or discomfort a sensation of chilliness or cold, and this is quite characteristic of gallstones. Nausea or vomiting may occur with, or after the onset of pain, and the vomiting may relieve it. But since we have some nausea with almost every severe upper abdominal lesion its value is correspondingly lessened.

Krause, in 1884, described these so-called prodromal symptoms of gallstones and attributed them to the active formation of the calculi. His work was lost sight of. We know, however, that the symptoms are due not to the formation of gallstones, but to the presence of those already formed in a comparatively quiescent state.

In my own experience the *x*-ray has not been a very valuable adjunct in the diagnosis of biliary calculi. Some surgeons, however, among whom may be mentioned Beck and Waterhouse, have had good results in this direction. Doubtless refinements in technic will give the *x*-ray an ever-increasing value in the diagnosis of abdominal lesions. I have not infrequently seen hyperchlorhydria.

It seems to me that there is ample basis for the use of the term "gallstone dyspepsia," as has been suggested by Mr. Moynihan. We should diagnose "gallstone dyspepsia" much oftener than we do, and be ready to advise prompt surgical relief in order to save the patients years of annoyance and discomfort. As one of the authors mentioned has put it, his "firm belief is that the majority of flatulent dyspeptic women who attend the out-patient room with such wondrous regularity to receive their weekly bottle of medicines are really suffering from gallstones." I believe that there is much truth in this statement, and also that we will find in a practice among the wealthier classes a still greater proportion of those in whom so-called

"latent" gallstones are trying in a hundred ways to make their presence known.

The gallstone patient is not the only one on whom the diagnosis of a gastric or intestinal dyspepsia or neurosis is too often wrongly made. Subacute and chronic gastric and duodenal ulcers are just as often allowed to go unrecognized for years. Why, in either of these cases, should we wait for frank hemorrhage or marked tenderness on pressure, or even perforation, to make our diagnosis? No case of gastric ulcer need remain unrecognized until a copious hemorrhage makes it all too plain. In a person below middle age, persistent and grave dyspepsia should always lead us to think not of a functional disease, but of one dependent on well-marked pathologic changes. The condition is frequently due to a latent or chronic gastric ulceration, single or multiple. Such patients almost invariably complain of more or less pain in the pit of the stomach, often aggravated immediately after the ingestion of food, but at times relieved by it. Vomiting is rare unless the process involves the pyloric portion of the stomach and causes a partial stenosis. At times a trace of blood may be found in the stools, by the test for occult blood, when it can be demonstrated in no other way. The stomach contents in a case of gastric ulcer are often hyperacid, but I do not place much confidence in the gastric analysis. There are so many factors which in any individual may cause a wide variation of all the constituents, and our methods of examination are as yet so faulty, that the information which we derive from a gastric analysis is misleading just as often as it is of value to us. The question of the motility of the stomach is more important than is the secretory function.

Anorexia is common in occult gastric ulcer, or its place may be taken by a marked capriciousness of appetite. In all of these patients, however, we note a continued emaciation, an apparent inability to absorb food even when it is ingested. The pain and anorexia are both entirely unrelieved by the ordinary remedial measures. The patients, because of their continual suffering or discomfort, become unable to work or even to enjoy their leisure. The long-continued use of stomachics and tonics depletes rather than restores their vitality and health. Yet in most instances the diagnosis is not made or even suspected. The history is carelessly taken, the case classified as dyspepsia, and treated for an indefinite length of time, until perforation or violent hematemesis shows the true state of affairs. Even vomiting after meals, long continued and often repeated, is generally ascribed to some nervous condition, is called nervous vomiting, and is treated accordingly—that is, not at all.

Duodenal ulcer gives us symptoms in many ways similar to those of gastric ulcer, yet liable also to be confused with those of gallstones. There are certain distinctive features which should in the majority of instances enable us to make a positive diagnosis of the condition comparatively easy. In a general way ulcer of the duodenum presents symptoms analogous to those of similar lesions within the stomach. We have, in typical examples, pain after the ingestion of food, dyspepsia, and occasionally traces of occult blood can be demonstrated in the feces. The pain as a rule shows itself in two different forms; the first is that which comes on after eating, but at a somewhat longer and more variable interval after the food reaches the stomach. This is the pain which we find described in the so-called "classical" text-book descrip-

tion of the condition. The second variety is the so-called "hunger pain," described so well by Mr. Mayo Robson. We find that the patient suffering from duodenal ulcer is more comfortable when the stomach has some food in it, and that they rest better at night if something is taken immediately before retiring. This pain may not be described as such, and the patient may not be aware of the real cause of the desire to keep something in the stomach. In duodenal ulcer it has been noted that the pain, of whatever variety it may be, is rarely referred. Vomiting, and especially the vomiting of blood, is rare, painless at a late stage of the disease. Rigidity and tenderness I have already mentioned as early symptoms of duodenal ulcer.

I have lately operated in a case of duodenal ulcer, referred to me by Dr. J. B. Mencke. The patient had been treated by various physicians for five years. Not one had elicited a careful history until just before he was referred to me. His complaint was that about one-half or three-quarters of an hour after meals he had severe pain in the right epigastrium associated with flatulence and distention. He had never vomited except when he forced himself to do so, and then experienced relief. For days or weeks he would feel perfectly well and then after some indiscretion in diet he would have another attack. He had never been jaundiced or had blood in his stools.

In this man the general food nourishment, absence of vomiting and melena, and the periods of comparative well-being, had directed the attention of his medical attendants away from the true seat of disease. Yet a detailed history and his reiteration of the statements about the agonizing and unbearable pain should at once have convinced them that no simple catarrhal gastritis or an enteritis of a chronic variety could be the underlying cause. The physical examination and stomach analysis in this case showed us nothing, and only on the history of the case was the diagnosis made, and confirmed at operation.

Duodenal ulcer is, of all the conditions so far mentioned, the most occult in its signs. We must, however, revise our previous opinions as to its frequency. Recent clinical investigations at the operating table by Mayo and others have shown that it is found almost, if not quite, as often as gastric ulcer. In my own experience it has not been quite as frequent as with some other surgeons. It is easy to see how a duodenal ulcer of the chronic variety in the presence of a not very irritating gastric juice may give very vague symptoms for a long period of time. The absence of vomiting and hematemesis or of tangible facts in the physical examination makes the diagnosis most difficult. I lay especial emphasis in my wards on the careful examination of the feces for occult blood, and have many times found a clue in this way in cases in which the diagnosis was very doubtful.

The differential diagnosis between gastric and duodenal ulcer and gallstones is often impossible. Yet there are some instances in which the symptoms will give us at least certain points which will enable us to become fairly positive in our determination of the condition under consideration.

The initial symptoms of all of the surgical diseases of the organs of the upper abdomen are in many ways very much alike. Thus, for instance, we have dyspepsia in early disease of the stomach, duodenum and gall bladder. It varies somewhat, however, in type when accompanying the different lesions.

Early in gallstone disease, discomfort in the upper abdomen is noticed. It is hardly a real pain and is accompanied by eructation of gas, which often brings relief. The patient has a good appetite, but is afraid to eat. A patient with a gastric ulcer, on the other hand, always shows more or less anorexia, even if it be only at certain longer or shorter periods of time. Patients with duodenal ulcer vary greatly in this respect, some simulating gastric ulcer, others behaving more like gallstone cases.

Vomiting is far more frequently seen in patients with gastric and duodenal disease than in those who have gallstones. In gallstone patients there is often the feeling that vomiting would relieve the discomfort, yet it rarely comes on until late in the disease, and then in association with a more or less unmistakable biliary colic. In duodenal ulcer, vomiting is at times also entirely absent, as is illustrated in the case before noted.

The pain in the three conditions mentioned varies somewhat, although most careful questioning of the patient is needed in order to enable us to differentiate the varieties.

In gallstone disease it is often, at least in the beginning of the disease, more like a sense of constriction than an actual pain and often accompanied by a sensation of chilliness, which is characteristic. Moreover, it seems to involve the whole right side in a sensation of stiffness and soreness, but without marked tenderness, except in the presence of an acute cholecystitis. In gastric and duodenal ulcer marked early tenderness accompanies a pain sharply localized, as a rule, and directly dependent either on the ingestion of food or the entire emptying of the stomach. In gallstone disease there is often a certain amount of tenderness noted on deep pressure beneath the right costal margin.

Jaundice, hematemesis, etc., all of them late symptoms, will clarify the diagnosis, but are of little value early. Laboratory methods do not help us at all in the early diagnosis of upper abdominal disease; in fact, they rather tend to confuse than to aid us. It can easily be seen how difficult it is to make a diagnosis of early disease of the stomach, duodenum or gall bladder. Our constant endeavor should be to discover, if possible, new clinical data and aids to examination.

Yet whether we have gallstones, rebellious duodenal or gastric ulcers, or perigastric or pericholecystic adhesions, there is but one treatment—operation—and, while the close proximity of the organs leads to difficulty in diagnosis, it renders it possible for us to inspect them all at the time of operation. This statement should not be taken as an argument in favor of what I have elsewhere spoken of as the "therapeutic test" of an exploratory operation. The mere fact that all these lesions may be treated through one and the same incision is no justification for the surgeon's shirking his duty of making a correct diagnosis as often as possible.

A confusing factor in making a diagnosis is to be found in the presence of adhesions. Adhesions of the upper abdomen generally caused by an inflammatory process of low grade may involve any or all of the organs of this region, i. e., the biliary tract, stomach and colon, etc. Likewise they may cause symptoms simulating those of diseases of any of these organs.

I have seen pericholecystic adhesions give the whole syndrome of gallstones—colic, jaundice, etc.—and I remember particularly in this connection the case of one of my former internes, on whom I subsequently operated. I have frequently noticed that when adhe-

sions have been present in gallstone cases the history of digestive disturbances has been perhaps somewhat more pronounced than in those instances in which they were not found. It is especially when we have adhesions about the gall bladder and ducts, which by constriction cause obstruction to the flow of bile and jaundice, that we are more uncertain whether we have a diseased condition within the gall bladder or totally outside of it. I am convinced, however, that such adhesions call just as strongly for surgical intervention, indeed even more so, for there is not even that slight chance of spontaneous recovery which we have with cholelithiasis.

It is not difficult to understand how adhesions involving the stomach, duodenum, or colon, especially if they be many and dense, can give ample grounds for diagnosing a serious organic condition of these organs themselves. They are, however, rather less often found, and hence of less importance, than those which we find about the gall bladder.

In the absence of any definite history of a previous inflammatory involvement of the peritoneum or operative procedure, I know of no way in which we can diagnose these adhesions.

It would leave the subject entirely incomplete were I to neglect to mention the part that the appendix may play in causing symptoms entirely referable to the upper abdomen. I have seen many such instances, and within the past year have operated in a number of cases of pylorospasm in which an appendectomy removed all the symptoms.

But while in gallstones and ulcer the consequences of failure in diagnosis may be most serious, they are not so grave as in carcinoma of the stomach.

Cancer of the stomach was for years looked on as the utmost example of medical failure. A diagnosis was synonymous with a fatal prognosis, and never yet has a patient been cured, or become cured under medical treatment. But with the advances of surgery we have found that it may in some instances be cured, if it is operated on sufficiently early. Here is the main part of the treatment—the early diagnosis. Yet what were the symptoms of gastric carcinoma as we were taught, and as they are still taught to-day? Vomiting of retained food putrefaction of food, tumor, hemorrhage, the presence of the Oppler-Boas bacillus in the vomitus, and cachexia. These are not the signs of the presence of a cancer of the stomach, but of a marked stenosis of the pylorus as a result of such cancer. Crile says: "These are terminal symptoms, and indicate that the surgical opportunity is forever lost." In applying this statement to cancer of the stomach, we could well mention tumor and retention vomiting as the signs of lost opportunity.

It is but frank to say that in our present state of knowledge a certain diagnosis of gastric carcinoma in its incipency is an impossibility. Yet we need not wait for terminal symptoms. It is far better to operate on an uncertain diagnosis than to allow the patient to pass the boundaries of our power to help him.

In most patients who develop cancer of the stomach we have either a history of well-developed gastric ulcer of the chronic type or, as is more often the case, of a chronic gastric catarrh. When in the presence of this condition a person of middle age develops more marked symptoms thereof and begins to complain of loss of weight and strength and perhaps some dull epigastric pain, we have the danger signal before us. Just as serious, or even more so, are these signs when they

develop in an individual previously in good health and with good digestive powers.

We are gradually also beginning to appreciate the fact that carcinoma of the stomach is found far more frequently in people below middle age than we had previously supposed. Too great stress, then, should not be placed on a patient's comparative youth, if his symptoms are such as to cause us to suspect carcinoma of the stomach.

Naturally we can make no diagnosis at once—the symptoms will merely arouse suspicion. But suspicion will soon be turned to almost a certainty, if, in spite of careful treatment for six or eight weeks, the patient continues to get worse. The pain increases slightly, the loss in weight becomes more out of proportion to the dyspepsia, appetite vanishes, and, in addition to loss of flesh, we begin to note some anemia. Diagnosis of probable malignancy can now be made, and it is our duty to confirm and treat it surgically at once, without temporizing or drugging. At this stage of the disease the patient can stand a grave operation, the growth is localized and often removable, and our chances of permanent cure have not yet been lost. Two years ago I had occasion to operate in such a case and found a cancerous growth of the mucosa of the pylorus which had not yet involved the outer coats of the stomach and was not over three-quarters of an inch in breadth. A pylorotomy was easily done, and at last reports the patient was feeling as well as ever. A month's delay in this instance might have given some glandular metastasis, made necessary a partial or subtotal gastrectomy, instead of a simple pylorotomy, and thus lessened the patient's chances for final recovery at least 50 per cent.

The diagnosis of pancreatic conditions, except acute pancreatitis, is still a matter of great uncertainty; even the acute conditions of the organ are not easy to differentiate clinically at their onset.

To diagnose a subacute or chronic pancreatitis at any stage of the disease is a matter of difficulty. Perhaps the main reason for the rarity of correct diagnoses of chronic pancreatic disease is the failure to consider the pancreas as a source of long-continued digestive disturbances. Recent studies and monographs have brought greater attention to the subject, and of late Mayo Robson has advocated surgical treatment for the cure of the condition. I can recall several cases in which the patient gave a history of long-continued dyspepsia, that is to say, periods of dyspepsia with long intervals of apparently entire health. Associated with this have been epigastric distress, occasional attacks of pain in the epigastrium, especially to the left, inability to digest certain classes of food, and alternating diarrhea and constipation. Examination of the feces has at times shown an excess of undigested tissue fibers and fat. In a number of these cases operation was undertaken with a view to relieving the chronic pancreatitis by drainage of the biliary passages, and I have become convinced that this is the proper treatment in such cases. Of late years the Cammidge reaction has been employed in the diagnosis of pancreatic lesions, and, while the results are often open to question, I consider it of some value.

There are two most excellent reasons why a beginning sclerosing pancreatitis should be recognized and promptly dealt with. One is the increased possibility of the occurrence of carcinomatous growth in a pancreas the subject of advanced disease. The other, and still more important reason, is the frequent occurrence of an incurable and fatal diabetes as a result of chronic

pancreatitis. When the disease has once reached this stage, any form of treatment is likely to be useless. I do not believe that chronic pancreatic lesions, even independent of gallstones, are nearly as rare as is supposed. Their frequent association with gallstone disease is, of course, well known. Their apparent rarity is largely due to the difficulties of diagnosis.

The conditions so far considered as offering a field for early diagnosis have been only the subacute and chronic lesions of the upper abdominal organs. There are two acute conditions in which an early diagnosis is still at times difficult, acute pancreatitis and perforative peritonitis.

Acute pancreatitis can often be diagnosed soon after the onset of the initial symptoms if we closely observe their sequence and occurrence. It almost always manifests its onset by sudden, sharp, epigastric pain, followed by vomiting, often accompanied by cyanosis. The pulse remains slow until we have considerable omental bursitis with absorption. The most prominent feature in the subsequent course of the disease—that is, within the next three or four days—is the apparent intestinal obstruction; and most marked of all the symptoms in this connection is the persistent belching so frequently noted in these cases, and due to the diaphragmatic irritation. Indeed, most cases of acute pancreatitis have been diagnosed as acute intestinal obstruction. In pancreatitis, however, it is possible in the course of a few days to procure good peristalsis, and thus to eliminate obstruction. We note very early in pancreatitis epigastric rigidity and excruciating pain.

The Cammidge reaction is of no value in the diagnosis of acute pancreatitis. More attention to the details of the symptomatology will no doubt enable us to distinguish most cases of acute pancreatitis from acute ileus, with which it is most often confused.

It may seem strange that perforative peritonitis of the upper abdomen has been included among the diseases often diagnosed too late, yet there is justification for so placing it. Mr. Moynihan has well pointed out, in a recent article, the fact that the symptoms for which we look at once, shock, rapid pulse, exquisite tenderness, etc., do not come on immediately after the perforation takes place, but only after a number of hours have passed. It has been my experience that the most valuable signs of perforation are the extreme, agonizing pain and rigidity of the abdominal muscles, including the diaphragm. The short, catchy respiration is characteristic and is due to the spasmodic fixation of the diaphragm. The pulse I have often found slow and of good volume, until we have the evidences of toxemia of peritoneal origin implanted on those of perforation itself. The tendency to look on the shock of a typical variety as a necessary symptom-complex to the diagnosis of such conditions as early perforative peritonitis and intestinal obstruction is too prevalent. I have often called attention to the fact that it is absent early in obstruction, and, as I see my cases of perforative peritonitis earlier, I find that the same holds true of them also.

It is, of course, unnecessary to dwell on the importance of early diagnosis and operation in cases of perforative peritonitis. Early we may and should be able to save the patients; late the cases are almost always hopeless.

It will be seen, then, that in all the subacute and chronic lesions of the upper abdomen an early diagnosis offers the only hope of successfully coping with the disease, whatever it may be. We should no more wait for

a gastric or duodenal ulcer to perforate than we would wait for an inflamed appendix to do so. The physician who waits for common-duct impaction to diagnose gallstones is just as much to be censured as one who diagnoses acute appendicitis by the formation of an abscess.

With a carefully taken history, painstaking physical and clinical examination, the proper solution will be found in almost every case, and, a correct diagnosis once being made, surgical treatment in early cases is safe and sure of good result.

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ABSTRACT OF DISCUSSION

ON PAPERS OF DRS. HERTZLER AND DEEVER

DR. W. D. HAGGARD, Nashville, Tenn.: It is true that we are not nearly so keen in the early diagnosis of conditions in the right upper quadrant as we are of conditions in the lower abdomen and in the pelvis. You will recall how slow we were in the early recognition of appendicitis, ectopic gestation, ileus and other conditions in the pelvis, and how much we have learned, but how very ignorant we are when it comes to the diagnosis of conditions in the upper abdomen. I think that this is due to a lack of appreciation of the frequency of these maladies. If we will look on every patient who presents himself with indigestion as having some serious lesion of the stomach and gall-bladder, with or without complication, until the seriousness is disproved, we will have taken the first step in making a correct diagnosis. I agree that history taking is most important, and how common it is to look on these patients as having some neurosis of the stomach or gastritis, and never for a minute think of the possibility of the existence of gall-stones or chronic gastric ulcer. It is so easy to make a mistake in diagnosis when we insist on receiving answers from the patient that confirm our preconceived opinions, as when we look for evidence of specific disease. Therefore, it is better to believe that every patient is the victim of some serious lesion when he complains of dyspepsia, until the contrary can be proved. In gall-bladder disease the initial symptoms are not acute colic always, but rather flatulence in women "fair, fat and forty," and when such patients have discomfort, tenderness on pressure under the costal arch or in the area of Boas, feel generally unwell, and complaining of indigestion, we must not jump to the conclusion that they are neurotics. Neither are they all sufferers from gastritis; they probably have gall-stones.

In reference to the stomach and duodenum, while we do not always have a definite symptomatology, as in gall-bladder disease, at the same time there is, in many instances, a train of symptoms that should lead to careful consideration of the case. Take a case of duodenal ulcer in which the patient complains of a typical hunger pain before meals, and sometimes coming on at night, when he has to take a bite of something to relieve him. Whether that is relieved by the closure of the pylorus, stopping the flow of gastric juice over the ulcer, does not matter. It means duodenal ulcer, in the majority of cases. Recently I saw a boy of 17 who complained of stomach symptoms for several years, and who suddenly had a pain in the right upper quadrant of his abdomen, after four weeks of tenderness, elevated temperature, chills and sweats, with bulging of the right lower thorax, leucocytosis and the tympanic area between the normal liver dulness and the pulmonary resonance enabled us to diagnose subphrenic ulcer. It resulted from a perforated duodenal ulcer. I feel that if we will pay more attention to the early history of these patients and get it accurately and honestly, we will make an effective step in the advancement of our diagnostic ability in the case of diseases in the upper abdomen.

DR. ROBERT J. MORRIS, New York: We are not going to make any progress in this matter of the early diagnosis of upper abdominal disease until we have stopped considering dyspepsia as a diagnostic entity. A patient consults us complaining of dyspepsia and states that he has been treated for

hyperacidity, for insufficiency of the pylorus or spasm of the pylorus. We must consider that these are merely symptoms and our examination has just begun with the diagnosis of dyspepsia. We are simply on the way toward a diagnosis. Recently I operated on a perforation of the duodenum, and the physician said that that was his second case within a month in persons who had been for two or more years under the care of a gastroenterologist for dyspepsia. It is not an easy matter to make a diagnosis, even when we go at the case very systematically. I have under my care at present a patient sent to me for ulcer of the duodenum. I had gone to work on the diagnosis by ruling out one thing after another, and after her eleven days of absolute constipation and a previous history of disturbance at times, I came to the conclusion that this was only a case of eyestrain. I have, during the year every month some cases of dyspepsia due to eyestrain sent in for operation for gall-stones, duodenal ulcer, cancer of the pylorus, and my position is always this: So long as eyestrain does cause such symptoms in a certain proportion of cases, let us find the cases. That is a reasonable ground to take. Few of our ophthalmologists are competent to make this diagnosis. In the case referred to the patient's eyes have been examined by a most competent ophthalmologist. I asked him a few days ago whether he worked this case out with reference to imbalance of the eye muscles, and he told me he had not. We must not forget that similar symptoms are caused in a certain proportion of cases by gall-stones. Cases of gall-stones are often found at the deadhouse, in which it is said that the patient had no trouble from the presence of such stone—who knows? Such patients may have suffered for months or years or even a lifetime and with no diagnosis made, even though they told the physicians that they had gall-stones, and he said that it was not so.

DR. ARCHIBALD MACLAREN, St. Paul, Minn.: The pseudoperitonitis which Dr. Hertzler so well described seems to me to need immense consideration. The peritoneum does form a false membrane over each abscess, but Nature, it seems to me, is well able to take care of that pseudoperitoneum, as is well seen in so many operations for pelvic inflammatory disease. I remember years ago in the early history of abdominal surgery, where in a certain case the wall of a large pelvic abscess had been stitched to the peritoneal incision. Six months later I had to open that abdomen for some other cause and found nothing but a single thin fiddle string left. The dissection and stitching up of these flaps may occasionally be a good thing, but usually it is rather meddlesome surgery. Dr. J. N. Jackson recently described a false membrane which forms on top of the cecum and which, in his judgment, is to be dissected off. I have frequently seen the same result produced by simply dividing that membrane and loosening up the colon.

Dr. Deaver is unquestionably correct in regard to the difficulties of diagnosis in abdominal troubles. The wonder to me is that any court of law ever goes right; because these people come to us and try to tell their story, and there is no reason why they should not do so. And still, after half an hour's time spent in cross-examination, they will often say: "Why, I did have an attack of inflammation of the bowels two or three years ago." You can manufacture testimony for these people without any trouble, and the great difficulty is to avoid doing this very thing. In regard to gallstones, which have given no symptoms. When the patient is recovering from the operation where slumbering gallstones have been discovered and removed one can go back and always get a history, without any question, of gallstone dyspepsia so well described by Dr. Deaver.

DR. A. E. HERTZLER, Kansas City, Mo.: Dr. MacLaren's statement with regard to the "string" is correct; we all know that such strings produce intestinal obstruction. I want particularly to call attention to the reason why some adhesions are temporary and some permanent. As I stated in the beginning, there is the ordinary phenomenon of blood coagulation; when that process goes on undisturbed permanent adhesions result. In cases in which there are processes that ordinarily go on to precipitation the fibrin is not absorbed. In the last type referred to by Dr. MacLaren, the treatment

is simply that of any varicocele—the ligation of the veins. Such ligation will relieve the congestion, just as ligation of the veins does in obstructive phenomena in other places.

DR. J. B. DEEVER, Philadelphia: It seems to me now to be a question of the education of the public, just as in the matter of appendicitis. If we will educate the public they will say as they do now in appendicitis: "Doctor, I want my appendix taken out. Doctor, I want my abdomen opened if you think there is a chronic ulcer." We must do with the gastroenterologists as we did with the gynecologists, set them aside. We must do with the gentlemen who are washing out stomachs and electrocuting them, acting on the minds of the patients as we did with the gynecologists, and it leaves, therefore, only the internist and the surgeon to handle these patients.

Another class of men who have only a very limited sphere are the roentgenologists. If we wait until a lesion is demonstrable by the Roentgen ray, it is too late for surgery to accomplish anything. We must recognize the early symptoms and not be afraid of advising abdominal exploration. I have heard men who held high positions say that it is a terrible responsibility. We must get that out of our heads. We must operate on our patients early if we wish for results.

RESULTS OF THREE YEARS' EXPERIENCE IN BACTERIAL IMMUNIZATION *

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PHILADELPHIA

Two years ago in a contribution¹ read before the Philadelphia County Medical Society on the subject of opsonins, I made the following statements: 1. "In the heralded unlimited field of therapy, where the opsonic index is ordained to play a star rôle, its utility seems destined to pass into oblivion, not only because of its inconstancy in agreement with the clinical symptomatology, but especially because of its impracticability." 2. "Although my experience thus far with artificial auto-inoculations has been most gratifying and my results in close harmony with those of other observers, I am disposed to believe that there is a tendency to overvaluation even in this method of therapy." To-day I am more than ever convinced of the correctness of that stand and I doubt very much if at present Wright himself believes, literally, his statement promulgated a few years since, that "by means of these bacterial vaccines we have, in the power of raising the antibacterial power of the blood, with respect to any invading microbe, out of all comparison, the most valuable asset in medicine."

It is ever a fact in medicine that when truly important discoveries are announced the pendulum of applicability and utility, at first, either swings too far or not far enough. Valuable, indeed, as bacterin therapy has proved itself to be in an extensive category of affections to which the human organism is subject, it was and still is, in a measure, the victim of the former evil. Time and experience have gradually shaped the destiny of opsonotherapy or bacterial immunization, and the practitioner conversant with the current medical literature

* Read in the Section on Pharmacology and Therapeutics of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

* From the William Pepper Laboratory of Clinical Medicine of the University of Pennsylvania.

1. Variability and Unreliability in the Determination of the Opsonic Index, THE JOURNAL A. M. A., Oct. 12, 1907, xlix, 1219.

has already formed a more or less correct judgment on the merits of biologic therapeutics.

That inoculation by bacterin, in properly selected cases, plays an extremely important rôle in convalescence is indisputable. That failure to obtain expected results is due often to ignorance or a misapplication of this particular kind of treatment in contraindicated cases, thereby unjustly placing active immunization in disrepute with many clinicians, is unquestionable. I dare say that were a ballot taken of average physicians as to whether or not active immunization should be employed in a given case of septicemia, a positive vote would be cast. From my experiences nothing could be more erroneous. The defenses of the organism have already been exhausted and broken down, which accounts for the occurrence of the bacteriemia. How illogical, therefore, the introduction of an antigen; in the hope of stimulating these body cells to the production of antibodies, when their supply has already been consumed! We must not expect the impossible from bacterin therapy. The condition can be likened to the overzealous, but indiscreet jockey, who vainly hopes to win in the close finish race by relentlessly flogging his exhausted thoroughbred. Scientifically considered from the standpoint of anaphylaxis, it is not improbable, in cases of bacteriemia, that the inoculation of bacterin may not only do no good, but actually result harmfully. The organism is already in a state of hypersusceptibility induced by an overwhelming autogenous antigen, when, if the theory of Vaughan be correct, albumin in the body is broken up into the toxic and non-toxic group. At the time of the heterogenous injection of dead bacteria, the body attacks the albumin so vigorously and releases so much of the toxic group that it is overcome by the poisonous radical. On the other hand, late in the course of the disease, if the patient survives, it must be recalled that the inoculation of dead bacteria may act beneficially. Such has been the experience of Rosenow² in chronic septic endocarditis. I have had no success in this class of cases, and when improvement or cure has ensued I have been inclined to attribute it to Providence rather than to bacterin therapy.

Finally, overdependence on the opsonic index as a guide, and carelessness or inattention to certain clinical signs and symptoms, be they ever so slight and seemingly trivial in nature, or an irrepressible enthusiasm to "push the treatment" as soon as improvement becomes manifest, invariably leads to disappointment, if not to utter failure and disaster. This is particularly true of tuberculous affections, in which a prolonged, tedious and cautious course of treatment of six to twelve months' duration must be instituted.

The unanimous interest in and practical importance of active immunization make it the imperative duty of every practitioner, individually and collectively, to determine as early as possible precisely in what class of affections bacterin therapy shall and shall not be utilized. The problem is shrouded in many difficulties owing to the variability in the application of the treatment, so that results necessarily differ. For instance, some observers rely implicitly on the opsonic index as the guide in dosage; others maintain that the clinical symptomatology is all-sufficient; some pin their faith to autogenous bacterins; others claim that the stock preparations are equally or more meritorious; some advocate inoculations, comparatively, of large size; others, minimum dosage; some draw their conclusions following bio-

logic therapy alone; others refuse to discard old measures of proved worth and insist on associating bacterin therapy only with the former; some are gifted with excellent judgment and possess keen powers of observation, while others are indifferent, careless and overenthusiastic or prejudiced. These disadvantages can be overcome only by a persistent effort on the part of the profession to continue the search for the truth by the multiplication of case reports.

It is very easy in noting results following an attempt at immunization to become either an optimist or a pessimist, depending on whether one is an advocate or a doubter of the method. In this report it has been my avowed purpose to communicate the results of all cases, good, bad and indifferent, of all cases treated, in the belief that only by such statements can we ever hope to solve this question in its entirety. Certainly, the report of sporadic cases, with only brilliant results, from time to time, may lead to erroneous conclusions.

It has been my fortune to employ bacterin therapy in 106 various affections, among which the following bacteria were isolated for the preparation of autogenous bacterins. In a few instances, notably in gonorrheal and tuberculous affections, a stock bacterin was employed.

Bacteria.	Infections.
1. <i>Micrococcus albus</i>	18
2. <i>Micrococcus aureus</i>	38
3. <i>Bacillus coli communis</i>	6
4. <i>Bacterium ferrugineum</i>	1
5. <i>Bacillus fluorescens</i>	2
6. <i>Micrococcus gonorrhoea</i>	19
7. <i>Bacillus proteus vulgaris</i>	2
8. <i>Bacterium punctatum</i>	1
9. <i>Bacillus pyocyaneus</i>	3
10. <i>Streptococcus pyogenes</i>	10
11. <i>Bacillus tuberculosis</i>	19
	119

In all, fifty distinct diseases were treated. Both by desire and virtue of circumstances, the time-honored measures of proved worth were never abolished from treatment during the periods of bacterial inoculations, because I have always considered bacterin therapy as an accessory, not as a specific agent. It was never intended to be, nor will it ever be, a "cure-all," but should be regarded as an aid to assist Nature in properly selected cases, to combat infection by fortifying the organism through the production of immunization by antibodies. Moreover, it is the acknowledged duty of the physician to employ all the useful measures at his command in the treatment of his patient and not to experiment with human life in order to determine the efficacy of a new remedial agent, although by such a course the problem might be speedily solved. Consequently, in many instances, it has been a difficult matter to decide how much of the cure should be attributed to the usual method of treatment, and how much to bacterial immunization. I have striven throughout to give an unprejudiced opinion, and in dubious cases have refrained from placing the credit to bacterin inoculations. Nevertheless, in certain classes of cases, the results have been consistently so striking that the value of inoculation by dead bacteria is undeniable.

ABSCESSSES

A review of the table of cases indicates that in the treatment of abscesses a fruitful field is afforded for bacterin therapy. Two deaths have occurred in my series, but they were both instances in which active

2. Rosenow: Jour. Infect. Dis., April, 1909.

TABLE OF CASES

No.	Case.	Age.	Disease.	Bacteria.	Duration of Disease.	Bacterin.		Number of Inoculations.	Average Dose of Inoculations.	Duration of Treatment.	Remarks.	Result
						Antigen.	Stock.					
1	W. M.	3	ABSCESSES Axillary	B. tuberculosis.....	1 yr....	++	+	8	B.=100,000,000; T.=.00005 mg.	3 mos....	General tuberculosis. Mixed infection. Pycnia. Pulmonary hemorrhage.	Death.
2	A. G.	23	Pulmonary	M. aureus and albus	12 yrs..	++	..	3	C.=250,000,000; S.=50,000,000..	10 dys....	Expectoration very profuse (12 oz. a day) and malodorous. Still under observation. Negative for T. B.	Negative.
3	L. C.	4	Multiple subcutaneous	Streptococcus pyogenes	10 dys..	++	..	2	200,000,000.....	2 wks....	Complicated convalescence following extensive burns.	Cure.
4	J. Z.	22	Multiple subcutaneous	M. aureus.....	1 wk....	++	..	3	400,000,000.....	10 dys....	Complicated convalescence following typhoid fever...	Cure.
5	A. B.	24	Pelvic	M. aureus.....	3 mos..	++	..	6	500,000,000.....	1½ mos..	Sponge left in abdomen at time of operation causing abscess and rectal fistula.	Improvement.
6	R. G.	22	Pelvic	M. albus.....	3 wks..	+	..	1	400,000,000.....	2 wks....	High, irregular fever. Very septic. Followed laparotomy. Pleuropneumonia. Sputum = T. B.	Death.
7	W. F.	40	Subdiaphragmatic	B. pyocyaneus	2 wks..	+	..	12	300,000,000.....	5 wks....	Suppuration following operation was very profuse and persistent.	Cure.
8	B. S.	17	Jaw	M. aureus.....	1 mo....	+	..	19	250 to 800,000,000	19 wks....	Osteomyelitis was associated with the persistent suppuration. Progressive gain in weight occurred.	Cure.
9	R. G.	22	Abdomen	B. coli communis	3 wks..	+	..	1	400,000,000.....	2 wks....	See Case 6. Very septic from pelvic abscess. No tuberculin treatment.	Death.
10	W. M.	3	Knee	B. pyocyaneus	1 yr....	++	+	8	B.=100,000,000; T.=.00005 mg.	3 mos....	Pulmonary hemorrhage. See Case 1. General tuberculosis. Mixed infection. Very septic.	Death.
11	H. G. L.	37	Malar	B. tuberculosis	1 yr....	++	..	8	500,000,000.....	2½ mos..	Persistent sinus in rt. malar region for months, on which the best surgeons in Philadelphia had operated. Bier treatment.	Cure.
12	U. W.	62	Mouth	M. aureus.....	2 wks..	+	..	3	S.=100,000,000; M.=200,000,000	3 wks....	Sinus resulted following initial lymphadenectomy for carcinoma of lip.	Negative.
13	G. C. F.	57	In ano	Streptococcus pyogenes	3 mos..	+	..	6	200,000,000.....	6 wks....	Small, slightly suppurating sinus in anal region, associated at times with induration. Bier treatment.	Negative.
14	A. B.	24	Rectal	M. albus.....	3 mos..	++	..	6	500,000,000.....	1½ mos.	Formed from pelvic abscess. See Case 5.....	Improvement.
15	A. B.	24	Vesical	M. aureus.....	3 mos..	++	..	6	500,000,000.....	1½ mos..	See Cases 5 and 14. Subsequently entirely recovered. Undetermined as to whether fistula is vesical or urethral.	Improvement.
16	M. McK.	17	Thoracic	M. aureus and albus	4 wks..	+	..	3	400,000,000.....	3 wks....	Developed pleurisy and pleural effusion following appendectomy. Rib resection. Drainage. Sepsis.	Death.
17	A. L.	18	Thoracic	M. aureus.....	1 yr....	++	..	17	400 to 800,000,000	5 mos....	Has had two or three operations, but discharge has always persisted. Bier treatment associated.	Marked improvement.
18	M.	45	POSTOPERATIVE INFECTIONS Gastroenterostomy	B. coli communis	2 wks..	..	+	1	80,000,000.....	5 dys....	Persistent suppuration from laparotomy wound following gastroenterostomy for inoperable carcinoma.	Improvement.
19	M. B.	45	Partial gastrectomy	M. aureus.....	3 wks..	..	+	2	100,000,000.....	2 wks....	Infection of laparotomy wound following partial resection of stomach.	Cure.
20	DeG.	50	Erasion of bubo	B. punctatum	1 wk....	+	..	4	300,000,000.....	3 wks....	Following operation a typical phagedena of abdominal wall occurred. Completely stopped following first inoculation.	Improvement.
21	P.	40	Fracture of patella	M. aureus.....	5 dys..	+	..	3	250,000,000.....	2 wks....	Patella was wired and infection occurred between fascia and skin. Patient very fat.	Improvement.
22	D.	48	Breast amputation	B. pyocyaneus	2 wks..	+	..	4	180,000,000.....	2 wks....	Persistent suppuration following operation. Patient had renal complications and very stout.	Death.
23	F.	30	Hypoglossofacial anastomosis	Streptococcus pyogenes	2 dys..	+	..	2	75,000,000.....	1 wk....	A diffuse cellulitis occurred on the side of the neck operated. Patient's improvement was prompt.	Cure.
24	D.	30	Craniotomy	M. aureus.....	2 wks..	++	..	3	200,000,000.....	3 wks....	No appreciable effect. Fungus cerebri developed.....	Negative.
25	J. L.	35	Craniotomy	M. albus.....	3 wks..	++	..	2	300,000,000.....	2 wks....	Mental aberration prevented a continuation of treatment, patient refusing to have the hypodermic needle.	Negative.
26	McE.	40	Craniotomy	M. aureus.....	2 wks..	+	..	8	400,000,000.....	7 wks....	Mental symptoms and symptoms of meningitis supervened. Suppuration steadily decreased and temperature fell.	Improvement.
27	M. T.	10	Chronic suppuration	B. ferrugineum	9 yrs..	+	..	6	100,000,000.....	5 wks....	Immediately following inoculations, discharge from ear has increased. Still under treatment.	Negative.
28	S. S.	19	Tibia, acute	M. aureus.....	3 dys..	+	..	3	150,000,000.....	10 dys....	A blood culture early showed Micrococcus aureus following operation. Treatment was futile. Patient worse. Still under treatment.	Negative.
29	J.	44	Tibia, chronic	M. aureus.....	6 mos..	+	..	1	400,000,000.....	1 wk....	Following compound fracture of leg, a sinus has persisted for months. No evidence of caries.	Improvement.

30	E. R...	28	OSTEOPERIOSTITIS Gonorrheal osteophytes.....	M. gonorrhææ.....	1 yr....	..	+	6	20,000,000.....	1 mo.....	X-ray demonstrated exostoses of both ossa calcis. Repeated gonorrheal infection. Walking, on account of pain at times, was almost unbearable. Treatment by inoculations, associated with prostatic massage and passage of urethral sounds.	Improvement.
31	E. R...	28	PROSTATITIS Gonorrheal, chronic.....	M. gonorrhææ.....	1 yr....	..	+	6	20,000,000.....	4 wks....	Improvement.	
32	E. R...	28	URETHRITIS Posterior, chronic.....	M. gonorrhææ.....	12 mos.	..	+	6	20,000,000.....	1 mo.....	Cure.	
33	M. P.T.	60	CELLULITIS Hand and forearm.....	Streptococcus pyogenes..... M. aureus.....	2 wks..	+	..	3	S.=56,250,000; A.=300,000,000	9 dys....	Negative.	
34	DeG...	50	Abdominal wall.....	B. punctatum.....	1 wk...	+	..	4	300,000,000.....	3 wks....	Improvement.	
35	F.....	39	Neck.....	M. aureus..... Streptococcus pyogenes.....	2 dys...	+	..	2	75,000,000.....	1 wk.....	Cure.	
36	J.....	26	CYSTITIS Urinary.....	B. coli communis.....	6 wks..	+	..	2	500,000,000.....	30 dys....	Improvement.	
37 to 49	Ward cases in Philadelphia Hospital.	2 to 10	VULVOVAGINITIS Gonorrheal.....	M. gonorrhææ.....	? .....	..	+	3 to 10	5,000,000.....	9 to 30 dys.	Improvement.
50	G. M...	45	TENOSYNOVITIS Suppurative, wrist and forearm.	M. aureus.....	4 wks..	+	..	4	400,000,000.....	4 wks....	Improvement.	
51	M. P.T.	60	Fingers, hand and wrist, subacute.	Streptococcus pyogenes..... M. aureus.....	2 wks..	+	..	3	S.=56,250,000; A.=300,000,000	9 dys....	Negative.	
52	W. M..	3	ARTHRITIS Infectious, suppurative, acute, wrist.	M. aureus.....	2 wks..	+	..	7	100,000,000.....	3 mos....	Negative.	
53	C.....	20	Infectious, suppurative, acute, knee	M. albus..... M. aureus.....	4 wks..	+	..	4	400,000,000.....	4 wks....	Negative.	
54	O. S....	18	Infectious, subacute, knees..	M. albus.....	Weeks	+	..	3	300,000,000.....	3 wks....	Negative.	
55	C. M...	20	Infectious, gonorrheal, chronic, knee.	M. gonorrhææ.....	Weeks.	..	+	2	50,000,000.....	3 wks....	Improvement.	
56	A. G...	16	Infectious, gonorrheal, acute, wrist.	M. gonorrhææ.....	4 wks..	..	+	3	50,000,000.....	3 wks....	Cure.	
57	J. A....	22	Infectious, gonorrheal, acute, knee.	M. gonorrhææ.....	5 wks..	..	+	4	50,000,000.....	4 wks....	Cure.	
58	C.....	24	Infectious, gonorrheal, chronic, knee.	M. gonorrhææ.....	5 yrs...	..	+	1	50,000,000.....	1 wk.....	Improvement.	
59	U. W..	62	ERYSIPELAS Acute, face and neck.....	Streptococcus pyogenes.....	2 dys...	+	..	1	100,000,000.....	5 dys....	Cure.	
60	J. B. C.	35	Recurrents, thighs and legs...	Streptococcus pyogenes.....	13 yrs..	..	+	4	50,000,000.....	6 wks....	Improvement.	
61	H. E. T.	15	ACNE VULGARIS Pustular.....	M. albus..... M. aureus.....	2 yrs...	+	..	18	1,000,000,000.....	6 mos....	Improvement.	
62	B. E..	23	Pustular.....	M. albus.....	7 yrs...	+	..	24	800,000,000.....	1 yr	Improvement.	
63	E. W. C.	18	Pustular.....	M. aureus..... M. albus.....	5 yrs...	+	..	13	900,000,000.....	22 wks...	Improvement.	
64	L. R...	21	Pustular.....	M. albus.....	2 yrs...	+	..	6	500,000,000.....	6 wks....	Cure.	
65	J. B. K.	40	Pustular.....	M. aureus.....	15 yrs..	+	..	5	850,000,000.....	2 mos....	Cure.	
66	W. S...	35	FURUNCULOSIS Forearm.....	M. aureus.....	1 wk...	+	..	2	350,000,000.....	10 dys....	Cure.	
67	J. H. S.	19	Neck.....	M. aureus.....	3 wks..	+	..	4	400,000,000.....	4 wks....	Cure.	
68	W.	21	Neck.....	M. aureus.....	3 wks..	+	..	3	325,000,000.....	3 wks....	Cure.	
69	L.	22	Axilla.....	M. aureus.....	2 wks..	+	..	4	425,000,000.....	5 wks....	Cure.	
70	E. V. J.	30	Back.....	M. aureus.....	3 mos..	+	..	4	500,000,000.....	2 wks....	Cure.	
71	J. Z....	22	Back.....	M. aureus.....	1 wk...	+	..	3	400,000,000.....	10 dys....	Cure.	

TABLE OF CASES—(Continued)

No.	Case.	Age.	Dis-ease.	Bacteria.	Dura- tion of Dis-ease.	Bacterin.		No. of Inocula- tions.	Average Dose of Inoculations.	Duration of Treat- ment.	Remarks.	Result
						Autog- enous.	Stock.					
72	G.	65	CARBUNCULOSIS Neck	M. aureus.....	3 wks..	+	..	2	880,000,000.....	5 dys....	Delirious for two weeks. Pyelonephritis. Pneumonia. Myocarditis. Heroic stimulation. Urine and lungs cleared up immed. Carbuncle speedily granulated. Small incision for drainage.....	Improvement.
73	C.S. Jr.	45	Neck	M. aureus.....	2 wks..	+	..	2	400,000,000.....	5 dys....	Carbuncle of neck healed very speedily. Bier cup. Dur-	Cure.
74	S.	42	Neck	M. aureus.....	2 wks..	+	..	3	450,000,000.....	2 wks....	ing convales. abscess of ischio-rectal space formed. Incision and drainage. Bier cup.....	Cure.
75	McM. ..	34	Neck and forearm	M. aureus.....	3 wks..	+	..	2	400,000,000.....	2 wks....	Huntingdon's chorea. Stock bacterin prepared from	Cure.
76	S. F.	35	Chin.....	M. aureus.....	4 wks..	+	..	3	450,000,000.....	3 wks....	eight different strains of cultures employed. Incision and drainage. Bier cup. Recurrence.....	Cure.
77	E. C. B.	29	Neck	M. aureus.....	1 wk....	+	..	4	500,000,000.....	3 wks....	Incision and drainage. Bier cup.....	Cure.
78	B.	33	Neck	M. aureus.....	2 wks..	+	..	2	400,000,000.....	2 wks....	Incision and drainage. Bier cup.....	Cure.
79	W. M. ..	3	Elbow	B. tuberculosis M. aureus and albus.....	1 yr....	+	+	8	B.=100,000,000; T.=.00005 mg.	3 mos....	Mixed infection. Pycmia. General tuberculosis. Pulmonary hemorrhage.	Death.
80	A. T.	18	Enteritis.....	B. tuberculosis.....	2 mos..	+	+	2	.0001 mg.....	2 wks....	Patient greatly emaciated and grew steadily worse....	Death.
81	C. B.	5	Epiphysitis, tibia.....	B. tuberculosis.....	4 wks..	..	+	3	"B. E." .0001; "B. F." .001 mg.	3 wks....	Following third inoculation, which was less than its predecessor, temp. rose considerably and was main- tained, child dying of military tuberculosis. See Cases 1, 10, 52 and 79. Pyemia.....	Death.
82	W. M. ..	3	Face.....	B. tuberculosis.....	12 mos.	+	+	8	B.=100,000,000; T.=.00005 mg.	3 mos....	Pulmonary tuberculosis complicated treatment.....	Death.
83	K. D.	45	Hip.....	M. aureus and albus.....	4 mos..	+	+	7	B.=300,000,000; T.=.0001 mg.	5 mos....	Child very anemic and waxy in appearance.....	Death.
84	T.H., Jr.	5	Sacroiliac.....	B. tuberculosis.....	6 mos..	..	+	9	200,000,000.....	2 mos....	Improvement.	Improvement.
85	G.	19	Hip.....	B. tuberculosis.....	4 wks..	..	+	19	.0002 to .005 mg.	9 mos....	Intermission of five months without treatment.....	Improvement.
86	T. M.	18	Hip.....	B. tuberculosis.....	3 wks..	..	+	15	B.=400,090,000; T.=0.0001	3 mos....	Beck's bismuth injection acted deleteriously and com- plicated inoculation treatment. Mixed infection. Fresh air and antituberculosis measures.....	Improvement.
87	J. C.	4	Hip.....	Streptococcus pyogenes M. aureus and albus.....	2 wks..	+	+	21	B.=200,000,000; T.=.0003	4 mos....	Fresh air and antituberculosis measures.....	Improvement.
88	J. B.	8	Hip.....	M. aureus.....	5 wks..	+	+	12	B.=200,000,000; T.=.0002	10 wks..	Fresh air and antituberculosis measures.....	Improvement.
89	W. M. ..	3	Knee	B. tuberculosis.....	12 mos.	+	+	8	B.=100,000,000; T.=.00005	12 wks..	See Cases 1, 10, 52, 79 and 82. Pyemia.....	Death.
90	I. W.	3	Mastoid.....	M. albus and aureus.....	1 wk....	..	+	3	0.0001 mg.....	10 dys....	Temperature dropped to normal quickly. Wound granulated rapidly. General tonic treatment. Wound healed speedily. At same time an epiphysitis of metacarpal bone subsided.	Improvement.
91	N. A.	7	Mastoid.....	B. tuberculosis.....	2 wks..	..	+	4	0.0001 mg.....	4 wks....	Immobilization of metacarpal phalangeal joints. General antituberculosis measures.	Improvement.
92	N. A.	7	Epiphysitis, metacarpal.....	B. tuberculosis.....	2 wks..	..	+	4	0.0001 mg.....	4 wks....	Ordinary tuberculosis measures. Has gained 10 lbs. in weight. Peritonum at time of exploratory lapa- rotomy was literally covered with tubercles.	Cure.
93	L. H. ..	30	Peritoncum.....	B. tuberculosis.....	1 wk....	..	+	56	0.0001 to 6 mg....	10 mos....	See Case 83. Condition incidental to tuberculosis of hip, where there was a mixed infection. See Cases 1, 10, 52, 79, 82 and 80. Pyemia.....	Death.
94	K. D.	45	Lungs.....	B. pyocyaneus B. tuberculosis.....	4 mos..	+	+	7	B.=300,000,000; T.=.0001	4 mos....	Shoulder resected years before. Anemic. Cardiac dilatation. Developed pelvic abscess. (T. B.) Obligated to suspend inoculations. No result.....	Death.
95	W. M. ..	3	Lungs.....	B. tuberculosis.....	12 mo..	..	+	8	B.=100,000,000; T.=.00005	3 mos....	Usual antituberculous treatment. Temperature fell. Suppuration decreased markedly. Posas abscess.....	Improvement.
96	P.	45	Shoulder.....	M. albus and aureus.....	6 yrs...	+	+	21	0.00000002 mg....	8 mos....	Vitality very low. Iliac abscesses.....	Improvement.
97	J. T.	4	Hip.....	B. tuberculosis.....	3 wks..	..	+	2	0.00000005 mg....	2 wks....	Three weeks after injection of Beck's bismuth paste patient developed pulmonary hemorrhages and died. Posas abscesses. Temperature steadily decreased. Gained weight.	Death.
98	R.	38	Spine.....	B. tuberculosis.....	4 wks..	..	+	7	0.00000001 mg....	7 wks....	Suppuration lessened markedly. Temperature lower. Suppuration decreased. Temperature lower.....	Improvement.
99	J.	20	Hip.....	B. tuberculosis.....	3 wks..	..	+	3	100,000,000.....	3 wks....	Associated with sacro-iliac disease. Anemia.....	Improvement.
100	C.	22	Spine.....	M. aureus.....	2 wks..	+	+	4	300,000,000.....	4 wks....	Improvement.	Improvement.
101	C. Y.	14	Spine.....	Streptococcus pyogenes M. aureus, B. pyocyaneus.....	6 mos..	..	+	6	B.=200,000,000; T.=0.001	6 wks....	Improvement.	Improvement.
102	H. H.	25	Spine.....	B. tuberculosis.....	1 mo....	+	+	11	B.=350,000,000; T.=.0001	3 mos....	Death.	Death.
103	E. J.	5	Spine.....	M. aureus.....	4 wks..	+	+	21	B.=400,000,000; T.=.0002	4 mos....	Improvement.	Improvement.
104	S. Y.	4	Spine.....	M. aureus.....	3 wks..	..	+	5	200,000,000.....	4 wks....	Improvement.	Improvement.
105	A. M.	4	Spine.....	B. tuberculosis.....	7 wks..	..	+	5	200,000,000.....	4 wks....	Improvement.	Improvement.
106	T.H., Jr.	5	Spine.....	B. fluorescens..... B. tuberculosis..... B. proteus vulgaris..... B. coli communis.....	6 mos..	..	+	9	B.=200,000,000; T.=0.00005	2 mos....	Improvement.	Improvement.

immunization was clearly contraindicated. In one, Case 1, the patient was in an advanced stage of tuberculosis and the victim of pyemia; in the other, Case 6, the patient was very septic and had the complication of pulmonary tuberculosis with pleuropneumonia, superadded to which the pus from the abscess, together with other organisms, demonstrated the *Bacillus pyocyaneus*, a bacterium which, in my experience, has always been a bad omen and with the bacterin of which in therapy I have never been able to obtain the slightest success. I am unable to explain this fact, save that it is usually an infection superimposed on a previous suppuration, and is independent of the particular bacterium causing the primary infection; that is, it acts as a scavenger of the primary suppuration—a pus parasite, as it were. It would seem, therefore, illogical to expect that anything can be gained by stimulating, through inoculation, the cells of the human organism to the production of antibodies, by the bacterin of a bacterium which in itself may be entirely dependent on the action and products of a pre-existing infection. Especially is this true if we may accept the theory of the specificity of opsonins.

In multiple subcutaneous or superficial abscesses, either acute or chronic, the results have been most brilliant. In two instances, Cases 3 and 4, not a single abscess developed after the first bacterial inoculation

In conjunction with this I desire to call attention to the important fact that the opsonic index may be very variable and unreliable as a control of the dosage and spacing of the bacterial inoculations. For example, in

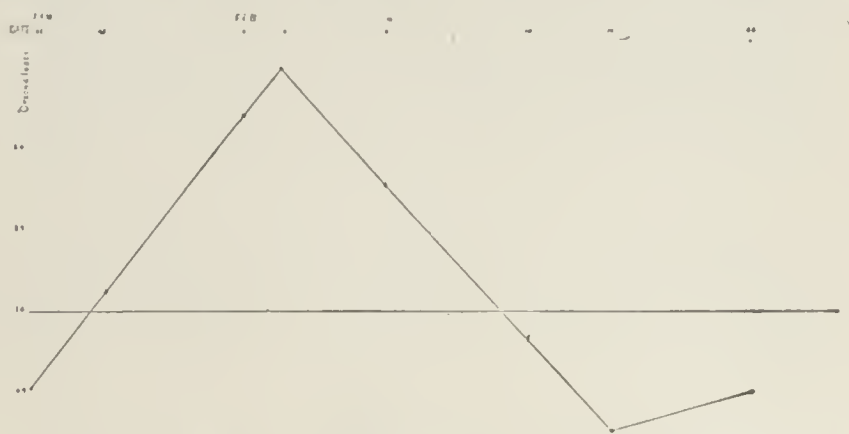


Chart 2.—Opsonic index. Patient, J. K.; acne vulgaris. The crosses on the line indicate bacterin inoculations, 880,000,000 *M. aureus*. Observe that after an initial rise the opsonic index persistently fell to the negative phase, where it remained, although a pustular acne existing for fifteen years permanently disappeared. The unreliability of the opsonic index could scarcely be better demonstrated.

Chart 1, the coincidence between the clinical symptoms and opsonic index was beautiful and all that could be desired. On the contrary, compare Chart 2 of the opsonic index of Case 65. In this instance, after an initial rise, the index fell into the "negative phase" and remained there in spite of the fact that, after four inoculations, the pustules disappeared permanently from the face of the patient, who had been a sufferer from acne vulgaris for fifteen years. From these and numerous other experiences, I have come to allow the clinical symptomatology to serve always as the paramount guide in the administration of bacterial inoculations. In my early work, and occasionally subsequently, the index was associated for what it might reveal in the nature of confirmation, but never to supersede the clinical symptoms as a factor in treatment.

In order to illustrate how ideally the symptomatology may be utilized in the conduct of bacterin therapy, to the exclusion of the opsonic index, permit me to present Chart 3 of Case 7 of my series.

SINUSES

Here, again, bacterin therapy is of undoubted value, although the results are not so striking, a much longer period being necessary to effect a cure. One cause partially responsible for this is that not infrequently carious bone or a foreign body lies at the bottom of the sinus. We cannot be expected to remove dead or dying tissue. This is the province of the surgeon. Another cause for the tardy improvement can be ascribed to the fact that these sinuses are frequently surrounded by dense fibrous tissue, crowding out granulations; hence the supply of blood and lymph necessary for the healing process. Then, too, the few lymph spaces that do exist have their orifices occluded by coagulated fibrin and necrotic tissue, preventing the lymph system from properly bathing the sinus wall.

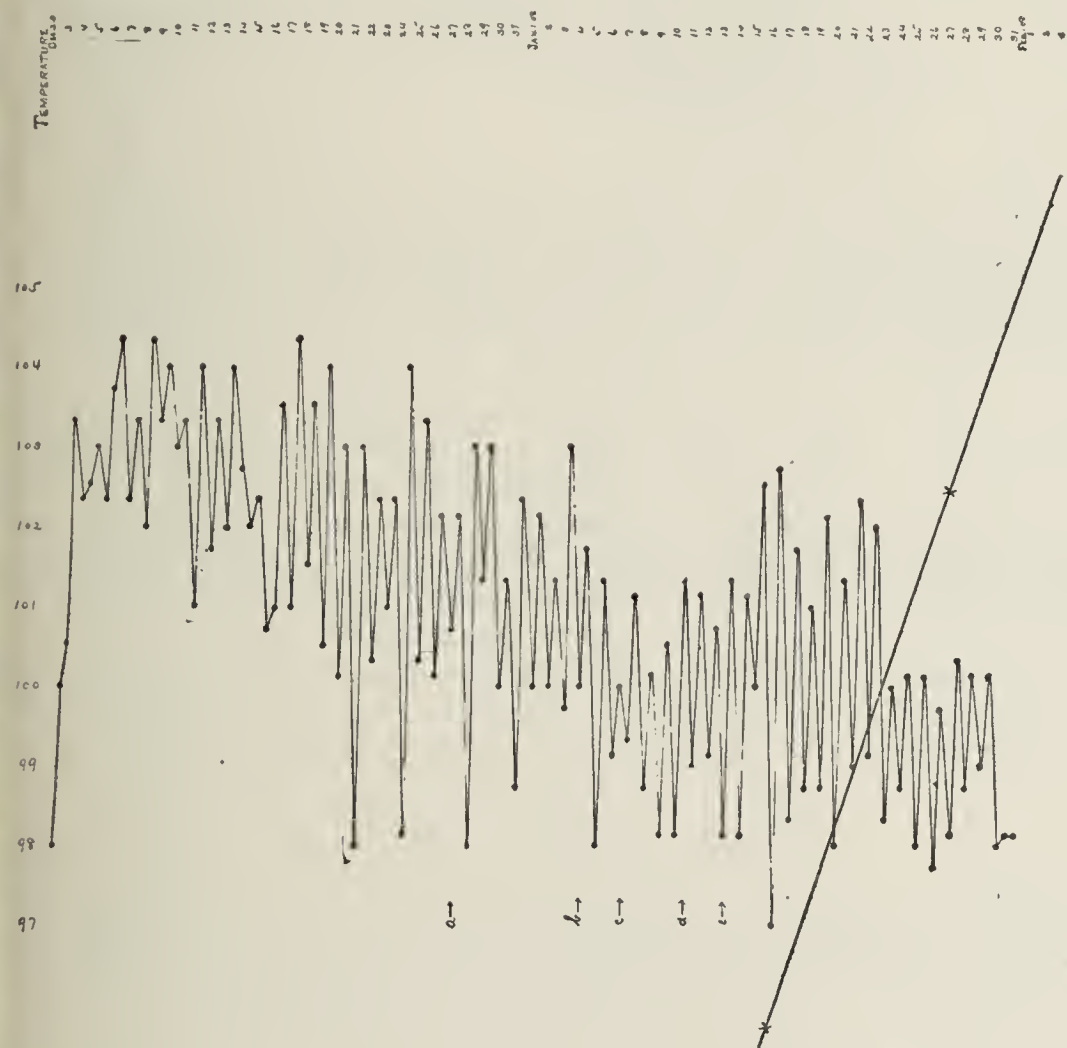


Chart 1.—Temperature (zigzag line) and opsonic index (straight diagonal line). Patient, L. C.: burns one-third to one-half body surface; multiple subcutaneous abscesses; a, skin grafts to arm and leg; b, development of scalp abscesses; c, marked loss of weight and strength; d, many subcutaneous abscesses evacuated; e, pus cultured from new abscess demonstrated micrococcus aureus. The small crosses on the diagonal line indicate inoculation with *M. aureus* bacterin, 205,000,000 bacteria. Note the parallelism existing between opsonic index and improvement in the condition and health of the patient. Note also that no new abscesses formed after the first inoculation of bacterin and the rapidity of disappearance of the recurrent pre-existent subcutaneous abscesses.

and the pre-existent ones disappeared in remarkably short time. The clinical course of one of these cases is represented in Chart 1, associated with the temperature curve of which the phase of the opsonic index is plotted and the time of the active immunization noted.

This can be obviated to a degree, theoretically at least, as Wright has observed, by the irrigation of these tracts with a solution consisting of 0.5 per cent. sodium citrate in 5 per cent. salt or 10 per cent. sugar solution, which possesses the power of decalcification or defibrination and promotion of osmosis.

Death occurred in two of the five cases in the series, as will be observed, but it must be borne in mind, in justification to any therapy, that they were in condi-

Even in ambulatory cases it is my custom to see that the patient is provided with and instructed in the use of a clinical thermometer, so that he may take and record his temperature at least twice daily. This may appear an unnecessary matter, and in itself is probably worthless, but it cannot be too strongly emphasized that if we are to be governed by the clinical symptoms, and are desirous of obtaining the greatest success, we must not ignore the slightest aid, for it is only by judgment based

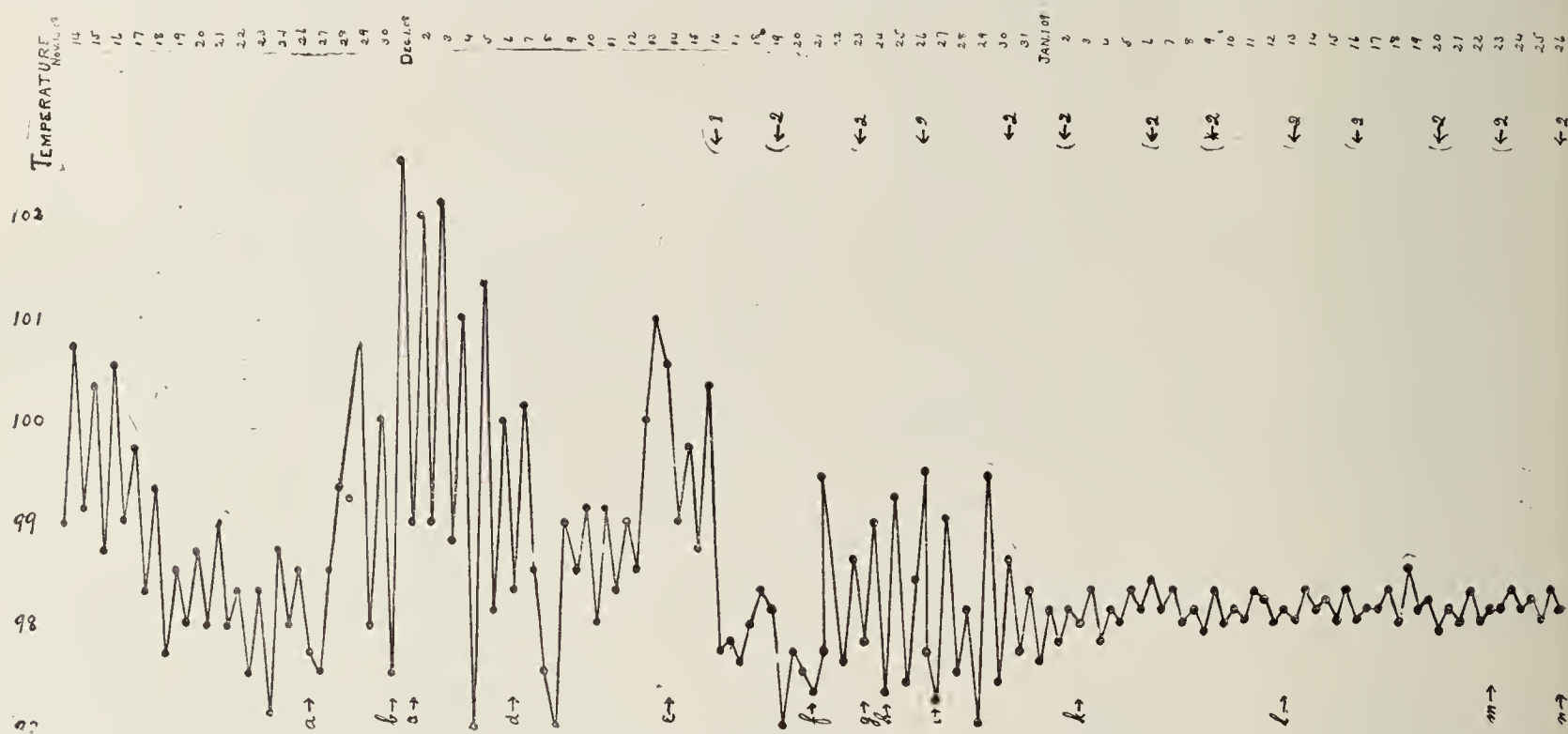


Chart 3.—Temperature. Patient, W. F. Subdiaphragmatic abscess drained per laparotomy; a, patient very comfortable; drainage satisfactory; b, patient complains of pain in hepatic region; c, leucocytes 20,000; d, excessive suppuration; e, suppuration variable, but very profuse; f, patient's appearance improved; feels much stronger; g, patient discharged from ward; h, treated in out-patient department; i, suppuration markedly decreased; k, discharge from wound very slight; l, marked gain in strength and health; m, no discharge; n, sinns healed; 1, pus demonstrates *M. aureus* and albus; 2, inoculations *M. aureus* bacterin $\frac{1}{2}$ e.e. This case illustrates how admirably active immunization can be conducted by resort to the clinical symptomatology as a guide, to the exclusion of the opsonic index.

tions not to be alleviated by any mortal measure. Patient 11 had undergone operation several times by some of Philadelphia's most distinguished surgeons for a persistent sinus in the malar region of the face. Whether cure in this case can be assigned to bacterin therapy, avoidance of interference or the application of Bier's vacuum cup, remains undetermined. The last, acting to promote the circulation of blood and lymph, is not to

on the total symptomatology, important signs as well as trivial details, embracing a consideration of the temperature, pulse, malaise, indisposition, headache, nausea, vomiting and local phenomena, as reactions in appearance and increase of discharge temporarily following inoculations, that success or failure depends.

FISTULAS AND EMPYEMAS

Whatever may have been the results of others in fis-

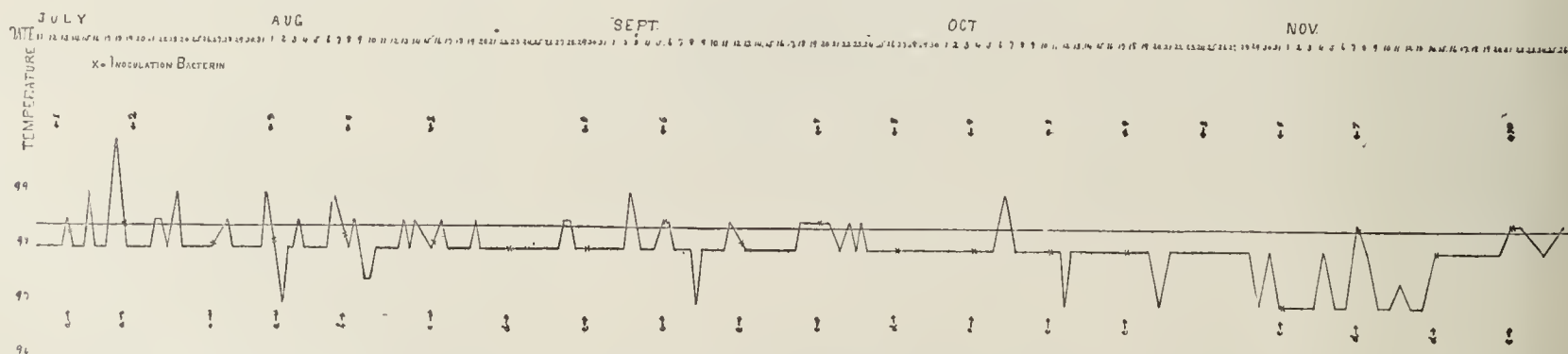


Chart 4.—Temperature. Patient, B. S.; osteomyelitis with suppurative sinus of jaw. Crosses on line indicate *M. aureus* bacterin inoculations; a, $\frac{1}{2}$ e.e. bacterin; b, $\frac{2}{3}$ e.e. bacterin; c, 1 e.e. bacterin; d, 1 e.e. bacterin; e, suppuration less; f, drain removed; 1, sinus healed; 1, weight 120; 2, weight 121; 3, weight 117; 4, weight 118; 5, weight 124; 6, weight 125; 7, weight 126; 8, weight 123; 9, weight 122; 10, weight 127. Note the progressive increase in weight as the temperature, at first above normal and hectic, became subnormal, then rose and fluctuated on the normal line.

be underestimated in the treatment of these cases. Case 8 seemed to be of sufficient importance to warrant the preparation of Chart 4, for two reasons: first, to show again the value of control by the clinical symptomatology; second, to illustrate even in the presence of definite and persistent osteomyelitis, how success may be expected in assisting Nature by stimulating the defense of the organism.

tulas, especially in fistula in ano, my success in this class of affections has been practically nil, or only that ascribed to time and Nature, as will be observed in the three cases it has been my opportunity to treat.

It seems questionable whether or not bacterial inoculations are to enter deeply into the treatment of thoracic empyemas. One of my cases, from which the *Bacillus pyocyaneus* was isolated, was uninfluenced and pro-

ceeded to death. The other, which has been under treatment for a year, shows slight but unmistakable improvement.

POSTOPERATIVE WOUND INFECTIONS

Nine cases of this character have been treated by bacterin therapy, and, although the results have been satisfactory so far as cessation of suppuration and wound repair are concerned, it is impossible to place the credit entirely to the inoculation of dead bacteria. Those cases treated with stock bacterins have responded equally with those in which the autogenous preparation was used.

OTITIS MEDIA

In our series there occurs but one case of suppurative middle-ear disease from which repeatedly the *Bacterium ferrugineum* was isolated in pure culture. The patient has been a sufferer for nine years. He has received six inoculations during the past five weeks, and, aside from slight increase in the amount of discharge, there has been no noteworthy effect. Naturally the case has been

was a sufferer from exostoses of the os calcis, demonstrated by the x-ray, causing him extreme pain on walking and incapacitating him from work. It is hoped that by Neisser bacterin the further formation of osteophytes may be stayed and the patient immunized against the gonococcus so that an operation may be undertaken with the prognosis of a reasonable degree of success. After six inoculations the pain on walking has decreased markedly.

PROSTATITIS AND URETHRITIS

One patient with chronic gonorrheal prostatitis has been not only greatly improved, but practically cured. In justice to other therapeutic measures, be it said that urinary antiseptics, prostatic massage and the passing of cold urethral sounds were not omitted from the treatment.

I have had no experience with gonococco-bacterin therapy in the treatment of acute specific urethritis. Nevertheless, in a case of the chronic posterior type complicated by stricture, a cure has been apparently

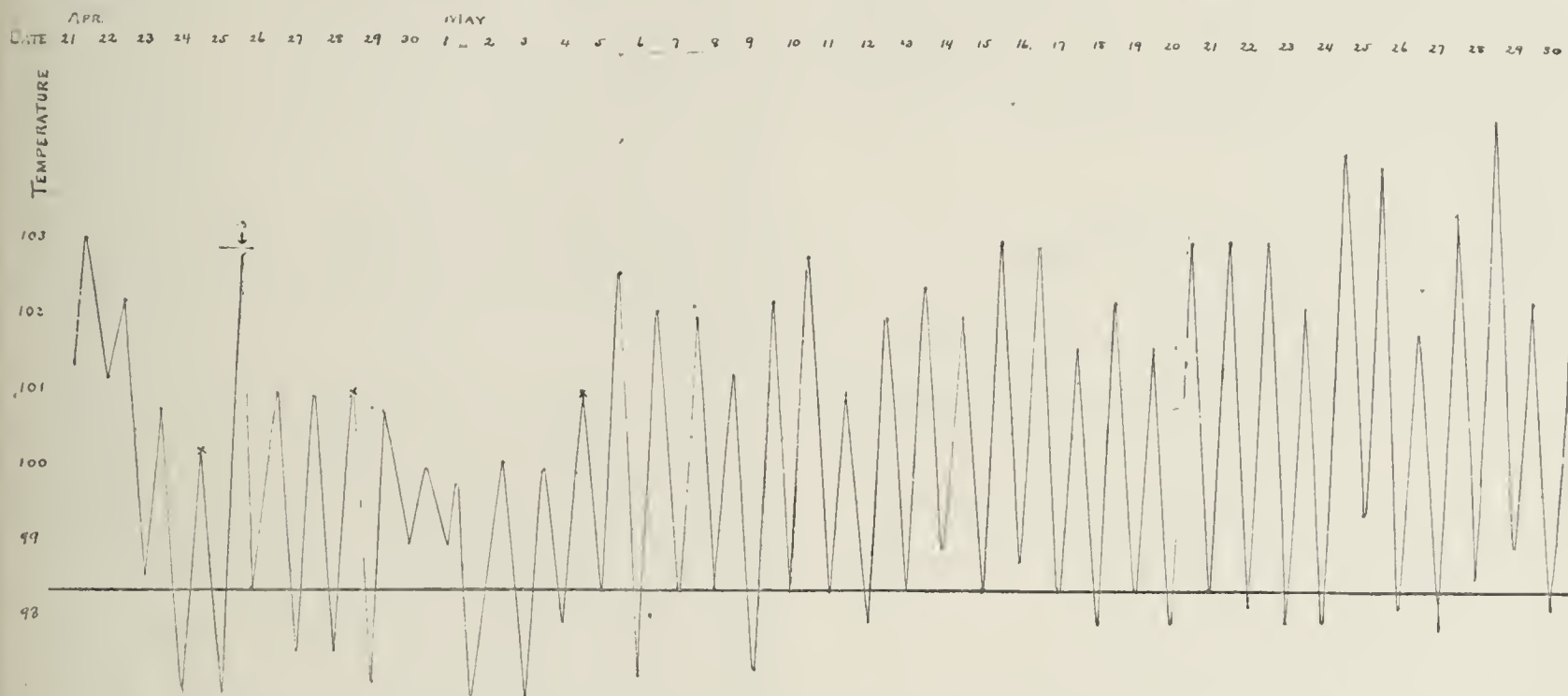


Chart 5.—Temperature. Patient, S. S.: acute osteomyelitis of tibia, followed by septicemia. The arrow indicates a point at which blood culture showed *M. aureus*; the crosses indicate *M. aureus* bacterin inoculations. Note that the patient, as indicated by the fluctuating temperature, progressively grew more septic, and that bacterin therapy was not only useless, but possibly harmful.

under observation too brief a period, and conclusions should not be drawn from a single case.

OSTEOMYELITIS AND OSTEOPERIOSTITIS

I am fortunate in having both a typical acute and a chronic case of osteomyelitis for comparative study. The patient with the chronic condition has been a sufferer for months, the infection arising from a compound fracture of the leg. The inoculations have been few, but the result brilliant. The acute case, No. 28 of the series, arose from a hematogenous infection. Following operation, the temperature, after a temporary fall, began to fluctuate and a bacterial inoculation was immediately made. Not the slightest effect could be observed, and a blood culture demonstrated the presence of the *Micrococcus aureus*. Subsequently two more inoculations were made, but the result has not only been not beneficial, but possibly actually deleterious. I believe that we have here a beautiful illustration for the contraindication of active immunization in acute bacteriemia. So instructive is this case that I have deemed it advantageous to show the temperature curve (Chart 5).

The only case of osteoperiostitis is one of subacute or chronic gonorrheal infection. The patient for a year

effected, all shreds having disappeared from the urine, employing the usual tests. Here, again, dilatation by sounds was associated with the biologic therapy.

CELLULITIS

In the majority of cases of this affection, no improvement could be definitely ascribed to bacterial immunization, although the patients recovered. In one instance, however, Case 34, the effect was so immediate on a rapidly spreading phagedena of the abdominal wall due to the *Bacterium punctatum* that there can be no question as to the efficiency of bacterin.

CYSTITIS

The report of one case³ can never solve any problem, and in this case a complete cure has not yet been secured, although, if the infection is primary and limited to the bladder, a favorable field seems to be afforded. An encouraging report has been received from Dr. Ohlmacher, of Detroit, who has continued the treatment in

3. Since the preparation of this paper, bacterin therapy has been applied to another case of cystitis due to the *B. coli communis*. Although slight improvement was perceptible during an abbreviated course of treatment, circumstances rendered its continuation impossible.

this case by the inoculation of autogenous *Bacillus coli communis* bacterin.

VULVOVAGINITIS

Through the courtesy of Dr. Howard C. Carpenter, I am privileged to report the results of gonococcal-bacterin immunization on thirteen children treated at the Philadelphia Hospital. His report is as follows:

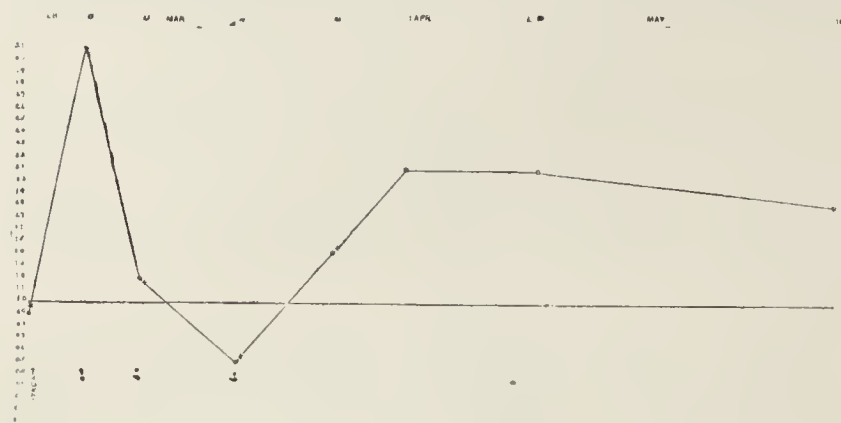


Chart 6.—Opsonic index. Patient, J. B. C.; recurrent erysipelas. The circles indicate opsonic readings; the crosses bacterin inoculations; a, inoculation 25,000,000 streptococci; b, 50,000,000 streptococci. Observe in this case that the "high tide of immunity" indicated by the opsonic index has been maintained in the "positive phase" for two and a half months, no inoculation having been given since March 22. It will be noted that this is entirely in accord with the clinical symptoms of the case.

1. The *Micrococcus gonorrhæ* was demonstrated by smears in each case prior to treatment.
2. Three to ten inoculations of a stock preparation were employed.
3. The earliest disappearance of the gonococcus was noted after the second inoculation.
4. Five million dead gonococci was the constant dose.
5. The period of treatment varied from nine to thirty days.
6. In one case in which no local treatment was employed, the result was most brilliant.
7. In every case the period of detention in the hospital was noticeably shortened.

TENOSYNOVITIS AND ARTHRITIS

The rôle played by bacterin therapy is largely conjectural in the treatment of tenosynovitis. The patients, acute and subacute suppurative types, finally recovered after periods of prolonged treatment, but such patients also recover without bacterial inoculations. The number of cases is too limited for conclusions.

My experience with infectious arthritis seemingly justifies the conclusion that the most favorable results can be expected in the subacute and chronic affections, especially those caused by the *Micrococcus gonorrhæ* in which infection either marked improvement or cure has always occurred. Indeed, in these cases the response to treatment frequently has been extremely prompt and the ultimate functional result better than by any other known method. Fifty million gonococci of a stock preparation constituted the average dose. From two to four inoculations were made over periods of three to four weeks. The results in other infections have been essentially negative.

ERYSIPELAS

Two cases of erysipelas have been successfully treated by biologic therapy in my series. One patient had an acute streptococcal infection of the face and neck. Recovery was prompt following one inoculation of 100,000,000 bacteria of the autogenous strain. Precisely the influence of the antigen cannot be determined even in this instance, as this infection is prone to run a short course.

The other case, No. 30, is one of peculiar interest and of sufficient importance for detailed description. I have merely reported the curve of the opsonic indices (Chart 6). This woman for thirteen years has been periodically, notably in the spring, the victim of recurrent attacks of erysipelas, involving both legs, thighs and genitalia. This infection, when her health is run down, is always superadded to a marked chronic hyperplasia of the loose connective tissues of both lower extremities. Beginning late in the winter, active immunization, employing a stock bacterin of the *Streptococcus pyogenes*, was instituted. Five inoculations were administered over a period of six weeks. The patient reports that she feels very well and that this is the first spring for a number of years that she has not been the victim of the attack of erysipelas. In this case, the opsonic index was utilized to advantage, as will be seen by consulting the chart. It would seem indisputable that bacterin therapy has a place in this type of case.

ACNE VULGARIS, FURUNCULOSIS AND CARBUNCULOSIS

Acne affords a fruitful harvest for active immunization. Every case has either been greatly improved or cured, and to the credit of bacterin therapy be it said that three of the cases were the most aggravated and obstinate types of pustular acne that it has been my fortune to observe. The duration of the disease previous to bacterial inoculations varied from two to fifteen years. Autogenous bacterins were always employed from the *Micrococcus aureus* or *albus*, isolated with equal frequency.

Of all the indications for bacterin therapy, furunculosis is probably the most brilliant. In no case have I failed to obtain a cure in more than five weeks; ten days being the shortest period of treatment. My rule has been invariably to culture the pus from the boil and prepare an autogenous bacterin. The *Micrococcus aureus* has always been the infecting organism.

No less satisfactory have been the results of therapy of carbuncles by bacterial inoculations. Again, the *Micrococcus aureus* was isolated in seven cases. A cure always resulted, the longest period required by treatment being three weeks; the shortest, five days. In one in-

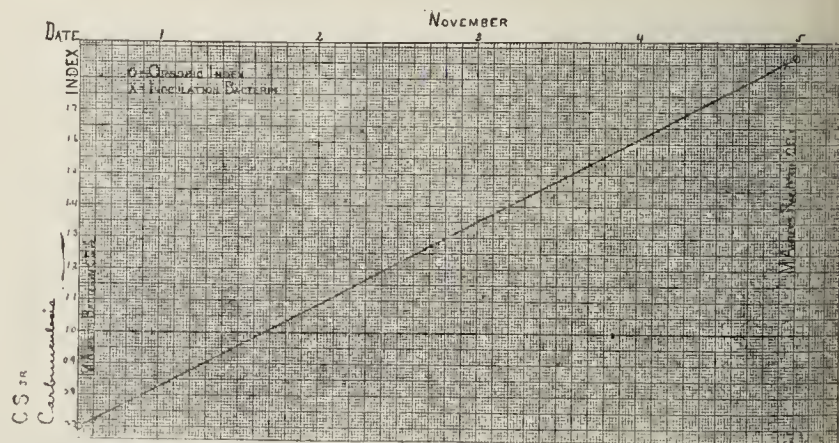


Chart 7.—Opsonic index. Patient, C. S., Jr.; carbuncles. Circles indicate opsonic readings; crosses indicate *M. aureus* bacterin inoculations, to the left, $\frac{1}{2}$ c.c., to the right 1 c.c. Note the definite rise of the opsonic index from the negative to the positive phase during the treatment of five days' duration.

stance a polyvalent bacterin, prepared from eight different strains of the *Micrococcus aureus*, was used with a result equally successful with any in which the autogenous preparation was employed. The clinical symptomatology has been practically the sole guide in the administration of the inoculations. The curve of the opsonic indices depicted in Chart 7 demonstrates graphically the

rapid rise of the index often observed in the treatment of a case, No. 73, of short duration.

TUBERCULOSIS

The treatment of tuberculosis, in its manifold phases, constitutes my proudest effort. Broadly, therapy in these cases has been directed to the (1) pure and (2) mixed infections. We have heard much of tuberculin therapy, which, of course, is simply bacterin immunization by the tubercle bacillus or opsonotherapy, if you please, when the bacillus emulsion, "B. E.," product is employed.

The cases in my series should also be divided into the chronic and acute classes. With the acute class the results have been anything but encouraging. Here, again, my belief has been sustained that we must not expect success. It is probably true that in incipient tuberculosis we have to deal with a bacteriemia, and it has been my fortune, in the artificial inoculation treatment of such cases, invariably to experience failure. The results of bacterin therapy in my work with the early cases of tuberculosis certainly supports the findings and opinion of Rosenberger. In the subacute and chronic stages of the disease, even in the pulmonary type, I have reason to believe in the statement of Trudeau and others. A review of the cases tabulated under "Tuberculosis" in the table of cases is almost self-explanatory and confirms this belief. Many of these cases, for divers reasons, have not passed to immunizing doses of tuberculin or to the stage of cure. A great number have manifested definite improvement. I desire to call attention to one case in particular, No. 93 in the series. An exploratory laparotomy revealed general tuberculosis of both the visceral and parietal peritoneum. The patient was a very sick young woman and her life was practically despaired of. Tuberculin therapy by "B. E." variety was instituted in August, 1908. After a very tedious regime of treatment continuously since that time, she is at present positively unaffected in any way by inoculations, weekly, of 6 to 10 mg. of tuberculin, and has gained ten to fifteen pounds in weight. Her health seems perfect. I am not unaware of the fact that occasionally such patients recover after a simple laparotomy.

The particular phase of tuberculous disease to which I especially desire to direct attention is the mixed infection so constantly superimposed on and associated with Pott's disease and hip disease—indeed, any bone or joint tuberculosis. It is well known how frequently these complex mixed infections fail to improve and ultimately cause the death of the child. I do not desire to be overoptimistic, but I am very sanguine over my successes with bacterin therapy in this class of cases, and do not hesitate to say that in no instance in which proper surgical treatment and antituberculous measures were associated with bacterial inoculations have I failed to observe improvement in the health of the child. I have made it a practice to culture and reculture the pus from time to time for the preparation of autogenous bacterins. Commonly as many as three different bacterins have been alternated in the immunization process. So soon as the temperature falls to 100, or lower preferably, and remains permanently below that grade, tuberculin inoculations are begun. I have been inclined to believe, judging from the cases under my observation, that better results have attended the process of active immunization when, just as in tuberculin therapy, pure and simple, the treatment has been started with relatively small bacterin inoculations, progressively in-

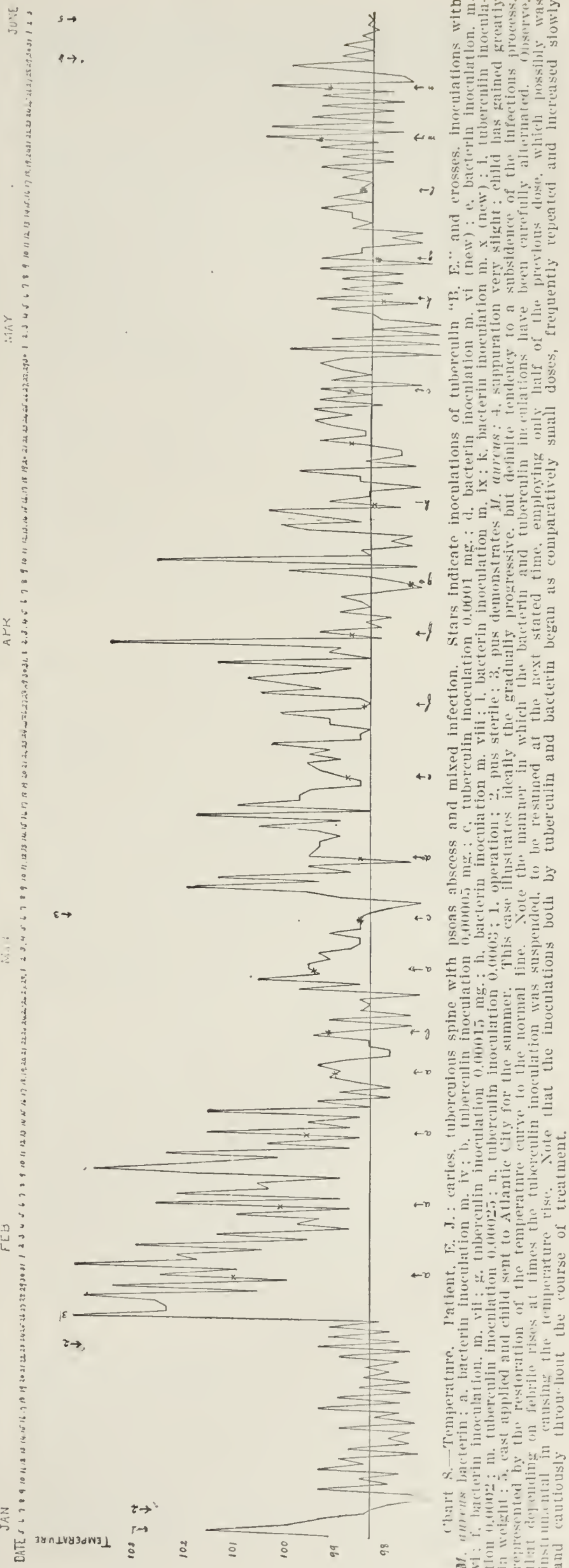


Chart 8.—Temperature. Patient, E. J.: carries, tuberculous spine with psoas abscess and mixed infection. Stars indicate inoculations of tuberculin "B. E." and crosses, inoculations with *M. aureus* bacterin: a, bacterin inoculation m. iv; b, tuberculin inoculation 0.0005 mg.; c, tuberculin inoculation 0.0001 mg.; d, bacterin inoculation m. vi (new); e, bacterin inoculation m. vi (new); f, bacterin inoculation 0.00015 mg.; g, bacterin inoculation m. viii; h, bacterin inoculation m. ix; k, bacterin inoculation m. x (new); l, tuberculin inoculation 0.0002; m, tuberculin inoculation 0.00025; n, tuberculin inoculation 0.0003; 1, operation; 2, pus sterile; 3, pus demonstrates *M. aureus*; 4, suppuration very slight; child has gained greatly in weight; 5, cast applied and child sent to Atlantic City for the summer. This case illustrates ideally the gradually progressive, but definite tendency to a subsidence of the infectious process, represented by the restoration of the temperature curve to the normal line. Note the manner in which the bacterin and tuberculin inoculations have been carefully alternated. Observe, that depending on febrile rises at times the tuberculin inoculation was suspended, to be resumed at the next stated time, employing only half of the previously was instrumental in causing the temperature rise. Note that the inoculations both by tuberculin and bacterin began as comparatively small doses, frequently repeated and increased slowly and cautiously throughout the course of treatment.

creased to the therapeutic limit, rather than by recourse to large dosage, thereby, in the former case, establishing immunity, and, in the latter, avoiding anaphylaxis. Apropos of the beneficial effect to be derived from treatment by this method, permit me to submit Chart 8, illustrative of Case 103 in my series.

So far as I am aware, I am alone in advocating the value and importance of alternating bacterial inoculations and tuberculin therapy in this type of tuberculous mixed infection. The inoculations should be given every four to seven days, the clinical symptoms permitting. The opsonic index is unreliable as a guide. Relative to tuberculin inoculations, I have used Bacillen Emulsion alone or Bouillon Filtrate alone, or a combination of the two, as practiced and advocated by Trudeau. The last, theoretically, seems to have the preference, but my results have been equally satisfactory with each. It all depends on the man behind the syringe.

It must be remembered that in the use of tuberculin we have a more potent instrument for evil than for good, unless it is properly administered. In careful hands, it serves as an invaluable aid in treatment and is Nature's own remedy to stimulate the bodily defenses. When tuberculin is so employed, the patients do better with than without tuberculin; their retention in the hospital is materially shortened and the complications, if they occur, are fewer and less severe.

CONCLUSIONS

From the study of the cases in this tabulated series the following conclusions seem justifiable:

1. The diseases contraindicated for bacterin therapy are the diffuse infections characterized by septicemia, pyemia and grave sapremia.

2. Those in which therapy by this agent is beneficial or curative are the superficial acute, subacute and chronic processes, especially the last two.

3. The acute cases, in which brilliant results can be uniformly expected, are those of acne vulgaris, furunculosis, carbunculosis and subcutaneous abscesses.

4. Subacute and chronic gonorrheal and tuberculous affections are amenable to bacterial immunization, and because of the impossibility and impracticability often of employing an autogenous bacterin the reliable stock preparations should be used.

5. Certain acute gonorrheal infections can be benefited.

6. It is questionable whether tuberculin therapy should ever be employed in very acute tuberculosis. Opinion is divided as to whether or not acute miliary tuberculosis and death supervened as a result of tuberculin therapy in one of our cases, No. 81 of the series.

7. The mixed infections in chronic tuberculous disease afford an important prospective field for *alternating bacterial inoculations and tuberculin therapy*.

8. Autogenous bacterins are always to be preferred over the stock preparations, and success or failure frequently depends on this fact.

9. Although the duration of the period of greatest potency of bacterins is undetermined, the best results have been obtained when the pus has been recultured and a fresh bacterin prepared every two to four weeks.

10. It is believed that the best effects, therapeutically, particularly in chronic cases, occur when the quantity of bacterin is slowly and cautiously increased during successive inoculations, thereby, as has been thoroughly demonstrated in tuberculin therapy, avoiding hypersusceptibility or anaphylaxis.

11. Therapy by both bacterins and tuberculins can be satisfactorily executed by keen observance of the clinical symptomatology. Reliance on the opsonic index as a guide is not only unnecessary, but often actually conducive to erroneous conclusions, owing to its variability.

12. Bacterin therapy, by virtue of its potency to do more harm than good, when unskillfully managed, will or should probably not become a universal therapeutic measure in the hands of the general practitioner, unfamiliar with bacteriology or work in the laboratory. Ignorance and wantonness are incompatible with ambition and energy, and an otherwise meritorious therapeutic agent thus abused will ultimately fall into disrepute.

13. Therapy by the employment of bacterins made from *Bacillus pyocyaneus* has been entirely useless.

14. Bacterins and tuberculins are not "cure-alls," but when intelligently used serve as invaluable aids to Nature in fortifying the bodily defenses, thereby accelerating convalescence, diminishing complications and promoting cure.

116 South Nineteenth Street.

PASTEURIZATION OF MILK *

ROWLAND G. FREEMAN, M.D.

NEW YORK

Public opinion in this country swings violently in one direction or another, occasionally on insufficient premises; and this, I think, applies to the present attitude among many pediatricists in this country concerning the pasteurization of milk.

We can all agree that what we want is a safe, raw milk, since we all wish, in the artificial feeding of infants, to approximate as nearly as is feasible the condition of the food as obtained by the infant at the breast.

The only questions for discussion, then, are: Can we obtain a safe, raw milk for the feeding of infants? And, if not, is milk injured by heating, and to what extent, and by what temperature?

There can be no question but that we can to-day feed all the infants of New York on a much safer raw milk than was possible five or ten years ago; but what is the extent of this element of safety? Take, for example, the best milks at present produced under the certified milk plan. How safe are these milks as a raw food for infants?

The danger of tuberculosis in such milk may be said to be fairly eliminated by well-aired, well-ventilated cow stables, and by the repeated tuberculin test. But tuberculosis is one of the lesser dangers in milk. The diseases concerning the spread of which we have most tangible and incontrovertible proof are typhoid fever, diphtheria, scarlet fever, and epidemic sore throat.

Our sanitary dairies do almost all that is possible to protect us from these diseases, but those of us familiar with this subject know that epidemics may occur from the sale of certified milks. No system of control can protect a milk-supply from a mild walking typhoid, or a typhoid-carrier among the employees, unless regular bacteriologic examinations are made of the urine and feces of the employees at frequent intervals; and I take it that no such system would at present be advocated.

Diphtheria has apparently been spread by the best of our milk-supplies; what protection have we against this in any raw milk?

* Read before the New York County Medical Society, Oct. 25, 1909.

Virulent diphtheria bacilli exist in the throats of many healthy persons, and, although our best dairies have some medical supervision, no supervision could be practically enforced that would protect the milk from a beginning diphtheria or a healthy diphtheria-bacillus carrier.

The same arguments will apply to other diseases carried by milk, so that, although in our best supplies the bacteria are only one-thousandth part as numerous as in the ordinary supplies, they are still present in sufficient numbers in most certified milk to cause our suspicion until we know their identity. Now if this is true of certified milk, how much more so is it true of our ordinary milk supplies! I think we may well say that at the present time there can be no absolute security in any raw milk. This being the case, why should we not use a heated milk in which there is security?

The opinion has become current in this country that heated milk produces poorly nourished children; that it causes rickets and scurvy; that it kills the life of the milk, and that it produces chemical changes in the milk which renders it less nourishing. It may be stated that these are opinions that prevail in this country and not abroad, and I am not willing to admit that in matters dependent on clinical and hospital observations we are superior to our confrères in Europe.

This opinion began to develop in our country at the time when milk was sterilized at a boiling temperature, sometimes for two days, adopting laboratory methods. The idea was given concrete form chiefly by an article published in the *American Journal of Medical Sciences*, in 1891, by Davis, of Philadelphia, and Leeds, the chemist, of Jersey City. This article, while giving no detailed clinical data, expressed the opinion that children fed on sterilized milk, although kept free from diarrhea, did not flourish, and the chemical basis for this opinion was expressed by Leeds, who advocated sterilization at 68 C. (155 F.) for six minutes instead of the boiling temperature which had previously been used.

From this time, however, it became evident that a boiling temperature was not necessary and that lower temperatures were sufficient to destroy the bacillus tuberculosis and the other organisms feared in milk, so that we gradually began to use lower temperatures and instead of a boiling temperature of 212 F., 175 F. for twenty minutes was used and later 155 F. for thirty minutes, while now we know that 140 F. for forty minutes will afford security. Nevertheless raw milk has become much more generally used, notwithstanding its dangers.

The opinion of Davis that boiled milk causes malnutrition in children is well answered by the fact that European physicians have been using it for the past twenty or more years without having made a similar observation.

Now as to the causation of scurvy: After scurvy had first been diagnosticated in this country by Dr. Northrup and the clinical picture clearly painted, many cases began to be reported, and, as this was at a time when milk was being sterilized, a good many of the patients were fed on heated milk. But I believe that, although scurvy developed after the milk was heated, the heated milk was not the cause of the scurvy.

Out of the 356 cases of scurvy collected and studied by the American Pediatric Society in 1897, 60 per cent. were fed on proprietary foods, 19 per cent. on sterilized cow's milk, 10 per cent. on condensed milk, 3.3 per cent. on breast-milk, and only 4.5 per cent. on pasteurized milk.

From these figures, therefore, we get very little to indicate any responsibility on the part of heated milk in connection with scurvy, while, on the other hand, we have the experience of physicians abroad who feed their babies on boiled milk and who have seen much less scurvy than has been seen in this country. Our scurvy developed to a great extent at the time when milk was being fed in extreme dilutions and after illness when the food was still further reduced.

Comby of Paris, who has had a very large experience, remarked several years ago that he had seen but five cases of scurvy, and in those cases the babies were all fed on diluted milk.

The original milk depots of Paris, founded in 1892, still dispense to babies milk heated to 115 C. (239 F.), which is absolutely yellow from the conversion of sugar into caramel, and I was told at this depot last year that in the long history of these milk depots, extending over sixteen years, but one case of scurvy had been observed.

It seems to me evident, therefore, that our assumed relationship between the heating of milk and scurvy is unfounded.

Another disease said to be caused by the heating of milk is rachitis, a disease which, to my mind, however, has little connection with feeding, the main etiologic factor being insufficient fresh air, for it is a disease of cold climates only, develops only in winter, and is most marked in those races which have been accustomed to outdoor life all the year round. It occurs with all sorts of food.

Now as to the manner of heating milk: Commercial pasteurization, which consists in heating milk to a high temperature for a few seconds, should be condemned. It is used for the purpose of keeping dirty milk sweet until it can reach the consumer. It should be insisted that milk be produced in a cleanly manner, so that it will keep sweet until it reaches the consumer. Some city milk is so dirty that it is heated at the dairy and again after it reaches the city, so as to prevent its becoming sour before it is delivered. Such milk should be poured into the gutter and not allowed to be sold as pasteurized milk.

The only safety for the consumer is to get his milk sweet and raw. Having obtained it, he should then render it safe by the use of the smallest amount of heat compatible with safety. A temperature of 140 F., but little higher than the temperature in which one can bear one's hand, if continued for forty minutes, with the milk in a closed nursing-bottle, is sufficient to kill all the bacteria that we know and fear in milk, at the same time changing neither the taste nor, so far as we know, the chemical composition or the ferments of the milk. Such pasteurization, to my mind, should be still used by every physician who is conscientious in his endeavor to secure the safety of the infant he is feeding.

CONCLUSIONS

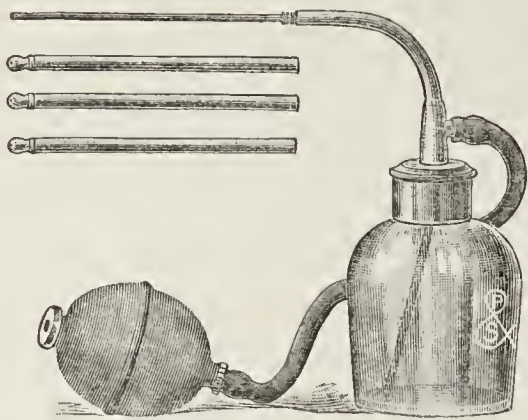
1. There is no absolute safety in any raw milk.
2. Commercial pasteurization of milk, employed to keep it sweet until it can be marketed, should be condemned.
3. Milk is in no way injured, either in taste or by chemical change or action on ferments, by pasteurization at 140 F. for forty minutes.
4. Pasteurized milk does not cause malnutrition or scurvy or rachitis.

211 West Fifty-seventh Street.

AN EASILY STERILIZABLE ATOMIZER

FRANCIS ASHLEY FAUGHT, M.D.
PHILADELPHIA

The accompanying illustration represents an improved atomizer. Recognizing that the ordinary atomizer in the hands of the average busy practitioner is far from ideal in respect to surgical cleanliness, I have had the old Philadelphia atomizer modified so that the distal portion of the nozzle (three and one-half inches) is detachable from the rest of the apparatus by means of a screw thread. This permits ready sterilization by boiling that part of the atomizer usually contaminated. To



Atomizer with duplicate removable nozzle-tips, which may be readily sterilized by boiling.

facilitate matters further, these atomizers are furnished with duplicate tips, which allow the atomizer to be repeatedly used without the delay incident to sterilization of the tip.

While this style of atomizer may not be applicable in all cases in which atomizers are employed, it is the type most universally used, so that the adoption of this suggestion should materially minimize the transference of infection from one patient to another.

The firm of George P. Pilling and Son Company have kindly followed my suggestion in the manufacture of this atomizer, which may be obtained from any instrument-dealer.

1831 Chestnut Street.

TREATMENT OF TYPHOID BY CONTINUOUS
SALINE INSTILLATION*DAVID RIESMAN, M.D.
PHILADELPHIA

I wish to preface what I have to say about the Murphy treatment in typhoid fever by a few remarks on the pathogenesis of the disease. We are accustomed to attribute the symptoms of typhoid fever to the typhoid bacillus and to such lesions, produced by ulceration of the blood-vessels, by perforation, etc., as are the indirect result of its action. The general symptomatology of the disease—the fever, the cerebral symptoms, the altered metabolism, and the acute degenerations in the parenchyma of organs—are ascribed to a typhoid toxemia brought about by the entrance into the blood of the poison of the typhoid bacillus. Unlike the toxin of tetanus, this poison is not a secretory product of the micro-organism, but is an endotoxin laked out of the bodies of dead bacteria. As this view of the pathogenesis of the typhoid toxemia is the one almost universally accepted,

it may be bold to question its correctness. But it seems to me that it is not a full and adequate explanation of the principal phenomena of the disease. There is another source of toxemia which the prevailing theory leaves out of account. I mentioned it in a paper published in 1899¹ and in a discussion of Dr. Mallory's address on typhoid fever before the Pathological Society of Philadelphia a few years ago.

Stated briefly, the theory or hypothesis is as follows: There occurs in typhoid fever in response to the cytogenic stimulus of the typhoid bacillus a tremendous proliferation of cells in all the lymphoid tissues of the body. Numerically this proliferation is as much beyond computation or conception as the pullulation of the bacteria themselves. All cell multiplication is attended by the elaboration of metabolic substances which enter the lymph-stream and by way of it the general circulation. When the cells die, which in typhoid fever happens soon after their birth, their disintegration products—the analogues of the endotoxins of bacteria—are also poured into the blood. Is it not conceivable that these two groups of substances—one produced during cell formation, the other during cell destruction—are factors in the toxemia and play a part in the causation of the general symptoms of the disease? Granting even that the products of metabolism of the newly formed lymphoid cells and their disintegration products are normal to the body, the quantitative increase occurring in a comparatively short time must tend to swamp the system. But it is more than probable that the metabolic products in the circumstances are abnormal.

That in the formation of the cells and of the bacteria enough proteid or other material is taken from the blood to make a difference is unlikely, although the point is worth considering.

Whatever the source of the poisons, it is eminently desirable to have a method that will eliminate them. Clinicians have endeavored to promote elimination by giving large amounts of water by the mouth and salt solution in considerable quantities by the rectum.

The good results obtained by surgeons in the treatment of peritonitis and other abdominal inflammations and in grave postoperative conditions by the Murphy method of continuous enteroclysis led me to use this method in the treatment of typhoid fever. It seemed rational to suppose that the constant instillation of salt solution into the bowel would better accomplish the result aimed at by the administration of water, namely, the filling of the blood-vessels and the increased excretion of poisons. I am aware of the fact that hitherto no positive proof has been brought that soluble poisons, at least none of an albuminous nature, are eliminated in the urine in typhoid fever; there is, however, nearly always a pronounced bacilluria.

By the Murphy method it is possible to introduce into the system extraordinary quantities of fluid. Murphy mentions the case of a child of 11 who absorbed, without losing one drop, 30 pints of salt solution a day. Such quantities I have not succeeded in introducing, nor have I attempted it, but it is easy to secure the absorption of from one-half to one gallon per day.

The method, termed proctoclysis by its inventor, is described as follows:

The patient is placed in the Fowler position. The apparatus in its simplest form consists of a fountain syringe or can with a large rubber tube attached, terminating in a

* Read before the College of Physicians of Philadelphia, May 5, 1909.

1. Riesman, David: *Internal Secretions; Metabolic Toxemia*, Philadelphia Med. Jour., Feb. 4, 1899.

vaginal hard rubber or glass tip flexed at an obtuse angle two inches from its tip, having numerous openings in its bulbous end. The tip should be inserted into the rectum so that the angle fits closely to the sphincter, and the tube may then be bound firmly to the thigh with adhesive strips so that it may not be expelled. The bag or can is suspended from the foot of the bed so that its base is about six inches above the level of the patient's buttocks. Once the irrigating apparatus is thus placed, it need not be disturbed for several days unless to increase or diminish the speed of influx. The solution, consisting of a dram each of sodium chlorid and calcium chlorid to the pint of water, is now placed in the reservoir and kept at a temperature of 100 F. by applied heat in the form of hot-water bags, thermolytes or an incensing can of hot water. The quantity administered depends on the severity of the case, the age of the patient and other considerations that will suggest themselves in the particular instance.

The best plan is to place a pint and a half of the saline solution in the container every two hours. The container should be elevated sufficiently to allow this all to flow into the rectum in forty to sixty minutes, giving the rectum approximately an hour's rest before the influx of fresh fluid.

I began the treatment by this method, somewhat modified, in the spring of 1908. At first I put the patients in the Fowler position, but found they did not bear this well. They were then left in bed in the recumbent posture. The solution used was the ordinary physiologic salt solution and did not contain calcium chlorid. No difficulty was experienced in keeping the tube in place without any special device. The solution flowed in so gently that hardly any was expelled. Occasionally a patient would object to the irrigation, but the majority bore it without a murmur. I have generally discontinued the instillation during the night and have persisted in it during the day, with brief interruptions in some instances. It would seem that the injection might be given with advantage throughout the febrile stage of the disease; yet it is conceivable that if absorption should not occur promptly the accumulation of water might distend the bowel, a thing not to be desired in the later stages of the disease. Careful observation in many cases will determine whether it is wise to continue the instillation through the third week.

On account of the rarity of typhoid fever in Philadelphia at this time as a result of the extension of the filtered water system, the opportunity of testing this or any other treatment is inadequate for the drawing of definite conclusions. Large as is the service at the Philadelphia Hospital, I have had since October, 1908, scarcely more than one or two cases of typhoid fever at any one time, and the total number is very small; the same condition prevails in the other hospitals.

During the past summer² we had a series of ten cases at the Jewish Hospital, several of them of great severity, in all of which the method of continuous saline instillation was used; all the patients recovered. The conclusions, however, can only be tentative, and all that can be said at present of the treatment is that it does two things: first, it increases the flow of urine; second, it lessens the nervous symptoms. It is difficult to see whether or not it shortens the course of the disease. It has seemed to me, however—and this opinion is shared by my hospital internes—that on account of it we have had recoveries in several desperate cases.

I have presented the subject in this brief way in the hope that those who have an opportunity may give the method a trial.

1715 Spruce Street.

CASE OF PERIURETHRAL ABSCESS *

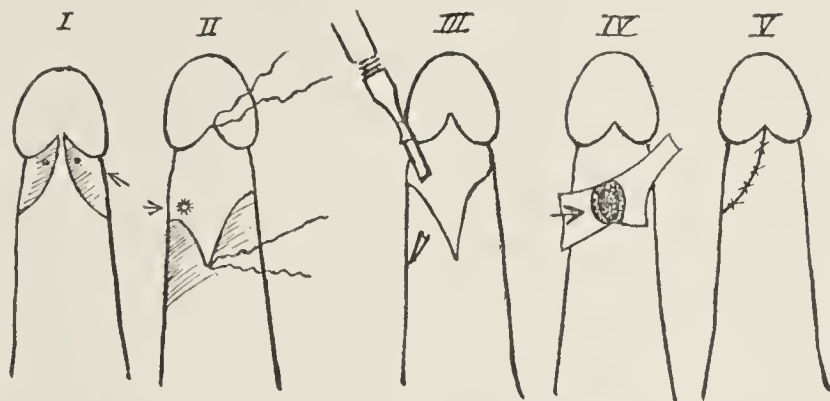
CHARLES S. STERN, M.D.

Urologist to Hartford Hospital

HARTFORD, CONN.

The condition here reported, which I have called periurethral abscess for want of a better name, might perhaps be better termed "subfrenal abscess," as I shall shortly demonstrate. I report it as interesting because of its infrequency and on account of its etiologic significance as the cause of recurrent gonorrhea.

History.—The patient, a married man of 38, had contracted his first gonorrhea nineteen years ago. Was rapidly cured of it, and had no subsequent discomfort. After undue erethismic disturbance, some years later, he had another specific infection of the urethra, also rapidly cured, but at this time was apprised of a fistula at the side of the frenum. This sometimes discharged thin, grayish matter; at other times, nothing; it only occasionally gave symptoms of inflammatory irritation. The patient twice subsequently, after undue intercourse, acquired acute anterior gonorrhea, and, as stated, seemed certain of acquiring a fresh attack after every possible exposure. During his last attack last summer I treated him for the first time. At that time I probed into small opening of the fistula and found that it communicated with a minute opening at the other side of the frenum, as well as penetrating a pocket, which showed a depth of about 3.5 cm., and I therefore advised opening this up. The acute gonorrhea was rapidly cured, and fol-



Surgical treatment of a periurethral abscess. I, preputial opening at each side of frenum; II, frenum bisected; opening of abscess discovered; III, bistoury penetrating lower angle of abscess; IV, abscess cavity laid open; V, plastic work completed.

lowing this the opening at the side of the frenum, which had been discharging simultaneously, also stopped running, under treatment. I did not see the patient again for six weeks; he then returned with a fresh discharge. I then took separate specimens from the urethra and fistula. Each specimen showed gonococci, but these were especially abundant in the specimen from the fistula.

Operation.—A few treatments cured the infection, and then with the positive assurance that his reinfections had all been caused from the fistula, this was operated on, and the following interesting conditions found. The frenum was bisected on a probe passed through the two openings. On being laid back, an opening 1 cm. in diameter was seen to the right of the median line. (Fig. 2.) A director was inserted into this to a distance of 3 cm., and an incision exposed the (Fig. 4) cavity of an old sinus (1 by 2 cm.). The incision was extended to the bottom of this and careful exploration made with a fine probe to discover an opening which might lead into the canal of the urethra, but none found. The walls of the abscess cavity were lined with granular, soggy, old inflammatory tissue, which was curetted. The infiltrated tissue forming the walls was excised so far as possible, and the edges of the wound were coapted and sutured. It healed promptly, leaving a slight open pocket.

I have not previously seen or read of the counterpart of this condition, though clinically it may be compared to the less infrequent periurethral fistulas as the cause of repeated reinfections of the anterior urethra.

75 Pratt Street.

2. That is, since the reading of the paper.

* Read before the Hartford Medical Society, Surgical Section, Oct. 25, 1909.

Therapeutics

SUGGESTIONS FOR THE PHARMACOPEIA OF 1910

USEFUL DRUGS OF THE PHARMACOPEIA OF 1900

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(Continued from page 291)

DRUGS USED FOR SYSTEMIC ACTION

The best drugs to stimulate the activity of the skin after absorption are arsenic and thyroid.

The best action of arsenic is obtained from liquor potassii arsenitis (Fowler's solution), and the liquid preparation is the only one that should be used when arsenic is pushed to its full physiologic limit. The best solid form of arsenic is arsenii trioxidum (arsenious acid). The primary symptoms of the overaction of arsenic are pain and distress in the upper abdomen, nausea, vomiting, flushing of the face, reddened eyelids, and swelling under the eyes in the morning. This swelling under the eyes in the morning probably represents but one thing, viz., irritation of the kidneys. If when arsenic is pushed for any reason, whether for chorea, psoriasis, leucemia, or pernicious anemia, the urine were more frequently examined, albuminuria would be often found. Serious consequences in the kidneys, destruction of red blood corpuscles, and neuritis can be caused by thoughtless overuse of arsenic. It is a dangerous poison, except in small doses, not more than 0.002 gram (1/30 of a grain) of the trioxid of arsenic three times a day, and even at this dose it can cause distinct undesired symptoms.

The iodid of arsenic probably is just as well not made official, as if it is desired to give iodine at the same time that arsenic is administered, it could be given conjointly, and the activity of both drugs better watched. The liquor arseni et hydrargyri iodidi (Donovan's solution) could be omitted for the same reasons. Two active drugs should be separately watched for their physiologic activity. There is no unique or specific value to these combinations which cannot be acquired by the administration of the same drugs separately. There is no need for the liquor acidi arsenosi. There is no need for the liquor sodii arsenatis.

When thyroid is administered for any purpose it should be remembered that its action is insidious, that it is potent, and that it can do serious harm, which may be permanent. Thyroid can produce serious loss of weight, can stimulate the thyroid gland to excessive activity, which may result in Graves' thyroid disease (exophthalmic goiter), may cause circulatory depression, faintness, and collapse turns. Its sale by druggists without a physician's prescription should be prohibited. The dose required for its continuous physiologic activity is small, from 0.05 to 0.20 gram (1 to 3 grains) of the official dried gland, two or three times a day, is often sufficient, and generally too much when its prolonged action is needed. Many times it will seem as though the preparation were inert. This is because it needs a little iodine to add to its activity. If even 0.05 gram (1 grain) of sodium or potassium iodid is administered conjointly with the thyroid treatment, it will be sufficient to saturate the thyroid extract and the thyroid secretion with the iodine which is necessary for their activity.

The only drug that is positively sure to decrease perspiration is atropin. Such treatment, of course, is only symptomatic, but it may be advisable to tide over a temporary prostrating and debilitating period of sweating. Toning up the general condition of the patient and proper hydrotherapeutic measures are the best means of combating profuse perspiration.

It is doubtful if sulphuric acid, administered internally or added to baths, is of any special value. There is no belladonna, stramonium, or hyoscyamus preparation that will act better in inhibiting perspiration than straight sulphate of atropin.

Besides local applications of heat of various kinds, the best diaphoretics are alcohol, antipyrin, and pilocarpin.

The action of alcohol is too well understood to require any description whatever.

The activities of antipyrin in this line can be used only occasionally in the beginning of acute fever. The antipyretic effect is positive and the perspiration that it causes may be profuse, and, if it persists, may need to be inhibited by atropin, lest too much prostration be caused.

To produce perspiration when dropsies or extravasated fluids are to be eliminated or when the kidneys are not properly secreting, pilocarpin has long been used. It has been found more and more dangerous on account of the profuse secretion which it causes into the bronchial tubes. In serious conditions for which pilocarpin has been used, such as in uremia, various hot air, and best "baking" or other dry heat, treatments, which are followed by profuse sweating, are much safer than is a sweating dose of pilocarpin.

If we need the sweating activity of pilocarpin, the hydrochlorid is the best preparation to use, and this should be administered hypodermatically. The pilocarpin nitrate seems superfluous. If one desires the increased secretion in the bronchial tubes from this drug, small doses of it can be administered for this purpose. If one believes that it is a stimulant to the growth of the hair, very small doses of it can be administered for this purpose. As pilocarpin represents the activity of pilocarpus, the fluidextract seems not needed.

DRUGS THAT ACT ON THE GENITOURINARY SYSTEM

It is well to subdivide the old classification of diuretics into subheadings of the objects for which the drugs are used.

(A) TO INCREASE THE AMOUNT OF URINE

The drugs most efficient in producing this result are caffeine, digitalis, buchu, scoparius, and squill. These drugs can rarely cause any irritation of the kidney (except possibly slight irritation by squill) and hence will not increase inflammation in an inflamed kidney. However, it is a mistake, when there is suppression of urine in nephritis, to give such diuretics as will cause more congestion of the already inflamed kidneys. Even water should be diminished in amount.

Caffeine and digitalis, of course, have their best use in passive congestion of the kidneys and when there are exudations anywhere and the circulation is at fault. It is probable that the repeated administration of strong, fresh decoctions of coffee, taken a cupful at a time, is as valuable a diuretic as is the drug caffeine, the extra amount of water thus taken being probably an advantage. When administering caffeine it is often forgotten

that if given after supper or at bedtime it may cause insomnia, whether in the form of coffee or the drug.

That digitalis is more efficient as a diuretic, in the form of the infusion, than in any other form, is a matter of general belief, but this is scientifically doubtful.

The clinicians who very infrequently use buchu, scoparius and squill seem to aid their patients who have disturbed secretion of urine as well as those who use these drugs frequently.

Buchu is often thought most active when fresh infusions of the leaves are made. The diuretic effect is perhaps here largely due to the increased amount of water ingested. It is probable that the fluidextract of buchu would act as well.

Scoparius (broom) is used much less as a diuretic than it was some years ago. Its active principle, spartein, has been advised as a cardiac drug when there is irregular action. In any loss of compensation it is useless, but it may sometimes quiet an irritable, irregular heart when there is arteriosclerosis and a diminished secretion of urine.

Squill has slight tonic effect on the heart, is slightly irritant to the kidneys, and has been used largely in combination with digitalis in cardiac dropsies. It is quite probable that most of the good effect is due to the action of the digitalis. Squill has also been used as an expectorant in certain kinds of cough, but it is a nasty, disagreeable drug to take, and the syrup of squill and the compound syrup of squill could well be omitted from the Pharmacopeia. If it is desired to use tartar emetic, it can be given more pleasantly than in the syrup of squill combined with the fluidextract of seneca, i. e., hive syrup. The fluidextract of squill, the tincture of squill, and the vinegar of squill are official. Certainly if squill is needed, all of these preparations are not needed.

Uva ursi and its fluidextract, zeo (corn silk), and chimaphila and its fluidextract may all be well omitted from the Pharmacopeia, and fabiana (pichi), not now official in the Pharmacopeia, should also not be added to the next Pharmacopeia. There is nothing that these last-named drugs can do physiologically that cannot be better done by the oil of santal, copaiba, and cubeb.

(B) DRUGS TO MODIFY THE CHARACTER OF THE URINE

The drugs in this class are the potash salts, hexamethylenamina (urotropin), phenyl salicylate (salol), and methylene blue.

The advantages of the alkaline potassium salts, acetate, bicarbonate, and citrate are too well understood and utilized to require discussion. The absolute necessity, at times, of rendering the urine alkaline is met by these drugs efficiently. Their prolonged administration is generally inadvisable, as it is not usually well to keep the urine alkaline for any length of time on account of the decomposition that such an abnormal reaction of the urine may cause or allow. During their excretion they stimulate the kidney somewhat and cause an increased amount of water to be passed. While the acetate is the most active, and the bicarbonate the worst tasted, the citrate seems to be sufficiently active and the most pleasant tasted. Combinations of these drugs probably act no better than a larger dose of one of them.

The value of hexamethylenamina can hardly be overstated. As a genitourinary antiseptic and as a gall-bladder antiseptic it is without parallel.

Any salicylic acid carrying preparation is not only somewhat of a bowel antiseptic, but considerable of a

genitourinary antiseptic, and one of the best preparations for this purpose is phenyl salicylate. Salol should not be given if there is any congestion or irritation of the kidneys, as in the intestine it breaks up into phenol and salicylic acid, and phenol is irritant to the kidneys, if in any amount, or if they are previously inflamed. Salol is an excellent bowel antiseptic for the upper part of the intestine, and therefore is an excellent antiseptic in acute disturbances of the bowels, and is valuable, in small doses, from 0.20 to 0.25 gram (3 or 4 grains), given once in six hours, in typhoid fever. It not only more or less prevents the typhoid bacilli and colon bacilli and perhaps other pathologic germs from entering the upper part of the intestine, but as a urinary antiseptic during typhoid fever it is of value. In inflammation of the pelvis of the kidneys and inflammation of the bladder and of the urethra, both hexamethylenamina and phenyl salicylate are valuable drugs.

The value of methylene blue as a genitourinary antiseptic is not so positive, and the staining of all tissues blue is of doubtful advisability. It can be given for a short time without any harmful effect, but it is used much less than it was a few years ago.

(C) STIMULANTS TO THE MUCOUS MEMBRANE OF THE GENITOURINARY TRACT

These are oil of santal, cubeb, copaiba, and cantharides. The latter is rarely used for this purpose, as it is so unpleasantly active that only small, inactive doses are given. The tincture is the only preparation used internally.

The oil of santal is the best stimulant for the urinary tract, and is much less likely to disturb the digestion than is copaiba or cubeb. As the oil of santal seems to be the best stimulant in subacute or chronic inflammation of the urinary tract, copaiba and cubeb seem almost not needed, as the best drug is none too good. As the balsam of copaiba seems to be the best preparation of copaiba, the massa copaiba could be omitted from the next Pharmacopeia. As the oleoresin of cubeb is the best preparation of cubeb, its fluidextract could be omitted from the Pharmacopeia.

The simple diuretic tritienn and its fluidextract would not be missed from the Pharmacopeia. The administration of plenty of water, the patient put on a milk diet and at rest, and frequent hot baths will do more toward curing cystitis and other acute inflammatory conditions of the genitourinary tract than any of these simple so-called diuretics. The simple bitter taraxacum, with its fluidextract and extract, could also well be omitted from the next Pharmacopeia. Sabal (saw palmetto) and its fluidextract should also be omitted.

(D) DRUGS TO INCREASE THE MENSTRUAL FLOW

For this purpose there is nothing that can surpass iron, manganese dioxid and thyroid. Sabina and its fluidextract, and hedeoma (pennyroyal), and oil of pennyroyal should be omitted. As a uterine sedative the viburnum prunifolium can do all that viburnum opulus can do; therefore the viburnum opulus, with its fluidextract, should be omitted from the Pharmacopeia.

(E) DRUGS TO CONTRACT THE UTERUS

The best drugs for this purpose are ergot and quinin. As previously stated, while hydrastinin hydrochlorid seems to cause contraction of the uterus, hydrastis in any other form is of but little, if any, value.

(To be continued)

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[For other information see second page following reading matter]

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THE VISCOSITY OF THE BLOOD

The study of the viscosity of the blood, though recent, has reached such proportions as to merit more than passing attention, not only from those interested in scientific progress, but from the clinician as well. The enumeration of the corpuscles and the estimation of hemoglobin have yielded invaluable data; the study of the reaction of the blood, its coagulation time, its specific gravity, its chemical constitution, etc., have not been without value. The practical worth of this more recent investigation remains to be determined, though some observers, notably Bachmann and Determann, are already trying to attach this new coach to the train of medical art.

Early investigators in the study of viscosity were hampered by intricate or by imperfect apparatus, and as a consequence their results were few and of doubtful value. With the advent of more efficient instruments, however, the subject gives greater promise. To Burton-Opitz, Hess, Determann, Hirsch and Beck, and to McCaskey we owe the present ready means for investigation. In principle, the devices are the same. In the Hess instrument, for example, small volumes of blood and of distilled water are drawn under the same suction through calibrated capillary tubes of equal bore, and the height to which each rises is taken as the measure of its relative viscosity. That of the blood is then expressed in terms of distilled water as a unit.

The normal viscosity varies between 3.5 and 5.5. As factors concerned in the production of viscosity the following have been noted: hemoglobin content, number of red corpuscles, the colloid and, to a lesser degree, the salt constituents of the plasma, vascosity and hydremia, various observers differing as to the relative importance of each. Age, sex, time of day, posture, exercise, altitude, baths, and various other factors as well as disease, cause variations.

Bachmann, in an elaborate study, emphasizes the existence of a direct relationship between hemoglobin and viscosity which he terms the hemoglobin-viscosity quotient; this, constant in health, may be markedly altered in disease. He points out that this quotient is lowered in pneumonia and epidemic meningitis, but raised in typhoid fever, and sees here a means of differential diagnosis. Leucocytosis and variations in blood pressure are without influence on it.

Jorns, in a more recent article, after giving a description of the method used by him in his investigations, asserts:

1. Viscosity varies directly with the hemoglobin content of the blood; in illustration of which he cites lowered values in hemoglobinemias, with a return towards normal as the anemia disappears.

2. It is raised by increased vascosity, as seen in conditions leading to cyanosis and dyspnea, *e. g.*, mitral stenosis, pneumonia, emphysema.

3. High values are frequently to be noted in arteriosclerosis, and these may be lowered by prolonged iodid therapy, therein confirming the observation of Müller and Inada, that the beneficial effect of the iodids is due to a viscosity-reducing action. He neglects to state, however, that to this finding Determann takes exception.

4. The highest values are present in diabetic coma, the lowest in hydremia, such as occurs in nephritis with anasarca.

Jorns, after setting forth his data, wisely refrains from sweeping inductions allowing his readers to interpret them, and to accept them for what they are worth.

The study of the viscosity of the blood is recent, the method of determination easy, and intelligent observations along the lines indicated in the papers here cited, may possibly serve to make this new method a valuable addition to our resources.

THE CONTAGION AND TREATMENT OF LEPROSY

Much has been said recently in the newspapers regarding the case of the alleged leper, John R. Early, who was sequestered for some months at Washington and later appeared before a medical society in New York, where he was pronounced by a well-known physician to be not a victim of the disease. The question seems to be still unsettled, as a recent report states that Early has been declared leprous by a special committee of the New York Society of Medical Jurisprudence. The Washington health authorities still hold to their former view, while, according to some accounts, the government has accepted the opinion of the New York specialist and stopped the man's pension.

There is hardly any disease the suspicion of which can so induce popular panic as leprosy. The accepted opinion of its incurability, the historical and traditional reputation of the disorder and its repulsiveness have been sufficient to account for this fear, and to a certain extent to justify it. The recent resolutions of the British and British colonial delegates to the conference on leprosy, held in Bergen, Norway, in August last,¹ support in a measure the popular views of its contagiousness, though they do not justify some of the measures which have been taken against it in certain quarters. They point out that an interval of years may elapse

1. *Nature*, November 18; and abstracted in *Society Proceedings in THE JOURNAL*, October 2, 1909, p. 1124.

between an infection and the first appearance of the disease, a fact which is itself rather suggestive of terrifying possibilities to timid persons. It must be admitted also that, according to the report of Brinckerhoff, the disease may even be on the increase in Hawaii. Against this, however, we have the fact that the leprosy germ does not seem to be particularly viable outside of the human body, and cases of known contagion in other than tropical and subtropical countries are at most very rare. The scattered Scandinavian lepers in Wisconsin and Minnesota do not appear to be foci of contagion, and there is no extensive evidence of its spread in Nova Scotia and Norway, where it has long existed. Though it was common in Europe after the Crusades, it almost entirely died out without any scientific treatment whatever. While it cannot be said that there is any racial immunity, the Orientals, including the Malay and Mongol races, appear to be most liable to the infection. It is probable also that the nervous form of leprosy will be found, as certain South African specialists have declared, much less contagious than the tubercular form. Occasional imported lepers are found in our northern cities mingling with the general population without restraint, but investigations by the Public Health and Marine-Hospital Service have not disclosed any authentic cases of contagion.

We have lately had reason to question the absolute incurability of leprosy, and can see some grounds for the belief that its malignancy is largely dependent on environmental and hygienic conditions. Apparent cures have been reported by competent dermatologists even in the semitropical State of Louisiana. The important question yet to be determined, and the one demanding most thorough study, is the manner in which the disease is transmitted, and much is to be expected in this direction from the experimental station in Molokai. The settlement of this question will afford a definite basis for effective prophylaxis and much of the fear of the disease at present held will be allayed. While leprosy is a disorder that is eminently one for compulsory notification, and humane isolation is not yet to be abandoned, these do not require the sacrifice of the dictates of common humanity.

THE NAMING OF DISEASES

The many objections to eponyms in scientific literature gain force in the case of new names for old diseases. An illustration of this is the naming of the so-called Krompecher tumors. Krompecher¹ wrote an original article on basal-cell carcinoma which is a valuable study of the subject. The basal-cell tumors, however, are among the oldest of the recognized lesions of the skin. Histologically, they are the so-called tubular epitheliomas, growing in strings between the connective-tissue bundles of the corium. Clinically, they have been known from time immemorial as "rodent ulcers,"

"Jacob's ulcers," "ulcus exedens," etc. All of these names, including "Krompecher tumor," are confusing and should be dropped for "basal-cell epithelioma," except that it seems almost a desecration to ancient medicine to change a name so old and hoary as "rodent ulcer." To substitute the name "Krompecher tumor" is like changing the name of the River Jordan to "Van Dyke's River," for instance, because Van Dyke has lately written entertainingly on it.

Of course, the eponym is often a necessary evil. When such a name must be used, care should be taken to use the correct one; that is, the name which bestows credit on the original investigator. Too often this point is overlooked, and credit withheld and bestowed without regard to the merits of the case.

At a recent medical meeting, for instance, one of the topics was "sporotrichosis beurmanii." In 1898, sporotrichosis was first described by Schenck² in Baltimore, who recognized the disease-producing organism as a sporothrix and established its pathogenicity. Two years later Hektoen and Perkins³ in Chicago described the second case, confirmed the findings of Schenck, and with fairness and propriety gave the name of *Sporothrix schenckii* to the pathogenic micro-organism. The claims of these three authors to priority are beyond question; their work was complete, scientific, and published in accessible literature. Now, three years after Hektoen and Perkins, and five years after Schenck described the disease and its organism, De Beurmann⁴ and his associates find the same organism in the same disease in France and appropriate the discovery for their own. There are no grounds for making any distinction between the organism described by De Beurmann and his colleagues and that described by Schenck, Hektoen and Perkins, and yet the disease is being described the world over, even in America, as "sporotrichosis beurmanii." There is a well known half-jest that an American painter can sell his paintings to better advantage in America when he is living in Paris. Sometimes one feels that the same sort of advantage belongs to scientific work done in Europe.

The case of sporotrichosis schenckii is merely a flagrant and recent illustration of the careless and unjust practice of ignoring the work of a discoverer or prior investigator for that of a later student; but unfortunately many similar instances could be given. The naming of angioneurotic edema is one. That, as we all know, is constantly called "Quincke's edema." Quincke⁵ wrote of it in 1882, but Bannister⁶ had described it and recognized its character two years before. If this edema is to bear any man's name, it should bear Bannister's.

In a recent paper⁷ on the treatment of nevi and other cutaneous lesions, the author states, after large experi-

2. Schenck: Johns Hopkins Bull., 1898, p. 286.

3. Hektoen and Perkins: Jour. Exper. Med., 1900, v. 77.

4. De Beurmann: Ann. de dermat. et de syph., 1903, p. 678.

5. Quincke: Monatsh. f. Dermat., 1882.

6. Bannister: Chicago Med. Rev., June 20, 1880.

7. Lancet, London, Dec. 4, 1909.

1. Krompecher: Beitr. z. path. Anat. u. z. allg. Path., 1900, xxviii, 1.

ence with various methods, that no other method for the treatment of nevi compares with the use of solidified carbon dioxide, which he looks on as "the most important addition to the list of physical agents employed in therapeutics since that of radium." He gives credit for the method which he esteems so highly to Geyser, not to Pusey, who introduced it.

Of course questions of priority and credit are of minor importance; but, for the sake of their own scientific standing, investigators should be scrupulously careful to give due credit to their predecessors and should avoid the inaccuracy and injustice of giving to one man the credit for another's work.

THE ANNUAL AUTOMOBILE NUMBER

In planning the fourth Automobile Number of *THE JOURNAL* for our issue of April 9, we recognize that the attitude of the physician toward the motor car is no longer one of hesitation and doubt, but that the automobile has been classed as a part of the physician's equipment, to be procured if his business will warrant it. A careful physician buys an automobile either because, after careful contemplation, he figures that the automobile as a business investment will bring him in sufficient revenue to justify its purchase, or else because he knows that he can afford it as a luxury and feels that he is entitled to introduce a little more pleasure into his busy life.

Automobiles have settled down to a fairly definite standardization. Perhaps one of our correspondents does not put it too strongly who says: "There was no car made in 1909 so poor as the best ones of 1906." A corollary of this remark would be the statement that the automobile of to-day cannot be judged by the performances of a model several years old. This remark is not intended to disparage the remarkable performances of some old machines which run year after year with satisfaction to their owners.

We look forward to the fourth Automobile Number with confidence in the cooperation of our readers, as in previous years. Those who are willing to contribute are requested to notify us at once, preferably designating some particular phase of the subject which they will take up. Manuscripts, which may contain from 200 to 800 words, should reach us during February, but the notification should be sent us immediately in order that space may be reserved.

As to photographs, we desire that they should be of as interesting a character as possible. They should be clear and distinct in order to reproduce well, and it will add to their interest if, like many of the pictures previously printed, they contain something besides the automobile itself. We shall be particularly glad of articles and photographs illustrating various improvements devised by physicians, arrangements for housing the automobile, caring for it, or repairing it—devices which may be taken advantage of by other practitioners. We

shall also welcome criticisms and suggestions that may aid us in our endeavor to make this fourth Automobile Number the best ever issued and one to be read by the general practitioner with pleasure and profit.

IMPROVED OUTLOOK FOR CANAL SANITATION

During the past three months two important matters connected with the administration of the Sanitary Department of the Canal Zone have been discussed editorially in *THE JOURNAL*. The first was a bill introduced into Congress by Hon. James R. Mann, of Illinois, modifying the present method of government of the Canal Zone; the other was the suspension of the publication of the monthly bulletin issued by the sanitary department. We are glad to say that both of these matters have been satisfactorily adjusted. *THE JOURNAL* discussed editorially, December 11, the work of the sanitary department and the value, to public health officers and sanitarians, of the bulletin issued by Colonel Gorgas. Some criticisms were also made regarding the action of the chief engineer in ordering the discontinuance of the bulletin. It is a great pleasure to announce that the publication and distribution of this bulletin have been resumed by order of Secretary of War Dickinson. This action on the part of Mr. Dickinson is most commendable and insures to the scientific world and to laborers in all branches of sanitary work the continued receipt of this bulletin containing the latest details regarding sanitary methods and results in the Canal Zone. On November 27 attention was directed editorially to a bill introduced by Mr. Mann (H. R. 12316; S. 601) providing for the government of the Canal Zone by a board of one director, one chief engineer and one governor. This bill was criticised because, either intentionally or otherwise, it subordinated the sanitary department to the engineering and construction department. Mr. Mann, on having his attention called to this point, replied: "It is not possible to have good government on the zone with a lot of different heads." Admitting this proposition, *THE JOURNAL* pointed out editorially that Mr. Mann's bill, instead of providing for a single head, provided for three and that the responsibility of administration could be lodged in a single director without subordinating the sanitary department to any other department. It is with great satisfaction that we learn of the amendment of Mr. Mann's bill by substituting a single director for the triple board, thus placing all the departments on the same level and equally subordinate to a single administrative head. The bill as it now stands appears to be satisfactory so far as this point is concerned, and its passage will not cripple the sanitary department. *THE JOURNAL* congratulates Mr. Mann on the marked improvement made in his bill.

QUACKERY AND FELONY

In the prosecution of advertising quacks one of the difficulties in the way of securing a conviction is the tendency of a lay jury to look at the action brought as a species of persecution skilfully engineered by the ethical members of the medical profession. This tendency is, of course, encouraged by the quack and used for all it is

worth and he assumes the pose of a martyr to professional jealousy. Human nature is so constituted that, while it looks on the commission of a misdemeanor with leniency, it views a felony with unequivocal disfavor. The case recorded in the Pharmacology department of this issue is a case in point. The individual prosecuted was charged, not with practicing medicine without a license, but with obtaining money under false pretenses. Here there was no opportunity to assume the rôle of injured innocence. The "gold-brick" swindler caught red-handed could as consistently cry "persecution" as could a physician who had taken money for making a fake diagnosis and pretending to "cure" the condition thus "diagnosed." The eminently sensible ruling of the court, in the case here referred to, that physicians should be permitted to testify as to certain conditions as matters of fact rather than merely as matters of opinion, will, if sustained by the higher courts, do much to render the quack's cry of persecution flat, stale and unprofitable. The important point in connection with this case, however, is that under such charges the prisoner becomes but a common felon and on a par with the ordinary porch-climber or sneak-thief. While the layman may experience some difficulty in recognizing the danger of quackery *per se*, he finds no such obstacle in a case of plain robbery. The average man is perfectly willing to play fast and loose with his health, but he objects to any such harsh treatment of his purse. Let the public once realize that quackery and robbery are usually synonymous, and the outcome of legal action instituted against quacks may be safely predicted.

Medical News

ARIZONA

Burned Hospital Rebuilt.—Whitwell Hospital and Sanitarium, Tucson, which was destroyed by fire December 29, last, has been rebuilt and reopened. The new structure is fireproof and is provided with outside villas for the use of patients suffering from asthmatic and pulmonary affections. The hospital was originally built in 1907 by Mrs. W. S. Whitwell, New York City, in memory of Mr. William Scollay Whitwell. The hospital maintains one free bed. Dr. Hobart P. Shattuck is resident physician.

CALIFORNIA

Bequest to College.—Cooper Medical College, San Francisco, has received a bequest of \$5,000 by the will of the late Mrs. Myrick.

Beriberi at Alviso.—Five cases of beriberi are reported by the State Board of Health at Alviso among Chinese and Japanese laborers.

Sale of Red Cross Stamps.—At the final meeting of the Red Cross Christmas Stamp Committee, held in San Francisco January 12, the treasurer's report showed a sale to date of 700,000 stamps with many sales not yet reported.

Cornerstone Laid.—The cornerstone of the Kaspere Cohn Hospital, Los Angeles, was laid recently, with appropriate ceremonies. The hospital is to cost \$50,000, of which more than \$30,000 has already been collected or subscribed.

New Sanitarium.—Hot Springs Sanitarium is to be established at Calistoga, to cost \$100,000, with the following directors: Drs. Stanley Stilman and Rufus L. Rigdon, San Francisco, William G. Downing, Suism, Frank G. Newton, St. Helena, and Mr. J. T. York, Napa.

Physicians' Club Organized.—The Physicians' Club of Redlands was organized December 16, and the following officers were elected: President, Dr. Charles E. Ide; vice-president,

Dr. John L. Avery; secretary-treasurer, Dr. H. Hamilton Forline, and directors, Drs. Walter B. Power and Thomas M. Blythe.

Personal.—Dr. Jacques Loeb of the University of California has been appointed head of the department of experimental biology in the Rockefeller Institute for Medical Research, New York City.—Dr. Channcey H. Wilder, East Oakland, has been appointed district surgeon of the Southern Pacific Railroad.—Dr. Arthur H. Reinstein, assistant surgeon at the Veterans' Home, Yountville, has been appointed a member of the staff of the Southern Pacific Railroad Hospital, San Francisco. At a farewell reception held in Dr. Reinstein's honor, the veterans presented him with a gold watch and fob, a leather hand-painted sofa pillow and \$100 in cash.—Dr. Ernest Dozier, San Francisco, has been appointed bacteriologist and pathologist to the Napa State Hospital.

CONNECTICUT

Loving Cup to Dr. Fuller.—At the annual meeting of Hartford County Medical Society, January 3, the loving cup of the society which is held by its oldest member, and which was so held by the late Dr. Gordon W. Russell for twenty-two years, was presented to Dr. Horace S. Fuller.

Health Officials to Meet.—The fifth conference of health officials of the state will be held in Lampson Hall, Yale University, New Haven, February 8 and 9. At the evening session February 8, Dr. Charles Wardell Stiles, U. S. P. H. and M.-H. Service, will be the principal speaker, and the morning session, February 9, will be devoted to the discussion of the milk supply of the state.

Personal.—Dr. George E. Ober has been elected president of the Bridgeport Board of Health.—Dr. Arthur D. Variell has been elected president of the Waterbury Board of Health.—Dr. David J. Mohumphy, Hartford, has been appointed medical inspector by the board of health.—Dr. Alfred S. Wadler, New Haven, has returned from Europe.—Dr. Everett J. McKnight, Hartford, and William H. Carmalt, New Haven, have been appointed by the board of directors of the state prison, to act at the prison under the requirements of the sterilization law recently passed by the general assembly.—Dr. Seth Hill, Stepney, has retired from practice.

DELAWARE

Personal.—Dr. Edward S. Dwight, Smyrna, has been appointed antituberculosis commissioner, vice Henry Ridgely, Dover, resigned.—Dr. Samuel G. Elbert, Wilmington, was seriously injured recently in a collision between his carriage and a street car.

State Board Appointees.—Drs. Presley S. Downs, Dover, and Henry W. Briggs, Wilmington, have been appointed members of the State Medical Examining Board, and Drs. Edwin S. Anderson, Dover, and Abram E. Frantz, Wilmington, members of the homeopathic board.

Hospital Notes.—The new Physicians and Surgeons Hospital, Wilmington, was opened for inspection December 20. The governor of the state delivered the opening address.—A public dispensary open to the indigent poor, suffering from tuberculosis, has been opened in Georgetown, under the auspices of the local antituberculosis society.

GEORGIA

Personal.—Dr. William L. Gilbert has been elected president, and Dr. Willard E. Quillian vice-president, of the Atlanta board of health.—Dr. William R. Googe has been elected mayor of Abbeville. His opponent was Dr. T. R. Moya.—The offices of Drs. Thomas M. Hall and J. H. Shirley, Milledgeville, were damaged by fire, December 28, to the extent of about \$3,000.—Dr. Charles T. Nolan, Marietta, has been appointed a member of the State Board of Medical Examiners, vice Dr. Edwin R. Anthony, Griffin, term expired.

The Tuberculosis Fight.—At the first meeting of the newly appointed board of trustees of the Georgia State Sanatorium, Dr. William C. Jarnagin, Atlanta, was elected member of the executive committee, finance and auditing committee, and the committee on farms and outside business; Dr. Thomas R. Wright, Augusta, chairman of the committee on sanitary, medical and dispensary service, and Dr. Nicholas Peterson, Tifton, a member of that committee and of the committee on farm and outside business.—At the first annual meeting of the Georgia Antituberculosis Sanitary Society, held in Atlanta January 17, Dr. Robert P. Izlar, Waycross, was elected third vice-president; Dr. William C. Pumpelly, Macon, secretary-treasurer, and Drs. Craig Barrow, Savannah, Rufus R. Kime, Atlanta, and Thomas J. McArthur, Cordele, members of the executive committee.

ILLINOIS

Cook County Budget.—The Cook County budget for the fiscal year 1910 shows an increase of \$307,829.41 as compared with the appropriation of the previous year. The new Oak Forest infirmary is to receive \$111,309.42, the Dunning Institutions, \$389,622.76, and Cook County Hospital \$473,500.70.

Consumptive Hospital Overcrowded.—The new tuberculosis hospital on the grounds of Cook County Hospital is overcrowded with patients. Several have had to be turned away and sent to the municipal lodging hospital and thence to the Dunning Hospital, and 20 tuberculosis patients have been placed in another department of the hospital because of the overcrowded condition.

Personal.—Dr. Rachael Watkins has been temporarily appointed assistant physician at the Peoria State Hospital. —Dr. Warren E. Taylor, superintendent of the Watertown State Hospital, is said to have resigned and Dr. William A. Crooks to have been named acting superintendent. —Dr. and Mrs. Harry C. Hill and family, Streator, have started for Europe. —Dr. George H. Brannon, Manhattan, has recovered from his recent operation at St. Joseph's Hospital, Joliet, and returned home. —Dr. Vaelav H. Podstata, superintendent of the Elgin State Hospital, has resigned, to take effect March 1.

Hospital Needs of Cook County.—The president of the Board of Commissioners of Cook County, in his annual message, notes an increase of 31 per cent. in the admissions to Cook County-Hospital between 1903 and 1908, and an increase of 56 per cent. in the daily average population. During 1909 there was an increase of 11 per cent. over 1908 in the daily population, or of 73 per cent. over 1903. He advises the adoption of comprehensive hospital plans, including the rebuilding of the old portion of the present hospital so as to accommodate 2,500 patients, this to be done gradually so as to interfere as little as possible with the existing hospital provisions.

Chicago

Passed Resolutions.—The Council of the Chicago Medical Society, January 10, adopted the following:

WHEREAS, the Chicago Medical Society is an integral part of a constituent society of the American Medical Association, and therefore vitally interested in the welfare of that great organization, and

WHEREAS, certain conditions exist which menace the best interests of the members of the American Medical Association, and of the profession at large; therefore, be it

Resolved, that the Chicago Medical Society in council assembled recommends the following changes in the policies and management of the American Medical Association, viz.:

1. The laws should be so amended that no one person will be permitted to hold, at the same time, more than one executive or honorary office in the Association.

2. The office of General Secretary, and the positions of Editor and Manager should be separated, and no person should be permitted to fill more than one of these places at one time.

3. The offices of Editor and Secretary should be filled only by men educated in regular scientific medicine and of unimpeachable professional records.

4. The number of Trustees should be increased.

5. All officers and employees whose duties involve financial responsibility should be bonded.

6. The laws governing admission to membership in the American Medical Association should be so amended as to make it mandatory on the secretary to enroll applicants who have complied with the provisions and the by-laws governing the same.

7. Space should be set apart in THE JOURNAL for free and courteous discussion of the policies and methods of the Association, or for any other matters which may appeal to the membership at large as bearing on the interests of the Association.

8. Provision should be made for the initiative and referendum.

9. No member should be expelled from the Association without a fair trial and full hearing.

10. No person who is a general officer or member of the House of Delegates or Board of Trustees or employee of the American Medical Association should be eligible to serve as a general officer or member of the House of Delegates, or Council, of any constituent Association.

11. *Be it further resolved*, That the Secretary of the Chicago Medical Society be instructed to publish these resolutions in full in the *Bulletin* of the Society, and to transmit a copy of the same to THE JOURNAL of the American Medical Association and to the editors of the various state journals.

The above were adopted by the following vote: *Ayes*.—Gehrmann, Noble, Bell, King, J. C. Stubbs, Albro, Senn, Fischkin, O'Byrne, Fantus, Whalen, Leigh, Hogan, Moore, Nagel, Scott, Humiston, Harvey, Pence, Betz, J. E. Stubbs, Lydston, Tansey, Ferguson, Corwin, Van Derslice, Cotton. *Nays*.—Hess, Weaver, Churchill, Harris, Balderston, Abt, Green, Langer, Harpole, Paddock, Norcross, Robbins, W. A. Pusey, Gillmore, Kuh, Woodruff, B. Pusey, Beck. *Absent*.—Walls, Preble, Fayill, Belfield, Ryan, Tuteur, Porter, Kaufman, Dawson, Baum.

INDIANA

Charge Against Physician Dismissed.—On the motion of the prosecuting witness in the case of Dr. James K. Moss, Ashboro, before the State Board of Medical Examination and Registration, January 12, the charge of prescribing illegally for the sale of liquor was dismissed without prejudice.

Medical Society Meetings.—At the annual meeting of the Hammond Medical Society, held January 4, Dr. William F. Howat was elected president; Dr. Francis H. Fox, vice-president; Dr. H. J. White, secretary; Drs. William D. Weis, Eleanor L. Scull, and Thomas W. Oberlin, censors. —At the annual meeting of Goshen Medical Society, January 7, Dr. Herbert K. Lemon was elected president; Dr. Charles L. Dreese, vice-president; Dr. Henry W. Eby, secretary; Dr. William B. Kreider, treasurer, and Dr. S. W. Walters, censor. The post-graduate course of study, which was so successfully carried on last year, is to be continued during 1910.

Personal.—Dr. Charles A. Carter, Indianapolis, has been appointed chief clerk in the department of statistics of the State Board of Health. —Dr. and Mrs. Henry O. Bruggeman, Fort Wayne, have sailed for Europe. —Dr. Charles W. Slick, Mishawaka, has been reappointed a member of the board of trustees of the Longcliff Hospital for the Insane. —Dr. William G. Wegner, South Bend, has been appointed commissioner of health of St. Joseph county. —Dr. Charles L. Thomas, Logansport, who was seriously injured in an automobile accident in Chicago, recently, is reported to be improving at St. Luke's Hospital in that city. —Dr. J. Lucius Gray, Laporte, has succeeded Dr. John W. Snyder, Michigan City, as secretary of the Laporte County Board of Health. —Dr. Felix W. Hazelwood, New Albany, is reported to be seriously ill with septicemia. —Dr. Henry Moore, Rockville, has resigned his position on the State Tuberculosis Hospital Commission because of physical disability and has gone to Florida to recuperate. —Dr. V. A. Magenheimer, Mooresville, is reported to be seriously ill with spinal meningitis. —Dr. Royal H. Gerard, Crawfordsville, has been elected supreme chief of the Tribe of Ben Hur. —Dr. William B. Richmond has been elected a member of the health board of Terre Haute, vice Dr. Frank A. Tabor, resigned, and Dr. Moorhead has been named as secretary of the board.

KANSAS

Personal.—Dr. Walton J. Mitchell, Wichita, has been reelected physician of Sedgwick county. —Drs. J. Albert Fulton, Hugh Wilkinson, and Lot D. Mabie have been appointed members of the board of health of Kansas City.

Conference of Health Officers.—The sixth annual conference of state, county, and municipal health officers was held in Topeka December 8. At this meeting the Kansas State Association of Public Health Officers was organized, with the following temporary officers: President, Dr. E. C. Reynolds, Iola; vice-president, Dr. Clayton F. Ralls, Winfield; secretary, Dr. John J. Sippy, Belle Plaine; and treasurer, Dr. C. Granville Edgerton, Ness City.

Society Meetings.—At the annual meeting of Douglas County Medical Society, held in Lawrence, January 11, Dr. Marvin T. Sudler was elected president; Dr. George W. Jones, Lawrence, vice-president, and delegate to the state society; Dr. Harry L. Chambers, Lawrence, secretary, and D. E. Smith, treasurer. —At the annual meeting of Riley County Medical Association, held in Manhattan, the following officers were elected: Dr. James D. Colt, president; Dr. J. Carroll Montgomery, vice-president; Dr. B. Belle Little, secretary; Dr. Edwin J. Moffit, treasurer; Drs. Charles F. Little and Lewis J. Lyman, delegates to the state society, all of Manhattan. —Bourbon County Medical Society held its sixth annual meeting and banquet at Fort Scott, and elected Dr. Charles A. Van Velzer, Fort Scott, president; Dr. J. B. Cummings, vice-president; Dr. John D. Hunter, Fort Scott, secretary; Dr. Charles F. Harrar, Fort Scott, treasurer; and Dr. Winfield S. Miller, Fort Scott, censor. —Cherokee County Medical Society, at its annual meeting, held in Galena, elected Dr. Harry H. Brookhart, Scammon, president; Dr. Lee, Baxter Springs, vice-president; Dr. Claude R. Loudermilk, Galena, secretary, and Dr. Charles T. Reid, Carona, censor. —Cowley County Medical Society held its annual meeting at Arkansas City and elected Dr. Otis B. Wyant, Winfield, president; Dr. Charles Dunning, Arkansas City, vice-president, and Dr. Francis M. Wilmer, Winfield, treasurer.

KENTUCKY

To Enforce Anti-Spitting Law.—The Board of Public Safety, Louisville, issued orders January 18 that policemen in plain clothes and detectives be detailed to enforce the ordinance prohibiting spitting on the streets.

Acquitted.—Dr. Edgar W. Stokes, Louisville, who was on trial on the charge of conspiracy in attempting to defraud the Louisville Railway Company in a personal injury suit, was promptly acquitted by a jury January 11.

Needs New Hospital.—An urgent appeal to the board of directors of the Louisville Commercial Club to take up the

matter of securing a new city hospital was made in a recent address by Dr. Henry E. Tuley, director of the club. Resolutions recommending the appointment of a non-partisan hospital commission were adopted at a meeting of the Jefferson County Medical Society, and a committee of five was appointed to urge the passage of an act providing for the securing of the hospital.

Personal.—Dr. William L. Nuttall, formerly superintendent of the State Institute for the Feeble-Minded Children, Frankfort, has been declared insane and committed to the State Hospital, Lakewood.—Dr. Haley P. Cartwright, Bowling Green, is reported to be seriously ill with heart disease.—Dr. Squire L. Helm, who has held that position for twenty-four years, has been reelected city physician of Lexington, and Drs. Walter O. Bullock and Joseph W. Pryor have been elected members of the board of health.—Dr. Alexius M. Forster assumed charge of the Kentucky Tuberculosis Association Sanatorium and the Tuberculosis Dispensary, January 7, and on its completion will be physician of the Waverly Hill Sanatorium.—Dr. Robert L. Bone, Madisonville, is reported to be critically ill with septicemia.—Dr. John B. Bowling, Perryville, fell on his veranda recently, sustaining a fracture of the hip, and is reported to be in a critical condition.—Dr. Alexander McKenney, Owensboro, was struck by a street car recently and severely injured.

MAINE

Society Meeting.—At the annual meeting of York County Medical Society, held in Saco, January 6, the following officers were elected: President, Dr. Clarence E. Thompson, Saco; vice-president, Dr. Fitz E. Small, Biddeford; secretary, Dr. Lester L. Powell, Saco; treasurer, Dr. Lawrence E. Willard, Saco; censors, Drs. Harry L. Prescott, Kennebunkport, Ernest L. Burnham, Sanford, and Paul S. Hill, Biddeford; and delegates to the state association, Drs. Jasper D. Cochrane, Saco, and Charles W. Blagden, Sanford.

Report of the Surgeon General.—In the annual report of Col. James B. O'Neil, Portland, surgeon-general, Maine National Guard, to the governor, he reports the following recommendations: That the hospital corps be furnished proper quarters for inspection and drill, and suitable individual lockers for clothing and equipment; that a modern ambulance be supplied; that at least two complete regimental infirmary outfits be at once obtained; that incinerators be installed at the state muster grounds; that the present system of kitchens and cookstoves be abolished and the camp cooking outfit of the regular establishment be substituted. During the year Captain John F. Hill, Waterville, resigned, and Dr. John G. Towne, Waterville, was appointed first lieutenant and assistant surgeon in his place.

MONTANA

Medical Society Election.—The Fergus County Medical Association, at its annual meeting in Lewistown, elected Dr. Abraham Poska, Philbrook, president; Dr. Charles C. Wallin, Lewistown, vice-president, and Dr. John T. Foley, Lewistown, secretary-treasurer.

Addition to Hospital.—The management of the Deaconess Hospital, Great Falls, has purchased three lots on Sixth avenue, opposite the hospital, on which they will build a two-story brick and stone structure 100 feet in length, which will be utilized as a home for the nurses of the institution.

Personal.—Dr. Crawford Johnston, Culbertson, has been appointed local surgeon for the Great Northern System.—Dr. John J. Mahoney, Missoula, has been appointed physician of Missoula county, vice Dr. George F. Turman, Missoula, resigned, and started for Europe.—Dr. Edgar C. Lee, Deer Lodge, has returned from Europe and resumed practice.

NEW HAMPSHIRE

Personal.—Dr. Edward D. Burt, Lincoln, recently underwent operation in a hospital in Boston.—Dr. Patrick J. McLaughlin has been appointed city physician and Dr. Albert F. Mulvanity, chairman, of the board of health of Nashua.

Money to Hospital.—By the will of Mrs. Isabel M. Fowler, of Little Boar's Head, the Margaret Pillsbury General Hospital, Concord, receives \$15,000, the income of which is to be applied to providing hospital treatment for poor women and girls.

NEW JERSEY

Personal.—The board of health of Gloucester City organized January 10, and elected Dr. John K. Bennett, secretary-treasurer.—The board of health of Ocean City has reorganized with Dr. N. Howard Burt, president.—Dr. William F.

Ridgway, Atlantic City, sailed from New York for England, January 15.

Hospital Staff Named.—The board of governors of the North Hudson Hospital has appointed the following medical staff for 1910: Consulting surgeon, Dr. Frank Gray, Jersey City; attending surgeons, Drs. Joseph M. Rector, Jersey City, Louis E. Poole, West Hoboken, Adam E. Fendrich, Weehauken, and John C. Farr, Hoboken; assistant surgeon, Dr. Edward B. Meisgeier, West Hoboken; consulting physicians, Drs. Egbert LeFevre, New York City, Eugene E. DeGroot and Richard Schlemm, Weehauken; attending physicians, Drs. Leo H. Shenier, West New York, H. J. Spaulding, Weehauken, and William Meyer, West Hoboken; consulting neurologist, Dr. William J. Arlitz, Hoboken; consultant of disease of the lungs and heart, Dr. John Nevin, Jersey City, and anesthetist, Dr. Fred J. Quigley, Union.

Officers Elected.—The Gloucester County Medical Society elected the following officers at its annual meeting January 20: President, Dr. Cyrus B. Phillips, of Pitman; vice-president, Dr. J. Harris Underwood, Woodbury; secretary and treasurer, Dr. George E. Reading, Woodbury; reporter, Dr. Howard A. Wilson, Woodbury; censors, Drs. James Hunter, Jr., Westville, Luther M. Halsey, Williamstown and Harry A. Stont, Wenonah; and delegate to the state society, Dr. Charles S. Heritage, Glassboro.—At the annual meeting of Atlantic County Medical Society Dr. Edwin H. Harvey of Chelsea was elected president, Dr. Thomas G. Dmnap, Atlantic City, vice-president, Dr. Edward Guion, Atlantic City, secretary and treasurer, Dr. Theodore Senseman, Atlantic City, reporter, and Dr. Edward A. Reiley, censor.

NEW YORK

Personal.—Dr. J. Orley Strannahan has been reelected chairman of the board of health of Rome, and Dr. Charles R. Mahady has been reelected health officer.—A committee of the Amsterdam State Medical Society is making arrangements to celebrate the fiftieth anniversary of the practice of medicine in Amsterdam of Dr. Salphronius H. French.

Bills Before Legislature.—The Garfein bill requires every employer to provide insurance indemnity for the benefit of his employees. An employee whose salary is \$2,000 a year or less, injured while at work, is to be entitled to a weekly compensation equal to the amount of his salary while incapacitated. If the injuries result in death, the next of kin are to be allowed to recover damages for the full amount of the insurance policy, which is not to be more than \$20,000.—The Hoey bill provides for a department of ambulance service for New York City, with a commission appointed by the Mayor at the head, instead of the present board of ambulance service consisting of the commissioner of police and charities and the president of the board of trustees of Bellevue and the Allied Hospitals.

Tuberculosis Notes.—The twenty-fifth anniversary of the Adirondack Cottage Sanatorium, Saranac Lake, will be held February 1. Twenty-five former patients who have been cured from tuberculosis will take part in the celebration.—In the annual report of the superintendent of the State Tuberculosis Hospital, Ray Brook, he reports that no patient can be admitted until April 1. The inability of the state hospital to accommodate all who wish to gain admission is hastening the consideration of more adequate means of tuberculosis treatment in the various cities, towns and counties in the state, where many sanatoria are being built or are under consideration.—A bill has been introduced in the legislature providing for the establishment of a state hospital for the treatment of cases of intermediate and advanced pulmonary tuberculosis.—A committee having in charge the gathering of funds for the erection of a tuberculosis sanatorium in connection with Albany Hospital, has received subscriptions for \$17,000 of the \$30,000 required. The sanatorium is to be erected on the land recently deeded to the hospital by Howard Van Rensslear.

New York City

Loeb Goes to Rockefeller Institute.—A department of experimental biology has been organized in the Rockefeller Institute, and Dr. Jacques Loeb of the University of California has been elected its head.

Enlarge Sloane Maternity.—The trustees of Columbia University have filed plans for an annex to the Sloane Maternity Hospital. The new building will be eight stories and will harmonize with the design of the present edifice. The cost will be \$120,000.

Montefiore Home to Move.—The trustees of this institution have purchased fourteen acres of land in the Bronx fronting on Gun Hill Road and extending to 210th street. It is

reported that \$2,000,000 will be expended in improving the property. The hospital equipment planned will give accommodation for at least 600 patients.

Gifts to Hospitals.—The will of Darius Ogden Mills gives \$100,000 to the Home for Incurables in this city and \$25,000 to the American Red Cross.—Mrs. Helen Hartley Jenkins has given \$25,000 to the Lying-in Hospital for a special study of puerperal fever. The fund is to be known as the Emma Hartley Endowment in memory of the donor's mother.

New Medical Society.—Physicians residing above One Hundred and Sixtieth street on Washington Heights have organized the Audubon Medical Society with the object of promoting scientific, professional and social relations. Dr. F. D. Uferrigan has been elected president; Dr. Roger H. Denmett, vice-president; Dr. W. H. Allison, secretary; Dr. Lynn L. Fulkerson, treasurer, and Dr. John N. Bassin, member of the scientific committee. At the meeting February 4, Dr. Benjamin T. Tilton will read a paper on "Acute Abdominal Emergencies."

New Quarters for Old College.—President Nicholas Murray Butler of Columbia University announces that within the past few weeks Columbia University has received gifts amounting to more than \$1,000,000 for the purchase of the entire block between One Hundred and Sixteenth and One Hundred and Seventeenth streets and Amsterdam and Morningside avenues. The College of Physicians and Surgeons will be moved to this site. Part of the new medical school equipment will be a building devoted entirely to medical and surgical research in which cancer research can be carried on under the terms of the will of George Crocker. The estimated cost of this undertaking is \$3,000,000. Large contributions have been received from William K. Vanderbilt, George J. Gould, Frank A. Munsey and an anonymous donor.

PENNSYLVANIA

Loving Cup Presented.—Dr. Francis A. Goeltz left Erie January 21, to take up his residence in Nyssa, Ore. On January 11 he was tendered a farewell dinner at the Erie Club by the staff of the Hamot Hospital, when he was presented with a silver loving-cup, suitably engraved, by the other members of the staff.

Decrease of Fatal Accidents in Mines.—In 1909, there was a marked decrease in the fatal accidents in the mines of the state as compared with 1908, the figures being 1,045 as compared with 1,250. The record of the year in the soft-coal region was 494 fatal accidents as compared with 572 in the preceding year, a decrease of 78, or 4 per cent. In the hard-coal region the decrease was more marked—in 1909, 551 fatalities against 678 in 1908.

Personal.—Dr. Charles Campbell, Petersburg, has been appointed division physician for the Pennsylvania System.—Dr. Harry F. Smith has been appointed police and fire surgeon of Scranton, vice Dr. Ernest L. A. Keisel, resigned.—Drs. James P. Gilligan, Maurice B. Ahlborn, Lawrence A. Sheridan and Edward R. Roderick have resigned from the staff of Mercy Hospital, Wilkes-Barre.—Dr. Charles P. Knapp has been elected president of the Wyoming Board of Health.—Dr. S. R. Molineux has been appointed assistant at the Robert Packer Hospital, Sayre.

The Flexner Portrait.—The permanent portrait committee of the Medical Department of the University of Pennsylvania reports that at present six professors are not represented in the collection of portraits of former professors of the medical school. A special appeal is made for contributions to secure the portrait of Dr. Simon Flexner, who was professor of pathology from 1899 to 1903. A special committee composed of these classes and of Dr. Flexner's associates and assistants has been appointed to institute such action as may be necessary to this end. Subscriptions should be sent to the treasurer, Dr. William Pepper, 1811 Spruce street, Philadelphia.

Medical Societies.—At the annual meeting of the Medical Society of Franklin County, the following officers were elected: President, Dr. John C. Gilland, Greencastle; vice-presidents, Drs. Frank N. Emmert, Chambersburg, and Thomas D. White, Orrstown; secretary, Dr. John J. Coffman, Scotland (reelected); assistant secretary, Dr. H. Clay Devilbliss, Chambersburg; treasurer, Dr. Johnston McLanahan, Chambersburg, and censor, Dr. Guy L. Zimmerman, Lemasters.—Physicians of Waverly, Sayre and Athens met in Sayre December 27 and took preliminary steps toward effecting a permanent organization to be known as the Valley Academy of Medicine. The following temporary officers were elected: President, Dr. John T. Holcomb, Athens; secretary, Dr. Marcus C. Hunter, Sayre, and treasurer, Dr. Leon S. Betowski, Waverly.—Allegheny County Medical Society, at its annual meeting, held

in Pittsburg, January 12, elected the following officers: Dr. Markley C. Cameron, Pittsburg, president; Drs. James I. Johnston, Pittsburg, William K. Walker, Dixmont, Edward M. Hand, Coraopolis, and David C. Boyce, Pittsburg, vice-presidents, and Dr. William B. Ewing, Pittsburg, secretary-treasurer.

Philadelphia

Bequests.—The will of the late Matthew Corr bequeaths \$5,000 each to St. Joseph's, St. Mary's and St. Agnes' hospitals to endow beds.—The will of the late Elizabeth P. Watson directs that her whole estate (\$50,000) be held in trust for her sister, Ellen, and at her death that \$5,000 each be given to the Home of the Merciful Saviour for Crippled Children, the Germantown Dispensary and Philadelphia Home for Incurables.

Spitzka Misquoted.—Dr. Edward A. Spitzka, professor of anatomy in Jefferson Medical College, states that an erroneous impression has been conveyed by the public reports concerning his recent address before the Clerical Brotherhood. He does not believe that physicians should put suffering persons to death, and does not in any way favor the delegating to any physician the right to administer lethal doses in any case. The physician's duty is to preserve life whenever possible, though he may attempt to relieve extreme suffering by proper methods.

Library for County Society.—At the meeting of the County Medical Society held January 19, it was announced that the society had decided to establish a medical library for the use of its younger members. The library committee was authorized to contract with the Free Library of Philadelphia for the reservation of alcoves in the different branches throughout the city for medical books and publications. These works are to be selected by a committee composed of Drs. James M. Anders, M. Howard Fussell, Herman Allen and Edward E. Montgomery. An initial appropriation of \$300 was made by the society for the purchase of books and journals.

University Assumes Control of Phipps Institute.—Some weeks ago, Henry Phipps announced the gift of \$500,000 for the erection of a new building, to be used by the Phipps Institute (for the study and prevention of tuberculosis), and to be managed by the University of Pennsylvania at its completion. Provost C. C. Harrison of the University has announced a change of plan whereby the University will assume control at once and has appointed the following committee of physicians connected with the University Medical School to arrange for the reorganization of the Institute: Drs. Charles H. Frazier, John H. Musser, David L. Edsall, Alexander C. Abbott and Provost Harrison, ex officio.

Personal.—Dr. Joseph Price is seriously ill at his country home at Whitford, near West Chester with nervous breakdown complicated by blood poisoning.—Dr. John C. DaCosta is dangerously ill with acute congestion of the lungs.—Dr. Frank A. Craig was appointed physician in charge of the Tuberculosis class of the Presbyterian Hospital, January 18.—Dr. Mary M. Wolfe, who is now in charge of the Stonyhurst Sanitarium, Honesburg, and who served as assistant physician at the State Hospital for the Insane, Norristown, from 1899 to 1901, and chief resident physician in the woman's department of the same institution until October, 1909, has been appointed clinical professor of psychiatry in the Woman's Medical College of Philadelphia.—Dr. James K. Young has been elected associate professor of orthopedic surgery in the University of Pennsylvania.—Dr. John M. Swan has been elected associate professor of clinical medicine in the Medico-Chirurgical College.—Dr. Harry Hudson has been made associate in orthopedic surgery in Jefferson Medical College.—J. Percy Keating, son of the late William V. Keating, has been elected a member of the board of trustees of Jefferson Medical College.

Officers Elected.—The seventeenth annual meeting of the Medical Club of Philadelphia was held January 21. The following officers were elected: President, Dr. James B. Walker; vice-presidents, Drs. William L. Rodman and Dr. S. Lewis Ziegler; and treasurer, Dr. Lewis H. Adler, Jr.—At the annual meeting of the Northwestern Medical Society, the following officers were elected: President, Dr. J. William Pancoast; vice-president, Dr. Nathan G. Ward; secretary, Dr. Harry Hudson; treasurer, Dr. William McKeage; and censors, Drs. Samuel M. Wilson, Lewis S. Somers and J. Edward Wallis.—The Section on General Medicine of the College of Physicians, at its annual meeting, January 10, elected Dr. John C. DaCosta, Jr., chairman, and Dr. Clifford B. Farr, clerk.—The following officers were elected and inducted at the annual meeting of the Philadelphia County Medical Society, January 19: President, Dr. Henry Leffman; vice-

presidents, Drs. William S. Newcomet and G. Morton Illman; associate vice-presidents: North branch, Dr. Samuel Wolfe; South branch, Dr. R. Oliver Kevin; West Philadelphia branch, Dr. Christian B. Longenecker; Kensington branch, Dr. John J. Gilbride; North East branch, Dr. Elmer E. Keiser; and Germantown branch, Dr. Frank B. Gummey; secretary, Dr. William S. Wray; assistant secretary, Dr. Alexander R. Craig; treasurer, Dr. Collier L. Bower; censor, Dr. Jndson Daland; delegates to the United States Pharmacopeia convention: Drs. Henry W. Cattell and Edward W. Watson, and Drs. Albert M. Eaton, Edward Q. Thornton and Martha Tracy, alternates.—The West branch of the Philadelphia County Medical Society, at its annual meeting, December 24, elected Dr. Henry D. Jump president and Dr. Charles A. E. Codman, clerk.—The Philadelphia Medical Examiners' Association, at its meeting, January 4, elected the following officers: Dr. Samuel E. Walker, president; Dr. Samuel H. Brown, vice-president; Dr. Norris S. McDowell, secretary; Dr. George D. Morton, treasurer; and Drs. Walter C. Stillwell, Robert W. Bruce, and Joseph D. Farrar, censors.

FOREIGN

Clinic for Occupational Affections.—A clinic for occupational affections is maintained by Milan, Italy, with assistance from private subscriptions, mainly from manufacturers. Persons with occupational affections are sent to this clinic from all parts of Italy, and ample laboratory and other arrangements are made for forty graduate students, so that physicians are able to make a special study of this important and hitherto comparatively neglected branch of medicine. The clinic has three pavilions, with accommodations for about 90 patients besides an isolation ward for occupational infectious diseases. A library of works relating to occupational affections is also being collected, and a hall is set apart for the meetings of the international commission for study of occupational affections, which has its permanent seat in Milan, and in which seventeen states are represented. The Berlin *Zeitschrift für ärztliche Fortbildung* in a recent issue speaks enviously of this new Italian clinic, urging the erection in Germany of an institution of the kind for graduate research in internal and surgical occupational affections and industrial accident cases.

Congress on Occupational Affections.—The second International Congress for Occupational Affections is to be held at Brussels, Sept. 10-14, 1910. Membership is open to all persons and corporations interested in industrial and occupational affections and prophylaxis. Six topics have been appointed for discussion: 1. Is it possible to classify occupational affections and industrial accidents separately? 2. Medical aspect of occupational affections, prophylaxis and hygiene. 3. Campaign against hookworm disease. 4. The eye and the illumination in respect to occupational affections. 5. Caisson work. 6. Occupational poisoning. The articles on these and other subjects should be in the hands of the secretary before May 31; address Ministère de l'Industrie et du Travail, Rue Lambert 2, Brussels, Belgium. The first congress of the kind was held at Rome last spring. It brought out in striking fashion the evils of the workmen's compensation legislation in Germany, which is engendering incurable neuroses after industrial accidents. The profession no longer calls them "traumatic neuroses" but "industrial legislation neuroses."

Leprosy in Colombia.—Dr. P. G. Medina, professor of hygiene and physiology at the medical school at Bogota, Colombia, was commissioned by the government to ascertain the number of lepers in the country and study the best means of treatment, and his report has just been published after four years of assiduous research. He states that the general impression in regard to the vast number of lepers in Colombia is grossly exaggerated. He found a total of 3,031 lepers in the three state leper colonies and only 1,275 outside, most of whom will soon be admitted to a new colony now being established. His report appears in the recently founded *Repertorio de Medicina y Cirugia*, published at Bogota, and he describes the effects of the various therapeutic measures that have been tried. The Carrasquilla antileprosy serum sometimes induces a marked febrile reaction with chills, headache and sweating, and in the cases in which this was observed, notable improvement followed and has persisted to date. No effect was apparent in the cases in which this pronounced reaction did not occur. Arrangements are being made to continue this serotherapy on a larger scale. The 120 patients to whom it has been already applied are anxious to continue it, but the benefit from chaulmoogra oil is more constant and seems to be permanent. In a number of cases of the tubercular type, the lesions have retrogressed and if the improvement which has persisted for a year continues to be evident the patients may be regarded as permanently cured.

LONDON LETTER

(From Our Regular Correspondent)

LONDON, Jan. 15, 1910.

Establishment of a Radium Bank in London

The prohibitive price of radium has led to the establishment of a novel institution—a radium bank where the precious metal may be stored and rented to physicians, scientists and others who wish to use it but cannot afford to pay \$80 a milligram, its present market price. The ultimate locality of the bank is to be in the neighborhood of Cavendish Square, in the heart of the district in which the London consultants live, but for the present temporary offices have been opened at Moorgate street in the heart of the commercial and banking district of the city. For an average operation 50 milligrams of radium are required, costing \$4,000 and therefore it is only at one or two of the London hospitals that radium can be used to any extent. A number of business men have combined to form the bank which will "let" 100 milligrams at \$200 for one day's use and for each subsequent day at $\frac{1}{2}$ per cent. on the value of the amount issued. Securities will have to be given. The bank purposes to stock radium to the value of \$250,000. The difficulty is in getting a supply of radium. The main source has been the pitch-blende from Joachimsthal, Bohemia, which yields one part in 3,000,000. A new supply has been discovered in the bed of a stream near Guarda in Portugal. In England two Cornish mines have yielded a little but the whole available supply is limited owing to the enormous expense of extraction. Although radium exists in air, sea water and almost everywhere, there is hardly an ounce of the pure metal in the world. The bank will be organized very much after the model of a similar institution in Paris, through which most of the radium used in England has hitherto come.

Successful Heart Massage in Chloroform Syncope

Dr. V. B. Orr has reported at the Royal Society of Medicine a successful case of heart massage in chloroform syncope. A patient was about to be operated on for gastric trouble when the heart failed. The surgeon, Mr. Charles Stonham, opened the abdomen and massaged the heart from below the diaphragm about three or four minutes after the failure. In response to the stimulation the pulsations returned and the patient recovered. Another case was mentioned by Dr. E. H. Starling in which a weakly child, aged 11 months, required needling for cataract. Chloroform was given from a Junker's inhaler and was well taken. When the child was under, the head was slightly raised to adjust the towels, and both pulse and respiration ceased. The head was lowered and artificial respiration performed, while ether and strychnin were administered hypodermically and warm saline solution was injected into the rectum. Fingers were passed under the ribs and the heart was compressed five or six times. A gasping inspiration was taken and the heart was heard to beat again, after which recovery gradually took place. The best results—ten successful cases—have now been recorded from the subdiaphragmatic method of heart massage.

Physicians in Politics

The general election which begins to-day is the most important which has taken place in the last two generations because of the magnitude of the issues involved—the supremacy of the peers or the people and taxation of imported necessities of life in a country dependent for its very existence on its foreign trade. Unlike his French confrère, the physician here plays very little part in politics. For those in practice it is considered unwise to take a public part because it tends to offend patients or possible patients on the opposite side. But no such restraint applies to those who do not practice or who have retired from practice. The training and occupation of the physician, however, does not help him to become an active politician. As a rule, unlike that of the lawyers who play a very large part in politics, he is a poor speaker. If he aspires to enter parliament he must be wealthy to a degree seldom attained in the profession. He must have enough money to live on, pay a large part of his election expenses and subscribe to the various charities and clubs of his constituency. Going back as far as the reign of Queen Elizabeth the total number of physicians who have sat in parliament seems to have been only about 60. Very few were men of eminence in their profession. Exceptions are the celebrated John Radcliffe, the founder of the Radcliffe Library at Oxford, who sat in the reign of William and Mary. John Friend, a fellow of the Royal Society and a censor of the Royal College of Physicians, sat in the reign of George I.

Later in the reign of William IV came Thomas Wakeley, the founder of the *Lancet*, an ardent political reformer. Among men of eminence in the profession who have sat at the present day are the late Sir Michael Foster, the physiologist, and Sir William Priestley the gynecologist. In the parliament which has just dissolved sat Sir William Collins, the ophthalmologist, and Sir Walter Foster, once professor of medicine in Birmingham and a well-known medical writer. The last two with Sir A. R. Simpson, the former professor of midwifery at the University of Edinburgh, and Dr. Addison, professor of anatomy at St. Bartholomew's Hospital, are the most eminent physicians who are candidates for the next parliament. Altogether there are 24 medical candidates—16 in England, 4 in Scotland and 4 in Ireland. Of these 5 have never been practitioners and after qualifying abandoned medicine for some other career. The profession has never shone in parliament. It has never produced a great speaker or statesman of the first rank. The medical members are simply ordinary units though they are listened to with attention when any topic with medical bearings is under discussion. On the other hand the legal profession is represented out of all proportion to its importance. The present prime minister and most of his important colleagues including the chancellor of the exchequer and the secretary for war belong to it. Several times the idea has been put forward that the medical profession should be represented specially in parliament but this has never proved practicable. The medical members there do not represent it as such but, like other members, one party, liberal or conservative. As physicians are scattered all over the country and individually exercise very little influence in politics it is difficult to see how they can ever have a special representation. One of the candidates for the Harley street and Cavendish Square district of London, however, is Dr. R. O. Moon, a fellow of the College of Physicians. He has probably been brought forward with view to secure the votes of the numerous physicians in that locality, but these are but a small fraction of the whole.

Sleeping Sickness in Uganda

The report of Sir Hesketh Bell, the governor of Uganda, on the measures adopted for the suppression of sleeping sickness, is very unfavorable to Koch's atoxyl treatment. At first it seemed to be efficient but later it produced blindness to such an alarming extent that its use had to be considerably restricted. All that can be claimed for the drug treatment is that in a great number of cases it prolonged life and relieved suffering; but no case of undoubted cure can be produced among all the thousands of patients treated.

Rat-Bite Fever

Under the title of rat-bite fever Dr. Horder, of St. Bartholomew's Hospital, has reported in the *Quarterly Journal of Medicine* 3 cases of a previously undescribed disease. All the cases presented the following points in common. A bite from a rat is sustained which may or may not suppurate. After an incubation period, in 2 cases of 28 days and in the other case of a few days less lymphangitis of the tissues about the bite with malaise, anorexia, and fever supervene. At the same time erythematous indurated patches appear irregularly distributed over the skin and diffuse tender swellings in the muscles. The attack may last from a few days to a week. A series of similar attacks follow at regular intervals sometimes for several months. The intervals vary from 3 to 10 days. Blood examination for microbes was negative but leucocytosis was present during the fever. Spontaneous recovery ensues and no treatment has proved of value. Dr. Horder suggests that the infective agent is a protozoon.

PARIS LETTER

(From Our Regular Correspondent)

PARIS, Jan. 7, 1910.

A New University

The bill organizing the schools of higher instruction of Algiers into a university (THE JOURNAL, Sept. 4, 1909, liii, 807), has just been passed. The school (*école*) of the practice of medicine and pharmacy of Algiers is thus transformed into a college (*faculté*) of medicine and pharmacy. The bill, however, aroused lively objection, the present condition of the future university of Algiers hardly appearing to justify this transformation. Thus, so far as the school of medicine is concerned especially, official statistics show 125 students on January 15, 1909, but in reality it is necessary to deduct from this number 25 students who are taking the midwives' course and as many native auxiliary physicians. There are, therefore, far from the number of 250 pupils generally considered necessary for the transformation of a school into a

college in order to assure emulation and the maintenance of a proper level of scholarship. In other respects the school of Algiers is hardly more satisfactory. There are few professorships; there is no clinic of mental medicine. The hospital of Mustapha is insufficient, containing only 40 beds for men and 20 for women for each of the services of clinical medicine and surgery. Considerable expense, then, will be required, quite out of proportion to the utility of the project.

During the discussion of the bill M. Peytral, senator from the department of the Bouches-du-Rhône, suggested the transformation of the Marseilles school of practice of medicine into a college. This school occupies a singular situation. It is part of the University of Aix-en-Provence, which is the seat of the colleges of law and of letters. For a long time Marseilles, possessing a college of sciences and a school of medicine, has demanded the transfer thither of the colleges of Aix. To-day this movement tends to be less pronounced, but Marseilles would like at least to transform her school of medicine into a college. It should be recognized that this transformation would be much better justified than that of the school of Algiers. The Marseilles medical school has in fact grown considerably. It has at the present almost as many medical students as the college of Montpellier or that of Toulouse, and even more than there are at Lille or Nancy. It has, moreover, 33 professorships, among which there are some for unique subjects, dealing with the diseases of tropical countries; for the port of Marseilles receives more colonial patients than any other French port. The hospitals of Marseilles contain more than 1,000 beds and furnish a large number of anatomie subjects. The city of Marseilles annually expends \$30,000 (150,000 francs), for the support of the medical school, which is well equipped and installed in a splendid building, the Château of Pharo, which belonged to Napoleon III and which the Empress Eugénie gave to the city.

Exclusion of a Medical Student for an Attack on a Professor

During an examination a Paris medical student assaulted Dr. Prenant, professor of histology. The council of the University of Paris has just excluded this student forever from all the colleges and schools of higher instruction.

Legislation in Regard to the Labor of Women and Children

M. Viviani, Minister of Labor, has just submitted for the signature of the President of the Republic a decree restricting the weight of the burdens which may be carried or drawn by children under 18 and women of all ages employed in industry and commerce. This decree will effectively repress the abuses observed in numerous factories where, without regard to the age of the children employed or the strength of the women, they are constantly obliged to draw or to carry burdens of considerable weight. Hereafter a boy under 14 may carry no more than 22 pounds (10 kilos); from 14 to 15, no more than 33 pounds (15 kilos); for girls or women the limits are, under 14 years, 11 pounds; from 14 to 15 years, 17½ pounds; from 16 to 17 years, 22 pounds; 18 years and up, 55 pounds (25 kilos). The use of wheelbarrows and push-carts is forbidden to boys less than 14 and to girls under 18. It is forbidden to allow women to carry, push or drag any burden whatever during the three weeks following confinement.

Reform of the Thesis Requirement for the Doctorate

The commission for the reform of medical studies has been debating the question of the suppression of the thesis for the doctorate for a long time. A bare majority was in favor of the thesis; but the assembly of the medical schools recognized that the suppression of the thesis would be impossible, for the law permits only doctors whose theses have been accepted to practice medicine. Moreover, the maintenance of the equality of the doctorate in medicine with the corresponding degree given by the other schools—the very dignity of the medical profession—demands the preservation of the thesis. There was little doubt on the first point.

The second question, however, was whether it would be possible to require theses without compelling all the graduates to go to the expense of printing. This question brought forward a very interesting and original suggestion from Dr. Regaud, *agrégé* at the Lyons medical school, which was finally approved. Among the theses for the doctorate there are some very remarkable ones which contribute greatly to the reputation of our schools. There are some, on the other hand, which are so inferior that it is really a pity to let them go out to represent French medicine in foreign collections. Unfortunately, it is impossible to refuse these theses, even the worst of them, for they always represent a pecuniary expense which one would hesitate to compel the student (or rather his family) to repeat, and then, many such authors are not sufficiently accustomed to the expression of their thoughts to pro-

duce a creditable work. According to Dr. Regaud's plan, the candidate would produce a thesis, of which he would have several copies made in typewriting, and which would be sustained and passed on, but only the theses receiving the mention "very good" would be admitted into the collection of the printed theses of the school. It goes without saying that the rights of the doctors whose theses had been received in manuscript, and those whose theses had been printed, would be the same. All would have the same prerogatives; only the latter would be laureates of the school and the others would not. Against this plan the objection was urged that to lay the authors of the best theses under additional expense would be an odd way to reward them; but it is probable that most of the young physicians would be proud to receive the honor and would willingly stand the expense attached thereto. Moreover, the thesis fees might be raised a little and a sufficient sum subtracted to make up a number of thesis purses to be given to those for whom the expense would be a burden; or those candidates who would have to have their theses printed might be excused from the thesis fees.

May a Hospital Physician Call a Surgeon from Another City Without Authorization of the Hospital Board?

Some time ago a case arose in Loupe (Eure-et-Loir) in which a hospital physician, without previously consulting the board, called a surgeon from another city to perform an operation on an injured working man. The court of appeals, to which the case was carried, has decided that, considering that the hospital was not provided with surgical equipment, or with suitable means of antisepsis for operations, that consequently in a delicate and urgent case the interests of the patient required the summoning of a specialist surgeon, and that the amount asked by this surgeon for his fee and expenses was not excessive, the administrative board of the hospital should assume the expense, since the hospital is by law obliged to give to injured patients all the attentions that their condition requires.

Responsibility of the Nurses' Agencies

There are in Paris several agencies which undertake to procure nurses for patients. The question has just come before the courts whether, if a nurse sustains an accident in the performance of his duties, the agency which has placed him in the position is responsible for this accident. The courts have decided that the agency is not subject to the law in regard to accidents of labor, as there can be no contract of labor between the agency and the nurse; the agency simply plays the part of an employment bureau and the nurse is not under its surveillance when he is in attendance on a patient, to whom, moreover, the nurse is free not to go. It seems to follow from these decisions that in case the nurse placed through an agency should be capable of any indiscretion, it would be impossible for the patient to hold the agency legally responsible.

BERLIN LETTER

(From Our Regular Correspondent)

BERLIN, January 6, 1910.

Personals

Three of the older representatives of German medical science are celebrating jubilees: Professor Hegar, a noted gynecologist, formerly director of the Freiburg clinic, celebrates his eightieth birthday; Professor Bernhard Schultze, formerly director of the Jena gynecologic clinic, the fiftieth anniversary of his doctorate; and Professor Kehrner, formerly chief of the Heidelberg clinic for women, the semicentennial of his doctorate. The first named particularly shows still great intellectual activity. He not only carries on his *Archives* but now and then publishes a contribution of his own to clinical gynecology.

Professor Henkel, the gynecologist of Greifswald, has been chosen as director of the Jena clinic as successor of Professor Franz, who has been called to Kiel, and Professor Jung, the gynecologist of Erlangen, has been chosen as head of the Göttingen clinic as successor of Professor Runge. In place of Professor Dentrelepoint, retired, Prof. E. Hoffmann of Halle has assumed the direction of the skin clinic at Bonn.

Congress on Internal Medicine

This year's congress on internal medicine (the twenty-seventh), which is to be attended by foreign physicians, will meet April 18 to 21 at Wiesbaden under the presidency of the Berlin clinician, Professor Kraus. The following are now listed as subjects for discussion: 1. The Specific Diagnosis and Treatment of Tuberculosis. The leaders of the discussion are to be Professor Schütz of the veterinary school of Berlin

and Professor Benzoldt of Erlangen. 2. The Origin and Treatment of Secondary Anemias. This will be presented in a paper by Professor Gerhardt of Basel.

Increase of German Students

The entire number of students in the twenty-one universities of the German Empire in the summer semester of 1909 amounted to 51,500. In 1879 the number was 19,771, an increase of 160 per cent. in thirty years. The number of foreign students has risen in these thirty years from 1,232 to 3,972. There are now 78.4 students for 100,000 inhabitants against 43.4 thirty years ago. In the last summer semester there were 7,250 law students, thirty years ago, 3,179; 4,879 medical students; in 1879, 2,061; 920 dental; in 1879, 17. Calculated on the basis of 10,000 inhabitants the number of law students has risen from 12.3 to 19.5, the medical students from 8 to 13.3 and the number of students of other departments has increased to a greater or less extent with the exception of Protestant theology in which there has been a regression from 5.9 to 5.6.

Premiums for Breast Nursing

The introduction of premiums for breast nursing has had the effect of inducing mothers to nurse their own children and has exercised a favorable influence on the nutrition of infants. Wiesbaden has appropriated since April 1, 1909, about \$600 (2,500 marks) for this purpose. The number of mothers who nurse their own children is not small (amounting to 70 per cent.) but the period of nursing is insufficient. The efforts of the lately established mothers' counsel stations in Wiesbaden are directed to prolonging this period. For this purpose the nursing premiums are raised from month to month, a constant stimulus being thus maintained to keep women from neglecting nursing. This has resulted in sixty-four women who formerly nursed their children from two to three months prolonging the period from eight to twelve months. From April 1, 1909, until now 139 women have been assisted by nursing premiums. Of these forty-two had not previously nursed their children.

Insurance for Age and Disability for 1908

According to the facts just published the insurance for age and disability furnished about 184,000,000 weekly contributions. During the year 140,000 pensions were granted, 117,000 for disability, 12,000 for sickness and 11,000 on account of age with an average annual amount of from \$40 to \$50 (163 to 170 marks). For the treatment of disease about \$4,500,000 (18,000,000 marks) were expended; for the care of the disabled \$205,000. The expenses of management amounted to \$4,500,000. The entire income for the year 1908 amounted to \$58,000,000, the expenses \$37,000,000, so that there was an accumulation of about \$21,000,000. The assets of the insurance societies amounted to \$375,000,000, to which must be added the book value of the inventories, amounting to about \$1,500,000.

Extraordinary Memory of the Feeble Minded

In a late number of the *Journal for School Hygiene* (*Zeitschrift für Schul-Gesundheitspflege*) a Munich physician, Dr. Weigl, publishes some interesting facts about the astonishing feats of memory of mentally defective children. In the Vienna Society for Psychiatry and Neurology a feeble-minded boy was presented who knew the calendar for a thousand years so thoroughly that he could name every past and future date to the year two thousand, and every feast day, immediately and without deliberation. He could give no explanation of the mechanism of his performance. If he was asked by what method he found the day of the week for any date he repeated one of the formulas existing for it which he had learned from a calendar. It was easy to perceive, however, that he himself made no use of this formula. His knowledge of the calendar always seems to stop abruptly with the year two thousand. It must be assumed that the boy depends on material which he has thoroughly learned.

An analogous case is furnished by the well-known Salzburg calculator, a cretin of high grade who lived until 1853 in Salzburg, and could perform the most complicated calculations in his head with incredible celerity. A Warsaw physician reports the case of a twenty-two year old idiot whose brain was affected since his seventh year in consequence of a severe typhoid, who, although he could neither read nor write, reckoned with extraordinary quickness, e. g., multiplied figures of two places as soon as asked. From an English asylum there comes a report of an idiot who knew many hundred dates from English history, especially the dates of the births and deaths of noted men. Psychologists have not yet succeeded in explaining all these phenomena.

Pharmacology

DR. TAYLOR & CO.

An Advertising "Specialist" Convicted of Obtaining Money by False Pretense

A most important trial and subsequent conviction has just been concluded in San Francisco; it is the first case in the United States in which an advertising "specialist" has been convicted by a jury of the crime of trying to obtain money by false pretense. The man, John J. Arberry, a graduate of the medical department of the University of Kentucky, 1891, and licensed to practice medicine in California in 1895 (before the examining board was established), was arrested in July, 1909, the trial being held this month—January, 1910.

Dr. Arberry was the "chief consulting physician" in a widely advertised concern known as "Dr. Taylor & Co.," a corporation, the principal stockholder of which, Dr. Arberry testified on the stand, is one O. C. Joslen, who formerly had a license to practice, which license was revoked in 1905, after a conviction in the U. S. Court for sending immoral literature through the mail; the literature was an offer to produce an abortion. Several other advertising concerns are largely owned by the same Joslen, but they are operated by very shrewd licensed physicians and their advertising is generally so worded that they cannot be reached under the law. It was for this reason that the present case, along an entirely new line, was undertaken and supported by the San Francisco County Medical Society.

A young man of about twenty came to San Francisco from the country about the middle of July; on July 19 he felt a pain in his back and, seeing the sign of Dr. Taylor & Co., went into the office. He saw Dr. Arberry, who told him, after massaging his prostate, that he had an abscess of the prostate and it would require \$200 to cure it. Arberry persuaded the young man to sign a letter to his aunt living in the country, asking that the money be sent to him, care of Dr. Taylor & Co. The money was received and paid. On July 23, Arberry, evidently thinking it a shame not to get some more "easy money," wrote a letter to the young man's aunt telling her to come to San Francisco, that the boy had another serious complaint. She came and first went to see some friends and fellow countrymen (Italians). One of her friends went with her to see Arberry, representing herself as her cousin and interpreter and alleging that she could not speak English—though she really speaks and understands it well. Arberry said to them that the young man had a valvular lesion of the heart and was liable to drop dead at any moment unless treated and cured, which would cost another \$200; the treatment was expensive because he had to use a German serum, imported at great expense. The woman stated to Arberry that she did not have the money with her, but would go out and try and get it. That afternoon Arberry was arrested.

Before the heart disease episode and the arrest, the young man happened to see a reputable physician and a member of the county society who soon satisfied himself that the patient did not have and never had had an abscess of the prostate. The same day that the aunt and the interpreter were to see Arberry, the young man was examined by three reputable physicians, one examining the prostate and the other two the heart; they all agreed that he was perfectly well and free from the diseases stated. It was the old swindle, but the interesting and important part of it came out in the trial.

All such cases heretofore have failed because of the defense that the "doctor" had made a mistake in diagnosis and that all physicians may disagree in such matters. But the attorney for the society, Mr. Walter Kaufman, who, though not a criminal lawyer, took a deep interest in the case, believed in the common-sense idea that physicians might testify to certain conditions as matters of fact within their knowledge and not merely as matters of opinion. There was much argument over this point, but the court finally ruled that a witness under oath could testify to matters of fact and that it was then up to the jury to determine the reliability of the testimony. On this basis the witnesses for the prosecution testified that they had examined the boy and that they knew as a matter of fact that he did not have and had not recently had an abscess of

the prostate, and further, that he did not have and had not had a valvular disease of the heart; in the latter point even the "experts" called by the defense agreed that it could be determined as a matter of known fact, whether or not the boy had a valvular disease of the heart. The case went to the jury January 13, and after about two hours' deliberation they returned a verdict of guilty.

This is the first verdict convicting a physician who follows this criminal line of activity, of a felony; that is, of attempting to obtain money by false pretense. It is stated that the advertising quacks in San Francisco have contributed a purse of \$25,000 to fight this case and it will undoubtedly be appealed to the Supreme Court. It is also the first time a trial court has admitted to the record testimony from physicians as to the condition of an individual as a matter of known fact and not merely as a matter of opinion. If the judgment shall be eventually sustained it will go far toward getting rid of the very worst type of quack—the licensed physician who has gone wrong.

THE AMERICAN DRUGGISTS SYNDICATE

The following letter from a prominent pharmaceutical manufacturing firm and our reply thereto are printed for the information of those who may be interested:

To the Editor: Will you send us one hundred copies of the article on the American Druggists Syndicate noted on page 221 of THE JOURNAL, January 15? Kindly send them with bill and oblige.

Gentlemen: As we endeavored to make clear in the comment on Dr. Robinson's letter, the American Druggists Syndicate matter was reprinted especially for the use of the individual physician. THE JOURNAL takes the attitude that the A. D. S.—as at present operated—is vicious because of its method in manufacturing and exploiting nostrums, and for no other reason. For THE JOURNAL to sell to one manufacturing concern reprints of an article criticising another firm in the same line of business would be justly a subject for criticism, this too in spite of the fact that the concern making the request might be of the highest standing and actuated by the most altruistic of motives.

In plain English, THE JOURNAL holds no brief for any manufacturer—reputable or otherwise—whose business may be injured by the activities of the American Druggists Syndicate.

This being so we are sorry to say that we cannot fill your order.

Correspondence

A Classified Index to Medical Literature

To the Editor:—Readers of THE JOURNAL may be interested in and some of them might like to take advantage of the plan of the library of the Morgan County Medical Society for furnishing a classified index to current medical literature.

This plan differs from the exhaustive alphabetic index to medical literature published semiannually by THE JOURNAL in that the card form is of great advantage in its expansive and cumulative features which, with its classification by subjects, make it much more accessible for immediate reference. For several years this library has taken thirty of the leading medical journals published in the English language, including all the great weeklies, and has carefully indexed the original articles and clinical notes according to the Dewey system. At first, this was done for the benefit of the members of the Morgan County Medical Society, but others became interested and copies of the index have been made and sold to several neighboring societies. In order to do this work, it has been necessary for the library to employ a trained librarian with headquarters in the library (in the Carnegie Library Building) and ready at all times to assist members and others in using the library and especially to prepare for members reference lists on any subject desired.

The additional copies of this card index amounting to nearly 10,000 cards annually have been furnished at a cost of \$125 a year, simply enough to cover the expense. Recently the library has had inquiries from a number of other societies and libraries, who would like to have the index, but the expense is too great. In canvassing this matter, with a printing house it appears that if we could secure fifty or sixty subscribers to the index, we could furnish it (not including the guide-cards which cost two cents each) for about one-half the cost, that is, for \$60 a year, or \$5 a month. If any of your readers would like to have such an index to recent current medical literature, we would be very glad to have their names and if fifty subscribers can be secured we will undertake the furnishing of this index at \$60 a year. It will probably comprise about 10,000 cards arranged with class numbers and by authors so that any subject can be found in its proper class and alphabetically under the name of its author. We find practically that very few things in medical progress fail to get into these journals in the course of the year and while there are some which would come to hand more promptly from foreign journals direct, even these are soon accessible to the reader through the medium of this group of leading medical journals.

As this is a work carried on by the library entirely in the interest of the practitioner for the purpose of enabling him always to be abreast of the times, we take the liberty of making an appeal through the columns of THE JOURNAL. This plan is based on the fact that ready access to the best medical journal literature is the surest and simplest way for the practitioner to follow medical progress. We would greatly appreciate correspondence with those interested in a good fresh up-to-date card index.

LIBRARY OF THE MORGAN COUNTY MEDICAL SOCIETY, Jacksonville, Ill.

Miscellany

Origin and Prevalence of Typhoid in District of Columbia.—Rosenau, Lumsden and Kastle, in their third report on typhoid fever in the District of Columbia (*Hygienic Laboratory Bulletin* No. 52, Public Health and Marine-Hospital Service) gives the results of epidemiologic investigations in elaborate tables and charts and also the results of an intensive study of the problem in a selected yet typical district of thirty-two city blocks containing 5,300 persons. During the typhoid season, from May 1 to November 1, every case reported was visited and bacteriological examinations made of the filtered and unfiltered Potomac water, of the excreta, etc. No cases of clinical typhoid were found which had not been diagnosed and reported as such. Dr. L. O. Howard, of the Bureau of Entomology, made a study of fly abundance in relation to the prevalence of typhoid, and but little connection between the typhoid germ and the fly as its disseminator could be made out. The city water supply during the typhoid season according to bacteriologic standards was of good quality, and in the opinion of the investigators could have been responsible for only an insignificant part of the infection. The evidence more strongly suggests personal contact and infected milk as the greatest factors, and in order to further reduce the incidence of typhoid in the District close attention will have to be given these. The solution of the typhoid problem and its suppression will depend on accurate knowledge gained by special studies in endemic areas, rather than by the necessarily hurried studies of acute outbreaks. Though they believe that practically every case of typhoid in the District is diagnosed and reported to the health officer, they deplore the fact that physicians do not fully avail themselves of the facilities of the Hygienic Laboratory for making blood cultures and bacteriologic examinations of the excreta. In about 90 per cent. of patients in the first week of the fever the blood culture test will reveal the typhoid bacillus, usually in pure culture. The intensive study of a selected district included full histories of all cases of illness, specimens from suspected cases of illness and from healthy persons with the

view of determining what proportion harbored the typhoid bacilli without having symptoms of the disease. Data were also collected in regard to sanitary conditions, water and milk supplies, etc. The figures show that only 15 per cent. boiled the water, 54 per cent. used raw milk, 11 per cent. home heated, 7 per cent. commercially pasteurized, 11 per cent. used condensed milk, and 12 per cent. used milk rarely or not at all. Sixty-eight per cent. of houses were thoroughly screened and 89 per cent. showed a "good" condition as to cleanliness; 4.8 per cent. of the population gave a history of having had typhoid within the past ten years, and in 7 out of 80 specimens examined the *Bacillus typhosus* was found. One hundred and six of the cases were in children under 10 years of age, and this special prevalence among children again suggests the importance of milk and contact in its dissemination. The results of the examination of the excreta of about a thousand apparently healthy persons indicate that the typhoid bacillus is more commonly distributed than the actual number of clinically recognized cases suggests. The results of the three years' study show that the disinfection of excreta is frequently inefficient or neglected, and there is a need of legal control of typhoid fever patients and typhoid bacillus carriers. A vigorous campaign against typhoid as a "contagious" disease and for the prevention of the spread of milk infection would eliminate the greater part of typhoid from the District. Considering the general sanitary condition and the fact that there is no water-borne infection the typhoid fever rate in Washington is excessive.

The Evolution of Man and Its Control.—Roswell H. Johnson (*Popular Science Monthly*, January) says: Man has learned that it is not necessary to depend on natural selection alone for the betterment of the race, but that the work of changing the species is partially under his control. Artificial selection therefore steps in. Though various plans have been suggested, and even adopted in isolated instances, as in the Oneida community, we reach solid ground for the first time when we consider the prevention of breeding from the very worst. The prohibition of marriage within certain degrees of consanguinity is one method of artificial selection which is old as the Mosaic law. Modernly it has been attempted among criminals in our prisons, and in institutions of charity among the insane, the feeble-minded, the epileptic. Those afflicted with syphilis and deaf mutes should of course be excluded from propagation. Natural selection may be trusted to take care of mere weakness and susceptibility to bacterial diseases, and the list of the unfit must vary considerably with scientific advances. But the selection of a method to limit the propagation of the unfit must be governed by considerations of social welfare and individual happiness. The extreme methods of the lethal chamber and Plato's scheme of disposing of defective babies are not in consonance with the respect for life established by society. Castration is too severe for general application, but vasectomy by which sexuality is retained but sterility produced as is employed under statute in Indiana among criminals, though it will be opposed, has much in its favor. The most practical method under present conditions is celibate isolation, not in prisons but in island communities, which would combine effective eugenics with greater humanity and would accelerate social progress to a marvelous extent. Since characters resulting from outside forces, such as alcohol, excessive fatigue, lack of hygiene, scurvy, rickets and other evils of malnutrition can be inherited where the germ plasm itself is affected, much can be accomplished eugenically by the improvement of environment. Sexual selection is an active force in the betterment of the race. It is scarcely possible to attain the ideal working of sexual selection among the most fit. The decline of the birth rate is serious only as it is greatest among the most desirable class. Among the innately inferior the fewer children the better, and among the means of limiting families among them would be the abolishment of child labor and ceasing to treat as illegal the knowledge of the prevention of conception which would be employed more by them and decrease their fecundity and a more reasonable proportion of the fit would be established. The eugenic value of divorce might be employed by extending the grounds for

divorce to such things as indicate innate inferiority. But all these measures do not forget the deplorable decline of births among the most fit and efforts should be brought to bear on the enlightened class to recognize the rearing of children as a duty to the race. The eugenicist proposes that laws both state and federal make vital statistics more reliable and comprehensive, and that students of biology study more accurately human heredity according to the laws of Galton and Pearson.

The Food Supply of the Future.—H. P. Armsby (*Science*, Dec. 19), refers to the utterances of James J. Hill (*World's Work*) on the rapid increase in the population and the probable shortage of the wheat supply. He quotes Davenport to the effect that if the ratio of increase of the past hundred years is maintained the end of the present century will see the population of the United States twelve hundred million, and emphasizes the fact that agriculture must be enormously productive to feed them, and that it must be continuously so. No race has ever yet learned to feed itself except at the expense of the fertility of its own or some other country. But with the rapid occupation of all new lands, even in Africa, the problem must be mastered; otherwise there will not be enough of the better foods to go around, and the diet, which is almost uniform among all classes, in this country, at least, will have to be changed. Nature in producing food is wasteful of her energy. Sixty per cent. of the energy stored in the wheat crop, and about the same proportion in the corn crop, is in the straw and stover, and practically only 30 per cent. of the energy of the wheat crop is available for human nutrition. So that it will be necessary to utilize more completely the energy of the by-products in the production of available food. While the conversion of the grain into the higher-priced and more marketable products has been in the past and is to a degree still justifiable economically, nevertheless the conversion of corn or other grain into meat is an exceedingly wasteful process, and Jordan computes that in the production of beef or mutton only 2.66 per cent. of the digestible organic matter consumed by the animal is converted into human food, and even in pork it amounts to only 15.5 per cent. So that the economic pressure of population will sooner or later compel the use of corn as human food, or the land must be devoted to other crops which afford more available nutriment and simply use the by-products for the production of meat, which may eventually become a luxury for only the tables of the wealthy.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

FORMALDEHYDE POISONING

To the Editor:—In THE JOURNAL, Jan. 15, 1910, in the Department of Queries and Minor Notes, appeared an item on "Formaldehyde Poisoning." An article on this subject by Dr. John MacLachlan appeared in the October number of the *Cleveland Medical Journal*. In addition to Dr. MacLachlan's personal case he has collected from the literature ten others and has sketched the symptomatology of formaldehyde poisoning in more thorough fashion than has previously been done. E. F. CUSHING, Cleveland, Ohio.

ARTICLES ON HOSPITAL CONSTRUCTION

To the Editor:—I am desirous of obtaining some information concerning municipal hospitals with a view of starting one which will have a wing for contagious diseases. Can you refer me to any cities of about 75,000 which have them? Or can you give me any light on any phase of the subject? I suppose a campaign of education will be necessary here before we will be able to make the public see the need of such an investment and I want material for this campaign. B. VAN SWERINGEN, Fort Wayne, Ind.

ANSWER.—In THE JOURNAL, Feb. 20, 1909, p. 610, you will find an article by Sturm on "The Planning and Construction of Hospitals for Smaller Cities and Towns," which gives plans and discusses construction, materials, etc. Other articles on hospital construction are found in the issues of Sept. 21, 1907, p. 990 and 993, and March 28, 1908, p. 1025. The *British Medical Journal*, June 20,

1908 (hospital number), contains much information about hospitals, construction, management, taxation for hospitals, etc. This is briefly abstracted in THE JOURNAL, July 18, 1908, p. 261.

Among cities having municipal hospitals are Akron, Ohio, Allentown, Allegheny, Altoona, Harrisburg, Scranton and Williamsport, Pa., Binghamton, N. Y., Columbus, Ohio, Dubuque, Iowa, Omaha, Neb., Indianapolis, Ind., and Lexington, Ky. It is suggested that you might write the authorities in those cities for further information.

GONORRHEA THERAPY ACCORDING TO RICORD AND CHOPART

To the Editor:—On page 42 of "Libertinism and Marriage" (Jullien-Douglas), reference is made to "Chopart's Mixture," and on page 49 "Ricord's old receipt" is mentioned, both used in the treatment of gonorrhea. What are the formulas of these two prescriptions?

ANSWER.—The formula of Chopart's Potio Balsamica used for the purpose named is as follows:

R	c.c.	
Syrupi Balsami toluatani.....	50	āā, fl. 3iiss
Balsami copaivæ.....	100	or fl. 3iil
Aquæ menthæ pip.....	50	fl. 3iiss
Spiritus (80 per cent.).....	5	fl. 3iiss
Spiritus aetheris nitrosi.....		
M. et Sig.—Teaspoonful 4 times a day.		

Because the term "Ricord's old receipt" might be applied to many formulas of Ricord, several of those recorded in *Hager's Handbuch der Pharmaceutischen Praxis* are here given.

R	gm. or c.c.	
Alumnis.....	1	āā, gr. xv
Acidi Tannici.....	100	or āā, fl. 3iil
Vini rubri.....		
Aquæ Rosæ.....		
M. et Sig.: Use 3 times daily as an injection.		

R	gm. or c.c.	
Alumnis.....	15-45	or gr. 225-675
Aquæ.....	100	fl. 3iil
M. et Sig.: Use as an injection (for vagina).		

R	gm. or c.c.	
Bismuthi subnitratiss.....	15	or gr. 225
Aquæ rosæ.....	200	fl. 3vi
M. et Sig.: Inject 3 times daily.		

R	gm. or c.c.	
Ferri pulverati.....	2	gr. iil
Iodi.....	4	or gr. vj
Aquæ dest.....	50	fl. 3iiss
Aquæ dest.....	q.s. ad 300	fl. 3x
M. Prepare a solution of the first three and dilute to 300.		
Sig.: Use 3 times daily as an injection in blennorrhæa.		

R	gm. or c.c.	
Plumbi acetatis.....	2-3	or fl. 3ss-i
Aquæ destillatæ.....	150	fl. 3v
M. et Sig.: Use as an injection.		

READING FOR STUDENTS PREPARING TO STUDY MEDICINE

To the Editor:—What does the American Medical Association publish that would be of value and interest to students preparing for medicine? We have several such students and I am desirous of giving them reading matter relative to the profession.

THOMAS J. MACKIN,
Librarian to Evanston Academy, Northwestern University.

ANSWER.—The following publications and articles may be found of interest to the prospective medical student.

Principles of Medical Ethics of the American Medical Association.
Minot: Certain Ideals of Medical Education, THE JOURNAL, Aug. 14, 1909, p. 502. This issue is the Educational Number of THE JOURNAL, containing a description of each medical college in the United States and Canada and giving valuable information concerning courses, entrance requirements, etc.

Dock: Spelling as an Index to the Preparation of the Medical Student, THE JOURNAL, April 10, 1909, p. 1176.

Culler, Robert M.: Some Facts About the Army Medical Corps, THE JOURNAL, April 3, 1909, p. 1902.

Bristow: The Unity of the Medical Sciences, THE JOURNAL, March 13, 1909, p. 843.

Keen: Educational Ideals in Medicine, THE JOURNAL, June 26, 1909, p. 2081.

Adams: The Great American Fraud, The Nostrum Evil, Quacks and Quackery. Reprinted from *Collier's Weekly* by the American Medical Association.

A list of books on medicine from the historical point of view will be found in Queries and Minor Notes, THE JOURNAL, May 8, 1909, p. 1517.

We also mention the following books and some articles from other periodicals. If they are not accessible in a library, copies can be obtained from the publications or publishers named.

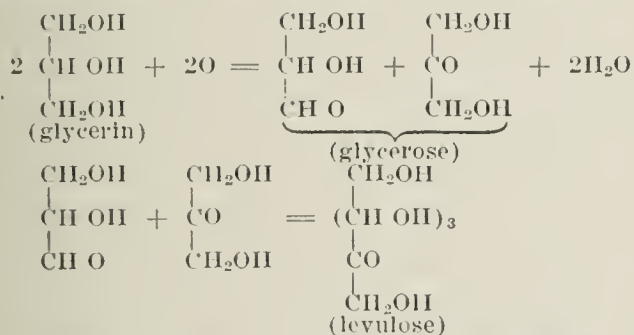
Lawbaugh: The Physician, his Duties and Relation to the Profession, *Journal of the Michigan State Medical Society*, Detroit, October, 1909.

The Practice of Medicine as a Career, The Army and Navy Medical Service (and a number of other articles of interest to the student), *Medical Record*, New York, April 24, 1909.
The Third Annual Report of the Carnegie Foundation, Washington, D. C., discusses medicine as a business, medicine as a profession, ideals of the profession, etc.
McWhorter: Relation of Medicine to Other Professions, *Alabama Med. Jour.*, Birmingham, May, 1909.
Cuthell: The Physician Himself, The F. A. Davis Co., 1914 Cherry St., Philadelphia.

LABORATORY MANUFACTURE OF SUGAR FROM PROTEIN AND FATS

To the Editor:—Please tell me when and by whom sugar was first made from proteins and fats in the laboratory. I remember having read that it was done by Emil Fischer, but cannot find the reference.
S. H.

ANSWER.—It is necessary to distinguish between the cleavage of a sugar radical out of a complex protein in which the sugar exists already formed, and a formation of sugar from a protein in which there is no preformed carbohydrate, since the principles involved and the significance of the operation for our understanding of carbohydrate metabolism, are entirely different. The demonstration of carbohydrate radicals in complex proteins is credited to Elchwald by Cohnheim and Mann ("Chemistry of the Proteids"); he discovered a carbohydrate in mucin in 1865. Many years before, however, Berzelius concluded that albumins must contain carbohydrate radicals because upon decomposition of proteins and sugars he obtained certain products in common from each, including oxalic and saccharic acids and furfural. Recent activity in this direction dates from Pavy's discovery in 1894 that a hexose could be obtained from egg albumin. The formation of sugar directly from a protein which does not already contain preformed carbohydrates has never been accomplished in the laboratory, although there is clinical and experimental evidence in favor of the view that such a process may be accomplished by the living tissues. It is theoretically possible to construct a sugar from the amino acids derived from the disintegration of the protein molecule, some of which stand in rather close chemical relation to the carbohydrates, but the actual performance of the task of producing sugar by going through all the steps from protein to carbohydrate has never been recorded. Likewise, there is no record of an actual formation of sugar from a fat in the laboratory, although various of the necessary steps have been demonstrated. The glycerol (glycerin) radical of the fats is especially closely related to the sugars, and the reactions by which it may be converted into sugar are indicated by the following equations from Wells' "Chemical Pathology," p. 524:



Emil Fischer's synthesis of proteids was described in THE JOURNAL, March 3, 1906, page 656.

The Public Service

Medical Department of the Army

Changes for the week ended Jan. 22, 1910.
Hughes, Michael E., 1st Lieut., M. R. C., ordered to Benicia Arsenal, Benicia, Cal., for duty.
Talbot, Edward M., capt., leave of absence extended 2 months.
Hughes, Michael E., 1st Lieut., M. R. C., granted leave of absence to March 1, 1910.
Norris, H. C. R., 1st Lieut., ordered to Fort Worden, Wash., for temporary duty.
Waterhouse, Samuel M., major, on expiration of his present leave of absence ordered to Fort Washington, Md., for duty.
Oliver, Robert T., examining and supervising dental surgeon, is designated to conduct an examination commencing Monday, March 7, 1910, at Fort Slocum, N. Y., of such applicants for employment as dental surgeons in the Army as may be authorized by the Surgeon-General of the Army to present themselves for examination.
Tetrault, Charles A., M. R. C., granted leave of absence for 4 months, to take effect on relief from duty in the Philippines Division, with permission to go beyond the sea.
Morris, Samuel J., capt., granted 30 days' leave of absence.
Carter, Edward C., Lieut. col., sick leave of absence further extended 1 month and 6 days.
Wickline, Wm. A., capt., granted 30 days' leave of absence.

Whitmore, Eugene R., capt., granted leave of absence for 4 months, to take effect on his relief from duty in the Philippines Division, with permission to go beyond the sea.
Coburn, Henry C., Jr., Lieut., granted leave of absence for 28 days.
Kean, Jefferson R., Lieut. col.; Russell, Frederick F., major, appointed members of a board of officers to proceed to Fort Sheridan, Ill., for the purpose of investigating the water supply and disposal of sewage at that post.
Reynolds, F. P., major, left Fort Monroe, Va., on 7 days' leave of absence.
Hanner, John W., capt., granted leave of absence for 1 month and 10 days.
Clayton, George R., 1st Lieut., M. R. C., relieved from duty at Fort D. A. Russell, Wyo., and ordered to Fort Sheridan, Ill., for duty.
Thorne, James L., 1st Lieut., M. R. C., honorably discharged from the service of the United States, to take effect Jan. 21, 1910.

Public Health and Marine-Hospital Service

Changes for the week ended Jan. 19, 1910:
Kerr, John W., asst. surgeon-general, reassigned to duty in the Bureau as Assistant Surgeon-General in charge of the Division of Scientific Research, effective Dec. 18, 1909.
Carmichael, D. A., surgeon, reassigned to duty at Buffalo, N. Y., effective Dec. 13, 1909.
White, Joseph H., surgeon, reassigned to duty at New Orleans, effective Dec. 1, 1909.
Lavinder, C. H., P. A. surgeon, detailed to represent the Service at the annual meeting of the Medical Society of New York, to be held in Albany, Jan. 25-26, 1910.
Earle, B. H., P. A. surgeon, leave of absence granted 15 days from Dec. 24, 1909, amended to read 2 days from Dec. 24, 1909.
Wood, C. E., asst.-surgeon, granted 21 days' leave of absence from Jan. 11, 1910.
Leake, James P., asst.-surgeon, granted 3 days' leave of absence from Jan. 12, 1910, on account of sickness.
Stiles, C. W., chief Division of Zoology, Hygienic Laboratory, detailed to represent the Service at a conference on hookworm disease, to be held in Atlanta, Ga., under the auspices of the State Board of Health, Jan. 18-19, 1910.
Bailey, C. A., acting asst.-surgeon, leave granted for 2 days from Jan. 3, 1910, amended to read 2 days from Jan. 1, 1910.
Blount, B. B., acting asst.-surgeon, granted 30 days' leave of absence from Feb. 1, 1910.
Delgado, J. M., acting asst.-surgeon, granted 2 days' extension of annual leave from Jan. 1, 1910, on account of sickness.
Gibson, L. P., acting asst.-surgeon, granted 4 days' leave of absence from Jan. 12, 1910.
Hunter, S. B., acting asst.-surgeon, granted 30 days' extension of annual leave from Dec. 1, 1909, on account of sickness.
Moorer, M. P., acting asst.-surgeon, granted 5 days' leave of absence from Jan. 15, 1910.
Onuf, B., acting asst.-surgeon, granted 5 days' extension of annual leave from January 6, 1910, on account of sickness.
Tarbell, B. C., acting asst.-surgeon, granted 30 days' extension of annual leave from Oct. 14, 1909, on account of sickness.

BOARD CONVENED

Board of medical officers convened to meet at the bureau, Jan. 24, 1910, for the examination of candidates for admission to the Service. Detail for the board: Surgeon G. B. Young, chairman; Surgeon Wm. G. Stimpson; Passed Assistant Surgeon John D. Long, recorder.

Society Proceedings

HOOKWORM CONFERENCE

First Southern Health Conference, held in Atlanta, Ga., Jan. 18-19, 1910

The first conference for the purpose of discussing the various aspects of uncinariasis was held in Atlanta, Ga., January 18 and 19, under the auspices of the Atlanta Chamber of Commerce and the Georgia State Board of Health. The conference was called to order by Mr. J. F. Paxton, president of the Atlanta Chamber of Commerce, who extended a hearty welcome to the delegates present, and said that the meeting was fraught with tremendous significance to the South.

Dr. H. F. Harris, secretary of the Georgia State Board of Health, was chosen temporary chairman and William Whitford, Chicago, official reporter for the conference, and representing THE JOURNAL of the American Medical Association, acted as temporary secretary, pending the formation of a permanent organization.

There were five hundred in attendance, representing eighteen states. Unusual interest was shown in the proceedings.

History and Zoologic Aspect of the Hookworm Disease

DR. CHARLES WARDELL STILES, Washington, D. C.: The earliest hookworms ever known were described in 1782 by a German clergyman—Goeze, who gave to them the German name *Haaken wurm*. A few years later, another German

scientist found numbers of the same group of parasites, and he Latinized the expression, using the term "uncinaria." In 1837, Dubini in performing an autopsy in Milan found in a cadaver a peculiar parasite with which he was not familiar. This parasite could not be traced among the parasites of man, and proved to be a new species, which he called "*Ankylostoma duodenale*." That was the first hookworm ever found in any human being, or, at least, ever described as having been found in any human being, and this hookworm is to-day known as the Old World hookworm. A few years later, however, it was noticed that this parasite was common in Egypt, and a parasite supposed to be the same was found in Brazil. In Brazil it was observed that this worm produced serious disease, and it is to the Brazilian physicians that we really owe our first knowledge of the clinical side of hookworm disease. In 1879, an outbreak of the disease occurred among the miners of the St. Gothard tunnel and this epidemic was known as the St. Gothard tunnel anemia or epidemic, and it was demonstrated by several Italian zoologists—Grassi, Peroncino, and others—that this epidemic was due to the hookworm which Dubini had found in Milan in 1843. It was during this epidemic that these Italian physicians began to experiment with treatment. The Brazilian physicians had already treated many cases in Brazil, but their treatment was practically unknown in other parts of the world. The Italians commenced treatment with male fern, and Bozzolo suggested the use of thymol. This is the origin of the use of thymol in connection with hookworm disease. It was found that the thymol treatment was very useful against any number or group of hookworms then known, although it was first used only against the hookworm of the old world, as found in man. In works on practice of medicine published as late as 1900, or thereabouts, this disease was given only three or four lines. Despite the fact that many Italians had come from Europe to the United States as immigrants, and that the disease had extended from Italy down the Rhine, as far as Belgium, several cases were recognized from the United States. The first man to recognize the egg of hookworms in this country was Dr. Harris. It is a matter of great regret to me that Dr. Harris did not publish that observation. He was not only the first man to recognize the eggs of hookworms in this country, but the first to interpret the conditions correctly. He was the first Southerner to recognize the widespread prevalence and the great importance of this disease. Up to about 1900 there were about 30 cases of hookworm disease diagnosed in different parts of the United States. In some of these it was recognized that the disease was imported from Europe. In other cases there was no explanation of the origin of the infection.

The first cases of infection with the American species of hookworm which were found were the following: One case observed by Dr. Claytor in a patient from Westmoreland county, Virginia; one case in Galveston, Texas, observed by Dr. Allen J. Smith; several cases in Florida, which were handled by Dr. Guiteras.

In about ten days after my first report appeared notifying the medical profession that this disease was common in the Southern states, Dr. Harris came forward with the statement that hookworm disease was the most common of the infectious diseases in the South. This statement dumbfounded me, and I thought that he had exaggerated matters, but later found that his statements were fully confirmed. It was soon found that the cases in America were due almost exclusively to this newly found parasite, which was named *Necatur americanus*, the American murderer. The distribution of the parasite is rather interesting. During the last week, on the spur of the moment a clerk in my office during a period of six days collected from correspondence 6,858 cases. The infection is heaviest or greatest along the sand area. The next heaviest infection occurs in the Appalachian region, and in general the Clay land region and the sand belt region are less infected. Cases are found in other parts of the country. For instance we found a group of cases in New York State, all the individuals being United States soldiers who enlisted in the southern states. Two patients were from Connecticut. I was unable to find the origin of these cases, not knowing

where the infection came from. There are a few cases in Chicago, and others which have come to us chiefly from the Philippines. According to this map we have also some cases in southern California.

I have examined personally about 130 cotton mills in the South, and 8 milling camps, and in many instances men, women and children in these mills infected with this disease have it to such an extent that the diagnosis can be made without the aid of the microscope. One out of every 8 of the cotton mill employees of the Southern states, if we accept the 130 cotton mills as a basis, has hookworm disease to such an extent that neither Dr. Harris nor I would think of taking the trouble to make an examination with the microscope. The distribution of the disease coincides very well with the distribution of what one might call the efficiency of the cotton mill labor. If one enters a Piedmont mill he will see that the laborer is distinctly more efficient than in a mountain mill, or a sand land mill. In the sand land mills the infection among the employees runs up to as high as 50, 60, or nearly 70 per cent. in the men, women and children employed, while in some of the Atlanta mills the infection drops to 5 per cent., or 0 per cent., due to the fact that in Atlanta people are in a clay belt, and under good sanitary conditions.

The frequency of this disease in the southern states is simply a zoologic problem. The population in this country consists of four different races of mankind—the white, yellow, black and red. Different races of men have different diseases, and when the races are brought together they trade diseases. The white man has brought to the southern states tuberculosis, and has presented it to the negro, and we all know the results. The death-rate from tuberculosis among negroes is three times as great as among the whites. Hookworm disease as found in the United States has been traced to the west coast of Africa, and as far as the pigmies of Africa. Unquestionably the negroes must have brought many hookworms to this country. It is an academic question whether the Indians in this country had the disease before the white people came here. The negroes must have brought many cases of infection with them, and the distribution of the disease in the United States at present must correspond with the distribution of people who in earlier days came in contact with negroes. We have in hookworm disease an African disease, which has been transmitted to the whites. The negroes having had the disease for generations do not suffer so much from the infection as do white people. As a result they are carriers of the infection, and of necessity there is a greater amount of this disease in localities where there is in the aggregate a greater negro population. Seventy-nine per cent. of the negro farm houses which I have examined and tabulated in North Carolina, South Carolina, Georgia, Alabama, and Mississippi, have no privy connected with them. Practically 80 per cent. of the negroes in the rural districts of the South are living under sanitary conditions which are not one iota better than those described for the savage tribes of Africa; and 46 per cent. of the white farm houses I have examined are in no better condition. The distribution of the disease is a natural result of our large negro population, of the insanitary habits of the people, of the character of the soil and shade and climate. There is probably no disease known in the medical calendar which is more easily diagnosed, more easily treated, and more easily prevented than hookworm disease.

Excessive Waste of American Life; How Life Insurance Companies Could Assist in Checking It

HON. E. E. RITTENHOUSE, New York: This parasite is now sapping the blood and blasting the lives of hundreds of thousands of people. It is causing mental and physical degeneracy and industrial inefficiency; to many of its victims it brings not only physical suffering, but misery and distress from the poverty which it breeds. And to this must be added the grief and sorrow that follows the steady march to the grave of those who pay the final penalty for their ignorance of the true cause of their affliction.

Popular interest in health preservation has developed enormously in recent years. Healthful exercise, the out-door

life and right living have become subjects of lively public interest. Health preservation, in one form or another, is a topic of frequent discussion in the public prints of the country. The death-rate from typhoid, another communicable disease, the conquering of which is largely a question of sanitation, has been reduced 54 per cent. since 1880. And still about 22,000 people die annually from this disease. The diphtheria death-rate has been reduced 80 per cent. since 1880. A large portion of this decrease is directly due to the use of antitoxin, which was first introduced in 1895; but still about 20,000 lives are annually lost from this malady. Certainly this record justifies the belief that similar results will follow a systematic and permanent campaign against the hookworm.

Every hour 72 Americans die from preventable causes. Every day, lives are needlessly destroyed which equal the population of a town of over 1,700 souls. Every year the sacrifice through ignorance and neglect equals a population of a city like Baltimore or St. Louis.

These estimates are based on the information and opinions gathered by Prof. Irving Fisher, of Yale University, which are found with his conclusions, in his recent report to the National Conservation Commission of which he is a member. Prof. Fisher, who is also president of the Committee of One Hundred on National Health, has made a very careful and exhaustive study of mortality from preventable diseases, and I believe his estimates are conservative. Let us suppose that the 2,000,000 people who it is estimated are suffering in a greater or less degree from the hook-worm parasite were concentrated in one city instead of being distributed throughout 8 or 9 states. Then these afflicted citizens would be under closer public observation, and the daily death-rate and the daily list of the sick would be a matter of public knowledge.

In Massachusetts, where the statistics are regarded as reliable and the only state where the information was available, I find that the death-rate since 1880 has decreased during ages under 5, 25.4 per cent.; ages 5 to 9, 52.4 per cent.; ages 10 to 14, 21.3 per cent.; ages 15 to 19, 37.1 per cent.; ages 20 to 29, 41 per cent.; ages 30 to 39, 15 per cent. This decline is doubtless practically the same throughout the country. This reduction in the death-rate up to middle life is perhaps to be expected because the diseases against which we have been warring are to a large extent confined to children and early adult life. The increase in the mortality rate from kidney disease since 1880, in Chicago, has been 167 per cent.; in Connecticut, 139 per cent.; from heart disease in Massachusetts, 105 per cent.; from apoplexy in the same state, 135 per cent. The increase from cancer in Philadelphia has been 79 per cent.; from pneumonia, in Chicago, 35 per cent.

With the possible exception of cancer, all these and many other diseases which are common to middle life and old age are, in a great measure, preventable or postponable, if proper methods of living are followed. In fact, most of these diseases may be cured or their development greatly retarded if they are discovered and given attention in their early stages. And it is also true that these diseases cause far more deaths than those of the more common communicable class to which we have referred; and yet, these non-communicable diseases in the preventable class are not among those against which the popular war is being waged. The sinews of war to carry on an organized campaign to conserve human life must come from two sources—private contributions and public taxes.

Owing to the attention already attracted to the ravages of the hookworm by Dr. Stiles, Dr. H. F. Harris and other medical men and laymen, the urgency of the situation has already been impressed on at least one who is able to make a liberal contribution. It is to be hoped that the generous offering of Mr. Rockefeller will be followed by others of equally liberal proportions. Experience has shown that a medical department bulletin couched in language that can be readily understood, and bearing a dignified and cheerful tone, is not only read, but carefully studied by a large number of policy holders.

If a campaign along these lines were inaugurated among the vast body of insured people it would indirectly exercise a most beneficial influence on those with whom the policy holders come

in contact, and benefit the public in general. But it should not be a temporary or spasmodic attempt. To be of value it must be permanent, and it is not difficult to see wherein such a campaign would render valuable assistance in the war upon the hookworm in these coast states. Such a movement on the part of the life-insurance companies would benefit the medical examiner, the family physician, the company and the policy holder. There is not a negative or an antagonistic factor in it. The fact that it has never been tried before is no argument against it. Its cost is not excessive. It is legal; it is just; it is humane, and it would add a new and valuable feature to life insurance.

Nothing can possibly be of more value to a nation than the lives of those who compose it. To use every possible means to prevent the needless destruction of these lives is not only a proper function of the government, but a most imperative and solemn duty of government. Our people, through their lawmakers, have recognized this duty only to a limited extent. They have provided health boards and bureaus—local and national—to assist in protecting human life against one class of preventable diseases; that is, those which may be communicated. But, as already indicated, the deaths they have succeeded in preventing are but a fraction of the enormous number occurring annually from some of these same communicable diseases.

The public health measures and the general war against disease are supposed to be more efficiently and effectively prosecuted in Greater New York than in any other large American city. The cost of governing that city last year was \$148,447,000, and all it could afford to spend on the health department was 1.6 per cent. of that amount, and during that year the city lost 33,200 people from ordinary preventable diseases. It may also be interesting to know that in 148 cities of the United States, during the year 1907, the ratio of health department expense to the total government expense was 1.8 per cent. In the same cities the ratio of expense for police and fire departments combined was 23 per cent. From this an idea may be gained of the very slight importance placed on the conservation of human life by the public in our great cities. In Greater New York \$8,000,000 is spent on the fire department, and the fire loss was \$9,400,000; and for the public health department \$2,418,499 was spent, while the value of the lives lost from preventable disease, using Professor Fisher's estimate as \$1,700 as the producing value of a life, was \$56,550,000. Compared with former years, the appropriation was liberal, but notwithstanding the relatively small and wholly insufficient provision for the conservation of public health in New York City during recent years, owing to the efficiency of the Health Department, and the work of the unofficial organizations, the death-rate from tuberculosis since 1880 has decreased 41 per cent.; from typhoid fever, 32 per cent.; from diphtheria 81 per cent.; while the mortality from diseases that were not combated increased rapidly—kidney disease, 73 per cent.; heart disease, 84 per cent.; apoplexy, 34 per cent.; pneumonia, 24 per cent.; and from spinal meningitis, 60 per cent.—during the same period. In spite of these increases the saving of the younger lives has been so great as to reduce the general average death rate in that city 33 per cent. during the same period.

If we agree with former President Roosevelt, that the health of our citizens is the greatest asset of the nation, our health departments—municipal, state and national—should be regarded as an extremely important branch of the public service. But ample evidence that they are not so regarded by the public is found in the fact that in many cities and states the health departments are provided for in a miserly way, with the natural result that the duties are often performed in an indifferent and perfunctory manner. In discussing this phase of the question, I do so not as the president of a life insurance company but as an ex-state official who served about four years at the head of the Colorado insurance department, and I know that it is often much easier to get appropriations for the protection of domestic animals, wild game, fruit trees and forests, than it is for the protection of the public health. If any state enjoys popular government, Colorado is that state, and the people are as intelligent, progressive, and patriotic as in any

state in the Union; and yet, the appropriation for the fish and game department has been far in excess of that for the combined bureaus which look after the public health, and the same lack of interest is found in virtually all states.

No department should show more activity and energy than a health department; it should be organized on scientific lines, presided over by scientific men, and provided with a publicity bureau and a large and efficient corps of medical examiners and inspectors, and their work should be conducted on a scale consistent with the amount of life waste they are to combat. Citizens who desire it should be given a free medical examination, and in some instances of infection it should be compulsory. It is not only necessary to tell a man how to avoid danger, but he should be told when he is in danger. Accidents seldom happen at railway crossings where, in addition to a danger sign, a watchman is maintained.

We all glory in the marvelous growth of educational institutions, and I would be the last to minimize their importance, but when we consider the needless suffering and sacrifice of human life that is now going on, it seems that education is now getting more than its share. The higher education is most desirable, but live Americans are of more importance than dead languages. We are not suffering for want of schools, but our nation is suffering from life waste of one billion and a half annually in dollars alone, which is the estimated productive value of the lives unnecessarily destroyed. If practical and permanent assistance along the lines indicated is forthcoming from public and private sources, how to live a healthful life; how to guard against and detect disease, will, in the course of time, become matters of common knowledge among our people. A higher standard of life would result and the uplift would be a moral as well as a physical one, for to war against disease and wrong living is to war against poverty, immorality and crime.

Pathology of Uncinariasis

DR. NEWTON EVANS, Nashville: Careful distinction must be made between the findings in the severe cases, which often result fatally, and the findings in cases which are accompanied by very mild symptoms, which are difficult to recognize or in which there are no symptoms except the presence of eggs and worms in the feces and usually increased eosinophils in the blood. In 64 cases reported by Chamberlain, all light and without symptoms, the hemoglobin varied from 80 to 91.5 per cent. In 62 cases of mild infection reported by Bass, the hemoglobin percentage averaged 90. The red cell count averaged 5,125,000 in these cases. In 5 cases of light infection in children suffering with pellagra, whom I have examined, the hemoglobin averaged 93 per cent. In Ashford's 19 severe cases in Porto Rico, the hemoglobin varied from 10 to 55 per cent. Leonard in Island of Grenada reported 20 cases. Both ankylostoma duodenale and uncinaria americana were present, the majority of cases showing the ankylostoma. Hemoglobin varied from 8 to 40 per cent. Colbert in Porto Rico reported 5,000 cases. The hemoglobin average was 44.1 per cent. Ashford and King in Porto Rico in 579 cases selected at random found that the hemoglobin averaged 43.09 per cent., running as low as 8 per cent. Capps reported one fatal case from Panama, in which the hemoglobin decreased from 18 to 11 per cent. at the time of death. Harris reported 1 case in which the hemoglobin was 20 per cent. The red cell count is not given in any series of mild cases except in that of Bass, in 62 cases.

In the severe cases there is a decided reduction of red cells. Chamberlain in 12 mild cases, in which the leucocyte count was made, gives the white cells from 12,700 to 7,600—average 9,600. Ashford, in 19 severe cases, gives from 1,500 to 18,000, average 7,800. Leonard in 20 cases found no leucocytosis present. The cases of Ashford and King averaged on admission 8,009. In Harris' 1 case the count was 4,020. In some of the most severe cases a decided leukopenia rather than leucocytosis is present. In the differential count of white cells apparently the only important abnormality occurs in the number of eosinophils. Eosinophilia is almost a constant finding, and practically all observers are agreed that the degree of eosinophilia is not an index of the severity or amount of infection.

Ashford and King conclude that eosinophilia is liable to be absent in the more serious cases. They give their conclusions in the following words: "Eosinophilia is the chief feature of importance. It is strange that Boycott and Haldane lay so much stress on the importance of eosinophilia from a diagnostic point of view, for in the more serious cases it is liable to be absent. In 1904, we called especial attention to our belief that eosinophilia was of great prognostic importance and have noticed that some German and Spanish writers have expressed the same view. Very chronic cases, of severe type, poor resisting power, and the lack of blood regeneration, rarely show eosinophilia, or, if at all, only a slight degree. A rise in eosinophilia is of great prognostic significance and their fall, with lack of improvement in symptoms, is not a good omen. In general, good resistance to the hypothetical toxin of uncinaria is expressed by eosinophilia."

Several writers emphasize the point of great resemblance between the blood findings in the severe types of uncinariasis and true primary pernicious anemia. In the case of Capps which resulted fatally, as the severity of the symptoms increased the blood showed at first typical secondary anemia, which gradually changed to a picture closely resembling that of pernicious anemia. However, Ashford and King give the average hemoglobin index in the severe cases as only 0.5; but 3 out of 19 of Ashford's blood counts gave an index of 1.0 or above. Among other changes in the blood characteristics of severe anemia may be mentioned the presence of erythroblasts which, however, are usually rather scanty, and this is especially true of the megaloblasts. In this respect the blood differs from the usual forms of primary anemia.

Poikilocytosis and polychromatophilia are present typically in the severe cases. One of the most remarkable features of hookworm disease is the complete lack of agreement between the severity of symptoms and lesions including the blood changes, and the number of worms found in the intestine. This is shown graphically by Sandwith's post-mortem findings (all in cases of ankylostomiasis) in which in 26 fatal cases the maximum number of worms found on autopsy was 863. In 6 out of 18 of these fatal cases (in all of which the patients had received no treatment to dislodge the worm) there were less than 10 worms in each case and in 2 cases there was only one worm in each. These facts lead to the almost inevitable conclusion that the cause of the anemia and its resultant symptoms is not the direct loss of blood, but is rather due to a toxemia caused by some poison generated by the parasite, to which the organism in the cases in which the patients die with only a few worms present, must become unusually susceptible.

The observers who have seen large numbers of the severe cases and individuals harboring great numbers of the parasite conclude that there is little relation between the number of worms and the severity of symptoms, and agree that the hookworm does not cause its symptoms by its blood-sucking propensities but by some as yet unknown toxin.

I have studied reports of 17 complete autopsies in American cases: Ashford and King, 12, in Porto Rico; Leonard, 4, Island of Grenada; Capps, 1, Chicago from Panama. These can be compared with the findings of Sandwith in 26 autopsies in cases of ankylostomiasis.

There is practically always edema with marked dropsy of the lower extremities, some abdominal ascites, serous effusions in other serous cavities and considerable general anasarca. The bodies usually appear fairly well-nourished, and in adults there is well-developed muscularity; intense pallor of the skin and other tissues is marked. The subcutaneous and other fat of the body is well preserved, of normal amount and of light yellow color. This absence of emaciation and preservation of normal amount of fat is in contrast to the findings of Sandwith in the ankylostoma cases, in which the muscles were wasted and there was usually decided absence of fat. Chamberlain, in comparing the weights of northern and southern recruits, found a difference in favor of the northern recruits, also there is a difference in favor of the non-infected southern recruits over the infected southern recruits. The muscular tissue, according to Ashford and King, is brownish gray in color, friable and often atrophied and microscopically the muscle fibers are fragmented and protoplasm reduced in amount.

The habitation of the worms is usually confined to the upper part of the jejunum and a certain number are found in the duodenum. In a few cases they have been found in the ileum, but never in the colon. Ashford and King describe their occurrence in the stomach in several cases, both attached to the mucous membrane and unattached. In practically all cases there is a mucous gastritis, sometimes extreme. Ashford and King report two cases and Leonard two cases of gastric dilatation. The duodenum and particularly the jejunum are the seat of a severe catarrhal process which also affects to a degree the other portions of the intestines. There is a large amount of mucus in the intestinal canal in which the worms are imbedded and which is often blood-stained in places. The lesions of the intestine are confined to the mucosa and there is often degeneration and atrophy of the intestinal and gastric mucous membrane. At the point of attachment of the worms there is a tiny erosion, superficial, not deep, and about one-half millimeter in diameter. This erosion is usually not surrounded by any discoloration and is difficult to locate with the naked eye. Leonard says that the mucous membrane showed minute hemorrhagic spots, but a majority of his cases were of the ankylostoma type. These minute superficial erosions are in marked contrast to the lesions described by Sandwith in the cases of ankylostomiasis, in which there are numerous petechial hemorrhages marking the bites of the worm and some of the worms are found imbedded for half the length of their bodies in the thickened mucosa, and those so attached are surrounded by much bloody mucus. Ashford and King express the opinion that the food of the uncinariæ is the epithelial cells of the mucosa and that it is not a blood-sucker. In not 5 cases in 10,000 was there sufficient blood in the feces to be discovered by the microscope. McNabb at Knoxville says that in every case he finds blood in the stools by the guaiac or the benzidin test. In my 8 cases, all light infections, 2 were positive to the benzidin test. Stiles says that 80 per cent. of the severe and medium severe cases will react to his blotting paper test for blood. The large number of worms removed by anthelmintic in any one case as reported (Colbert) is 4,872. The proportion of males to females of the parasites as found at autopsy by Capps was one male to four females. Sandwith in 50 cases gives the proportion in the ankylostoma infection as 56 per cent. males and 44 per cent. females. Whether the proportion as reported by Capps is the usual one in uncinariasis, I do not know.

The most pronounced change in the liver is fatty degeneration. Ashford and King state that the changes in the spleen are definite and characteristic. It is decreased in size, soft and has a wrinkled capsule. Microscopically, the 8 cases examined invariably showed a decided paucity of lymphoid elements, and even a decrease in the size of the lymphoid cells. The Malpighian corpuscles were greatly reduced in size and in cellular content. The increase of connective tissue was only relative and apparent. Capps reported a large spleen with interstitial hyperplasia. This was possibly malarial in origin. Leonard says that the spleen was normal in 2 of his 4 cases, and enlarged in 2, the enlargement probably being due to malaria.

Ashford and King report that practically all fatal cases show a chronic parenchymatous or diffuse non-indurative nephritis. The kidneys are invariably pale and usually slightly enlarged. In the older patients there was a slight increase in connective tissue. Microscopically the changes were most marked in the convoluted tubules, where there was fatty degeneration and desquamation of epithelium. There were exudates of serum and blood into the interstitial tissue and Bowman's capsules, and bloody and epithelial casts in the tubules. Their findings in the urine of the severe cases correspond well with these post-mortem lesions. Twenty in 24 cases had small trace of albumin before any anthelmintic treatment; 18 of the 24 had casts, hyaline and granular, no bloody casts and few epithelial.

The only constant changes seen in the lungs are the extreme pallor, as in all the other organs, and in almost all cases a pulmonary edema, as shown by the dripping of fluid from the cut surface. Many cases show signs of passive congestion, probably due to incompetency of the mitral valve. Every case

is reported to have had a greater or less degree of pleuritic effusion, clear and yellow in color.

Sandwith says that there was a cardiac hypertrophy in 10 of his 26 cases. The American observers also report cardiac hypertrophy in several cases and dilatation dependent on fatty degeneration in many. The muscle was frequently flabby and a functional incompetency of the valves was present. Ashford and King say that there is frequently an increase in the pericardial fat. In all cases a considerable amount of serous effusion is present in the pericardial cavity. Microscopically they report in two or three cases distinct brown atrophy, and in two cases extensive fatty degeneration.

About the only constant lesions described in the brain are intense anemia and an effusion into the ventricles of a clear, pale, yellow fluid.

The marrow of the shafts of the long bones usually has undergone changes somewhat similar to those in pernicious anemia, although Capps in the description of his case says that the marrow of the femur was extremely yellow and fatty. "At two points it had a reddish color, but was even here practically all fat."

Ashford and King lay great stress on changes in hemolymph glands. In two cases in which search was made numerous hemolymph glands of considerably larger size than the normal type were found in the region of the abdominal aorta. Most of these were of the spleno-lymph variety.

The etiologic relationship of the so-called ground itch to uncinariasis can be considered to be proved beyond any reasonable doubt. In 1901 Loos first showed experimentally that the larvæ of ankylostoma enter the skin through the hair follicles and penetrate the deeper tissues. This entrance has been repeatedly demonstrated since. All the descriptions of the symptoms, lesions and sequence of events in ground-itch either accidental or experimental in origin are in perfect accord, and have been accurately described by Ashford and King and by Claude Smith. According to Ashford and King the exposure of the skin to the larvæ causes the following symptoms: 1. Itching within a very short time. 2. Followed by redness and swelling of part. 3. In two days papules appear. 4. These rapidly change to vesicles, discrete or often confluent, which later usually rupture. 5. Frequently followed by pustules, but in favorable cases pustules do not form. 6. In case pustules do not form the vesicles soon begin to dry up and crusts are formed and in the milder cases not forming pustules, the lesion completely subsides in a week or two. 7. In the more severe cases, in which the symptoms are probably due to secondary pyogenic infection, extensive and deep ulcers form, which sometimes respond well to treatment but often are very resistant.

Claude Smith has shown that a toxin may be extracted from the larvæ by alcohol which will produce the itching and other changes of ground itch but in a milder form. Colbert reports that in 5,000 cases of uncinariæ 4,956 gave a typical history of one or more preceding attacks of ground itch. Ashford and King say that 96 per cent. of 12,000 gave such history.

(To be continued)

CITY OF WASHINGTON BRANCH OF THE AMERICAN PHARMACEUTICAL ASSOCIATION

Regular Meeting, Held Jan. 5, 1910

The Pharmacopeia of the United States

MR. GEORGE M. BERINGER, in calling attention to the report of the American Pharmaceutical Association committee on the U. S. Pharmacopeia, pointed out that this report represented the individual views of the ten members of that committee, and that no attempt had been made to harmonize the views of the several members. In regard to the scope of the book, he called attention to the views of one of the members of the committee who believe that the Pharmacopeia should be a medium of communication between physicians and pharmacists and should represent as nearly as possible the present-day needs and practices of representative medical men. On the matter of nomenclature, Mr. Beringer expressed the opinion

that the contraction of the chemical names for synthetic remedies has been criticised, though it is probably the best that can be done at the present time. The Latin titles should be as nearly correct as possible and the Pharmacopeia should contain a comprehensive list of synonyms. Among the more desirable features that should be added to the Pharmacopeia, he said, are: Working methods for determining physical and chemical constants, working methods for sterilizing official substances, and the harmonizing of tests so as to make them applicable by the retail druggist.

PROF. HENRY KRAEMER discussed the importance of pharmacognosy in connection with Pharmacopeial work and pointed out that in the U. S. Pharmacopeia fully 70 per cent. of the articles are more or less intimately dependent on plant drugs. Pharmacognosy itself is a distinct branch of science and involves problems that differ essentially from those presented by botany or the simple study of plants themselves. It is broader than botany in that it includes the study of conditions which tend to modify the constituents of drugs. Drugs themselves, or at least many drugs, are becoming scarce, and this fact makes the proper study of pharmacognosy even more important, so as to be able to secure genuine and pure drugs.

Speaking of the U. S. P. VIII, he pointed out that this book is not abreast of the advances that have been made in pharmacognosy, and that it is, in fact, distinctly behind the German Pharmacopeia which was published five years before. Foreign pharmacopeias generally include adequate pharmacognostic descriptions, and all of them require the use of the compound microscope. Some of the foreign pharmacopeias do not recognize powdered drugs, and there is much to be said in favor of this, as powdered drugs are always difficult of recognition and generally tend to deteriorate rapidly.

Speaking of the recently published report of the A. Ph. A. committee on the drug market, he deplored the fact that this report reflects discredit on pharmacognosy and the pharmacognosists of the country. He asserted that men who claim to be trained in pharmacognosy should and must be able to distinguish between true and fraudulent drugs. The whole subject of drugs should be on as satisfactory a basis as are spices, and the Pharmacopeia should provide a purity rubric for vegetable drugs, so as to avoid effectually the present-day conditions under which drugs vary from 0 to 99 per cent. in value. In regard to the proposals to standardize the finished products, he pointed out that assay methods are as yet incomplete, and that galenical preparations of drugs do not depend for their activity on the action of any one ingredient. Many drugs contain antagonizing products that materially influence the direct action of the so-called active constituent; for these reasons a fluid extract when made from a poor or unsatisfactory drug cannot fully represent the complete and necessarily complex action of a representative drug of good quality. In this country, the campaign of education has only begun and much is yet to be done before medical men and pharmacists fully appreciate the possibilities and the value of pharmacognosy. Because of this lack of appreciation of the value of pharmacognosy, the Pharmacopeial Convention should not bind the hands of the subcommittee, and above all the Committee on Revision, as a whole, should not be empowered to revise (?) the work of men who are closely in touch with practices in the drug market and the possibility of developing methods for controlling the nature and purity of vegetable drugs.

MR. H. H. BARTLETT, in discussing the nomenclature of the Pharmacopeia, pointed out that approaching the question from the viewpoint of an outsider it would appear desirable that the science of pharmacy and all that pertains thereto should be made universal, and that above all it would appear desirable to conform to widespread practices in connection with nomenclature. As an illustration of the shortcomings of the U. S. P. VIII in the matter of nomenclature, he reviewed the names proposed by the Brussels Conference for the several potent medicaments included in the protocol and the compliance or lack of compliance of the U. S. P. with these several titles. For syrup, he believes that the more generally accepted Latin "Sirnpus" is to be preferred to the U. S. P. style "Syrupus," as

the former is not alone more widely used but also generally accepted as being the correct form. For ergot he believes "Secale cornutum" to be preferable to "Ergota," as the latter has no status as good Latin.

"Fluidextractum" he thinks a good illustration of the fantastic Latin that may be evolved by American scientists. He discussed this term at some length and pointed out that it was against all accepted practices to include or look up a prefix between two root words. Apart from the hybrid character of this word, both the English as well as the Latin, it is and will continue to be an insurmountable barrier to International nomenclature; as foreign countries will not adopt it, the linguistic sense being better developed in Europe than in this country. Many of our chemical names are also in need of revision so as to bring them into harmony with present-day thought in chemical theory and in keeping with the nomenclature now generally adopted abroad. Thus, the alkaloids should have the termination "um" in place of "a," so as to bring them into accord with the nomenclature of modern chemistry.

DISCUSSION

PROF. JOS. P. REMINGTON said that we should have many such meetings as this between now and the time for the convening of the Pharmacopeial Convention in May. Taking the several communications in the reverse order to which they had been presented, he disclaimed any intention of posing as a philologist, but he was and is unalterably opposed to the indiscriminate changing of Latin titles. The matter of "Fluidextractum" he pointed out had the endorsement and sanction of the late Charles Rice, who was generally recognized as a Latin scholar of some note. The most serious objection that has been made to this word is the charge of novelty, and this, he thinks, is not a serious fault when we appreciate the great advantage that has accrued from the segregation of the several extractive preparations in the Pharmacopeia and the classing together of all of the fluid extracts instead of having them, as formerly, interspersed with the extracts. Professor Remington believed that the Committee on Revision should be extremely conservative in the matter of nomenclature changes, if for no other reason than the millions of dollars' worth of labels that would be involved. He discussed the difficulties in connection with volatile oils at some length, and pointed out that the need for detecting adulteration in this class of preparations brought to mind some of the many suggestions that have been made in connection with pharmacopeial tests; some men wanting simple tests, others preferring complex measures. He expressed his belief that the very best test would be none too good for the Pharmacopeia, and that now that the Pharmacopeia was the law of the land, the intelligence of the drug clerk was not to be considered as a reason for limiting the nature of the assays or tests to be included in that book. In the matter of vegetable drugs he believed that we must depend, for many years to come, on the accuracy of the pharmacopeial description of these substances. Now that powdered drugs are so widely used they should be fully described in the U. S. P. so as to facilitate their recognition and thus control their identity and purity.

He expressed the belief that a long list of synonyms would be dangerous as it would lead to confusion and unnecessary complications. He pointed out that many names that were practically identical were nevertheless used for substances that might differ materially, and that the Pharmacopeia was limited to but one substance under each name. Admissions to the Pharmacopeia he believed should be left to physicians. He expressed the opinion that the American Medical Association, through its committee on the U. S. P., should prepare and present at the coming Pharmacopeial Convention a tentative list of admissions and deletions. Such a list would certainly be accepted by the Committee on Revision, as it was apparent that drugs to be used by the medical profession for medicines should be dictated by physicians. Doses, of course, should also be furnished by members of the medical profession.

DR. H. W. WILEY expressed himself as being satisfied that there was every assurance of our having a satisfactory Phar-

macopeia. He agreed with Professor Kraemer that it was desirable to have pure drugs. Nature was a wonderfully capable synthetic chemist and the products of Nature's workshop were usually complex. As an example of the folly of placing too much reliance on a single ingredient, he cited tea and coffee, both of which have as their main active constituent caffeine, but this constituent was so modified by the accompanying substances that no true lover of coffee or tea would depend on the caffeine content of his beverage as an indication of its value. Much the same can be said of other drugs, which if they have virtues, should be available in as satisfactory form as possible. The coming revision of the U. S. P., to be generally acceptable, must be conducted on a distinctly higher plane and must embody a broader view of the whole general subject, greater skill of the individuals who are responsible for the revision and a greater appreciation of the public welfare, for after all was said and done the Pharmacopeia was not a book for the retail druggist, the manufacturer, or the physician, but was designed, primarily, to protect the unfortunates who are in need of medicine to make them well.

Dr. Wiley paid a high tribute to some of the members of the Committee on Revision and said that if his prayers prevailed these members would find a place on the Committee on Revision for the U. S. P. IX; on the other hand, he asserted that there are a few who, if his prayers are answered, will not even seek a place on the coming Committee on Revision as they can well be spared.

DR. REID HUNT asserted that no one was more cognizant of the difficulties connected with the matter of admissions and deletions than he. He also pointed out that it would be practically impossible to make a Pharmacopeia that would comply with the supposed needs of all who are interested in a book of this kind. He believed the Pharmacopeia should be limited to the best and most widely used drugs in medical practice, leaving it to others than the members of the Pharmacopeial Convention to establish standards for articles primarily of commercial rather than of medical interest. Also in view of the fact that medicine is distinctly international and that the next U. S. P. will probably draw, as it has always done, very largely from foreign sources, he said that greater efforts should be made to attain international agreements both as regards standards and nomenclature. In this connection he pointed out that for the newer remedies, particularly for the substances that have been protected by patents, there now exists a greater degree of uniformity than has hitherto been found in connection with drugs that have been in use for centuries.

PROFESSOR KALUSOWSKI expressed himself as being in favor of physicians dictating the remedies that should enter into the Pharmacopeia and that the revising of the book should be done by pharmacists and specialists thoroughly familiar with the possibilities of the times. He also stated that the Pharmacopeia should be more evenly balanced and that the space devoted to the several subjects should be more in keeping with their relative importance. Being a legal authority, the Pharmacopeia should contain only the best available tests and these should be stated in language that is clear and yet concise.

PROFESSOR REMINGTON said that from the point of view of Dr. Hunt, engaged as he is in research and in the study of the newer remedies and newer theories that are advanced from time to time, one was likely to get an entirely wrong impression of the articles the rank and file of medical practitioners, the men who are saving the lives of their patients, were using. Many medical men live in districts where the newest and latest remedies have not reached and for this reason antiquated and obsolete substances cannot be entirely ignored. That even otherwise up-to-date physicians at times appreciate the efficacy of old-time remedies was illustrated by the stand taken by one of the physicians on the Committee on Revision, who, when it was proposed to delete the mixture of asafetida, pointed out that he himself had found it to be a useful remedy in flatulence and was using it daily in his practice and, on the representations of this particular member of the committee, mixtures of asafetida was retained in the U. S. P.

WESTERN SURGICAL AND GYNECOLOGICAL ASSOCIATION

Nineteenth Annual Meeting, held at Omaha, Neb., Dec. 20-21, 1909
(Continued from page 316)

Movable Liver and Constriction-Lobe of the Liver

DR. M. L. HARRIS, Chicago: Movable liver is found in two classes of patients: those in whom the movable liver is the chief or only abnormal condition present, and those in whom it is but a part of a general visceral ptosis. In the former class the condition is probably due to congenital defects of the attachments of the liver, while in the latter class the loss of the support affected by a firm abdominal wall, together with a gradual yielding and elongation of the attachments of practically all the abdominal organs, plays an important part in the condition. Constriction-lobe is a very common condition, being found, according to Leue, in 1.9 per cent. of male, and 25.3 per cent. of female subjects over 16 years of age, in which he performed an autopsy, 3,484 in number. Both movable liver and constriction-lobe may give rise to symptoms which are distinct and often distressing, relieved only by properly suturing the liver in place, or by suturing the floating lobe to prevent its abnormal mobility.

DISCUSSION

DR. R. C. COFFEY, Portland, Ore.: I make it a point to fix a movable kidney where it can always be felt with the hands afterward; and the patient does not have pain and redisplacement, and the results are good. In twenty-two cases of gastroptosis I found the liver displaced in four cases sufficiently to require suture; but my technic has been a little different from that of Dr. Harris, in that I do not believe it is necessary to scarify the liver. In the cases I have had there has been no redisplacement.

DR. JAMES E. MOORE, Minneapolis: A woman, a neurasthenic, was confined to bed most of the time, complaining of a tumor in the lower abdomen. I found that the right end of the liver was loose, so that when she turned on the liver side the edge of the liver ran up and down, the organ being pushed over to the middle of the abdomen. Shortly after suturing the liver in place the woman got out of bed and has been traveling all over the United States and other countries since.

DR. A. F. JONAS, Omaha: At a meeting in Chicago I reported three or four cases of ptosis of the liver in which the margin of the liver descended four fingers' breadth below the right costal margin. At that time I had used the gall-bladder as a suspensory ligament. The patient was placed in the semi-Trendelenburg position and the liver pushed up as far as it would go, and sewed with the gall-bladder to the upper margin of the incision, which was extended up against the costal arch. This operation was successful. I have occasionally done the operation since, but only in cases in which the liver could be pushed in its normal position.

Two Cases of Operative Removal of Cervical Ribs

DR. S. C. PLUMMER, Chicago: The first patient was a woman of 24. Symptoms began 8 years ago and consisted, at first, of pain extending from the axilla to the middle of the ulnar side of the forearm. Four years ago there was weakness of the hand and later some muscular atrophy appeared. Pain was aggravated by slight exertion. There was no anesthesia.

The second patient was a woman of 30, whose symptoms began 20 years ago. Pain in this case was confined to the ulnar side of the forearm; as in the first case, it was aggravated by exertion, but was also brought on by exposure to cold. She also suffered from coldness of the extremity. There was atrophy of the thenar and interossei muscles. There was no anesthesia. Both of these patients had bilateral cervical ribs, as shown by the skiagrams, but in both the symptoms were confined to the right upper extremity. The first patient was operated on March 16, 1905, and her case was included as Case 37 in Keen's article, published in the *American Journal of the Medical Sciences*, February, 1907. The second was operated on Sept. 22, 1909. In each case an incision extending obliquely upward and backward for about three inches from

just above the right clavicle at the outer border of the sternocleidomastoid muscle, was employed. The first patient reports, Dec. 14, 1909, that she now has very little pain, but that the strength of her hand has not improved. The second patient was almost entirely free from pain one month after the operation, but is still somewhat sensitive to cold.

DISCUSSION

DR. JAMES F. PERCY, Galesburg, Ill.: Four years ago I saw three cases of cervical rib in one year, one of them in a girl of 14. The patient was referred to me because of a swelling in the neck above the clavicle. I saw her with the late Nicholas Senn, and I mention these cases to give his opinion in reference to operation. This girl had some pain in the left arm, but it was not constant. The x-ray showed what the condition was. Dr. Senn advised against operation, because, he said, in the first case of cervical rib he operated on he opened the pleura, and got collapse of the lungs, which never recovered. This patient had a similar condition on the other side, but he did not have the courage to operate and said he would not advise it until it became imperative. The next case was a girl of 16, and in this case the cervical rib was also on the left side. It was discovered by the dressmaker, and the patient came to me because of swelling. The third case was in a girl of 20, who had this condition on both sides, and was urged to have something done, because of what the dressmaker said in regard to enlargement of the lower part of her neck. Not one of these patients has been operated on up to date. I have beautiful skiagraphs of all three cases.

DR. L. L. MCARTHUR, Chicago: Not all of these cases of cervical ribs produce symptoms attended by pain. I saw a woman with a case of double cervical rib, which produced atrophy of the muscles of the hand and double drop-wrist, but unaccompanied by pain. Being familiar with the fact that not all cases of cervical rib are relieved by operation, and in stating the case to her, and she not being assured she would get relief, operation was refused.

DR. A. F. JONAS, Omaha: I have a case of cervical rib I would like to place on record in a young woman of 21. She had a swelling in the left side of the neck, which was tender and hard, and had been diagnosed as sarcoma of the cervical vertebra. A skiagram showed a cervical rib. She had no symptoms referable to the hand or arm. They felt normal in every respect; but there was pronounced and decided tenderness over the rib, the point of which could be seen pressing underneath the skin. On account of tenderness and the pain it caused her it was decided to remove the rib. We cut down upon it and found running over it what we thought was the common carotid artery, and in pressing it, it was found to be the subclavian artery, which rolls up over the rib at least three-quarters of an inch, and then dips down shortly. I wish to call attention to the anomalous course of the subclavian artery on the left side in this particular case.

DR. HARRY M. SHERMAN, San Francisco: I would like to say a few words about the persistence or recurrence of pain in these cases. A woman of 30 complained of pain in the arm. Cervical rib was suspected on account of the character of the pain. The rib could be felt, and a skiagram showed its presence. It was removed without any trouble, and the pain and the disability symptoms disappeared. She returned to her home in the South, but came back in a few months stating that the pain had recurred, and examination did not reveal any change whatever in the condition of her neck from what it had been when she left me. She was pregnant, and returned to San Francisco to be confined in the home of her mother. I report this case with reluctance, because the baby has not yet been born. I wanted to see especially if the pain would disappear again after pregnancy and confinement; that is, if there was some condition of the nerves left after the removal of the rib, which predisposed this patient to pain sometimes, whenever a special strain was put on the individual; and I think that is all the more likely from Dr. Plummer's report of the slow recovery of the patients whose cases he has reported.

Hernia: What Constitutes a Predisposition?

DR. A. F. JONAS, Omaha, Neb.: In this paper I draw the following conclusions: 1. All deductions as to predisposition

to hernia that are based on the direction and size of the inguinal canal, a large external ring, are untrustworthy. 2. All opinions as to predisposition based on the vague ideas of muscular weakness, reduced abdominal resistance and diminished support of connective tissue structures, are unreliable. 3. Retarded descent or undescended testicle favors a complete or partial non-obliteration of the vaginal process. 4. A partial or a completely non-obliterated vaginal process may be regarded as an anatomic predisposition to oblique inguinal hernia. 5. The non-closure of the vaginal process cannot be recognized clinically. 6. It would seem that we are scarcely justified in using the term predisposition to hernia, because of the lack of reliable clinical data.

The Frequency of Congenital Sacs in Oblique Inguinal Hernia

DR. WILLIAM HESSERT, Chicago: The sacular theory of the origin of oblique inguinal hernias is nothing new. Mention of the congenital origin of hernial sacs was made in 1762 by Camper. The testicle, at first an abdominal organ, reaches the internal ring, through the agency of the gubernaculum, at about the seventh month, and reaches the scrotum at the time of birth. At this time the vaginal process is continuous with the peritoneal cavity. From ten to twenty days after birth, obliteration takes place. This begins at the external ring and proceeds more rapidly downward than upward. At three points there seems to exist a greater tendency to obliteration, namely, (1) at the internal ring, (2) at the external ring, and (3) at a point just above the testicle. Dissections of Zuckerkandl, Camper, Sachs, and others have shown that in almost half of the infant bodies examined the vaginal process was found to be open on one or both sides. The right testicle descends later than the left, and defects of closure of the vaginal process are twice as frequent on the right side as on the left. The sacular or congenital theory of oblique hernia is that one which credits the majority of these hernias as being due primarily to the improper closure of the vaginal process in the infant, and the persistence of a sac, which later gives rise to hernia. These sacs have been found in cases in which a hernia never developed. They explain the sudden coming down of a hernia. The atypical closure of the vaginal process explains the different varieties and combination of hernia sacs and hydroceles. Among the signs by which a sac may be recognized at operation as of congenital origin are the following: (1) glove-finger-like and narrow sac, generally empty; (2) thin wall; (3) absence of subserous fat; (4) trabeculated structure; (5) annular constrictions, which often still correspond with the internal or external ring; (6) thickening of fundus; (7) fibrous process extending downward from fundus testis; (8) close relationship of sac to vas deferens and a variable distance, sometimes reaching to the tunica vaginalis vessels—the latter may be spread over the sac; (9) sac still enveloped by fibers of the cremaster. The following conclusions may be drawn: 1. Over three-fourths of all oblique inguinal hernias owe their existence to a preformed sac, the result of some form of faulty closure of the vaginal process in the infant. 2. Congenital malformation of the muscles of this region, as seen in the failure of the internal oblique and transversalis to form a conjoined tendon, is a predisposing cause of both oblique and direct hernias. 3. The lesson to be learned from this study is that inasmuch as the hernia owes its existence to a preformed sac, the essential and fundamental act in any hernia operation consists in the complete ablation of the sac. The surgeon should avoid the leaving of an infundibuliform process, which may be the cause of recurrence, no matter what the type of operation has been.

Some Anomalies of the Sigmoid

DR. L. L. MCARTHUR, Chicago: In May, 1909, I was called to operate in a case of intestinal obstruction of eleven days' duration, occurring in a young woman, a teacher, about 30 years of age, whose history was negative, except for chronic constipation. For several days she had had no bowel movements, in spite of cathartics, colonic flushings, etc. Becoming tympanitic and suffering colicky pains, she consulted her family physician, who, being unsuccessful in relieving her, sent her to Dr. Montgomery's sanitarium. When seen by me on the

eleventh day she presented an anxious appearance, cold, clammy extremities, enormously distended abdomen, had but slight temperature (below 100 F.), rapid and weak pulse, low leucocyte count (12,000), vomiting not fecal; abdomen tympanitic all over, no tumor to be felt externally, nor by rectum; vaginal vault and uterus crowded downward. Though weak, operation was advised. On opening the abdomen the small and large intestines both dilated, but the chief dilation existed in an enormous loop wedged in the pelvis. On raising this loop it was seen that it was the sigmoid, that it was sharply flexed at the point of junction with the rectum, and that the relief of its incarceration permitted its contents to pass down into and out of the rectum, with reduction of colonic distention. Fear that so simple a procedure might not explain so obstinate an obstruction, careful and extensive search was made throughout the abdomen without finding any other cause. The meso-sigmoid showed thickening, scar tissue and old infiltration; I anchored the loop of sigmoid posteriorly with its distal and proximal ends unusually close together, and the band of Gersuny was very evident. The latter was cut, the very large sigmoidal loop restored to the left abdominal cavity, the small intestines restored to the pelvis, the omentum drawn down over the sigmoid, and the abdomen closed. Recovery was uneventful. I am in accord with Dr. Clark in not favoring the fixation by suture of such loops to either the anterior or posterior wall, as the potential dangers are almost equally as great as that of recurrence. Were a similar case to be encountered and the patient not in quite so desperate a condition, I should make a side-to-side anastomosis between the proximal and distal end before restoring it to the abdomen, just as I have corrected a rectal prolapse by anastomosing the drawn-up rectum to the first portion of the sigmoid. A few months ago I saw Dr. Arbutnot Lane remove an entire colon for chronic obstinate constipation, in which he commented upon the frequency with which the most refractory cases of constipation were associated with prolapse of the dilated sigmoid, this while in the act of lifting such a sigmoid from the pelvis.

DISCUSSION

DR. A. E. BENJAMIN, Minneapolis: I wish to report one case and to mention a number of others I have seen in which the patients had symptoms of pronounced constipation, and some of them having other conditions which demanded operation. I have made it a practice in nearly all these cases to investigate the condition of the sigmoid. I found undue angulation of the sigmoid, with thickening around it, and some bands. These I have separated. The previous history of these cases has usually been that of extreme constipation. Recently I operated on a girl, 18 years old, who was attending college. She came to me for the sole purpose of being relieved of extreme constipation, as she said she was not troubled in any other way. Careful examination revealed enlargement of the left ovary. It was slightly cystic. My experience in other cases taught me there was something else wrong. I operated and found a small dermoid cyst of the ovary which could have had very little to do with the constipation for which she sought treatment. I found a dilated condition of the sigmoid, with extreme angulation, thickened band fibers, and constriction of the sigmoid. These were separated and the raw surface covered. Since that time her bowels have moved regularly every day, without the aid of cathartics, whereas before operation she would go for a week without a bowel movement.

(To be continued)

AMERICAN ASSOCIATION FOR CANCER RESEARCH

Annual Meeting, held in New York City, Nov. 27, 1909

(Concluded from page 312)

Influence of Regenerating Tissue on the Animal Body

DR. CHARLES R. STOCKARD, New York: When the adult animal body regenerates new tissue in order to replace a lost part, or when abnormal secondary growths arise, the growth equilibrium of the body is disturbed, and this disturbance is followed by changes which affect the usual physiologic condition. The question arises whether the changes which follow or accompany normal regenerative growth are in any way

similar to the effects resulting from malignant growths. In order to test this proposition experiments have been conducted with a series of animals regenerating different amounts of body tissue. The animal used was the medusa, *Cassiopea xamachana*, since it readily regenerates new arms as well as portions of its body. Its food supply may also be perfectly controlled.

In the first experiment each of twenty selected individuals had five of the eight oral arms amputated at their bases, and another similar group of twenty specimens had in addition to the five arms a piece of definite size cut from their bodies. Both groups, therefore, regenerate equal numbers of arms, but the latter group also grows new tissue to replace the removed body piece. All these regenerating individuals decrease in body size more rapidly than uninjured specimens kept under similar conditions. The second group, which was regenerating more new tissue, decreased in size much more rapidly than the first during the early part of the experiment. After two weeks, however, the removed body piece had been replaced, and it is important that after this period the second group ceased to decrease in size any more rapidly than did the first group. After this period both groups were growing only the five new arms. The regeneration of new arms proceeds more rapidly at first and gradually slower. Associated with this fact is a primarily more rapid decrease in the body size and later a smaller decrease in proportion as the regeneration rate of arms is slower. Regenerating tissue grows at the expense of the animal body and will continue to grow at a vigorous rate even though the body be starving to death. When an additional amount of regeneration is imposed on an animal it suffers in body size and vigor, and when this additional formation of new tissues ceases the unusual decrease in body size also ceases. If an animal regenerates new tissue at a rapid rate the body suffers more markedly than when the regeneration rate is slower. Other somewhat differently devised experiments gave results which entirely confirm the above statements. A comparison between the manner in which newly regenerating tissue affects the animal body and the reaction of the body to malignant growths is most suggestive, and there are undoubtedly many points of similarity between regenerative and malignant growths.

Case of Blastomycosis Associated with Epithelioma of the Jaw

DR. WILLIAM B. COLEY, New York: The patient, a man aged 25, was admitted to the General Memorial Hospital as a case of generalized sarcoma on Dec. 9, 1908. The first symptom which was noticed 3½ months prior to his admission was a severe sharp pain in the lower part of the left chest. Two and a half months before admission he had an attack of hematuria, the same recurring at intervals of from 1 to 2 weeks up to 2 weeks before admission. One and a half months before admission the first tumor was noticed in the right side of the lower jaw at the angle of the mouth. A few days later a similar mass appeared in a corresponding position in the left portion of the lower jaw. There was rapid increase in the size of the tumors and loss in weight. A few weeks previously a tumor developed in the region of the left kidney. At the time of his admission there was a tumor in the right side of the mouth about the size of an English walnut, and a similar somewhat smaller tumor in the left side; a tumor over the lower part of the sternum 1½ inches in diameter, very hard and firmly fixed, but not tender. Liver and spleen were not enlarged. A specimen which had been removed from the tumor of the lower jaw at Mt. Sinai Hospital three weeks before the patient's admission to the General Memorial was reported by the pathologist of Mt. Sinai Hospital as "endothelial sarcoma." On Dec. 12, 1908, the temperature rose to 105 F.; on December 14 to 106 F., and remained between 102 and 104 F. for nearly two weeks. The blood examination showed marked leucocytosis. The patient's general condition was little affected during the highest temperature. The tumor over the sternum increased with great rapidity; on December 30 it had become larger than two fists. Aspiration done under careful aseptic precautions drew thick, dark creamy pus which was placed in sterile tubes; blastomycetes were found in the pus. The tumor continued to increase rapidly in size, and a week later reached the size of a child's head. It was incised under

cocain anesthesia and drained. Numerous tumors developed with great rapidity in various parts of the body. Death occurred on Feb. 9, 1909. Paralysis of the lower extremities had set in 38 hours before death. Death occurred on the sixty-first day after admission to the hospital, five and a half months since the beginning of the first symptoms. Examination at death showed fifteen tumors externally in various parts of the body. There was no tenderness present in any of these tumors, except the large discharging tumor in the right upper chest, and this was not tender in the early stages. A portion of the larger jaw tumor was removed and examined by Dr. James Ewing, pathologist to Cornell University Medical School. His report read as follows: "The material contains a malignant epithelioma. It is pigmented, which suggests that the original growth was a pigmented mole. I could find no blastomyces in the material and cultures were negative." I cannot express any opinion as to whether the blastomyces played any part in the etiology of the tumors of the jaw. The coexistence of an epithelioma of the jaw with the other tumors of blastomyecitic origin was certainly interesting.

DISCUSSION

DR. JAMES EWING, New York: The evidence on which the diagnosis of blastomyecitic infection is based must be admitted to be defective in this case, in that no cultures were obtained and no blastomyces found in the tumor. Evidently the patient had a severe general infection, but the relation of the blastomyces found in the pus to this infection is not clear.

Early Cutaneous Carcinoma, Illustrated by Lantern Slides

DR. H. H. JANEWAY, New York: The photomicrographs here presented represent a graduated series of the two varieties of epitheliomata of the skin, the squamous and the basilar celled growths. A study of the series justifies conclusions which are not entirely in accord with the views of either Borrmann or Ribbert. These two writers have made the most important recent contributions on the early stages of epithelioma and represent divergent aspects of the autogenetic theory of cancer. While some of the tumors here illustrated appear to have grown from previously isolated groups of cells, and others indicate a close relation between chronic inflammatory processes and beginning epithelioma, yet one must conclude, from the series of sections here presented, that neither an embryonal deposit nor a cellular infiltration of the connective tissue stroma is the essential factor in the etiology of all cancers; but that the great majority of cutaneous epitheliomas originate by a primary metaplasia of the body cells. One may, however, go further than this and state that the peculiar clinical features of the two somewhat unusual cases of multiple superficial epitheliomata herein reported, indicate that such a metaplasia depends on what one may, somewhat indefinitely but nevertheless properly, term individuality. There is something about these patients which results in their skin cells possessing a peculiar proneness to undergo a primary cancerous metaplasia.

In one of these cases, the one from which the youngest tumors were taken, there existed a hitherto undescribed subepithelial capillary congestion in association with the most minute growths. This subepithelial capillary congestion is of such a character that it suggests a liberation of regenerative or proliferative functions in the cells becoming epitheliomatous; and such a change may be conceived of as occurring and increasing, according to the conception of Benecke, at the expense of the normal physiologic functions of the cells.

A consideration of these various facts, together with clinical evidence, indicates that the essential change applicable to all cases in the transition of somatic cells into cancer cells, is primarily of the nature of a degeneration—a degeneration which, in one class of cases, depends on the existence of a previously isolated group of cells; in another class, on associated lesions in the connective tissue stroma, including among these changes the above described subepithelial capillary congestion; and in still a third class, which is by no means a numerically unimportant one, on metaplastic activities for which the epithelial cells are alone responsible. The development of cancer in these latter cases is unassociated with any changes in the connective tissue stroma and individuality of the cells is

doubtless a determining factor in the development of the degeneration in them.

Peculiar Cell Inclusions, Probably Parasitic, in Chronic Lesions of the Spleen, Liver and Lymph-Glands from a Case of Endemic Goiter

DR. S. B. WOLBACH, New York: Peculiar cell inclusions, which are undoubtedly parasitic, were found in a case of colloid hypertrophy of the thyroid gland. The patient came from a locality where "goiter" is common. The parasites are very numerous in lesions in the spleen, cervical, mesenteric and prevertebral lymph nodes and in the liver. The lesions are granulomatous in character. The smallest lesions consist of groups of endothelial cells. Larger lesions, the size of miliary tubercles contain numerous giant cells, and the lesion as a whole resembles tuberculosis, but necrosis does not occur. Marked connective tissue increase and final cicatrization is the rule. The parasites are found in giant cells and in endothelial cells. Barely they have been found free in lymph sinuses. The largest forms are from 20 to 30 microns in diameter, and consist of a central body from 3 to 5 microns in diameter, surrounded by radiating spinous projections. The central body and spinous projection stain by Gram's method. Material surrounding the central body decolorizes by Gram's method. Giant cells containing these radiate structures usually contain, also, small bodies within vacuoles. Similar minute structures, many with a single central deeply staining dot or spinous projection, are found within endothelial cells in early lesions. The finding of intermediate forms between the minute bodies in vacuoles and the large radiate structures has established the opinion that these inclusions represent stages in the evolution of a parasite. The inclusions are not affected by solvents for fat, or by acids and alkalis. They do not stain with osmic acid or other fat stains. They can be readily demonstrated in frozen sections of formalin material. The nature of the parasite has not been determined. The best interpretation of the radiate structures is that they represent capsular material surrounding the parasite, analogous to the forms produced after intravascular inoculation, by the acid-fast bacteria and the organism of coccidioidal granuloma.

DISCUSSION

DR. F. B. MALLORY, Boston: We have just had a similar case at the Boston City Hospital, in which lesions resembling early miliary tubercles were found in the spleen in numbers, and in the liver sparingly. The lesions consisted of endothelial cells and giant cells. There was no necrosis. Within the giant cells were radiate bodies, corresponding in every particular with those described and demonstrated by Dr. Wolbach. Against the view that these bodies are parasites, is the fact that in a giant-cell sarcoma that we had in the department a number of years ago many of the giant cells contained spiculated bodies similar to those in these two cases, but somewhat smaller in size.

DR. JAMES EWING, New York: Some years ago, in examining the brain of a case of pernicious malaria, I found in the ganglion cells wreaths and star-shaped structures in astonishing geometrical arrangement, somewhat resembling the bodies described by Dr. Wolbach. Similar structures were afterward found in a case of tuberculous meningitis. These bodies were artefacts, and showed how very peculiar intracellular products may appear. I do not wish, however, to suggest that the bodies described by Dr. Wolbach were not parasitic, as is strongly indicated by their remarkable structure and wide distribution.

DR. S. B. WOLBACH, New York: The stellate or radiate inclusions could not be dissolved by fat solvents, acids or alkalis, and their constant occurrence in giant cells, in widely distributed lesions, is more in favor of their parasitic nature than is the morphology. I admit that the morphology was unsatisfactory, but the fact that similar bodies have not been seen in the experience of well-known pathologists augurs against the possibility of the inclusions' being deposits or artefacts. Moreover, they occurred in formalin-fixed tissues, as well as in Zenke-foxed material, and, therefore, were not like the structures described by Calkins and Gaylord, and attributed to corrosive-sublimate crystals.

Marriages

ARTHUR S. MONZINGO, Tacoma, to Miss Bernice Green, of Boise, January 12.

CHARLES V. WADLINGER, M.D., to Miss Ethel M. Moore, both of Pottsville, Pa., January 14.

CHARLES JOSEPH DILLON, M.D., to Miss Helen Walsh, both of New York City, January 12.

THOMAS MACRAE, M.D., to Miss Emma Dean Fordyce, both of New York City, January 18.

HAROLD K. MOUSER, M.D., Fort Wayne, to Miss Fay Strother, of Latty, Ohio, recently.

HARRY HAZLETON PENQUITE, M.D., to Miss Hazel Owens, both of Colfax, Iowa, January 13.

EDWIN AYRES KELLEAM, M.D., to Miss Ophelia Everidge, both of Grant, Okla., December 22.

EDWARD B. PRIES, M.D., El Paso, to CLOTILDE C. JACQUET, M.D., of New Orleans, January 26.

A. J. EVANS, M.D., to Miss Blanche Lefler, both of Elida, N. M., at Portales, N. M., January 7.

THOMAS DEVEAUX HALL, M.D., to Miss Geneva Telene Olson, both of Elliott, Miss., October 5.

ERNEST R. MIDDLETON, M.D., Winters, Texas, to Miss Edith Fred of San Marcos, Texas, January 10.

JOSEPH WASHINGTON GOLDSMITH, M.D., Brooklyn, N. Y., to Miss Julia Moog of Chicago, January 18.

MORT W. WAFUL, M.D., Waurika, Okla., to Miss Katherine Ethel Hudler, of Wilton, Iowa, January 13.

JAMES ARTHUR ATTRIDGE, M.D., to Miss Florence Ella Sparrow, both of Harbor Beach, Mich., December 8.

EDWARD VICTOR VALZ, M.D., U. S. Navy, to Mrs. Charles Noble Wrenshall, at Pittsburg, Pa., December 29.

ERNEST ALBERT JENKINSON, M.D., Sioux City, Iowa, to Miss Evarista Ryan Mullally of Jackson, Neb., at St. Louis, January 5.

Deaths

Ellery Denison, M.D. New York University, New York City, 1853; a member of the American Medical Association, and of the Mayflower Society; school trustee for eighteen years and examining surgeon of enrollment in New York City in 1861; from 1855 to 1865 attending physician to the Northern Dispensary for the Diseases of Children, New York City, and for twenty-two years thereafter attending physician to the Home for Aged Men and Cripples; died at his home in New York City, January 13, from gastritis, aged 82.

Andrew Moses Moore, M.D. University of Pennsylvania, 1869; a member of the American Medical Association; who entered the Navy in 1869, served eleven years and eleven months at sea, and twelve years and one month on shore duty; for several years on duty at the Naval Recruiting Rendezvous, Chicago; and was retired with the rank of lieutenant commander Aug. 14, 1893, on account of incapacity resulting from incident of service; died in Naples, Italy, January 12, from pneumonia, aged 64.

W. Frank Haehnlen M.D. University of Pennsylvania, 1882; professor of obstetrics in the Medico-Chirurgical College of Philadelphia, and head of that department for fourteen years; obstetrician to the Medico-Chirurgical Maternity and gynecologist to the Philadelphia General Hospital; formerly lecturer and instructor in obstetrics at the University of Pennsylvania and physician-in-chief and gynecologist to the Samaritan Hospital; died at his home in Philadelphia, January 14, from pneumonia, aged 50.

John H. Ewing, M.D. Jefferson Medical College, 1877; formerly a member of the Medical Society of New Jersey, and president of the Hunterdon County Medical Society; local pension examiner, and county physician; surgeon to the Lehigh Valley Railroad, and to the Hunterdon county jail; a member of the original commission and president of the board of managers of the New Jersey State Village for Epileptics, Skillman's; died at his home in Flemington, January 12, from neuritis, aged 56.

George L. Bowman, M.D. University of Wooster, Cleveland, 1878; a member of the Ohio State Medical Association; health officer of Black River township, pension commissioner, township trustee, clerk of the township board, and clerk of the

board of education; for more than 30 years a practitioner of Lorain; died in Dr. Frederick's Hospital in that city, January 9, from angina pectoris, aged 56.

Joseph H. Chandler, M.D. Jefferson Medical College, Philadelphia, 1860; formerly a member of the American Medical Association; surgeon of the Fifth Delaware Volunteer Infantry during the Civil War; ex-president of the Delaware State Medical Society; said to have been the oldest practitioner in the state; died at his home in Wilmington, January 14, from heart disease, aged 70.

James Thomas Green, M.D. University of Alabama, Mobile, 1860; of Green Springs, Fla.; surgeon of the Third Alabama Infantry, C. S. A., during the Civil War; in 1898 city physician of Tampa, Fla.; formerly local surgeon of the Plant System and Atlantic Coast Line; died at the home of his daughter in Tampa, January 8, from arteriosclerosis, aged 75.

Jesse Leeka, M.D. Physio-Medical College of Indiana, Indianapolis, 1878; a veteran of the Civil War; at one time coroner of Howard county, Ind.; and afterward postmaster, police magistrate, justice of the peace, township clerk, and village clerk of Oakwood, Ill.; died at his home in that place, January 4, from senile debility, aged 79.

Francis Meigs Thomas, M.D. University of Louisville, 1893; of Leonardville, Kan.; surgeon of the federal penitentiary, Fort Leavenworth, Kan., from 1896 to 1900, and from 1901 to 1906; and afterward a resident of Asherton, Texas; died in the Southern Pacific station, San Antonio, Texas, January 12, from heart disease, aged 39.

William Bascom Davis, M.D. Missouri Medical College, St. Louis, 1880; local surgeon of the Chicago and Great Western Railway, at St. Joseph, Mo.; for eight years physician of Buchanan county, and for two years city physician of St. Joseph; died at St. Joseph's Hospital, January 5, from cerebral hemorrhage, aged 54.

John Hanson Wheeler, M.D. Kentucky School of Medicine, Louisville, 1855; a veteran of the Mexican and Civil wars; formerly superintendent of the Masonic Widows' and Orphans' Home, Louisville, and a member of the city council; died at the Church Home and Infirmary, Louisville, January 8, from senile debility, aged 83.

Abner Duell Thomas, for two years a student at the University of Michigan; afterward assistant surgeon of Illinois volunteers, and later surgeon of the Third Arkansas Volunteer Cavalry during the Civil War; died at his home in Little Rock, Ark., December 21, from tetanus due to a machinery accident, aged 70.

John Jacob Prevaux, M.D. Harvard Medical School, 1898; a member of the Massachusetts Medical Society; representative from Amesbury to the state legislature from 1890 to 1894; and senator from the fourth Essex District in 1896 to 1897; died at his home in Haverhill, January 6, from cerebral hemorrhage, aged 52.

Samuel Creed Gholson, M.D. Hampden-Sidney College, Medical Department, Richmond, Va., 1851; surgeon in the Confederate Service during the Civil War; formerly a member of the Mississippi State Medical Association; died at his home in Holly Springs, January 15, from cerebral hemorrhage, aged 82.

Peter Ellsworth Triem, M.D. Hahnemann Medical College, Chicago, 1881; for many years a practitioner of Manchester, Iowa, and a member of the faculty of the College of Homeopathic Medicine of the State University, Iowa City; died at the home of his son in Seattle, Wash., December 31, aged 59.

Orlando Clark Irvin, M.D. Bellevue Hospital Medical College, 1881; a member of the State Medical Association of Texas; visiting physician to the Providence Hospital and Hotel Dieu, El Paso; for many years division surgeon of the Santa Fe System; died at his home, January 13, aged 62.

Edwin L. Yarletz, M.D. Eclectic Medical Institute, Cincinnati, 1874; district surgeon of the Union Pacific Railroad; chairman of the Western Nebraska District Pension Examining Board, and city physician of Lodge Pole; died at his home in that city, December 16, aged 58.

Frederick Samuel Buckingham, M.D. College of Physicians and Surgeons, New York City, 1871; a member of the American Medical Association; for many years a practitioner of law in New York City; died at his home in Lakewood, N. J., January 9, from angina pectoris, aged 60.

T. Norwood Watts, M.D. Eclectic Medical Institute, Cincinnati, 1887; a veteran of the Civil War; for two years clerk of Wabaunsee county, Kan.; and a resident of Alma for nearly thirty-five years; died at his home in Topeka, December 23, from pneumonia, aged 73.

Alfred Joseph Horowitz, M.D. Long Island College Hospital, Brooklyn, 1906; of New York City; died in a hotel in Newark, January 2, from the effects of cyanid of potassium, self-administered, it is supposed with suicidal intent, while suffering from melancholia, aged 28.

Howson White Cole, M.D. Jefferson Medical College, 1854; a member of the Medical Society of Virginia; surgeon in the Confederate service during the Civil War; thrice mayor of Danville; died at his home in that city, January 8, from senile debility, aged 79.

Francis E. Minshall, M.D. New York Medical College and Hospital for Women, New York City, 1893; of Brooklyn, N. Y.; for many years physician to the Women's Memorial Hospital; died in Galilee, Pa., December 23, from cerebral hemorrhage, aged 56.

Duke William Goodman, M.D. Tulane University, 1891; acting assistant surgeon U. S. P. H. and M.-H. Service at the United States Consulates at Bluefield, Nicaragua, and Port Limon, Costa Rica; died at his home in Mobile, Ala., January 11, aged 55.

Thomas J. Shaw, M.D. Rush Medical College, Chicago, 1880; for twenty years assistant demonstrator of anatomy and clinical assistant to the professor of gynecology in his alma mater; died at his home in Chicago, January 20, from senile debility, aged 68.

Dwight Reuben Bement, M.D. Eclectic Medical Institute, Cincinnati, 1878; a veteran of the Civil War; of Mount Ayr, Iowa; died suddenly in a livery barn in that city, January 10, from heart disease, after making a professional call, aged 70.

Joel Barnett Gresham, M.D. Medical College of the State of South Carolina, Charleston, 1845; for many years health officer of Clay county, Miss., and of West Point; died at his home in that place, December 30, from pneumonia, aged 85.

Fred Robert Disney, M.D. College of Physicians and Surgeons, Chicago, 1907; a member of the Oklahoma State Medical Association; formerly of Chicago; died at his home in Pocasset, Okla., December 25, from pneumonia, aged 31.

Henry J. Coleman, M.D. New York Homeopathic Medical College, 1861; of Lorman, Miss.; a surgeon in the Confederate service during the Civil War; died suddenly January 16, at his plantation home near Port Gibson, Miss., aged 77.

Frank E. Stipp, M.D. Louisville Medical College, 1894; a member of the Indiana State Medical Association, secretary of the Lawrence County Board of Health; and health officer of Bedford; died at his home, January 4, aged 37.

William Davis Harelson, M.D. Memphis Hospital Medical College, 1897; a member of the Louisiana State Medical Society and of the East Baton Rouge Parish School Board; died at his home in Comite, January 9, aged 40.

Gawn Shaw Cleland, M.D. University of Toronto, 1882; Trinity Medical College, Toronto, 1890; a member of the British Medical Association; died at his home in Riverdale, Toronto, January 3, from tubercular laryngitis, aged 51.

Otto Fikenscher, M.D. Barnes Medical College, St. Louis, 1897; of Sibley, Ill.; a member of the American Medical Association; died at the home of his parents in Lohman, Mo., January 6, from pneumonia, aged 37.

John Jethro Sherman, M.D. Rush Medical College, 1881; for forty-five years a practitioner of Marinette, Wis., and mayor of that city in 1896; died at his home, January 9, from hemorrhage of the stomach, aged 79.

Robert H. Grinstead, M.D. University of Louisville, 1853; for many years a practitioner of Glasgow, Ky.; died at the home of his daughter in Munfordville, Ky., January 15, from senile debility, aged 80.

M. Francis Leary, M.D. Tulane University, 1873; hospital steward in the Army during the Civil War and acting assistant surgeon for three years; died at his home in Gaylord, Kan., January 13, aged 63.

Emmanuel Church (license, West Virginia, years of practice, 1870); for nearly 50 years a practitioner of Wyoming county, W. Va.; died at his home in Pineville, October 26, from heart disease, aged 70.

Theophilus M. Lewis, M.D. University of Louisville, 1856; formerly of Stanford, Ky.; died in the Eastern Kentucky Hospital for the Insane, Lexington, December 26, from senile dementia, aged 79.

English John Warth, M.D. Bellevue Hospital Medical College, 1879; for many years a practitioner of Nevada, Mo.; died at his home in Price, Utah, December 26, from arteriosclerosis, aged 77.

John Bogardus Hill, M.D. Harvard Medical School, Boston, 1852; a member of the Massachusetts Medical Society; died at his apartments in Boston, December 9, from cerebral hemorrhage, aged 82.

Joseph A. McFerren, M.D. Jefferson Medical College, 1847; formerly a member of the Delaware State Medical Society; died at his home in Laurel, Del., January 8, from senile debility, aged 82.

Jesse Lee Worley, M.D. Eclectic Medical Institute, Cincinnati, 1877; formerly a councilman of Washington, Ohio; died at his home in that city, January 6, from cerebral hemorrhage, aged 58.

Andrew Jackson Davis, M.D. United States Medical College, New York City, 1883; of Roxbury, Boston; died at his home in Watertown, Mass., January 13, from senile debility, aged 83.

B. H. Padgett, M.D. Medical College of the State of South Carolina, Charleston, 1881; warden of Walterboro, S. C., for several years; died at his home, January 9, from pleurisy, aged 53.

George Edwin Allen, M.D. Medical School of Maine, Brunswick, 1883; a member of the Massachusetts Medical Society; died at his home in Haverhill, January 8, from myocarditis, aged 46.

Edwin Hinckley (license, Washington, registration, 1887); of Toledo, Wash.; died at the Western Washington Hospital for the Insane, Fort Steilacoom, January 2, from uremia, aged 74.

Charles Benjamin Hollifield, M.D. University of Louisville, 1891; of Port Arthur, Texas; while making a professional call in that city, January 13, died from angina pectoris, aged 43.

Sidney Mosher (license, Iowa, 1887, 25 years practice); a physio-medical practitioner of Sioux City for nearly thirty-five years; died at his home January 12, from heart disease, aged 74.

John Drake Chambers, M.D. University of Michigan, Ann Arbor, 1874; a pioneer practitioner of Fort Wayne, Ind.; was found dead in his office, January 13, from pericarditis, aged 65.

Edward H. Horner, M.D. University of Pennsylvania, 1855; surgeon of volunteers during the Civil War; died at his home in Turbotville, Pa., January 10, from senile debility, aged 78.

Flora S. Gleason, M.D. State University of Iowa, College of Homeopathic Medicine, Iowa City, 1882; died at her home in Corona, Cal., January 7, from angina pectoris, aged 59.

James Lockhart, M.D. University of Nashville, 1858; surgeon in the Confederate Service during the Civil War; died at his home near Advance, Mo., January 9, aged 83.

Benjamin Franklin Syman, M.D. Denver and Gross College of Medicine, 1906; of Denver; died in that city, January 12, after an operation for appendicitis, aged 25.

Joseph Freeman Thompson, M.D. University of Virginia, Charlottesville, 1889; died at his home in Lexington, Ky., November 21, from heart disease, aged 42.

Edwin A. Harris, M.D. Atlanta (Ga.) Medical College, 1887; a member of the Medical Association of Georgia; died at his home in Midville, January 11, aged 42.

Gabriel F. M. Cummings, M.D. Georgia College of Eclectic Medicine and Surgery, Atlanta, 1889; died at his home in Rockmart, Ga., January 8, aged 49.

John Baptist Knoebel (license, Ill.); a practitioner for nearly fifty years; formerly of Highland, Ill.; died at his home in Manitou, Colo., January 1, aged 77.

A. C. Edwards, M.D. University of Louisville, 1857; one of the oldest practitioners of Meridian, Miss.; died at his home January 10, from paralysis, aged 80.

Russell P. Pelton, M.D. Western Reserve University, Cleveland, 1893; died at his home in Vermilion, Ohio, January 9, from pneumonia, aged 41.

William Alva Walton, M.D. Vanderbilt University, Nashville, 1881; died at his home in Henrietta, Tenn., January 1, from dropsy, aged 55.

Julius O. Dorsey, M.D. University of Maryland, 1863; died at his home near Parker's Landing, Md., January 4, from pneumonia, aged 67.

Abram C. Moore, M.D. Starling Medical College, Columbus, 1850; died at his home in Wyoming, Cincinnati, January 7, aged 83.

William Henry Dent, M.D. Miami Medical College, Cincinnati, 1890; died at his home in Glenwood, Ind., January 4, aged 42.

Medical Education and State Boards of Registration

COMING EXAMINATIONS

KANSAS: State House, Topeka, February 8. Sec., Dr. F. P. Hatfield, Olathe.

NEBRASKA: State House, Lincoln, February 9. Sec., Dr. E. Arthur Carr, 141 S. 12th Street.

NEW YORK: Albany, February 1-4. Chief of Examinations Division, Dr. Charles F. Wheelock.

WYOMING: State Capitol, Cheyenne, February 16-18. Sec., Dr. S. B. Miller, Laramie.

Simple Refraction Required in Vermont

Dr. W. Scott Nay, secretary of the Vermont State Board of Medical Registration, says that the board voted Jan. 11, 1910, not to receive for examination after Jan. 1, 1911, any applicant who has not received instruction in simple refraction.

Indiana Board Adopts Higher Requirements

Word has just been received from Dr. W. T. Gott, secretary of the Indiana State Board of Medical Registration and Examination, that at a meeting of the board, held January 12, it was voted to increase the minimum requirement for entrance to medical colleges to two years of collegiate study in addition to a four year high school education. This ruling will affect all students matriculating subsequent to Jan. 11, 1910, who expect to practice medicine in Indiana, and will be enforced for all applicants after January, 1914.

This action by the Indiana board indicates that they do not intend to discriminate against the graduates of their own state university medical school. There are now three state boards which have adopted the requirements of two years of collegiate work as the minimum requirement of preliminary education, thus supporting their state university medical schools, the other two being the boards of Minnesota and North Dakota. This makes seven boards requiring preliminary education in advance of high school work. Besides the three boards requiring two years of collegiate work there are four requiring one year, Connecticut, South Dakota, Colorado and Kansas.

Connecticut Homeopathic November Report

Dr. E. C. M. Hall, secretary of the Connecticut Homeopathic Medical Examining Board, reports the written examination held at New Haven, November 9, 1909. The number of subjects examined in was 7; total number of questions asked, 70; percentage required to pass, 75. The total number of candidates examined was 3, all of whom failed. The following colleges were represented:

College	FAILED	Year Grad.	Per Cent.
Hahnemann Med. College and Hospital, Chicago	(1909)	71.8	* 73.2*
Atlantic Medical College, Baltimore	(1909)		69*

* Failed also at July 1909 examination.

Idaho October Report

Dr. W. F. Howard, secretary of the Idaho State Board of Medical Examiners, reports the written examination held at Boise, Oct. 5-6, 1909. The number of subjects examined in was 11; total number of questions asked, 110; percentage required to pass, 75. The total number of candidates examined was 44, of whom 27 passed and 17 failed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
University of Colorado	(1906) 75; (1909) 80;		80.8
Rush Medical College	(1894) 76.5; (1896) 78.8; (1906) 86.8; (1907) 87.		
Northwestern University Med. School	(1904) 88.8; (1909)		76.7
College of Physicians and Surgeons, Chicago	(1905)		82.4
College of Physicians and Surgeons, Keokuk	(1897)		76.3
Hospital College of Medicine, Louisville	(1901)		75
College of Physicians and Surgeons, Baltimore	(1906)		80.1
Detroit College of Medicine	(1907) 76.3; (1909)		83.5
University of Minnesota	(1904)		82.2
Barnes Medical College	(1898) 75.6, 77.3; (1909)		76.5
University Medical College, Kansas City	(1903)		80
St. Louis University	(1904)		75.3
Starling Medical College	(1901)		75.3
Eclectic Medical Institute	(1900)		79.9
University of Oregon	(1909)		80.7
Medico-Chirurgical College, Philadelphia	(1898)		81
Chattanooga Medical College	(1903)		75
Queen's University, Ontario	(1909)		77.8

FAILED

University of Colorado	(1890)	66.3
Bennett Medical College	(1907)	50.4
Northwestern University Med. School	(1876) 60.9; (1909)	71.5
University of Kansas	(1907)	66.4
Michigan College of Medicine and Surgery	(1898)	60.3
American Medical College, St. Louis	(1892)	43.6
St. Louis University	(1905)	46.4
Kansas City Hahnemann Medical College	(1909)	71.5
Woman's Medical College, Kansas City	(1901)	71.6
Barnes Medical College	(1896) 72.9; (1907) 68.2; (1908)	62.7
Long Island College Hospital	(1876)	53
Eclectic Medical Institute, Cincinnati	(1897)	66.5
Tennessee Medical College	(1907)	45.3
University of Nashville	(1902)	62.3

West Virginia November Report

Dr. H. A. Barbee, secretary of the West Virginia State Board of Health, reports the written examination held at Parkersburg, Nov. 9-11, 1909. The number of subjects examined in was 20; total number of questions asked, 120; percentage required to pass, 80. The total number of candidates examined was 27, of whom 24 passed and 3 failed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Georgetown University	(1908) 89; (1909) 90, 92, 94		94
Howard University	(1907)	87,	87
Maryland Medical College	(1903) 88; (1909) 82, 87, 90,		90
Louisville and Hospital Medical College	(1908)		81
Hospital College of Medicine, Louisville	(1907)		86
University of Louisville	(1908) 81; (1909)		93
Baltimore Medical College	(1908)		84
College of Physicians and Surgeons, Baltimore	(1908)		83
Leonard School of Medicine	(1909)		87
Medico-Chirurgical College, Philadelphia	(1905)		85
Western Pennsylvania Medical College*	(1907)		93
University of Pittsburg	(1909)		89
Ohio Medical University	(1902)		86
Chattanooga Medical College	(1909)		83
University of Nashville	(1909)		91

FAILED

University of Louisville	(1908) 74; (1909)	78
Chattanooga Medical College	(1909)	77

* Now the University of Pittsburg, Medical Department.

Medical Economics

THIS DEPARTMENT EMBODIES THE SUBJECTS OF ORGANIZATION, POSTGRADUATE WORK, CONTRACT PRACTICE, INSURANCE FEES, LEGISLATION, ETC.

How Physicians Look to the Public

From time immemorial physicians have considered it one of their unquestioned prerogatives to lecture the public on the relation which exists or should exist between the medical profession and the laity. Turn about is not only fair play, but a very profitable form of exercise, since it is not only right but just that we should know how the people regard us and in what way we fail to satisfy them. Two articles recently published in the *British Medical Journal* on "The Relations of the Laity and the Medical Profession" by Mrs. Hodgkinson, editor of the *British Health Review* are, therefore, not only interesting, but may be read with profit by American physicians, as well as by our British brethren.

Mrs. Hodgkinson disclaims the need of apologizing for erroneous opinions "since mistakes are often highly instructive and candor offers an opportunity for criticism and enlightenment likely to be extremely useful to all concerned." Commenting on the changing attitude of the public toward the profession and the fact that the more far-sighted members of the profession have already recognized this change, she says: "The unreasoning part of the public—equally dissatisfied—betakes itself to the 'patent medicines' so admirably analyzed and expounded in a recent publication of the British Medical Association, and, in view of the sums thus spent, no one will, I think, contend that this is an inconsiderate body." Regarding the better informed minority which, she states, is acquainted with the advance which is taking place in the profession and conscious of the limitations of modern medicine, it, she says, "is convinced that its best hope lies in the recognition by profession and public of the fact that their relations must be progressive and therefore subject to change."

This admirable statement of the present case is worthy of serious consideration. The relations existing between the medical profession and the public are certainly changing and will continue to change. We cannot go back to the conditions of our forefathers, neither can we prolong indefinitely the present-day situation. Change and progress is sure to occur and it behooves us to foresee the change and adapt ourselves to it, rather than to ignore it or oppose it, and thereby to suffer.

Dismissing the relations between the physician and the average man who, Mrs. Hodgkinson states, "is brought up in complete ignorance of the laws of health or the natural needs of his body," her first criticism is that the medical profession, a body of immense social and legal weight, has made no organized protest against the absence of sound training on health matters in the schools and that it has not attempted to establish clinics for the study of the criminal, feeble-minded, or insane, but has left to the laymen the work of pushing forward and in some cases of remedying such evils. Mrs. Hodgkinson draws an analogy from history in the failure of the clergy to take the lead in needed reforms: "In certain stages of history, ecclesiastical authorities, too, have refused their rightful position as leaders of reform, and the tide of vital affairs has ebbed and left them stranded. An example and a warning not to be neglected."

After commenting on the cynicism of public opinion, which considers that the physician's interest in the patient begins and ends with his disease, she continues: "The thinking laity believes that the time is approaching for more revolutionary methods and that there are measures, now denounced as socialistic, which would reconcile these conflicting interests and secure the doctor's pecuniary position on the health and not on the disease of the community." Treatment of symptoms instead of causes and lack of careful examination by physicians is also commented on. Mrs. Hodgkinson also holds that the medical profession "has blindly and almost unpardonably neglected the study of dietetics in health and disease." She also complains of the morbid dread of responsibility into which excessive specialization forces its devotees, using the history of the treatment of appendicitis in the last ten years as an illustration. Much more to the point is her criticism that extreme specialization works a hardship on those who are poor in purse, in illustration of which she gives the following: "A patient, having weathered through an intestinal operation, was tortured with facial neuralgia. In quavering tones, he mentioned the matter to the surgeon, and was blandly repulsed. 'My dear sir, I know no more about neuralgia than you do. You must call in a physician if you want advice.' But he could not, poor man, for the operation and the nursing home had absorbed all his small means, and he therefore endured the neuralgia as best he could until he left the house, and, hastening to the nearest chemist, provided himself with the best advertised bottle available. It wrought an almost immediate cure and, for aught I know, considerable future damage."

As a remedy for such conditions, Mrs. Hodgkinson suggests that some means be devised by which the surgeon and physician could cooperate, "arranging the financial boundaries between the high contracting parties" so as to insure to the patient the care to which he is entitled. "But," she asks, "need the specialist be quite so ignorant? Is it not partially a pose, or idleness, or hedging, or self interest?"

The second article is devoted to a discussion of the vexing question of fees, which she says she approaches with trembling, "well aware that our advisers must live." She begs to remind physicians, however, that patients also must live and in a double sense, where they are concerned. She frankly says that she considers surgical fees too high, positively declining as an offset "to waste space in eulogizing the charity of many medical men, as it needs no praise, for it is known and respected. But," she says, "suppose we imitate the unemployed and say: 'Curse your charity; what we want is a lower and more definite scale of fees.'" She particularly pleads for some kind of a standard, claiming that at present "Sir Pompey Partington may demand £150 for a snip which Mr. Cutler Walpole may willingly perform for half the money," and that it is impossible to tell when a patient enters

the consulting room what drain may be made on his resources. The patient naturally wants to live and for the sake of his family if not for himself, wishes to be treated by the best skill obtainable. With the present lack of standards and with almost unlimited variation in charges, a patient never knows how much the unavoidable surgical treatment is going to cost him.

In comparison to the surgical fee which "must be paid too quickly," however, is that of the general practitioner "which is paid too slowly." Mrs. Hodgkinson makes a strong and sensible argument for physicians' bills regularly rendered and properly itemized, summing up the entire matter thus: "The thrifty public would certainly prefer bills more frequent, and above all, more detailed. Honestly, would not the profession prefer them also? And if not, why not?"

The weakest portion of the two articles is that devoted to the discussion of advertising. Here, as in almost all of the popular discussion of this subject, Mrs. Hodgkinson misses the point entirely, devoting herself to a consideration of the apparent inconsistency of the position of the profession on this question. This is not strange, since correspondence or conversation with any number of physicians will show that very vague ideas on this subject exist within the profession as well as without it. Yet the entire question can be summarized in a few words. The medical profession objects and has objected from time immemorial to any means of self-exploitation which is untrue or ill-bred. Its objection to the vast majority of advertisements of so-called "specialists" is that they are untrue and every competent physician knows that they are. The objection which the cultured physician has to the methods of the man who plasters his house with signs and mechanical devices to attract attention is that such methods are not those of a gentleman. Apply these two tests to the advertising problem and the entire situation is clarified. Mrs. Hodgkinson fears that the physician or surgeon who writes a book for the instruction of the public on hygiene is in danger of professional condemnation. This depends entirely on the purpose of the book and the manner in which it is written. If it is honestly intended for public education and not for self-exploitation, and if the statements therein are a truthful, unexaggerated summary of the proved and accepted knowledge of the profession on the subject, then there are no grounds for criticism, but only praise. The physician who writes a book for the public as a means of self-aggrandizement or to make himself prominent in the public eye, is insincere and therefore untruthful. Yet while this is true, Mrs. Hodgkinson's ideas on this subject are worthy of repetition. "Far from joining in the condemnation of those who attempt to enlighten us, we fail to understand why it should not be a test of what is best and greatest in the profession to be a successful teacher of the laity in matters which concern them. This is one of the functions of the true physician and one which the future will demand and to stigmatize it as self-advertisement, while permitting more indirect but more lucrative forms of advertisement savors of injustice, which finds no response from us."

All of which is perfectly true, provided the work is done sincerely, and to benefit the reader and not the writer.

Equally interesting are her forecasts. The ideal which she holds is state payment of the profession which "is bound to come, so excellent has been the work done by the medical officer of health, and so clearly are indicated the opportunities for that thoroughly organized and systematic campaign against disease so absolutely impossible under obtaining conditions." The conception of the physician as a state health-officer, while savoring of socialism to some, is yet deserving of careful consideration.

The comparison established here between the work of the state health officer and that of the private practitioner is also worth considering. Obviously, if the future brings about such a competition, the state health officer, armed with the authority and support of the state, will have a decided advantage over the private practitioner whose authority will be purely personal and who must earn his own living and collect his own fees. In the meantime, as Mrs. Hodgkinson says, the orthodox medical man is heavily handicapped. We do

not often consider the additional fact, however, which she further emphasizes, that "this handicap reacts on the patient, who is courted far more than is good for him." It would be interesting to speculate on the possibilities afforded by the future, when physicians have increased and disease decreased to the point where a sick person will be eagerly sought after and solicited by a number of physicians. Particularly suggestive in the light of the recent experience of medical organization in this country, are her comments regarding medical education, with which she says the public mind is dissatisfied, believing that the average medical man "is either unable or unwilling to keep step with the progress of modern science, which affects his work more rapidly and profoundly than it perhaps does any other." As a remedy, she proposes compulsory postgraduate courses but admits that it is difficult to see how these could be adapted to the needs of the struggling practitioner and suggests the possibility of the organization of a state medical service which might be of assistance in this particular. Apparently, the idea of organization of the medical profession itself for its own improvement and for the solution of this and other problems does not occur to her as a possible solution.

No doubt the difference in political conditions in Great Britain is partially responsible for this since many matters can be uniformly regulated by Act of Parliament in Great Britain which cannot be so disposed of in this country. Mrs. Hodgkinson voices the spirit of the times as well as the hope of the future in her closing expression of belief that "the bonds which unite the profession and the public may and must be strengthened, since the future will differ from the past most materially in the fact that we shall not so much call on the physician to rescue us from the disastrous consequences of our own and others' ignorances and follies when the harm is done, as to instruct and safeguard us in the ways of health and right living."

That this is the task of the physician of the future, no one will deny. On the contrary, we will all agree with Mrs. Hodgkinson that the possibilities of such a future are infinite. A clear picture of the ultimate goal of the profession, however, does not in any way help to solve the perplexing questions of the present nor determine how the transitional stage shall be passed through, with the least possible discomfort to the individual physician and patient; or how, in order to gain the ultimate good, we can best follow the advice of Saint Paul, to "prove all things, hold fast that which is good."

Mrs. Hodgkinson's articles are most interesting, whether we accept all her conclusions or not, and the example of the *British Medical Journal* of giving space to such a criticism of the profession is to be commended.

POSTGRADUATE COURSE FOR COUNTY SOCIETIES

DR. JOHN H. BLACKBURN, DIRECTOR
BOWLING GREEN, KENTUCKY

[The Director will be glad to furnish further information and literature to any county society desiring to take up the course.]

Sixth Month—Second Weekly Meeting

SURGERY OF THE LIVER

INJURIES OF THE LIVER: Character and extent of wounds. Symptoms. Treatment. Indications for laparotomy. Control of hemorrhage. Technic of suture of liver.

ABSCESS OF THE LIVER: (a) Tropical, solitary, amebic, abscess. Diagnosis, septic symptoms, pain, enlargement of liver. (b) Pyogenic abscess. Multiple after suppurative pyelophlebitis, appendicitis, etc. Single after injuries, wounds, ulcerations, etc. Surgical treatment. Indications for exploratory aspiration. Abdominal incision. Transpleural incision. Combined abdominal and transpleural incision.

CIRRHOSIS (ATROPHIC) OF THE LIVER: History, age, hepatic facies, ascites, hemorrhages. Vessels maintaining "compensatory circulation." Treatment. Indications for surgical treatment. Paracentesis, laparotomy and epiploexy; indications for each; technic of each.

Book Notices

ORGANIC AND FUNCTIONAL NERVOUS DISEASES. By M. Allen Starr, M.D., Ph.D., LL.D., Sc.D., Professor of Neurology, College of Physicians and Surgeons, The Medical Department of Columbia University in the City of New York. Cloth. Pp. 897, with 300 engravings and 29 plates in colors and monochrome. Third Edition. Price, \$6. Philadelphia: Lea & Febiger, 1909.

In the present edition of this classical work the author has evidently studied with care the needs of both practitioner and student. He arranges his material in four parts. In the first division or general portion of the book methods of examination and diagnosis are fully discussed in conjunction with the necessary anatomy and physiology of the nervous system. The second part covers the great division of organic diseases. In part third functional diseases are given twice the space allotted to the same section in a former edition. The concluding (fourth) part considers diseases of the sympathetic nervous system in the light of recent work in this field.

As the reader opens the book and begins reading, he imagines that he is listening to the author's rugged class-room English—always precise and unadorned by any rhetorical flourishes. In the chapter on "Organic Nervous Diseases," one hears him at his best—in his chosen field. And still the reader is carried along by an unswerving interest until he reaches the chapter on "Functional Nervous Diseases," where he is rudely awakened to the consciousness that the author is on strange territory.

Two errors should be expunged from future editions: 1. On page 730, under the caption of the treatment of trifacial neuralgia the author refers to a new treatment by the injection of three minims of 90 per cent. of alcohol into the branch of the nerve affected. Fortunately, in a footnote, the reader is referred to an original article by Patrick, published in *THE JOURNAL* (Nov. 9, 1907, p. 1567) in which one can read that the dose is thirty minims of a 75 to 90 per cent. solution of alcohol. 2. On page 739, under Sciatica, is mentioned a new treatment with normal salt solution at a freezing temperature, of which 5 c.c. are injected perineurally. If the author has in mind the method practiced by Lange, Umber, Alexander, Schloesser, Schlesinger, and adopted by American neurologists, the dose given as 5 c.c. should read 50-90 c.c. In neurology as in general medicine, specialties have grown up within specialties. There are those who excel in the diagnosis of thoracic diseases; others, who are brilliant interpreters of obscure abdominal affections, and still others who can make most searching analyses of metabolic disorders. In the specialty of nervous diseases there is no neurologist living since Charcot, with the possible exception of Oppenheim in Germany, whose text-book writings bear the imprint of originality as do Starr's. The book as a whole, therefore, must be pronounced among the best in the English language.

THE CAUSATION OF SEX. A New Theory of Sex Based on Clinical Materials. By E. Rumley Dawson, L.R.C.P., M.R.C.S., Fellow of the Royal Society of Medicine. Cloth. Pp. 196, with illustrations. Price, 6 shillings. London: H. K. Lewis, 1909.

The author's "theory of sex" was first presented to the Obstetrical Society of London in 1900. It is now worked out into a monograph of about 200 pages which contains a considerable collection of reports of various cases which form the clinical basis of the hypothesis. The theory is that the sex of the fetus is not due to the male parent, but depends on the ovary which supplied the ovum that was fertilized; and that a male fetus is due to the fertilization of an ovum from the right ovary and a female fetus is the fertilization of an ovum from the left ovary.

To show that the male parent does not influence the sex of the child a number of instances are given in which a woman has had only girls or only boys by two husbands, while other cases are given in which husbands have had children of different sexes by different wives. To prove that male fetuses are due to the fertilization of ova from the right ovary and vice versa, a number of cases are given in which male or female pregnancies, either intra-uterine or extra-uterine, were found to coexist with a large corpus luteum in the right or left ovary respectively. Cases of pregnancy after ovariectomy are also given to show the same fact.

Dawson meets the objection that sometimes children of both sexes are born after the removal of one ovary by assuming that such removal is not complete. Assuming an alternate action of the ovary the author forecasts, with 97 per cent. of success, the sex of the subsequent child by reckoning from the ovulation month of the last child to the tenth ovulation period prior to the expected birth of the coming child. Numerous examples are given from his own practice and from that of others. It follows that the production of sex at will must consist in avoiding attempts at fertilization in the months in which an ovum of the undesired sex is produced.

The author has presented his arguments well from his chosen standpoint. The theory lacks the foundation of cytologic and biologic studies, the absence of which leaves it somewhat unsatisfactory. The uniformity of favorable cases is also suspicious and leaves the reader in some doubt as to the thoroughness of the search of literature.

THE STEREO-CLINIC. By Dr. Howard A. Kelly, Baltimore, Md. Vol. I., Gynecologic Examination, Hypertrophy, Conglutination, Pessaries, Fibroma. 41 Stereos. Cloth. Price, \$10.25. Vol. II., Examination of Bladder and Catheterization of Ureters, Dilatation and Curettage. 45 Stereos. Cloth. Price, \$11.25. Vol. III., Perineal Tear, Pelvic Abscess, Dermoid Cyst, Parasitic Myoma, Dysuria, 42 Stereos. Cloth. Price, \$10.50. Troy, N. Y.: The Southworth Co.

This work, one of the latest by the well-known author, consists of a series of stereograms or stereoscopic photographs illustrating various gynecologic operations, pathologic conditions and methods of making examinations.

It is recognized by all that the sense of sight is the one through which knowledge is most quickly and easily acquired. By means of these stereograms, Kelly has brought to the library of every surgeon the clinic room and the actual operation so that the various steps of the operation may be studied at leisure.

Instead of trying to catch a hurried glimpse of a rapidly performed operation, one may sit down and view the various steps with almost the realism of the operating-room. These stereograms with their almost perfect perspective are a great improvement over the ordinary illustration, however well the latter may be executed. As the stereograms are taken during the actual performance of the operation, the individuality of the operation is preserved as well as the various steps of the operation illustrated.

A careful study of the pictures with the apparatus furnished is like taking a postgraduate course. Each stereogram is accompanied by just enough text to bring out nicely the points desired to be emphasized.

THE PRINCIPLES OF HYGIENE. By D. H. Bergey, A.M., M.D., Assistant Professor of Bacteriology, University of Pennsylvania. Third Edition. Cloth. Pp. 542, with illustrations. Price, \$3. Philadelphia: W. B. Saunders Co., 1909.

Sanitary science and hygiene have made enormous strides during the past few years, owing largely to the knowledge gained in the etiology of diseases. An impetus has been given by many new discoveries in this field to a more detailed study of conditions of the air, and this subject has been ably discussed in the first chapter. Following this in logical sequence are chapters on ventilation and heating, water-supply and sewage disposal. Perhaps no other branch of sanitary science has advanced as rapidly as these, to which the author does full justice.

Food and dieting are taken up from a modern point of view. Physiologic chemistry has advanced our ideas in this respect, and the new movement for pure food has contributed its share to a betterment. The discussions on milk and alcoholic beverages are rather short, but give the desired information as explicitly as possible in such limited space. Exercise, clothing, personal hygiene, etc., are considered in separate chapters.

Of special interest is the chapter on the causes of diseases, the discoveries in this line following each other with such rapidity that it is difficult to keep in touch with the progress of the subject. This problem is discussed most intelligently and as much information is given as the size of the book permits. Closely following are the chapters on disinfection and quarantine. Much attention has been given by sanitarians to these topics, especially to disinfection, and the opinions prevailing among experts are recorded by the author. The closing chapter on vital statistics, and an appendix add much useful information.

SURGICAL DIAGNOSIS. By Alexander Bryan Johnson, Ph.B., M.D., Professor of Clinical Surgery in the Columbia University Medical College. Volumes I. and II. Cloth, with illustrations. Price, \$18 per set. Three volumes in set. Sold in sets only. New York: D. Appleton & Co., 1909.

It is seldom that one practices medicine or surgery in any of its branches long without realizing that a correct diagnosis is at once the most important as well as the most difficult part of the art, for when a correct diagnosis of a case has once been made, the most approved treatment is usually not difficult to outline.

The title of this work is too limited, for it deals not only with the question of diagnosis, but contains much that pertains to pathology and occasionally to treatment. This could scarcely be otherwise, however, in a work as comprehensive as this and this feature but adds to its value, for it is almost impossible for one to think of diagnosis without at the same time having pathology in his mind.

There are to be three volumes when the work is completed; Volumes I and II are now ready. Volume I treats of wounds and their diseases; diseases of the soft parts and of the bones; tumors; fractures and dislocations; syphilis; the x-rays; the head and neck; thorax and breast and abdomen in general; the peritoneum and injuries of special abdominal organs.

Volume II treats of injuries and diseases of the abdomen and of its contained viscera; the rectum; injuries and diseases of the kidney, the bladder, the prostate, the urethra, penis, seminal vesicles, scrotum, testes and spermatic cord.

The work is profusely illustrated in both color and black and white with almost entirely new cuts. Each volume is provided with an index of authors as well as of subjects.

This excellent work will certainly find favor with all who may read it.

THE PRACTICE OF ANESTHETICS. By Rowland W. Collum, L.R.C.P., M.R.C.S., Anesthetist to St. Mary's Hospital, Paddington, and **GENERAL SURGICAL TECHNIQUE**, by H. M. W. Gray, M.B., C.M., F.R.S.C., Surgeon and Lecturer on Clinical Surgery, Royal Infirmary, Aberdeen. Edited by James Cantlie, M.A., M.B., C.M., F.R.C.S., Surgeon Seamen's Hospital Society. The Medico-Chirurgical Series No. 1. Cloth. Pp. 382, with 39 illustrations. Price, \$3.00 net. New York: William Wood & Co.

This book is one of a series in which medical and surgical conditions are dealt with conjointly. This volume takes up anesthesia and general surgical technic. Part 1 contains a brief review of the history of anesthesia, a consideration of the chemical properties of the various anesthetics, the physiology of anesthesia, preparation of the patient, the selection of the anesthetic for special cases, concluding with the methods of administration of the various drugs and mixtures used, and the after-care of the patient. In Part 2 the author discusses the personal preparation of the surgeon and assistants, the operating room and its equipment, ligatures, suture material, etc., preparation and after-care of the patient, operations in private homes, responsibilities of the surgeon, and common surgical operations which may have to be undertaken by the general practitioner. While not pretentious, the book is full of practical interest and is to be commended.

THOSE NERVES. By George Lincoln Walton, M.D., Consulting Neurologist to the Massachusetts General Hospital. Cloth. Pp. 202. Price, \$1. Philadelphia: J. B. Lippincott Co., 1909.

This book, small enough to go in one's pocket, is dedicated to "Those Who Need It." One is surprised as well as amused in turning over its pages to find how many of the keen little paragraphs can be applied to one's own mental and physical states. In a day when there is so much loose talk about the power of the mind over the body, it is refreshing to read something practical and sensible on the power of the individual over the mind. The object of the author, as stated in the introductory chapter is to "promote such peace of mind as may make for health as well as for happiness. In other words, like vaccination, pure milk and disinfection, it aims to prevent." Self-control, freedom from annoyance on account of irritating surroundings, the mental dangers of isolation are discussed, as well as some mental traits for which the author has had to invent a terminology which is none the less easily recognizable. Who, for instance, does not know at the first glance what is meant by "side-trackability," "character-leakage," or "magnification of the unessential?" Two chapters are devoted to various obsessions in which almost any one can find some of his favorite peculiarities graphically but sympathetically portrayed.

Medicolegal

The Medical Practice Law in Oklahoma After the Territory Became a State

The Criminal Court of Appeals of Oklahoma says, in *State vs. Harmon* (104 Pac. R., 370), that the territorial laws relating to the practice of medicine were not extended and did not remain in force in the state of Oklahoma by reason of section 39, article 5, of the Constitution, which provides that: "The legislature shall create a board of health, board of dentistry, board of pharmacy, and pure food commission, and prescribe the duties of each. All physicians, dentists and pharmacists now legally registered and practicing in Oklahoma and Indian Territory shall be eligible to registration in the state of Oklahoma without examination or cost." This provision of the Constitution was made effective by chapter 70a, article 1, page 7^{1a}, of the session laws of 1907-'08, the same being entitled: "An act to define and regulate the practice of medicine, to create a board of medical examiners for the examination and licensing of physicians and surgeons, and to prescribe their qualifications; to provide for their proper regulation, and to provide for the revocation of their license; to require itinerant vendors to procure a county license, and to fix suitable penalties for the violation of this act, and repealing laws and parts of laws in conflict herewith." This law was approved June 12, 1908, and became effective on the 24th day of August, 1908.

Construction and Validity of Statute Relating to Vaccination of School Children—"Successful Vaccination"

The Supreme Court of Washington holds, in *State vs. Shorrock and others* (104 Pac. R. 214), that a provision that the boards of directors might make vaccination a necessary condition precedent to attendance on the public schools was clearly within the title of the act of 1897, entitled "An act to establish a general uniform system of public schools in the state of Washington," etc. It says that this provision stands on the same plane as the provisions contained in the act for the exclusion of those afflicted with infectious or contagious diseases, or who reside in houses wherein such diseases are prevalent. In other words, it defines the class of persons who may be permitted to attend the schools created by the act. It is therefore germane to the general subject.

Nor does the court consider the provision in question repealed by the subsequent statute providing for the compulsory education of children. If the latter statute required compulsory attendance on the public schools, the two statutes taken together might require compulsory vaccination, but even in that case there would be no repeal of the former by the latter. The legislature has power to require all minors to attend the public schools, and to require them to be vaccinated before so attending.

Neither is the statute void because it makes no allowance for those physically incapable of vaccination. It is not to be presumed that the legislature intended to require, as a condition of its right to attend the public schools, the vaccination of a child whose condition of health is such that the operation would endanger its life, or injuriously affect it mentally or physically. It is presumed that exceptions were intended in favor of such individuals; and, if the officers having in charge the execution of the statute refuse to recognize an exception in such a case, the courts can be appealed to, to compel such recognition.

A contention that the statute is too indefinite to be capable of enforcement was founded on the fact that it requires "successful vaccination," and no definition of the term is furnished by the statutes. But here, again, the court thinks that the rule of common-sense construction can properly be invoked. The board of directors in question construed the statute to mean that a person was successfully vaccinated when the customary reaction was obtained by the operation, or when three operations had been performed without obtaining reaction. Of course, if the customary reaction follows the operation, there is no question concerning the success of the operation. But if no reaction follows three several operations, it is evident that the individual cannot be vaccinated,

and such individual can be held to be either successfully vaccinated, or as one not included within the general language used in the statute. To allow individuals to attend the schools who from their condition of health or causes cannot be successfully vaccinated is not a violation of the statute. This is but a recognition of an exception intended by the legislature, but which was not provided for because not foreseen.

The court finds no objection to the statute itself, or to the manner in which it was being enforced.

Notice Necessary to Inquisitions of Lunacy—Force of Physicians' Certificates

The Supreme Court of Vermont says, in *ex parte Allen* (73 Atl. R., 1078), that, at common law, an insane person may be temporarily restrained without legal process, and, if need be, in an asylum, if his going at large would be dangerous to himself or to others, preliminary to the institution of judicial proceedings for the determination of his mental condition, and such a restraint does not violate any constitutional provision. When, however, the confinement is permanent in nature, the person thus confined is deprived of his liberty which, in order to be lawful, must be in pursuance of a judgment of a court of competent jurisdiction after such person has had sufficient notice and an adequate opportunity to defend. It is no answer to say the person is insane and consequently notice to him will be useless, for that is assuming as a fact the very thing in question, and which is presumed to be otherwise until proved.

Such notice and opportunity are required by the Constitution of Vermont wherein it reads: "Nor can any person be justly deprived of his liberty except by the laws of the land, or the judgment of his peers." And by the fourteenth amendment to the federal Constitution that no state shall "deprive any person of life, liberty or property, without due process of law."

The Vermont statute contains no specific provision for notice to the alleged insane person of the institution of proceedings for a court of inquiry to ascertain whether he shall be removed to the hospital for the insane as a state charge. But the provisions for a court of inquiry should be construed in the light of the requirements of the principles of the common law, and so construed the insane person is entitled by law to proper notice of such proceedings and an opportunity to be present and defend. That is all that due process of law requires, and consequently the statute in this respect is not unconstitutional.

Just what force as evidence the statute contemplates that the physicians' certificate shall have in hearings of this character is a question not entirely free from doubt. The examination by the physicians is made under certain provisions of the statute, but it is not of a public nature and made under competent authority on behalf of the public to ascertain a matter of public interest. The certificate is not, therefore, a return of the physicians' proceedings and findings to a court to be there acted on in affirmance or disaffirmance, as is generally done when an investigation has been made by an inquisition by virtue of competent authority. Yet an inquisition of lunacy is only presumptive evidence of insanity, and is traversable as a matter of right by the alleged lunatic, and may be sent to a court of common law to be tried by jury. And the statute respecting the use of the certificate may reasonably be so construed as to make it, like an inquisition of lunacy when traversed, *prima facie* evidence of the person's insanity.

In this case the court finds that the proceedings of the court of inquiry questioned were a nullity, and that the confinement of Lydia Ann Allen in the state hospital for the insane on the order of that court was illegal, wherefore she would be discharged from such confinement on said order, yet, if she was insane and her going at large would be dangerous to herself or to others, she would not be set at liberty on habeas corpus. In such circumstances it was the duty of the court and within its common-law power resting on public necessity to restrain her until resort could be had to regular and orderly means to place her under permanent legal restraint.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

Medical Record, New York

January 15

- 1 *Pellagra at the Peoria State Hospital, Peoria, Illinois. J. F. Siler and H. J. Nichols. U. S. Army.
- 2 Practical Method of Obtaining the Duodenal Contents in Man. M. Einhorn, New York.
- 3 Eye Troubles of Early Life. J. W. Avery, New York.
- 4 *Interpretation of Clinical Hearing Tests According to the Author's Sensitive Hair Theory of Sound Perception. W. S. Bryant, New York.
- 5 *Letters to a Neurologist. J. Collins, New York.

1. **Pellagra in Illinois.**—Of 2,150 inmates examined by Siler and Nichols at the Peoria institution, the majority of whom have been almshouse and asylum inmates for many years. 175 were pellagrous during the summer of 1909. No physicians, attendants, or employees were affected. About 70 per cent. of the patients had suffered from previous attacks and pellagra has been prevalent at least 4 years. The average age of the patients was 50 years; the sex distribution was about equal. Attacks were mild (skin symptoms, mild digestive tract symptoms without constitutional reaction) and severe (marked skin and digestive tract symptoms with pronounced toxemia). A diagnosis of pellagra is not warranted in absence of skin symptoms. The symmetry of skin lesions was a most striking feature. When bleb formation occurred the death-rate was high. Digestive tract symptoms were not present in all cases. In some cases diarrhea and stomatitis could be attributed to bad teeth, and infection with amebas and flagellates, but in other cases, the constitutional symptoms pointed to some additional specific poison. Patellar and plantar reflexes were abnormal in about three-fourths of the cases, usually increased. It was impossible to determine the exact extent of mental disturbance attributable to pellagra, as all patients were insane before the disease was recognized. The patients developed no suicidal tendencies. In mild cases the patients recovered without therapeutic aid. In severe cases they were not much benefited by Fowler's solution, atoxyl or thyroid tablets. Examination of the feces showed in 84.8 per cent. of the cases protozoal infection (amebas, flagellated and encysted forms). These protozoal infections account in part for the intestinal symptoms and are believed to be a predisposing factor. In 18 autopsies, well-marked ulcerations of the colon were found in 12 cases, and folliculitis occurred in all. No other organ showed any striking alteration. Cultures of blood, spinal fluid and spleen pulp were uniformly negative. The disease impressed the authors as an intoxication rather than an infection. Not more than two ounces of corn were eaten daily; no evidence was obtained of the use of spoiled corn. The possibility of an intoxication from bacterial action on corn products in a damaged intestine is considered the most promising field for study.

4. **Interpretation of Clinical Hearing Tests.**—In diseases of the cochlea, when there is only a quantitative impairment and not loss of high tone perception, Bryant maintains that the lesions of the cochlea must be localized. When, however, there is a total loss of perception of high tones from cochlear involvement, the author interprets this absence of high tone perception as due to a lesion which is diffused throughout the extent of the scala media.

5. **Letters to a Neurologist.**—Collins supposes himself to receive a letter from a worldly, selfish woman, who has exhausted all sorts of pleasure, and now, at 43, finds herself a prey to *ennui*, supposing herself to be sick. He answers her by trying to direct her to live for others instead of herself, to endeavor to aid some of the great endeavors of the day to better the conditions of the masses, and in this to find a happiness that the mere pursuit of pleasure cannot bring.

Boston Medical and Surgical Journal

January 13

- 6 Test Diet, Nitrogen and Sulphate Partitions as an Aid to Diagnosis in Intestinal Disturbances. J. M. Lynch, Hoboken, N. J.
- 7 Antityphoid Inoculation Conducted by Massachusetts General Hospital. L. H. Spooner, Boston.

- 8 Reproduction of Pain as a Means of Making Differential Diagnosis. H. T. Hutchins, Boston.
- 9 Opsonic Therapy in Pyorrhea Alveolaris. L. S. Medalla, Boston.
- 10 Crotalin; An Improved Method for its Administration. T. J. Mays, Philadelphia.

New York Medical Journal

December 15

- 11 *Presence of Acid-Fast Bacteria in Distilled Water. R. C. Rosenberger, Philadelphia.
- 12 Present Status of United States Army Nurse Corps. C. Lynch, Washington, D. C.
- 13 Private Nurses and Nursing: Recommendations for their Betterment. T. E. Satterthwaite, New York.
- 14 Successful Experiment in Educating Efficient Nurses for Persons of Moderate Income. W. O. Stillman, Albany, N. Y.
- 15 An International Educational Standard for Nurses. Mrs. H. Robb, Cleveland.
- 16 Factors of Mortality in and the Complications of Gastroenterostomy. C. G. Cumston, Boston.
- 17 *Bacterial Vaccines in Acute Rheumatism. G. A. Persson, Mt. Clemens, Mich.
- 18 Educational Responsibilities of a Milk Depot. I. S. Wiie, New York.
- 19 Physiologic Gastric Juice in Treatment of Tuberculous Diseases. J. D. Nagel, New York.

11. **Acid-Fast Bacteria in Distilled Water.**—Rosenberger is still of the opinion that tubercle bacilli are present in the blood in every case of tuberculosis of the lungs or other viscera. If, he asks, tubercle bacilli are not in the blood, how would they appear in the urine or feces without demonstrable lesions either of the kidney or of the intestine? The demonstration of tubercle bacilli in the blood is not a procedure that can be indulged in by every student, and it is not for the man who "wants to come into the laboratory to do a little work," but for well-trained bacteriologists. Rosenberger repeatedly examined distilled water under many varying conditions for acid-fast bacteria, but failed to find them. He questions the value of the work done by men who have reported adversely on the presence of tubercle bacilli in the blood.

17. **Vaccine Treatment of Acute Rheumatism.**—Persson reports 68 cases of acute rheumatism in which the opsonic treatment has been employed. The bacterial vaccine which was used in all these cases was prepared in the following manner: A desired micro-organism was grown in a media consisting of 80 parts of sea water with a specific gravity of 10.15 which had been sterilized by filtration, and 20 parts of a 5 per cent. solution of neucleanic acid, allowed to develop in the incubator for 48 hours, when proper dilution with the sterilized sea water was made to form a suspension of 20,000,000 germs to the cubic centimeter. It was then exposed to thermal death point for 30 minutes. Each patient received a daily inoculation of 1 c.c. or 20,000,000 germs. The results obtained were as follows: *Streptococcus rheumaticus* infection, 47 patients; cured, 32; improved, 8; and unimproved, 7. *Staphylococcus pyogenes aureus* infection, 14 patients; cured, 3; improved, 7; unimproved, 4. Colon bacillus infection, 7 patients; cured, 3; improved, 1; and unimproved, 3.

Lancet-Clinic, Cincinnati

January 8

- 20 *Stricture of the Male Urethra. E. O. Smith, Cincinnati.
- 21 *Acute Dilatation of the Stomach. E. Walker, Evansville, Ind.
- 22 Life Insurance Examinations with Reference to Urinalysis and Tuberculin Reactions. C. W. Leigh, Chicago.

20. **Stricture of Male Urethra.**—According to Smith, almost every stricture which is secondary to specific urethritis is amenable to gradual intermittent dilation treatment. The first principle to be observed in the introduction of any instrument into the urethra is that no force is to be employed. Internal urethrotomy he regards as unsafe, and says it should never be attempted by the unskilled and inexperienced. External urethrotomy is seldom indicated in other than traumatic strictures.

21. Abstracted in THE JOURNAL Nov. 20, 1909, p. 1770.

Virginia Medical Semi-Monthly, Richmond

December 10

- 23 What the Practicing Physician Can Do in the Prevention of Typhoid. L. L. Lumsden, Washington, D. C.
- 24 Tuberculin in Pulmonary Tuberculosis. W. T. Little, Canon City, Colo.
- 25 Four Hundred Consecutive Abdominal Operations. C. R. Robins, Richmond.

- 26 Importance of an Early Diagnosis in Genitourinary Tuberculosis. F. R. Hagner and H. G. Fuller, Washington, D. C.
27 Case of Kidney Congenitally Misplaced in the Pelvis. J. W. Henson, Richmond.
28 Case of Hydramnion. J. M. Williams, Disputanta, Va.
29 Causes, Symptoms and Differential Diagnosis of Pyosalpinx. B. M. Ansbach, Philadelphia.

Kentucky Medical Journal, Bowling Green

December 15

- 30 Fracture of the Patella. S. C. McCoy, Louisville.
31 Non-Valvular Diseases of the Heart. J. B. Marvin, Louisville.
32 *Exophthalmic Goiter: Operative Treatment; An Improved Technique. J. R. Wathen, Louisville.
33 Microscope Examination of Specimens Removed and Conclusions Based on These Examinations and the Recent Work of Others. E. F. Horine, Louisville.

32. **Exophthalmic Goiter.**—The technic employed by Wathen is said to possess the two most important requisites, i. e., rapidity and safety. The patient's head is elevated, and a large sand-pillow is placed under the shoulders and neck. This position throws the chin upward and places the tissues of the neck on the stretch. The skin is grasped in the median line, with two pairs of Jacobs' volsella forceps and traction is made upward. With a large pair of blunt-pointed scissors the skin and platysma muscle are incised; then, with constant upward traction, the incision is continued around the neck as far as is needed, which is usually to the edge of the external jugular vein on either side. This method of elevating the skin by traction with the forceps is much safer, as one is not so liable to cut the veins and arteries lying below; it is very rapid and allows the use of scissors which cause less hemorrhage of the smaller arteries when cut. The two large flaps are now dissected up to above the hyoid bone and down to the sternum. The ribbon muscles are freed in the middle line, and the sternohyoid muscle of each side is double clamped high up and cut, the forceps being left on to act as retractors. Next, the broad and thin sternothyroid muscle is separated from the gland capsule and divided on both sides.

The capsule is then opened and the tumor grasped with large, three-pointed volsella forceps, and traction is made in an upward and opposite direction. With gauze the capsule is wiped off the gland, artery forceps catching the capsule at several points. As the arteries and veins appear they are double clamped and cut high up on the tumor, so as to avoid injury to the recurrent laryngeal nerve, or cut off the arterial branches to the parathyroids. As early as possible the superior thyroid artery should be located and clamped, as this is the major portion of the arterial supply. The constant upward traction on the tumor causes the vessels to stand out between the capsule and the tumor, and also prevents venous hemorrhage.

After the vessels have all been clamped and the tumor freed, except at the isthmus, a very large forcep is placed on this point, and, as near as possible, the tumor is cut V-shaped from the isthmus. Then the clamp is gradually loosened and any bleeding vessels in the pedicle are ligated. Next, the edges of the cut gland are whipped over the catgut and in this way the secretions, as well as the hemorrhage, are stopped. Next, each artery or vein held in the forceps is tied with catgut or celluloid yarn, as the latter is more rapid and less liable to slip than is catgut. A stab-wound is then made in the suprasternal notch, and a small rubber tube, and by its side a small piece of gauze, are introduced. At this stage of the operation, the cavity is repeatedly flushed out with normal saline. The anesthetist then allows the patient to come out somewhat from under the anesthetic, and the straining and nausea test the ligatures. This is, in Wathen's opinion, one of the most valuable points in his technic, as on more than one occasion he has seen even the celluloid yarn give way and much hemorrhage ensue. The ribbon muscles are then sutured and the skin to which the platysma is attached, is sutured with a subcuticular catgut suture.

Ohio State Medical Journal, Columbus

December

- 34 Treatment of Syphilis by Deep Injections. A. Ravogli, Cincinnati.
35 Therapeutic Test of Syphilis. J. Metzger, Toledo.
36 Hernia. W. D. Hamilton, Columbus.
37 Question of Operation in Fractures at the Base of the Skull. F. E. Bunts, Cleveland.

- 38 Cyclic Vomiting. A. Friedlander, Cincinnati.
39 Hygienic Aspect of Ohio River Water Supply Incident to Slack Water Navigation. S. O. Barkhurst, Steubenville.
40 The Delicate Child. E. W. Mitchell, Cincinnati.
41 Case of Hypertrophy of the Palpebral Conjunctiva. F. W. Blake, Columbus.

Pennsylvania Medical Journal, Athens

December

- 42 Limitations of Mental Therapies in the Treatment of Disease. C. W. Burr, Philadelphia.
43 *Sanitary Science and Social Evil—Social Hygiene. F. W. Tompkins, Philadelphia.
44 *Social Hygiene. L. Litchfield, Pittsburg.
45 *Ocular Manifestations with Intracranial Lesions Complicating Aural Disease. S. M. Smith, Philadelphia.
46 *Brief History of the Treatment of Stammering with Suggestions as to Modern Methods. G. Hudson-Makuen, Philadelphia.
47 *Reduction of Temperature in Children without the Use of Drugs. W. C. Hollopeter and H. B. Mills, Philadelphia.
48 *Management of Typhoid, with Special Reference to Diet. W. E. Robertson, Philadelphia.
49 *Importance of Considering the Arterial and Venous Systems in Diseases of Other Organs. H. A. Hare, Philadelphia.
50 *Blood Pressure Past Middle Life in Diagnosis, Prognosis and Treatment. J. H. Barach, Pittsburg.
51 Aortic Stenosis. H. D. Jump, Philadelphia.
52 *Analysis of 63 Cases Exhibiting Xiphisternal Crunching Sound. M. Solis-Cohen, Philadelphia.

43. Abstracted in THE JOURNAL Oct. 9, 1909, p. 1216.

44. Abstracted in THE JOURNAL, Oct. 16, 1909, p. 1321.

45, 46. Abstracted in THE JOURNAL, Nov. 6, 1909, pp. 1588, 1590.

47. **Reduction of Temperature in Children.**—The most satisfactory antipyretic for young children, according to Hollopeter and Mills, is cold. This may be in the form of an ice bag or a sponge bath given cautiously. By means of the ice cap or sponging one is able to calm a nervous irritability, and this is done by literally bleeding the children in their own vessels. The routine method that the authors follow in managing the feverish child, is the manipulation of the ice cap and hot-water bag. The ice bag is placed to the head and the hot-water bag to the feet. Of course this has the effect of equalizing the circulation in the most satisfactory way. This is all preliminary to the sponging.

The authors supplement the ice bag and the hot-water bag, if the child's temperature is not reduced in a few hours, by cold sponging. This is accomplished by removing all the clothing, except the diaper, and placing the child on a blanket and sponging for 10 or 20 minutes. This will allay the nervous tension and reduce the temperature, and is more satisfactory than any other anodyne, especially if done in a gentle manner. In a fretful or nervous child it is well to commence with water at the temperature of from 90 to 95 F. and to sponge the body very carefully, commencing at the face and gradually going down the anatomy until the whole body has been covered, and then allowing a little evaporation or letting the child be exposed, except its extremities. The second step is to take a basin containing water at 80 F. and proceed in the same way as at first, finally using a basin containing water at 70 F. This method of procedure has been less trying to the child and favorable results are reached earlier. If the child is irritable or excitable, the whole body should not be exposed at one time, during the bath, but should be bathed in instalments until the entire body has been covered in full.

Another therapeutic method of great importance in pediatric practice is colonic irrigation. Another valuable adjunct in the management of feverish children, and one now being strongly advocated throughout the medical world, is that of permitting the entrance of plenty of fresh air into the sick-room regardless of the temperature of the patient, the only precaution necessary being the avoidance of draughts, which may readily be accomplished by the intelligent use of screens. Finally, the care of sick children should include treatment in the open air.

48. **Management of Typhoid.**—Concerning the reduction of fever, Robertson says that just as in health one runs a normal daily curve, so in disease, the temperature curve follows a course according to the nature of the infection. If the temperature be 105 F. or over, it is justifiable to give a prolonged sponge or a dose of from 5 to 10 grains of aspirin. It is Robertson's practice not to have his patients disturbed for any purpose from 11 p. m. to 7 a. m. During the day food is

given every four hours. One-half hour after each meal dilute hydrochloric acid is administered in doses of from 20 to 60 minims, gauged by the degree of dryness of the tongue. Patients treated in this way, he asserts, remain well-nourished and do not present the usual hebetude of typhoid. In fevers, hydrochloric acid is diminished or absent; hence the physiologic need is supplied; this, with carbohydrates will prevent tympany. The author's diet list is given. Robertson found that typhoid carriers are rarely met with after the above plan is adopted.

49, 50, 52. Abstracted in THE JOURNAL, Nov. 6, 1909, p. 1507.

Bulletin Johns Hopkins Hospital, Baltimore

December

- 53 Pleural and Pulmonary Secondary Osteosarcoma. E. R. LeCount, Chicago.
- 54 Aretaeus the Cappadocian. E. F. Cordell, Baltimore.
- 55 Results Obtained, and Features of Interest, in 215 Consecutive Cataract Extractions. S. Theobald, Baltimore.

American Journal of Surgery, New York

December

- 56 Diagnosis and Treatment of Retrodisplacement of the Uterus. E. E. Montgomery, Philadelphia.
- 57 *Tumors of the Urethra in Women: Especially Malignant Growths. B. C. Hirst, Philadelphia.
- 58 Surgical Treatment of Hemorrhage Complicating Pregnancy. E. P. Davis, Philadelphia.
- 59 Diagnosis and Treatment of Extrauterine Pregnancy. P. B. Bland, Philadelphia.
- 60 Polypoid Growths and Rectal Polypi: Report of a Recent Case of Fibroma, Undergoing Myxomatous Degeneration. L. H. Adler, Philadelphia.
- 61 *Relation of Rectal Diseases to the General Nervous System. E. Laplace, Philadelphia.
- 62 *Roentgen-Ray Treatment of Malignant Disease. C. L. Leonard, Philadelphia.
- 63 *Conservation of the Middle Turbinate. W. A. Hitschler, Philadelphia.
- 64 Present Status of the Cataract Operation. W. C. Posey, Philadelphia.
- 65 Cyclodialysis. W. L. Pyle, Philadelphia.
- 66 Postoperative Treatment of Urethrotomy—Internal and External. H. M. Christian, Philadelphia.
- 67 *Cancer of Stomach: A Statistical Study. J. A. McGlinn, Philadelphia.

57. Tumors of the Urethra.—Hirst says that the only practical deduction to be drawn from a study of these growths is the necessity of their early and complete removal. If a careful examination after removal shows benignancy, so much the better for the patient as regards recurrence. Benign urethral growths are at least provocative of some symptoms and there is always the possibility of malignant degeneration if they are neglected. If they prove to be malignant, they could not have been removed too early or too completely.

61. Rectal Diseases.—Laplace shows the intimate connection of the sigmoid and rectum, with the sympathetic and cerebro-spinal nervous system; how by various rectal disorders the nervous system becomes thoroughly demoralized, predisposing the patient to many reflex troubles; to demonstrate the great absorbing power of the rectum, for gases and fluids, and thereby to show the toxic influence of constipation on the general system, in weakening the autoprotective powers of the economy, the opsonins and phagocytes.

62. Roentgen-Ray Treatment of Malignant Disease. — Leonard is convinced that the Roentgen rays have demonstrated their efficiency as a remedial agent in the treatment of malignant disease, not only in superficial epithelioma, but also in the graver forms of malignancy. Their established potency renders them a valuable supplemental agent to radical operation by destroying the lymphatics and any residual foci of malignancy. Therefore, every patient suffering from malignant disease should submit, as early as possible, to the radical surgical removal of all the visibly diseased tissue that it is possible for the surgeon to remove, and should then be given the benefit of a vigorous course of post-operative Roentgenization. This course of treatment must be vigorous as otherwise it may do more harm than good, and must be guided by the same principle as is a surgical operation, i. e., as severe as the vitality of the patient will permit. The value of this agent as a palliative in hopelessly inoperable cases of malignant disease, has been shown by the complete recovery of patients on whom operation was impossible, and by the relief of pain and the prolongation of life in comfort under normal physical conditions to a degree not attained by any other method of treatment.

63. Conservation of the Middle Turbinate.—According to Hitschler, the point to be observed is that a normal middle turbinate cannot be sacrificed without interfering with the functioning power of the nose, and the function of the nose is to cleanse, warm and moisten the air in its passage to the lung. The nasal mucous membrane is not of the same anatomic structure throughout. In passing over a heated surface the air is warmed directly in proportion to the amount of heated surface over which it must pass. Nature has therefore placed in certain portions of the nasal mucous membrane a tissue which can alter the area of its surface to accommodate itself to the varying conditions of the inspired air. The tissue which can thus contract and expand is the cavernous tissue, and this cavernous tissue reaches its highest development in the median surface of the inferior turbinate and in the inferior surface of the middle turbinate—portions of the nasal fossa in the direct line of the current of inspired air. This cavernous tissue also reaches a high grade of development in the inferior portion of the inferior turbinate, and to a less extent on the anterosuperior portion of the septum—the tubercle. It is thus evident that the inferior portion of the middle turbinate is a highly functioning organ and its removal must be accompanied by loss of its function.

67. Cancer of the Stomach.—In 2,268 autopsies made at the Philadelphia General Hospital there were 121 cases of primary cancer. The stomach was the site in 37.2 per cent. of the cases (45); and the uterus in 10.7 per cent. (13). Of the cases of cancer of the stomach 32 were in males, and 13 in females. The average age of the patients was 58 years. The youngest was 38, the oldest 76 years. Fifteen, or 35 per cent., occurred between the ages of 45 and 55. Metastases occurred in the following order: Liver, 16 cases; abdominal lymph nodes, 9; pancreas, 8; omentum, 4; mesentery, 4; lungs, 3; kidney, 3; transverse colon, 3; spleen, 3; peritoneum, 3; pleura, 1; both adrenals, 1. The site of the cancer is not reported in all the cases. Of those recorded, the pylorus was the site in 18 cases, the lesser curvature in 4, and the cardiac end in 2. Stenosis was present in 7 cases and atresia in 2.

Chicago Medical Recorder

December

- 68 Practitioner and Specialist. H. T. Byford, Chicago.
- 69 *Preservation of Meats by Cold Storage. H. S. Grindley, Champlain, Ill.
- 70 Value of the Nurse in the Public School. T. A. Woodruff, Chicago.
- 71 Contract Medical Practice. C. P. Caldwell, Chicago.
- 72 Cessation of Discharge During Anterior Acute Gonorrhea Due to Hyperemia not the Results of a Gonorrheal Inflammation of Parts in the Immediate Vicinity. W. F. Bernart, Chicago.
- 73 Marcus Patten Hatfield. G. T. Palmer, Springfield.

69. Preservation of Meats by Cold Storage.—The investigations which have been made at the University of Illinois on the effect of cold storage on meats were begun in 1904 with the prime object of determining the character of the chemical changes which meats undergo when kept in cold storage. Both boiling and roasting experiments were made and in this connection the detailed chemical examination of eight samples of cooked meat and eight of broth and drippings resulting from the boiling and the roasting were made. The results of these observations confirm the accurate and exhaustive chemical investigations made in this country by Wiley and Pennington and their associates, and Richardson and Schreubel, which demonstrated without doubt that cold storage meats are as nutritive as fresh meats, considered from the standpoint of their chemical composition, and that meats kept in cold storage under proper conditions undergo at most only very slight chemical changes.

Journal of Ophthalmology and Oto-Laryngology, Chicago

December

- 74 Ocular Symptoms of Diseases of the Accessory Sinuses. W. C. Posey, Philadelphia.
- 75 Nodular Opacity of the Cornea Cured by Excision. G. B. Jobson, Franklin, Pa.
- 76 Painless and Bloodless Tonsillectomy with Descriptive Technique. O. Tydings, Chicago.

American Journal of Obstetrics and Diseases of Women and Children, York, Pa.

December

- 77 *Involution of the Puerperal Uterus; Especially Involution of its Circulatory System. J. R. Goodall, Montreal.
- 78 Teratoma Strumosum Thyroideale Ovarii. C. C. Norris, Philadelphia.

- 79 *Appendicitis Complicating Pregnancy, Labor and the Puerperium. P. Findley, Omaha.
80 Incarceration of the Pregnant Uterus. R. W. Lobenstein, New York.
81 Sequelæ of Present-Day Labor. J. O. Polak, Brooklyn.
82 *The Chloroform Package for the Obstetric Bag. F. H. Meehan, Cincinnati.
83 Important, but Often Neglected Factors in Infant Feeding. T. S. Southworth, New York City.
84 Treatment of Typhoid in Childhood. LeG. Kerr, Brooklyn.

77. Involution of the Puerperal Uterus.—The essential conclusions drawn by Goodall from a study of 80 uteri are as follows: The uterus renews all its arteries after each pregnancy; the renewal always consists in the building of a new vessel within the lumen of the old one. The walls of the old vessels which have become superfluous are completely absorbed. Under the influence of advanced age, or chronic wasting or acute disease the destruction and absorption may be very incomplete. The differences between the parous and nulliparous uterus arise out of the incompleteness of destruction and absorption of waste products. The changes in the walls of the vessels of the uterus are closely allied to those about the atrophic corpus luteum. Disease, either local in the pelvis or general, renders the process of involution much slower, and acute disease may cause a complete block in involution. Alternating periods of exacerbation and improvement may cause conditions in the uterus resembling a series of involutions.

In later years of sexual life and under the influence of disease the more highly specialized tissues have a strong tendency to be replaced by the less specialized, i. e., muscle by elastic tissue. The veins of the uterine body and cervix are everywhere reduced by a growth of hyaline tissue in their walls and not by organization of clot. Under the influence of age and disease this hyaline growth is replaced partly or wholly by elastic tissue. Syncytial cells play no part whatsoever in the production of these venous changes. The large colorless masses found in the mucosa of the uterus of women who have borne children are the remains of atrophic elastic tissue and not the remains of organized blood clot. This unabsorbed dead tissue may remain at least ten months, but probably very much longer, and is the most positive sign of a foregoing pregnancy. When elastic tissue of the parent vessel remains in the uterus unabsorbed, it becomes either atrophic or hypertrophic. The latter, unless disturbed by a subsequent pregnancy, will remain throughout the woman's life and constitute the so-called sclerosis of pregnancy. This unabsorbed hypertrophic elastic tissue may arise from the elastica interna, or from the elastic tissue of the media and adventitia, or from elastic tissue invading the interarterial space, or from all sources combined. The muscular cells of the uterus and cervix undergo fatty degeneration with subsequent slow absorption of the fat. The fibrous tissues undergo hyaline degeneration with slow absorption of this hyaline substance. Many of the muscle fibers of the uterus disappear completely, especially is this true of the media of the large arteries. The uterine arteries and veins probably undergo a slight reduction in their lumen in a manner similar to that of the arteries of the uterine wall.

79. Appendicitis Complicating Pregnancy.—Findley reports 7 cases. In all 7 there had been previous attacks of appendicitis. In 5 the attack of appendicitis preceded the uterine contractions, and in each instance the miscarriage or labor was followed by a rapid development of the symptoms referable to the appendix. In 2 there was a gangrenous appendix, with abscess formation which rapidly spread to the general peritoneal cavity and resulted fatally. In 2 the fetus was dead in utero. In one of these cases a blood mole was expelled 3 days after drainage of an abscess. Of the 7 women, 2 died from septic peritonitis and one from bronchopneumonia. One recovered after abscess formation, 2 recovered after sharp attacks with pus confined to the appendix, and one after a recurrent attack of the catarrhal variety. Death occurred in 3 of the 7 cases—a mortality of 43 per cent. In the three cases resulting fatally, one patient was not operated on, making the mortality in the operative cases 33.3 per cent.

Findley concludes that pregnancy does not incite a primary attack of appendicitis, but recurrent attacks may be precipi-

tated by pregnancy, labor and the puerperium. Severe attacks may be confounded with puerperal infection of the uterus and its appendages. Mild attacks of appendicitis do not alter the course of pregnancy. Severe attacks commonly interrupt pregnancy and may lead to death of the fetus either *in utero* or shortly after birth. Death of the fetus is ascribed to non-viability, toxemia, and septicemia. A woman in the child-bearing period who has experienced one or more attacks of appendicitis should be operated on because of the liability of a recurrent attack in the event of pregnancy. Mild cases do not demand operative intervention unless oft repeated in the course of pregnancy. Severe cases should be operated on without delay. When occurring near the end of the period of gestation or in labor, the pregnancy should be speedily terminated, immediately after which the appendix should be removed. Where an appendiceal abscess has formed, early drainage is imperative, in the fear that the contracting uterus which forms a part of the abscess wall may liberate the pus into the general peritoneal cavity. When operating in the course of pregnancy, every effort should be put forth to prevent miscarriage. Rest should be enjoined, opiates administered, and during the operation the uterus should be handled and exposed as little as possible.

82. Chloroform Package for Obstetrical Bag.—This is an advocacy of the use of the dropper ampoule.

Therapeutic Gazette, Detroit

December

- 85 Epididymo-Vasostomy for Relief of Sterility. E. Martin.
86 Use of Mercury by the Ophthalmic Surgeon. B. Chance, Philadelphia.
87 Rose Cold and Hay Fever, or Coryza Vasomotoria Periodica: Its Prophylaxis and Treatment. O. L. Litchford, Philadelphia.
88 Vaccine Treatment of Disease with Opsonic Control. E. C. Seufert, Chicago.
89 Changes in the Vascular System and their Bearing on Treatment. H. A. Hare, Philadelphia.

Southern Medical Journal, Nashville

December

- 90 Mistakes in Medical Practice. S. G. Bonney, Denver.
91 *Surgery of the Gall Bladder. W. D. Haines, Cincinnati.
92 Importance of Recognizing Mild Cases of Pellagra. G. Dock, New Orleans.
93 Cases of Pellagra. A. W. Ryne, Beulah, Miss.
94 *Unique Case of Renal Calculi. P. Bromberg, Nashville.
95 Acute Osteomyelitis. R. Caldwell, Nashville.
96 The Habitus Enteropticus. F. M. Durham, Columbia, S. C.
97 Treatment of Pelvic Inflammation. E. M. Sanders, Nashville.
98 Late Vomiting of Pregnancy. S. S. Crockett, Nashville.
99 *Hemophilia in One Family. W. M. McCabe, Nashville.

91. Abstracted in THE JOURNAL, Nov. 6, 1909, p. 1591.

94. Renal Calculi.—While bathing, the patient was suddenly seized with an intense pain in the back (both sides), the pain radiating downward toward the bladder, accompanied by frequent and urgent desire to urinate, which terminated with the passage of a large number of stones. The peculiarity of the stones is the uniformity in shape, the almost identical size, weighing approximately one-fifth of a grain each, the perfectly smooth surface which seems rather highly polished, and the color when first passed. They were covered with a tough mucus and had the appearance of being enclosed in a sac, but when water was added it was apparent that it was only a mucus covering. The stones themselves, when fresh, were remarkably smooth, highly polished, and of a dark, olive green color. These attacks were frequent during the following 2 years, the patient passing several hundred of the stones.

99. Hemophilia in One Family.—The history of this family of hemophiliacs is extremely interesting, because it has been traced back four generations, and shows that the transmission has in every case been through the female.

Alabama Medical Journal, Birmingham

December

- 100 Case of Ovarian Pregnancy. E. M. Prince, Birmingham.
101 Value of Vaccine Therapy in Surgical Affections. J. P. Long, Birmingham.
102 Importance of Careful History Taking and Case Records. C. Lull, Birmingham.
103 Hepatic Abscess. W. H. Wilder, Birmingham.
104 Delirium Tremens—New Plan of Treatment. G. E. Petter, Memphis.
105 Prophylaxis against Infectious Disease from the Standpoint of the General Practitioner. D. C. LaVerne, Birmingham.

Journal of the Missouri State Medical Association, St. Louis

December

- 106 Regurgitant Vomiting Due to Unusual Adhesions Following Gastroenterostomy with Pyloric Exclusion. M. W. Myer, St. Louis.
- 107 Corneal Ulcers and their Treatment. S. G. Kelly, Sedalia.
- 108 Relation of the Physician and Surgeon in Appendicitis Cases. A. B. Miller, Macon.
- 109 Our Overstocked Instrument Case: Plea for Simplicity in Operative Procedure. F. C. Ewing, St. Louis.
- 110 *Spina Bifida. J. M. Frankenburger, Kansas City.
- 111 *Amputation at the Shoulder for Sarcoma of the Elbow; Recovery of Patient, with Peculiar Postoperative Sequelæ. B. C. Hyde, Kansas City.
- 112 Plea for Civil Service in the Charitable Institutions of Missouri. M. A. Bliss, St. Louis.
- 113 Case of Osteosarcoma. C. W. Watts, Fayette.

110. **Spina Bifida.**—The case reported by Frankenburger is remarkable on account of the immense size of the sac.

111. **Sarcoma of Elbow.**—Hyde reports a case of amputation at the shoulder-joint for sarcoma of elbow, with recovery of the patient, and with peculiar postoperative sequelæ, the appearance of a bleb on the abdomen, synchronous with delirium; the desquamation of the blister, *pari-passu* with the disappearance of delirium, at the same time that there was no wound infection or other apparent condition that would cause an altered mental state; pain and muscular weakness in the left lower extremity.

Detroit Medical Journal

December

- 114 Operative Interference in Appendicitis. A. M. Campbell, Grand Rapids.
- 115 Adenoids and their Treatment. C. H. Burton, Hastings, Mich.
- 116 Plea for the Early, Frequent and Thorough Examination of the Pregnant Woman. H. W. Yates, Detroit.

Journal Cutaneous Diseases, New York

December

- 117 *Results of the Wassermann Test in Scleroderma. II. II. Whitehouse, New York.
- 118 The Psychologic Aspect of Dermatitis Factitia. G. Pernet, London, Eng.
- 119 *Adipositas Cerebralis. G. Pernet, London, Eng.
- 120 A Comparative Study of Acrodermatitis Chronica Atrophicans and Diffuse Scleroderma, with Associated Morphea Atrophica. J. P. Kanoky, and R. L. Sutton, Kansas City.
- 121 Tuberculin Injection in the Treatment of Certain Diseases of the Skin. A. S. Clark, New York.

117. **Wassermann Test in Scleroderma.**—Of 5 cases of diffuse scleroderma, 3 gave a strongly positive Wassermann reaction, 1 a faintly positive and 1 a negative reaction. The 2 latter patients, however, had been under antisyphilitic treatment, the first for over a year, and the second for 6 months, a sufficient length of time in each instance to negative the test, had both been cases of undoubted syphilis. Two cases of band-like morphea type appear to stand apart from the others, the reaction being negative in both instances.

These 7 Wassermann tests were made by 3 different investigators, and in each case the original Wassermann test and the Noguchi modification were done, in some instances more than once, and in all with numerous control experiments. Whitehouse deems it not improbable, in view of the histologic similarity of the changes in scleroderma to those in syphilis, that should the Wassermann observations here recorded later be confirmed, syphilis may be found to be an etiologic factor in this disease.

119. **Adipositas Cerebralis.**—The patient, a single woman, aged 29, developed a variety of symptoms, some of which were taken at first for myxedema, for the patient got stout, flabby and apathetic, but thyroid extract did no good. When seen by Sir Victor Horsley the diagnosis of tumor hypophysi was made, owing to the diplopia, lethargy, paresis of the third and seventh nerves on the right side, amenorrhea, and optic neuritis. The patient was treated by Horsley and lived for some years.

At the necropsy an adenoma of the pituitary body was found. It had been noted that the skin was coarse and the lips thickened. The sections showed in addition to the adipositas a hypertrophic condition of the derma itself, the collagen and elastic tissues being very coarse and thick. The connective tissue framework of the fatty layer was also coarse and hypertrophied. The condition was therefore more than an adipositas, one that affects the integument as a whole. Pernet suggests that perhaps the denomination dermo-adipositas cerebralis, or hypophysi, would fit the change better than the name given to it by neurologists.

Ophthalmic Record, Chicago

December

- 122 Poles of the Eye and the Significance of their True Location; and the Binocular Spacial Pole with its Fulness of Meaning. G. C. Savage, Nashville, Tenn.
- 123 George Cuvier Harlan. C. A. Oliver, Philadelphia.
- 124 Tendon-Tucking Operation. D. M. Greene, Grand Rapids, Mich.
- 125 Bony Degeneration of the Choroid Involving the Retina, Ciliary Body, Crystalline Lens and Iris, Right Eye. J. W. May, Kansas City.

American Journal Orthopedic Surgery, Philadelphia

November

- 126 *Intraperitoneal Neurotomy. J. J. Nutt, New York.
- 127 Principles of Muscle-Balance as Applied to Orthopedic Practice. W. Truslow, Brooklyn.
- 128 Symmetry and Asymmetry: Their Effect in Latéral Curvature of the Spine. A. H. Tubby, London, Eng.
- 129 Treatment of Severe Scoliosis by Plaster Jackets with Windows and by Braces of a Similar Pattern. Z. B. Adams, Boston.
- 130 *Adolescent Rachitis. Etiology and Pathology. A. E. Horwitz, St. Louis.
- 131 *Suggestion for the Improvement of Plaster-of-Paris Technic. A. H. Freiberg, Cincinnati.
- 134 Brace for the Retention of Congenital Luxation of Hip After Reduction. G. G. Davis, Philadelphia.
- 135 Sling for Head Extension. G. G. Davis, Philadelphia.
- 136 Single Strap Brace for Talipes Equino Varus. R. T. Taylor, Baltimore.
- 137 An Appliance for the Correction of Resistant Clubfoot. E. H. Bradford, Boston.
- 138 *Treatment of Flat-foot. Use and Abuse of Foot-Plates. R. T. Taylor, Baltimore.

126. Abstracted in THE JOURNAL, Aug. 14, 1909, p. 588.

130. **Adolescent Rachitis.**—Horwitz concludes that the disease is a recrudescence of a disturbance which existed in childhood; that this relighting is due to a disturbance in nutrition at the time of great bone activity; that the pathologic histologic changes approach those seen in the infantile type, and that the development of the genitalia is an important factor in the nutritional disturbances at this period.

131. **Improvement of Plaster of Paris Technic.**—To any one accustomed to the frequent use of plaster of Paris bandages it must always have been apparent that a waste of labor and material constantly occurs in the loss of much of the plaster of Paris during the manipulation of the bandage prior to its application to the body of the patient. It is of consequence since, depending as we do, on the plaster to furnish the main strength of the dressing, there will be required more bandages to make a dressing of sufficient strength if the plaster lost be considerable than if this is not the case. In order to diminish this factor of waste, Freiberg has been using plaster bandages in such a way as to avoid this waste almost completely. By immersing the plaster of Paris bandages while wrapped in a porous paper it seemed possible to avoid the loss of plaster which ordinarily occurs. After a number of experiments, it was found that the most efficient material was a gray filter paper employed in pharmacy. This has, however, the disadvantage of being rather expensive when used in quantity. An excellent substitute for this is the ordinary white crêpe paper napkin. Freiburg has found it best to use three or four thicknesses of such napkins to envelop each plaster bandage. The paper covering is secured by a slender rubber band.

The bandages, wrapped as above described, are gently immersed in the water and left there without being disturbed in the least until all bubbling has ceased. It is best to use very warm water and to allow considerably more time than usual, say from three to four minutes, for soaking. With the exception of the wrapping, the bandages do not differ from the hand-made ones. When the bubbling has ceased the bandage is carefully lifted so as to avoid breaking the paper. It is now held quietly in the hand for a few seconds until the water is drained from it as much as possible, without the use of pressure. If it be not allowed to drain the water contained within the paper will balloon when pressure is made and the paper will be torn. This is undesirable since it means loss of plaster. This having been avoided by the drainage, the bandage is now slowly but firmly squeezed with both hands so as to express the water contained therein. While it is perhaps not necessary that it be done thus carefully, it is possible in this manner to express the water from the bandage almost clear, and there is no difficulty whatever in applying two plaster jackets from the same vessel of water

without an appreciable loss of plaster equal to a table-spoonful.

138. Abstracted in THE JOURNAL, Aug. 7, 1909, p. 479.

Yale Medical Journal, New Haven, Conn.

December

- 139 Chylorhax. F. C. Hyde, Greenwich, Conn.
140 Differential Diagnosis of Atypical Appendicitis. J. E. Loveland, Middletown, Conn.
141 Mouth Breathing. H. E. Smyth, Bridgeport, Conn.
142 *Influence of Thoughts and Emotions in the Causation of Disease. S. D. Gilbert, New Haven, Conn.
143 *The Physician as an Educator in Sanitation. F. E. Gullid, Windham, Conn.
144 *Appendicitis During Pregnancy. O. G. Ramsay, New Haven, Conn.

142, 143, 144. Abstracted in THE JOURNAL, June 26, 1909, pp. 2124, 2126.

Journal Experimental Medicine, New York

January

- 145 *Relation of Catalytic Activity of the Blood to the Number of Red Blood Cells in Health, and to the Number of White Blood Cells and the Body Temperature in Peritonitis. M. C. Winternitz and J. P. Pratt, Baltimore.
146 Catalytic Activity of Developing Hen's Eggs. M. C. Winternitz and W. B. Rogers, Baltimore.
147 *Experimental Sarcosporidiosis in the Guinea-Pig and its Relation to a Case of Sarcosporidiosis in Man. S. T. Darling, Ancon, Canal Zone.
148 *Resistance Produced in Mice Against Transplanted Cancer by Autoinoculation of the Spleen. W. W. Woglom, London, Eng.
149 *Respiratory Changes of Pressure at the Various Levels of the Posterior Mediastinum. S. J. Meltzer and J. Auer, New York.
150 *The Excretion of Calcium and Magnesium after Parathyroidectomy. J. V. Cooke, New York.
151 Dextrose Consumption by the Isolated Perfused Human Heart. H. A. Stewart, New York.
152 *An Experimental Study of Opsonic Immunity to *Staphylococcus Aureus*. J. C. Meakins, New York.
153 *Tuberculous Cervical Adenitis: Study of the Tubercle Bacilli Cultivated from Fifteen Consecutive Cases. P. A. Lewis, Boston.
154 *Influence of Adrenalin in Phloridzin Diabetes. A. I. Ringer, New York.

145. **Catalytic Activity of the Blood.**—The catalytic activity of the blood of normal rabbits varies directly with the volume and number of red corpuscles. The catalytic activity of the blood is independent of the temperature of the body and of the leucocytes, because either of these may rise, fall or remain stationary while the catalytic action increases.

147. **Sarcosporidiosis.**—Guinea-pigs were infected by feeding them infected rat muscle. Sarcosporidia appeared identical with those found in the biceps of a negro, both probably representing aberrant forms.

148. **Protective Action of Autoinoculation of Spleen.**—It has been found that the inoculation into mice of different mouse tissues evokes resistance to the growth of transplanted cancer. Woglom shows that autoinoculation of the spleen has the same effect, thus illustrating the extreme delicacy of the reaction.

149. **Respiratory Pressure at Various Levels of Posterior Mediastinum.**—The results of this investigation support the view that the respiratory changes in the apices of the lung are not as good as those in the rest of the lung, and it disproves the claim that any decrease or increase of pressure at any part of the lungs must be equally distributed to all parts of the lungs.

150. **Calcium and Magnesium Excretion After Parathyroidectomy.**—The results suggest a condition of altered salt equilibrium of the nerve cells brought about by the disturbance in the catalytic processes of the body by increasing the acid factors.

152. **Staphylococcus Opsonins.**—The injection of staphylococci killed by heat into rabbits causes a considerable increase in opsonin, and affords protection against living virulent staphylococci in proportion to the amount of opsonin in the blood. There may be great increase of staphylococcus opsonin in human staphylococcus infections and the injection of killed staphylococci may produce a high opsonin content in the blood of human beings.

153. **Type of Tubercle Bacilli in Tuberculous Glands.**—In 15 cases of primary tuberculosis of the lymph nodes of the neck Lewis isolated 9 strains of tubercle bacilli of the bovine type and 6 strains of the human type. The classification was

based on adaptability to artificial growth, on character of growth on glycerine broth and of virulence.

154. **Adrenalin in Phloridzin Diabetes.**—The results confirm previous results indicating that adrenalin, by constricting the blood vessels, produces anemia of the tissues and imperfect oxidation, this anemia being followed by glycosuria.

Kansas City Medical Index-Lancet

December

- 155 Hereditary Spastic Paraplegia: Seven Cases in Two Families. J. Punton, Kansas City.
156 Eugenics. W. I. Thomas.
157 Advantage of Psychometric Methods in Diagnosis, Prognosis and Treatment of Cerebral Disorders. T. A. Williams, Washington, D. C.
158 Great Internal Hemorrhage. H. C. Crowell, Kansas City.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

Lancet, London

January 1

- 1 Problems Relating to the Evolution of the Brain. G. E. Smith.
- 2 *Points in the Clinical History of Pneumonia. P. Kidd.
- 3 Mechanism of Infection in Tick Fever and the Hereditary Transmission of *Spirocheta Duttoni* in the Tick. Sir W. B. Leishman.
- 4 *Treatment of Wounds and Recent Results Obtained at St. George's Hospital, London. Sir W. W. Cheyne.
- 5 Postural Albuminuria in a Boy the Subject of Chorea. J. S. Bury and J. F. Ward.
- 6 Diagnosis and Treatment of Duodenal Ulcer. B. G. A. Moynihan.
- 7 Combined Mercurial and Arylarsenate Treatment of Syphilis. F. J. Lambkin.
- 8 The Circulatory System. H. Campbell.

2. **Pneumonia.**—Kidd reports 20 cases which point out some of the unusual features occasionally seen in pneumonia. Thus, a young man, aged 27, who gave a clear history of having had four successive rigors, developed signs of pneumonia of the right lower lobe, and the disease terminated by crisis on the second day. Abdominal pain is a well-known mode of invasion in young children, associated sometimes with tenderness and rigidity in the right iliac fossa sufficient to excite a suspicion of appendicitis. Kidd has seen several cases of this kind. Pneumonia may be introduced by symptoms of meningitis ("meningism"), headache, retraction of the head, photophobia and stupor, which may be very misleading. One of the most uncommon initial symptoms is hemoptysis, meaning by this a free hemorrhage, not merely bloodstained expectoration. The most common form of fever is the continuous with slight morning remissions of from 1° to 1.5°. But there may be much greater remissions, and the pyrexia may even be intermittent and very irregular. The course of the disease, as a rule, is a definite one, ending generally, in the absence of complications, by the ninth or tenth day, more often on the seventh day. Abortive attacks in which recovery takes place within two or three days, are not uncommon in children, but may also occur in adults, as shown by the case reported by Kidd. Among the rare complications noted by him were laryngitis; nephritis; anasarca of renal type without albuminuria; severe maniacal delirium; parotitis; acute delirious mania; and death from pulmonary embolism during convalescence. Kidd also saw a case of typhoid beginning with lobar pneumonia; and one of rheumatic fever and pneumonia combined, a simultaneous infection.

4. **Treatment of Wounds.**—Cheyne states that he does not believe that a surgeon will get the best results unless he takes the view that suppuration in clean wounds is avoidable, and that the way to avoid it is to look on the treatment of a wound as a bacteriologic problem, and to act accordingly.

British Medical Journal, London

January 1

- 9 Ureteral Calculi. S. White.
- 10 *The Rational Puerperium. J. W. Ballantyne.
- 11 *Cardiolysis (Precordial Thoracostomy) in Heart Disease. W. Thorburn.
- 12 The Mechanism of Cardiac Pain. O. May.
- 13 Infective Endocarditis Treated with Antidiphtherial Serum. W. R. Judd.
- 14 *Henoch's Purpura or Angioneurotic Edema? H. C. Barlow.
- 15 Fatal Aplastic Anemia. W. Thomas and H. D. Rolleston.
- 16 Presence of Bilharzia Hematobia in Egyptian Mummies of the Twentieth Dynasty. M. A. Ruffer.
- 17 Foreign Body in Tongue. W. Murray.

- 18 Efflorescence of Urea in Uremia. J. A. W. Pereira.
- 19 Modification of Whitehead's Operation for Hemorrhoids. W. S. Richardson.
- 20 Position of Patient after Operations on the Abdomen. S. K. Vines.

10. **The Rational Puerperium.**—In order to obtain for puerperal patients the advantages associated with early rising without the risks which might be expected to belong to the resumption of the erect posture in the first days of the puerperium, Ballantyne recommended to such patients as he considered suitable the performance of systematized movements carried out in the horizontal posture. The movements were quite voluntary. Each patient was covered with a blanket and lay flat in bed with her arms by her sides. The nurse, standing in the center of the ward, directed the exercises. The patients were directed to turn from the back onto the side; three times they rolled on to the one side; three times they drew up the knees; and three times they rolled on to the other side. Next they did exercises with the arms, first stretching them above the head, then flexing them on the chest, then stretching them at right angles to the trunk, and finally placing them by the side; the arm exercises were carried out six times. Next they did breathing exercises six times, filling the chest with air, the arms being stretched by the sides the while. Finally they rolled from side to side three times. In the majority of cases these movements were begun in the first day of the puerperium—that is, in the second twenty-four hours after labor. In no case were they begun later than the fourth day. On the first day they lasted for about ten minutes, on the second day for twenty minutes, and on the third for thirty minutes; they were never carried beyond that time. In most of the cases the tone of the abdominal muscles when the patients left the hospital was above the average, and it was noticed that the result was poorest in phlegmatic women and in those who had shown no enthusiasm for the exercises. It could not be traced that the movements had any marked effect on the action of the bowels. The 69 patients who exercised from the first day onward were mostly normal cases. In 18 cases in which the exercises were begun on the second day there had been some interference or anomaly: case of forceps for persistent left occipito-posterior position; hydramnios with an anencephalic fetus; slight albuminuria; twins; cervical cysts; several breech presentations; prolapsed cord and dead fetus; syphilis with a dead fetus; epilepsy; and postpartum hemorrhage. Among 16 in which the movements were begun only on the third day there had been more serious irregularities, such as craniotomy 2, eclampsia 4, albuminuria 3, postpartum hemorrhage and induction of labor. The four patients who began so late as the fourth day were a case of collapse after delivery of twins, two cases of accidental hemorrhage, and one case of persistently rapid pulse in which thyroid extract had been given during pregnancy for marked obesity. With regard to the date of assumption of the erect posture, each of the cases in which exercises had been performed was judged on its own merits, with the result that 43 patients rose on the seventh day, 38 on the eighth, 19 on the ninth, and 4 on the tenth, and 1 each on the sixth, the eleventh and the twelfth. Toward the beginning of the quarter the eighth day was regarded as the routine time for leaving the horizontal position, but toward the latter part of the term many of the patients got up on the seventh. A very noticeable feature in these cases was the absence of the usual phenomena which follow on rest for some days in the horizontal position; the patients, for instance, did not experience the same feeling of weakness in the limbs, dizziness, etc., as usual. It seemed, therefore, as if the seven or eight days' rest in bed with the exercises was followed by a more immediate return to the condition of normal health and strength than after the longer period of rest without the exercises.

11. **Cardiolysis in Heart Disease.**—To 15 cases of cardiolysis recorded in the literature, in which operation on the thorax was undertaken with the object of freeing the heart from adhesion to its bony wall, Thorburn adds one successful case, that of a boy, aged 15, who 9 years after the operation was in much better condition than before.

14. **Henoch's Purpura.**—The most interesting feature common to both the cases reported by Barlow was the occurrence

of solid edema which appeared and disappeared very rapidly. This is not a condition generally seen in Henoch's purpura, but angioneurotic edema is characterized by severe gastrointestinal crises. In neither case was the spleen felt. The temperature in the first case was slightly raised at the onset but in the second it was normal throughout; in both at times the pulse was mildly slow, and for some time in the younger boy (aged 4½ years) it was regularly intermittent. There was no involvement of the joints in the first case, and a very slight and transient swelling of one joint in the second. The changes in the younger boy's general condition were very rapid. One morning he would appear to be *in extremis*, and the next his illness seemed to be slight. Both patients recovered.

Medical Press and Circular, London

December 29

- 21 Treatment of Congenital Talipes Equinovarus in Infants. W. G. Stevenson.
- 22 The Digestive Disturbances of Rickets. Prof. A. B. Marfan.
- 23 Genital Tuberculosis. Prof. Leguen.
- 24 The Contagion of Leprosy. A. S. Ashmead.
- 25 The Child Criminal. W. C. Sullivan.
- 26 Proposed Sterilization of Certain Degenerates. R. R. Rentoul.

Journal Tropical Medicine and Hygiene, London

December 15

- 27 Filariasis in Fiji. A. D. Brunwin.
- 28 Bilharziosis of the Anus. F. C. Madden.

British Journal of Children's Diseases, London

December

- 29 Mirror Writing. G. A. Auden.
- 30 The Position of the Apex Beat in Children. J. E. H. Sawyer.

Bristol Medico-Chirurgical Journal

December

- 31 History and Practice of Surgery in Ancient and Medieval Times. J. Swain.
- 32 *Mercurial Treatment of Tabes Dorsalis. M. Faure.
- 33 *Vis Medicatrix Naturæ. G. M. Smith.
- 34 *Cases of Pneumonia. A. Fells.

32. **Mercurial Treatment of Tabes Dorsalis.**—According to Faure, mercurial treatment, better followed longer and more generalized, is one of the causes, and probably the initial cause, of the transformation of the prognosis of tabes. It is generally among patients who have followed, or will follow, a methodical and prolonged mercurial treatment that the evolution of the disease remains benign, provided that they do not ignore other therapeutic rules, and that diagnosis is, and has been, made early, and treatment commenced in good time. It is among patients badly treated, or not cared for at all (who were formerly the rule), that the evolution of the disease remains progressive; but evidently this rule admits of exceptions and corrections in one or the other of both its parts, as dogmatic affirmations in medicine always do. The mercurial treatment to be performed by injections of soluble salts, which permit a stricter surveillance of individual toleration. Calomel and grey oil ought to be reserved for strong and robust patients, and constitute for these cases the best procedure. For other patients, the use of these two substances may be attended with fatigue, and sometimes with an increase of certain tabetic symptoms; hence a difficulty arises in making the medication acceptable, and hence the complaints which are heard against it. Two or three centigrams of mercury benzoate or biniodid daily are sufficient in the majority of cases. The injections should be discontinued in every case in which the patient feels indisposed; but if the salt is soluble, uneasiness will disappear with the elimination of the drug in one or two days. Among invalids whose general state requires exceptional care the hydrargyrum cure may be made with smaller doses and associated with or followed by an arsenical cure.

A series of from 15 to 39 eg. of mercury (metal), renewed about four times yearly, may be given in order to complete an average of 1 gram in the year. Theoretically, 1 eg. of mercury (metal) daily may serve as a standard for the whole of a series, for ordinary patients. The intensity of the treatment does not result either from the quantity of a daily dose, or from the nature of the salt employed, but from the whole dose of the series. Consequently, the series will become shorter as the daily dose becomes bigger.

33. *Vis Medicatrix Naturæ*.—Smith expresses his disbelief in empirical drugging when it has no reason to be trusted from experience, or is not founded on some physiologic principle. Until a thing has been tried on man or animals, one cannot say much. But the whole history of medicine shows how great faith one generation has had in a mode of treatment that the next generation utterly disbelieves in. In studying the various processes that go on for our protection and recovery from disease and accident, there is something which appeals very powerfully to the imagination. To a man who takes a hopeful view of things, the *vis medicatrix naturæ* is a great beneficent force or series of forces. To the pessimist the whole thing merely emphasizes the struggle between the good and evil.

34. *Pneumonia*.—In the first case reported by Fells, the pneumococcus was thus responsible for three distinct and consecutive pneumonic attacks—an empyema, a nephritis and an arthritis. In two other cases, the pneumonia was followed by thrombosis in the veins of the left leg, which appeared with startling suddenness when the patient first stood up after three weeks in bed, and when convalescence from the pneumonia was well established. The swelling was peculiarly hard, and there was no pitting on pressure.

Annals of Tropical Medicine and Parasitology, Liverpool
November

- 35 Medical and Economic Entomology. R. Newstead.
36 Malaria. W. T. Prout.

Annales de Gynécologie et d'Obstétrique, Paris
December, XXXVI, No. 12, pp. 721-780

- 37 Menstruation merely a sign of Abortion of an Ovum. (La menstruation dans ses rapports avec l'ovulation, la fécondation, la gestation et l'allaitement.) B. Pinard.
38 Adenomyomas of the Inguinal Portion of the Round Ligament. P. Lecène.
39 *Rapid and Effectual Action of Serotherapy* in Acute Gonococcus Infection in the Female. C. le Masson.

39. *Serotherapy of Acute Gonorrhea in the Female*.—Le Masson reports only one case but the apparent complete cure in 17 days, the demonstration of the harmlessness of this method of treatment and the rapidity of its action he thinks justify publication of a report. Five days after the first injection the vaginal secretion had ceased and no gonococci could be discovered; in fourteen days the local symptoms had entirely subsided. Serotherapy is more liable, he asserts, to entail a speedy and complete cure of acute lesions than in the older processes, but it may influence favorably the acute exacerbations of chronic processes. His experience also confirms the analogy in many points between the gonococcus and the meningococcus.

Lyon Médical, Lyons

October 31, XLI, No. 44, pp. 729-768

- 41 *Localized "Goose Flesh" as Sign of Visceral Disturbance or Neuropathy. (Etude du phénomène localisé de la chair de poule.) Maurice.

November 7, No. 45, pp. 769-812

- 42 *Symptomatic Value of Hemoptysis in Pulmonary Tuberculosis. M. Piéry.

November 14, No. 46, pp. 813-856

- 43 *Localizations of Acute Articular Rheumatism in the Subcutaneous Connective Tissue. (Phlegmon séreux rhumatismal.) Gallavardin.

November 21, No. 47, pp. 857-896

- 44 *Permanent Spasmodic Paralysis in the Course of Slow Chronic Uremia. A. Pic and C. Roubier.

November 28, No. 48, pp. 897-928

- 45 Prophylaxis of Typhoid. H. Rondet.

December 5, No. 49, pp. 929-996

- 46 Individual Isolation to Prevent Internal Contagion in Children's Hospitals. P. Chatin.

December 12, No. 50, pp. 997-1064

- 47 *Present Status of our Knowledge of Cirrhosis of the Liver. M. Piéry.

41. *Localized "Goose Flesh"*.—Vergély called attention a few months ago to the fact that a pencil drawn lightly along the skin over the liver region may induce a local patch of "goose-flesh," limited to this locality. He encountered this in 2 patients with inflammatory processes in the biliary passages, and ascribed it to the influence of the local process. Maurice has obtained a positive response in a number of other patients and describes 4 cases in detail. He is more inclined to regard

the localized erection of the papillæ of the skin as a sign of a neuropathy with or without a complicating infectious process. The extra-excitability of the sympathetic system in certain neuropathies as shown by this sign suggests the necessity for tranquilizing the sympathetic system and the viscera innervated by it. Otherwise the viscera may be abnormally innervated and forced into abnormal movements. It is possible that when the automatic functioning of the biliary passages is disturbed by an overvigorous nerve wave or too frequently repeated waves, the even flow of the bile is interfered with, germs are aspirated from the intestines and infection results. This visceral overexcitability should be calmed: drugs have only a temporary sedative effect but a change from the home environment may accomplish the purpose.

42. *Symptomatic Importance of Hemoptysis*.—Piéry discusses hemoptysis as it appears in abortive pulmonary tuberculosis, in the fibrous form, in the common fibro-cheesy type and in galloping consumption. With the exception of the hemoptysis of mitral stenosis, it is almost invariably of tuberculous origin or, at least, it is wise to treat the patient for several months on this assumption. In a few rare cases, however, the cause may prove to be cancer, gangrene of the lung, an echinococcus cyst or aneurism of the arch of the aorta. If the blood is red and fresh, there is danger that the hemoptysis will continue, as also when there is fever or when the pulse is 100, 110 or 120, small and depressible.

43. *Localizations of Acute Articular Rheumatism in the Subcutaneous Connective Tissue*.—There are two principal types of subcutaneous lesions developing during the course of acute articular rheumatism, the edematous and the pseudophlegmonous. The latter type may include a serous phlegmon with a clear sterile fluid content. In the two cases reported, the phlegmon was on the leg, developing in young men, rather addicted to alcohol, in the course of a severe and protracted acute articular rheumatism involving the heart and with a tendency to other fleeting pseudophlegmonous localizations in or near the joints.

44. *Paralysis from Uremia*.—The case reported by Pic and Roubier shows that permanent spasmodic paresis may develop from the uremia in the course of chronic interstitial nephritis. The paresis may present the paraplegic form and may vary in intensity. The uremic intoxication probably entails edema in the brain, or the cerebrospinal fluid becomes more toxic. Lumbar puncture may bring some improvement.

47. *Cirrhosis of the Liver*.—Piéry remarks that recent research has demonstrated the unity of the general process in cirrhosis, has defined the initial lesions and has revealed the special points which differentiate cirrhosis from hepatitis. A toxic inflammation of the liver is responsible for many of the tardy chloroform fatalities. He reviews the cirrhosis resulting from tuberculous, syphilitic and other processes, remarking that there is no special pigmentation or cardiac cirrhosis. In the cases suggesting the latter, the trouble, he asserts, is merely cirrhosis of various origins in individuals with heart disease, and the same is true also of cirrhosis with pigmentation. The latter is the result of the setting free of an excessive proportion of hemoglobin. The amount need not be very large to produce this effect when the liver is diseased.

Obstétrique, Paris

November, II. N. S., No. 11, pp. 797-884

- 48 *Treatment of Puerperal Infection. J. Barsony.

- 49 Radium Treatment of Gynecologic Disease. II. Chéron.

- 50 Importance and Advantages of Müller's Method of Delivery with Breech Presentation. (De l'extraction d'après Mueller.) J. Lovrich.

48. *Intravenous Bichlorid Treatment of Puerperal Infection*.—Barsony advocates intravenous injection of bichlorid of mercury which he has been using for this purpose during the last 6 years, after 9 years of tentative administration. In well-established puerperal infection he injects 0.005 gm. of the bichlorid and if the temperature keeps up, he repeats the injection the same day. The injections are suspended at the slightest sign of intoxication and resumed, with a smaller dose, when these symptoms have subsided. The healthy organism cannot tolerate the doses that infected individuals need and tolerate perfectly. In one desperate case he made 28 injec-

tions, representing 0.138 gm. of the bichlorid, in the course of 16 days and the woman recovered. Kenezy made an intravenous injection of 0.02 gm. by mistake in 2 cases but without harm. Barsony discards all local treatment except weak antiseptic vaginal douches, never using the bichlorid for this purpose for fear of cumulative action. The number of red corpuscles increases in normal and febrile pregnant women under the influence of the injections. In one case of puerperal sepsis the reds numbered only 1,200,000, with 20 per cent. hemoglobin, but the woman recovered. A 2 or 5 per 1,000 solution of the mercuric chlorid in physiologic salt solution for intravenous injection and 1 or 0.5 gm. potassium permanganate for the vaginal douches are all that is necessary, with two visits a day and careful supervision of the action of the drug. In a total of 2,736 obstetrical patients in the last few months only 2 women succumbed to puerperal infection and they had pre-existing pyosalpinx or felon. The results in general have been so satisfactory that he has decided in future to make a prophylactic injection of 2 mg. in all parturient patients, and inject 3 mg. as a routine procedure before major gynecologic or obstetric operations.

Presse Médicale, Paris

December 18, XVII, No. 101, pp. 905-920

- 51 *Acute Articular Rheumatism with Goiter. (Le rhumatisme prolongé des goitreux.) E. Weill and G. Mouriquand.
- 52 Deep Painful Angioma on Arm or Leg. (Angiomes profonds douloureux des Membres.) H. Benard and L. Lamy.
- 53 Radium in Cancer. (Quelques réflexions personnelles sur la lutte contre le cancer par le radium.) L. Chevrier.
- 54 Radioactive Mineral Waters and Serums. (Eaux minérales radioactives et sérums artificiels radioactifs.) C. Fleig.
- 55 The Esbach-Paquet Quantitative Test for Albumin in the Urine. L. L. Ozoux.

December 22, No. 102, pp. 921-928

- 56 Chemical Changes in the Fat from the Food in the Intestine. (Chimisme intestinal des graisses alimentaires.) A. Richaud.
- 57 Symptomatology of Fracture of the Femur. (Similitude des symptômes dans les fractures intra- et extra-capsulaires lorsque le trait de fracture a la même direction.) J. Hennequin and G. Kuss.
- 58 *Clinical Estimation of Acidity of Urine. A. Martinet.

51. **Acute Articular Rheumatism with Goiter.**—Weill asserts that acute articular rheumatism in an individual with goiter has a peculiarly protracted course, apparently unmodified by salicylic medication. He believes that thyroid insufficiency reduces the resisting power of the organism in respect to rheumatism. His and others' experience also shows that thyroid treatment seems to reinforce the defensive processes and he advises tentative thyroid treatment in all such cases. He states that he has never witnessed anything that suggests to him that the goiter is able alone to cause the rheumatism syndrome.

58. **Estimation of the Acidity of the Urine.**—Martinet expatiates on the importance of a rapid, simple and reliable method of estimation of the acidity of the urine as a basis for treatment in various conditions, and describes the technic he prefers for the purpose: To 20 drops of decinormal sodium hydrate solution in a test-tube are added 2 drops of a 1 per cent. alcoholic solution of phenolphthalein and the whole heated to boiling. With the same dropper, urine is then added, drop by drop, the tube being shaken occasionally until the distinct pink color vanishes entirely. The total acidity is expressed in terms of sulphuric acid, SO_4H_2 , by dividing 93 by the number of drops of urine required for decoloration. He describes the chemical process involved.

Revue de Médecine, Paris

November, XXIX, No. 11, pp. 753-840

- 59 *Actinomyces Simulating Cervical Pott's Disease. (Actinomycome cervico-rachidien.) A. Chauffard and J. Troisier.
- 60 *Chronic Inflammation in the Aorta. (Le syndrome de Hoggson.) J. Vires and Anglada.
- 61 Herpes Zoster in Mumps. (Le zona ourlien. Apropos d'un cas de zona au cours d'une méningite ourlienne.) H. Roger and J. Margaret.

59. **Actinomyces Simulating Cervical Pott's Disease.**—Actinomyces may induce a syndrome simulating Pott's disease in the upper part of the spine as in the case reported here. A hack-driver of 31 complained of sudden and painful stiff neck, which persisted unchanged for months, and a tumor developed in the left sternomastoid region, extremely painful, hard as wood and constantly growing larger until

the circumference of the neck was nearly 20 inches. After exclusion of woody phlegmon and tuberculosis, the condition was diagnosed as actinomyces. This assumption was confirmed by the painful trismus, the persisting good general health and the patient's occupation with horses. The blood and spinal fluid were constantly sterile, but the specific agglutination and fixation reaction were pronounced as also the opsonin findings; the seroreaction for syphilis was negative. The cerebrospinal fluid was limpid but showed notable lymphocytosis and tendency to cytotoxicity. Marked improvement was soon evident under 4 gm. of potassium iodid a day and later 6 gm. The patient could move his head and neck without pain by the end of the week and the other symptoms gradually subsided although traces of the tumor were evident even after 3 months, but none by the end of the year.

60. **Chronic Aortitis.**—Vires states that chronic inflammation of the aorta may induce valvular or vascular insufficiency and the latter is mainly responsible for the syndrome, and reports a case with autopsy findings and discusses the origin and differentiation. The symptoms are those of incompetency of the valve segments with abnormal dilatation of the aorta. Radioscopy, he declares, is valuable for its recognition; the dilatation of the ascending aorta explains the sounds and signs observed.

Semaine Médicale, Paris

December 22, XXIX, No. 51, pp. 601-612

- 62 *Hemoglobinuria from Hemolysis with Acute Jaundice. (Hémoglobinurie hémolytique avec ictère polycholique aigu.) A. Chauffard and C. Vincent.

62. **Hemoglobinuria and Acute Jaundice from Hemolysis.**—The patient in the case reported was a man of 47 previously healthy until acute jaundice developed with hemoglobinuria and a hemolysin abounding in the blood. The latter was evidently responsible for the disturbances. This hemolysin anemia did not seem to be a secondary process or process of reaction but was evidently responsible for the hemoglobinuria and vanished as the latter subsided. The jaundice was not due to retention. After about a week of weakness and torpor recovery gradually ensued. The case seems to be the connecting link between the different morbid conditions of acquired hemolytic jaundice on one hand and paroxysmal toxic hemoglobinuria on the other, with some features of each. The attack developed in midsummer, without chilling, which is sometimes responsible for hemoglobinuria.

Archiv für Verdauungs-Krankheiten, Berlin

December, XV, No. 6, pp. 671-808

- 63 *Dietetic Treatment of Gastric Ulcer. (Diätbehandlung des Ulcus ventriculi.) M. Lüdin.
- 64 *Spasm of Colon and the Alleged Spastic Form of Constipation. (Weitere Beiträge zur Lehre von der sogenannten spastischen Obstipation.) I. Boas.
- 65 Pyloric Spasm. S. Schütz.
- 66 Method of Catheterizing Duodenum and Pylorus. M. Einhorn.
- 67 *Etiology of Anacidity. B. Stiller.
- 68 The Metabolic Findings during Sudden Change from Years of Strict Vegetable Diet to Animal Food. (Ueber die Ausnützung animalischer Nahrungsmittel von Seiten langjähriger absoluter Vegetarier—japanische Bonzen.) G. Yukawa.

63. **Dietetic Treatment of Gastric Ulcer.**—Lüdin compares the results of the Leube diet applied in former years with those of the Lenhartz diet which has been followed during the last two years, all at Gerhardt's clinic at Basel. The statistics embrace 55 cases before 1907 and 45 since. The percentage of complete cures and the duration of the course of treatment were much alike in both series, but the different classes of patients showed some difference, suggesting that the Leube method is preferable for the subacute cases, that is, those in which there had been hemorrhage from the stomach before the patients entered the clinic. On the other hand, the Lenhartz diet seems to be preferable for the cases in which the ulcer is still bleeding, although three days of fast must intervene after the hemorrhage before the Lenhartz diet is commenced. In the cases with no history of hemorrhage, the number of complete cures was larger under the Leube treatment, but the duration of the required course was not so long with the Lenhartz diet. The criterion for the cure was when the patients could tolerate the full diet of the regime and be able to spend several hours out of bed without further disturbance from the ulcer.

64. Spasm of the Colon and the Alleged Spastic Obstipation.

—Boas discusses the condition which others interpret as "spastic constipation" and asserts that further experience has shown that it is possible to cure the constipation in these cases, and he has done so repeatedly, while the spasmodic contraction of the colon is still unmodified. Why, he asks, does not the spasm cease when the functioning of the intestines is restored to normal without any drugs, merely by dietetic measures, as for ordinary constipation, and the patients feel subjectively entirely well and continue to feel well? This seems to disprove completely any connection between the so-called spastic obstipation and the colon spasm. At the same time, he adds, this spasm of the colon deserves more and careful study on account of its frequency. He encountered 20 such cases in the last year and 2 others with the clinical picture of spastic constipation but no signs of intestinal spasm. The spasm in 10 cases was accompanied by severe constipation; in 5 others there was diarrhea, and in 4 normal bowel functioning. The spasmodic contraction occurred at the sigmoid flexure in 6, in the transverse colon alone in 1, in the ascending colon alone in 2, and in the descending colon alone in 4; while in 7 there was spasmodic contraction at several points in the intestines. In no instance were all the segments of the large intestine contracted simultaneously. In 7 cases the spasm at the sigmoid flexure was accompanied by a movable cecum. He urges further research to determine the actual prevalence of intestinal spasm with clinically normal bowel functioning; whether these spasms are an accompaniment of other organic or functional disturbances elsewhere; what their relations are to neurasthenia; whether they can be induced by reflex action and from what organs; the relations between intestinal spasm and enteroptosis or displacement of the intestines; the nature of the relations between spasm of the colon and chronic enteritis, if such exist; whether or not chemical or physical changes in the feces are liable to induce the spasmodic contraction in the large intestine; whether or not any means can be found to arrest the tendency to spasm, and if such can be found what their action will be on bowel functioning. Boas has discovered this spasm in individuals with normal intestinal functioning but who were nervous and excitable, also in individuals with chronic constipation, chronic diarrhea, rectal carcinoma, chronic catarrh of the large intestine and chronic sigmoiditis. The spasmodically contracted segment of the intestine is not sensitive to pressure and the intensity of the spasm varies as it is examined through weeks and months. When it is multiple, one segment may contract more intensely while another will relax, and *vice versa*; the contraction may even vanish entirely, he states, under soft stroking with the fingers but only to return later in more intense form. He has never witnessed its complete permanent subsidence in any case. When the intestines are inflated the spasm relaxes but it returns again the moment the air escapes. In one case, he sought to cure the tendency by regular distention in this way, systematically repeated, but was unable to induce more than a transient influence on the spasm. The same occurs with injection of fluids. As the contraction is easily relaxed by air and water, it can offer no obstacle to the passage of feces. He was unable to detect any influence on the spasm from the action of belladonna and other drugs.

67. Etiology of Anacidity.—Stiller quotes Kelling's recent

statement that anacidity is encountered in tuberculosis, in cancer, gout and gall-stone diseases and with tenia, but that the overwhelming majority of such patients are neurasthenics. He then continues with the assertion that all neurasthenics can be separated into two classes and that it is only one of these classes which presents this tendency to anacidity and achylia. These two classes of neurasthenics are each distinguished by certain pronounced anatomic, physiologic and pathologic characteristics. The first class includes the individuals with general asthenia, the movable tenth rib, splashing sound in the stomach, tendency to ptoses of various viscera, defective production of blood and defective nourishment, hypoplasia of the heart and vessels, dyspeptic disturbances and a tendency to nutritional disturbances on slight causes. In short, the neurasthenia is merely one component of the general asthenia

which is a constitutional anomaly. The second category of neurasthenics includes all other forms of neurasthenia, the cerebral, spinal, cardiac, sexual and algid. These neurasthenics may present all possible algias, nosophobias, dyspnea, palpitations, arrhythmia or sexual anomalies, but they look sound and healthy all the time, and with all their complaints and suffering and tears never lose their appetite. The contrast between their mental and moral bankruptcy and their well-fed aspect is always striking. He calls this form of neurasthenia the "irritative" to distinguish it from the asthenic in which the nervous disturbances and complaints are of a milder, quieter nature, although of course there are transitional forms. One of the most essential features of the asthenic type is the participation of the abdominal sympathetic system in the constitutional asthenia. This is responsible for the manifold functional aberrations in the digestive sphere, not only in the stomach but in all the digestive secretory glands and assimilating organs, with the specially characteristic undernourished and anemic condition and aspect. This sympathetic or vegetative or dyspeptic neurasthenia explains the nutritional disturbances in these cases and the varying functional disturbances swinging from anacidity to hyperacidity, from extremes of defective to excessive functioning, so that hyperacidity may alternate with or supplant anacidity or the reverse at any moment. The constantly shifting picture is merely the result of the instable, hyperexcitable, asthenic sympathetic nervous system. Gall-stones and tenia by reflex action may induce a similar condition of heterochylia, as he calls it. With an organic affection the secretory disturbance is more constant. The majority of tuberculous individuals are of this asthenic habit, but all asthenic persons do not become tuberculous by any means.

Beiträge zur Geburtshilfe und Gynaekologie, Leipsic

XV, No. 1, pp. 1-165. Last indexed Dec. 11, p. 2042

- 69 *Defects in Development in the Female. (Entwicklungsstörungen beim weiblichen Geschlecht.) E. Kehrer.
- 70 The Isthmus of the Uterus and Placenta Praevia. (Der Isthmus uteri; die Placenta isthmica: Fall von Placenta praevia isthmica et cervicalis.) O. Pankow.
- 71 *Sources of Error in Digital Measurement of Diagonal Conjugate. (Fehlerquellen bei der digitalen Messung der Conjugata diagonalis.) H. Sellheim.
- 72 Complete Ruptures of Uterus at Munich Woman's Clinic during the last Fifty Years. F. Weber.
- 73 *Manual Separation of the Placenta. (Ueber-manuelle Lösung der reifen Placenta.) A. Leo.
- 74 Etiology and Prophylaxis of Postoperative Thrombophlebitis. L. Hell.

69. Defects in Development in the Female.—Kehrer gives a systematic review of the various defects in physical development encountered in the female, hoping that by studying and classifying them light will be thrown on their causes. A genetic classification is as yet impossible but Campbell has started a foundation for it by his announcement that he was able to induce at will disturbances in the development of the uterus in rats by a one-sided diet, especially exclusive restriction to meat.

71. Sources of Error in Estimation of Size of Diagonal Conjugate.—Sellheim discusses the errors due to measuring from the wrong points, changing the position of the finger during the procedure, and inaccurate reading of the measurement taken by the finger in the pelvis.

73. Manual Separation of the Placenta.—Leo analyzes the experiences in the Halle clinic with 329 cases of manual separation of the placenta. It is evident from them that far more lives are sacrificed from hemorrhage on account of too tardy intervention than from infection acquired during the procedure. With proper technic the prospects for the puerperium are not much affected. His practice is to draw down or press down the uterus until the external os is outside the vulva, the woman being on her back, under the influence of a general anesthetic, the vulva washed with soap and the vagina briefly rinsed out. The placenta is then separated with the hand protected with a rubber glove while the other hand pushes down the fundus. After removal of the placenta, the hand is rinsed in a disinfectant fluid and introduced again to examine conditions anew. The whole is concluded by rinsing out the uterus and vagina with a weak hot disinfectant solution.

Berliner klinische Wochenschrift

December 20, XLVI, No. 51, pp. 2281-2336

- 75 *Internal and Operative Treatment of Round Gastric Ulcer and its Sequelæ. (Interne und chirurgische Behandlung des runden Magengeschwürs und seiner Folgezustände.) W. Weintraud. (Chirurgische Behandlung des Magenulcus und seiner Folgezustände.) Heile.
- 76 *Experimental and Critical Study of Tuberculin Therapy. J. Citron.
- 77 Roentgen-Ray Equipment for Field Service. (Heutiger Stand der Verwendung von Röntgenstrahlen im Kriege.) Niehues.
- 78 Determination of Trypsin in Serum, etc. (Verwendung der Fuld-Gross'schen Methode zur Antitrypsinbestimmung.) J. Trebing and G. Diesselhorst.
- 79 Element of Time in Phloridzin Glycosuria Test of Kidney Functioning. (Ueber den zeitlichen Ablauf der Phloridzinglykosurie in der funktionellen Nierendiagnostik.) A. Salomon.
- 80 Origin of Urobilin. (Zur Frage der Urobilinentstehung.) S. Möller.

75. **Treatment of Gastric Ulcer.**—Weintraud discusses his experiences with 150 cases of gastric ulcer, comparing the Leube and Lenhartz methods and the indications for operative intervention. He has found the most effective measure against internal hemorrhage to be intravenous injection of a 10 per cent. salt solution. The effect, he asserts, is sometimes remarkable; the patient may keep on vomiting but there are no longer fresh clots in the vomitus. As a rule, severe gastric hemorrhage with repeated and frequent vomiting of blood is best combated by complete rest, for which morphin may be necessary, ice, withdrawal of all food until the hemorrhage ceases, and intravenous saline infusion. If the vomiting of blood persists the salt solution may be injected repeatedly in small amounts into the vein and rectum, supplemented by camphor. These measures generally suffice under constant supervision, otherwise a surgeon must be called in. A course of alkaline waters seems to be the best means of healing obstinate gastric ulcers and preventing serious after-effects. Heile reviews his 26 cases of gastric ulcer in which he has operated in the last three years, calling attention to the possible occurrence of a gastric ulcer with gall-stones. In one such case disturbances persisted after removal of the gall-bladder for stones but subsided entirely after a second laparotomy had disclosed a large indurated gastric ulcer.

76. **Tuberculin Treatment.**—Citron writes from Kraus' service in the Berlin Charité to relate what has been learned from years of extensive tuberculin treatment of pulmonary tuberculosis. The main point, he says, is to bear in mind that tuberculin is not a protecting substance in itself but merely serves to stimulate the organism to produce its own protecting substance. Consequently the organism must be given time and be allowed to rest between the doses, as otherwise its power to produce antibodies becomes exhausted. His chief contention is that tuberculin treatment belongs in the hands of the general practitioner who alone, as a rule, is able to persevere with the course to its full conclusion. During the first month, it is better, he says, to have the patient under constant medical supervision but after this, office treatment is sufficient. If a time comes in which no improvement nor arrest of the tuberculosis is evident during the course of a month of treatment and the tuberculous process continues to progress in spite of the tuberculin treatment he advises discontinuing it. Reports of four typical cases illustrate the types most frequently encountered. Benefit is revealed by increase in weight, improvement in the local findings and loss of fever.

Deutsches Archiv für klinische Medizin, Leipsic

XCVIII, Nos. 1-3, pp. 1-298. Last indexed Jan. 1, p. 86

- 81 Localization of Sensory Paralysis. (Zur Lehre von der Lokalisation sensibler Lähmungen.) D. Gerhardt.
- 82 *Research on the Functioning of Diseased Kidneys. (Funktion kranker Nieren.) K. Schlayer and R. Kakayasu.
- 83 Antipneumococcus Immunization of Man, Rabbits and Mice. (Bakteriotropine des Blutserums bei Pneumokokkeninfektionen.) G. Boettcher.
- 84 Spectroscopic Study of Hemoglobin. (Hämoglobin in normalen und pathologischen Zuständen. Lichtextinktion und Eisengehalt.) E. Masing.
- 85 Mechanical Theory of Increased Blood Pressure in Nephritis. (Experimentelle Untersuchungen über die Bedeutung der mechanischen Theorie der nephritischen Blutdrucksteigerung.) W. Alvens.
- 86 Arteriosclerosis and Palpability of Artery Walls. (Arteriosklerose und Fühlbarkeit der Arterienwand.) H. Fischer and K. Schlayer.
- 87 Pathology of Suprarenals in Man. (Zur Kenntnis der Pathologie der menschlichen Nebenniere.) A. Goldschmidt.
- 88 *The Atonic-Astatic Type of Infantile Cerebral Paralysis. O. Foerster.

- 89 Blood Count Technic Simplified. (Eine neue Technik der Leukocytenzählung.) V. Ellermann and A. Erlandsen.
- 90 Elimination of Bismuth in Urine after "Bismuth Meal" Roentgen-Ray Examination. (Wismutauscheidung im Urin nach Wismutmahlzeit.) G. Dorner and Weingärtner.
- 91 Fatal Poisoning from Potassium Permanganate. (Vergiftung mit Kaliumpermanganat in Substanz.) J. Rubin and G. Dorner.
- 92 Differential Diagnosis of Tumor in the Lung and Tuberculosis. H. Grau.
- 93 Case of Pluriglandular Insufficiency plus Serous Meningitis. K. Goldstein.

82. **Functioning of Diseased Kidneys.**—This is the report in detail of the research described in THE JOURNAL, Dec. 11, 1909, page 2043. It fills 76 pages and is accompanied by 8 colored plates and charts, and the findings are compared with those of other investigators in this line. The work issues from Romberg's clinic at Tübingen.

88. **The Atonic Astatic Type of Infantile Cerebral Paralysis.**—Foerster gives 22 illustrations to show the special features of this form of paralysis as observed in 4 typical cases, comparing them with other types of paralysis in children.

Deutsche medizinische Wochenschrift, Berlin

December 23, XXXV, No. 51, pp. 2249-2304

- 94 Inflammation in the Ovaries and Fallopian Tubes. (Therapie der entzündlichen Adnexitiden.) H. Hofmeier.
- 95 The Mechanism of Regulation in Complete Dissociation between Auricle and Ventricle. (Der Regulationsmechanismus bei der völligen Dissoziation zwischen Vorhof und Kammer.) G. F. Nicolai and J. Plesch.
- 96 Experimental Sleeping Sickness. (Experimentelle Schlafkrankheit.) W. Spielmeyer.
- 97 Imitation Psychoses. (Zur Frage der Induktionspsychosen.) Sierau.
- 98 Retrospect over 2,000 Appendicitis Operations. J. Schnitzler.
- 99 *Decapsulation of the Kidneys in Eclampsia. (Nierendekapsulation bei Eklampsie.) Johnsen.
- 100 Rapid Cultivation of Typhoid Bacilli from Blood Clot after Digestion in Trypsin-Containing Beef Gall. (Die Züchtung von Typhusbazillen aus dem Blutkuchen nach Verdauung desselben in trypsinhaltiger Rindergalle.) F. Kirstein.
- 101 *Reappearance of Leprosy in Central Europe. (Das Wiederaufleben der Lepra in Mitteleuropa und seine Ursachen.) A. Blaschko.

99. **Decapsulation of the Kidneys in Eclampsia.**—Johnsen reports 3 cases of puerperal eclampsia in which the pulse of 160 or 180 indicated an unfavorable prognosis. One patient recovered after 148 convulsions and the decapsulation did not seem to influence the outcome which was possibly to be ascribed to the copious saline infusion and venesection, the strength being kept up with milk given through the stomach tube. The convulsions did not cease entirely until the twentieth day. In the 2 other cases the decapsulation was followed by rapid recovery from the profound coma, subsidence of the convulsions and of the albuminuria, while the amount of urine immediately increased. One patient succumbed to puerperal sepsis. There are now 42 cases of decapsulation of the kidneys in eclampsia on record, and 24 of the patients were saved; excluding all but the puerperal cases, the proportion of recovery is much larger. General anesthesia was not needed in his case, the simple operation was completed in 20 or 30 minutes.

101. **The Recrudescence of Leprosy in Europe.**—Blaschko believes that most people are immune to leprosy, but still he congratulates Germany on the recent legislation which has placed this disease on the list of those requiring compulsory declaration, urging the necessity for a constant watch that the disease be not allowed to get a foothold in the country.

Medizinische Klinik, Berlin

December 19, V, No. 51, pp. 1917-1958 and Supplement

- 102 Anatomic Foundation for Disturbances in Hearing. (Anatomischen Grundlagen der Hörstörungen.) V. Hinsberg.
- 103 *Modern Obstetrics. (Moderne Geburtshilfe.) K. Riedel.
- 104 Chronic Intoxication from Pilocarpin Systematically Instilled for Glaucoma. A. Elschnig.
- 105 Test for Detection of Bovine Mastitis by Examination of the Milk. (Neues Verfahren zum Nachweis der Mastitismilch.) J. Bauer and M. Sassenhagen.
- 106 Blood Findings in Potassium Chlorate Poisoning. (Ueber einige bei einer Kali chloricum-Vergiftung erhobene Blutbefunde.) F. Lange.
- 107 *Focus Reaction and the Ocular Tuberculin Test in Ophthalmology. (Herdreaktionen und Verwendungsmöglichkeit der Konjunktivalreaktion in der Ophthalmologie.) A. Wolff-Bisner.
- 108 The Liver in Respect to Absorption of Fat. (Beteiligung der Leber an der Fettresorption.) K. Glaessner and G. Singer.
- 109 Clinical and Experimental Study of Action of Strophanthin on the Cardiovascular System. (Ueber die Herz- und Gefäßwirkung des Strophanthins bei gesunden und kranken Menschen.) O. Vagt. Commenced in No. 50.
- 110 Treatment of Acute Cardiovascular Weakness. (Bekämpfung der akuten Kreislaufschwäche.) G. Liebermeister.

103. **Modern Obstetrics.**—Riedel reviews mostly the points in which obstetrics at present differ from obstetrics of a few years ago. The necessity for the accoucheur abstaining from septic contamination is one of the most prominent features of modern obstetrics. When a physician has had to incise a felon recently he must refrain from releasing the placenta with his hand in the uterus. In febrile lying-in cases the general care of the body, the mouth and skin, and regulation of sleep and diet are important features. The day of alcohol treatment is past. More and more in Germany abstention from douches, disinfection, etc., is accepted as the rule. He commends the Momburg belt tourniquet as a most effectual and harmless method of controlling post-partum hemorrhage from atony. The Wassermann test has demolished both the Profeta and Colles laws. He rather discredits the scopolamin-morphin "twilight sleep" on account of its drawbacks, but adds that a promising prospect is opened by recent attempts to control the pains of labor by application of cocaine to the so-called genital points in the nose, the inferior turbinate and a spot on the septum.

107. **The Conjunctival Tuberculin Reaction in Ophthalmology.**—Wolff-Eisner reiterates that the great advantage of this technic is the absence of the focal reaction which otherwise might lead to the spread of the process, and there is no means to keep a focal reaction under control. Another advantage of this technic is that a positive reaction is obtained only with existing active tuberculous. This technic is not adapted for ophthalmology as the test is contraindicated by lesions in the eyes. The only way in which it could be used by ophthalmologists would be by repeated instillation of minute amounts of tuberculin to induce a focal reaction in the internal eye. The focal reaction here might prove useful for diagnosis and could be more readily kept under control in the eye.

Monatschrift für Kinderheilkunde, Leipsic

October, VIII, No. 7, pp. 377-448

111. Elimination of Lactase and Sugar in Prematurely Born Infants. (Laktase und Zuckerausscheidung bei frühgeborenen Säuglingen.) H. Nothmann.
112. Experimental Albuminuria Induced by Mechanical, Bloodless Means, and Production of Nephritis in Rabbits. (Ueber mechanische unblutige Hervorrufung von Albuminurie und Erzeugung von Nephritis bei Kaninchen.) R. Fischl.
113. Relations between the Food and the Sebum in Children. (Hautalg und Ernährung bei Kindern.) W. Birk.

Münchener medizinische Wochenschrift

December 21, LVI, No. 51, pp. 2617-2672

114. *The Benefits of the Hystereurynter in Placenta Prævia. (Wie sind bei der Placenta prævia die Erfolge für Mutter und Kind am zweckmässigsten zu bessern?) W. Hannes.
115. Operations on and Protheses for Lower Jaw. F. Köuig.
116. Experimental and Morphologic Studies on Vaccine. S. v. Prowazek and J. Yamamoto.
117. The Hemolytic Test in the Insane. (Untersuchungen zur Muehschen Hemmungsreaktion.) E. Stilling.
118. *Formation of Vagina from Loop of Small Intestine. (Scheidenbildung aus einer verlagerten Dünndarmschlinge.) A. Mueller.
119. *Treatment of Severe Unilateral Pulmonary Tuberculosis with Surgical Pneumothorax. (Behandlung schwerer einseitiger Lungentuberkulose mit künstlichem Pneumothorax.) L. v. Muralt. Commenced in No. 50.

114. **Treatment of Placenta Prævia.**—Hannes remarks that tamponing the vagina is of not the least use in arresting hemorrhage from a placenta prævia. Compression to be effectual must be applied directly on the placenta, pushing it back into its place, and this is accomplished in an ideal manner by the inflatable bag introduced into the membranes. It acts as a tampon, as a labor contraction-promoting element, and also as a gentle dilating force. The bag is boiled and kept in sterile glycerin. It was thus applied in 246 cases of placenta prævia at the Breslau maternity between 1894 and 1908. Fully 70 per cent. of the children were born alive, surviving the first few days, and 83 per cent. in the cases in which only the inflatable bag had been used. He compares these figures with the statistics of other methods elsewhere, all showing a mortality for the children ranging between 60 and 80 per cent. The results were equally favorable in respect to the mothers; only 8 of the 143 treated with the inflatable bag alone succumbed, that is, 5.5 per cent., and these deaths might have been prevented by earlier application of the bag; 1 died of eclampsia, 1 from air embolism after version, 1 from a cardiac defect, and 4 from sepsis already developed when brought to the clinic. The mortality from infection was thus 1.8 per

cent., or, excluding the cases of preceding infection, only 0.9 per cent. The bag imitates physiologic conditions, but it requires the constant presence of the physician. Hannes is convinced that the more prevalent the use of a hystereurynter with placenta prævia and the earlier it is applied in the individual case, the more children will be born alive and the more mothers will survive.

118. **Formation of Vagina out of Loop of Small Intestine.**—Mueller describes a case in which Mori's technic was applied with complete success. The patient was a healthy young woman with no trace of a vagina or menstruation but soon to be married. A loop of the small intestine that could be brought down to the vulva was resected for about 14 cm. and the piece cut out was wrapped in gauze while the stumps were united with an end-to-end suture. The resected piece with its attached mesentery was then brought down through the peritoneum between the rectum and bladder, the lower end of the strip still covered with gauze, the upper end closed with a three tier suture. Five catgut sutures fastened the lower end of the intestine to the lips of the wound in the vulva. The operation required two and one-third hours and was done under scopolamin-morphin, chloroform and ether, followed by saline infusion. Convalescence was rapid without any drawbacks, as also in Mori's case; the new method therefore, he thinks, deserves to rank as a typical vaginoplastic operation. He suggests that this same technic may prove useful for bladder and other defects. The surgeon was Prince Ludwig Ferdinand of Bavaria, M.D.

119. **Treatment of Pulmonary Tuberculosis with Surgical Pneumothorax.**—Muralt reports 10 cases remarking that 7 were regarded as hopeless until the therapeutic pneumothorax was induced as the last resort. One patient is now completely cured, with others on the road to recovery. The method is applicable only for severe unilateral pulmonary tuberculous and it is accompanied by certain dangers and liability to complications. The physician has to debate whether to offer the patient this chance or let the disease proceed unchecked, the same as in case of a malignant tumor. Increasing experiences will define the indications still better but even at present he regards the method as having won a permanent place for treatment in certain cases of pulmonary tuberculosis.

Therapeutische Monatshefte, Berlin

December, XXIII, No. 12, pp. 623-691

120. *Shoulder Arthritis responsible for Neuralgiform Pain in Arm. (Omarthritis mit Brachialgie und ihre Behandlung.) A. Goldscheider.
121. Importance of Albumin in Infant Feeding. (Bedeutung des Eiweisses der Nahrung in der Diätetik des gesunden und kranken Säuglings.) L. Langstein.
122. Treatment of Acute and Chronic Endometritis. R. Birnbaum.
123. What Ehrlich has Accomplished in Treatment of Trypanosome Infection. (Die Ehrlichsche Chemotherapie der Protozoenkrankheiten.) C. Schilling.
124. *Influence of Purgatives on Peristalsis. (Einfluss der Abführmittel auf die Verdauungsbewegungen.) R. Magnus.
125. Mode of Action of Hypnotics. (Zur Theorie der Wirkung von Schlafmitteln.) C. Maunich and K. W. Rosemund.
126. Ergot. (Ueber Mutterkorn.) W. Heubner.

120. **Inflammation of the Shoulder Joint.**—Goldscheider calls attention to a type of inflammation in the shoulder joint which causes little local disturbance but induces severe pain in the arm down to the hand. The disturbances in the arm and hand entirely overshadow the mild causal affection in the shoulder. The connection, however, is soon rendered evident by the subsidence of all trouble as the omarthritis is cured. Closer analysis shows moreover that the pains in the hand and forearm occur with movements in which the shoulder has to participate. Without treatment of the shoulder trouble all measures against the brachialgia are ineffectual, but, on the other hand, the nervous symptoms in the arm require treatment with the arthritis. A general course of tonics and sweating procedures for several days may be required, with heat applied to the shoulder, and use of a sling for several days. An electric-light cap, fitting over the shoulder, has proved useful in his experience. These measures should be supplemented by the salicylates, and this treatment should be kept up for several weeks. A little passive and active movement of the shoulder joint should be commenced after the second week, brief but frequently repeated, and always very gentle. He warns that unless the scapula is held by another person while the shoulder

is being exercised, the desired and supposed mobilization is not realized. The pains in the arm generally persist until the joint can be exercised, and then they subside spontaneously. The pain in the shoulder and the radiating brachialgia both vanish when the shoulder can be moved freely enough for the ordinary demands on it.

124. Influence of Purgatives on the Gastrointestinal Movements.—Magnus has been studying with the Roentgen rays the influence on the digestive tract of several of the most common purgatives. Each seems to have its own mode of action. He states that senna acts on the large intestine alone, castor-oil influences the small intestine, stimulating it to active movements, while magnesium sulphate prevents the absorption of water in the intestinal canal but displays no power to stimulate the movements of the intestine.

Therapie der Gegenwart, Berlin

December, L. No. 12, pp. 553-600

- 127 *Chronic Fibrous Meningitis. (Schwartenbildung am Rückenmark.) F. Krause.
- 128 *Differential Diagnosis and Prognosis of Tuberculous Pseudolobar Pneumonia. D. Gerhardt.
- 129 *Etiology and Treatment of True Angina Pectoris. M. Michaelis.
- 130 *Acetone-Alcohol Disinfection. O. v. Herff.
- 131 *Iodin Sterilization. (Zur Hautdesinfektion bei internistischen Eingriffen.) Umber.
- 132 *Prevention of Thrombosis in Typhoid. (Zur Verhütung von Venenthrombosen beim Typhus.) G. Klempner.

127. Chronic Fibrous Meningitis.—Krause gives an illustrated description of three cases of what was supposed to be an intradural tumor compressing the spinal cord in the neck, but which proved to be a localized induration, the tough fibrous mass involving or clinging to the spinal cord and being detachable only with the knife. The cases show that a longitudinal incision can be made in the spinal cord without severe injury resulting. This suggests that tumors in the spinal cord need no longer be regarded as necessarily contraindicating surgical interference. Improvement followed the removal of the fibrous patch in each case, but a complete cure is scarcely probable on account of the nature of the process. The prognosis with this fibrous meningitis is therefore less promising than for actual intradural tumors which are generally circumscribed and do not involve the spinal cord except by their mechanical pressure. He has opened up the spinal cord in 36 cases of such tumors and has lost only 9 of the patients while a number were completely cured, even the severest paralysis retrogressing after the operation. In his last series of 10 intradural tumors all but one of the patients were cured, this patient succumbing to pyelonephritis and exhaustion.

128. Tuberculous Pneumonia.—Gerhardt discusses the differentiation of the acute pseudolobar form of tuberculous pneumonia which simulates ordinary croupous pneumonia at first and only gradually discloses its malignant nature. The lack of a crisis, of dyspnea and cyanosis, occurrence of the diazo reaction, and the green sputum without tendency to jaundice, may suggest the tuberculous origin. Among 99 pneumonia and 237 tuberculous cadavers examined during the last two years at Basel the two diseases were found combined in only 10; in 4 of these the tuberculosis was evidently an old and encapsulated process. The leucocyte count has considerable differential importance. Gerhardt says, as it is generally high in pneumonia in the young while in acute tuberculous processes it is as a rule close to or below normal. In the 6 cases of tuberculous pneumonia examined during the last year the leucocytes ranged between 4,500 and 8,000, but in another case reported in detail the leucocytes numbered 14,000. This case shows further, he asserts, that acute hemorrhagic nephritis may accompany tuberculous pneumonia. The finding of bronchial conglomerates in the sputum usually speaks for fibrinous pneumonia, but in one case in his experience bronchial clots were coughed up five or eight times a day, sometimes fully 4 or 5 cm. long and ramified, but autopsy revealed merely an ordinary tuberculous pneumonia with cheesy degeneration. In another case described, the typical pulmonary tuberculosis ran the usual course at first but then gradually retrogressed to complete recovery, the patient, a man of 47, regaining his former health and weight. He had been under treatment six years before for cough and night sweats which had subsided during a stay in a sanatorium.

129. Treatment of Angina Pectoris.—Michaelis describes the treatment of the paroxysm and, in the intervals, removal of the cause and measures to increase the resisting powers. He has never witnessed any fatality from morphin but has always found it efficient in relieving the pain besides combating the spasm. Nitrite of amyl, he says, not only relieves but keeps the patient tranquil when he knows that he has it always with him. Local heat is also useful during an attack, and application of dry cups in the axilla or on the back. When there is much dyspnea inhalation of oxygen is extremely beneficial. If the patient shrinks from the use of a mask, a funnel can be fitted on the tube. The mechanical support of the heart region by a pad, exerting slight pressure, relieves some patients and helps to ward off attacks. Sleep is indispensable and hydrotherapy is very useful. In prophylaxis, potassium iodid should be given in not too small doses and should be kept up for a long time. Michaelis does not ascribe much importance to heredity. His experimental research has shown the possibility of development of a collateral circulation. The tendency to arteriosclerosis should be combated by the usual measures.

130. Acetone-Alcohol Disinfection.—Further experience has confirmed von Herff in his favorable verdict on this method of disinfection, which was described in THE JOURNAL, Feb. 27, 1909, page 744. He has modified the method a little, especially for hair-covered surfaces, by using a varnish for the field of operation, in addition. His formula for this is 10 parts each of benzoin and dammar resin in 100 parts ether, stained with 20 per cent. of an alcohol iodo-iodid solution (7 parts iodine, 5 parts potassium iodid and 100 parts alcohol). Two years' experience with this technic has demonstrated to his satisfaction the superiority of this simple and convenient method above all other technics in which soap and water are permitted. He rubs the field of operation for 5 minutes with the 10 per cent. alcoholic acetone solution and then applies the varnish. As the best criterion of the method he presents his experience with 280 suprasymphyseal transverse incisions without a single primary operative peritonitis.

131. Iodin Sterilization.—Umber lauds the superiority of the method of disinfecting the field of operation, dry, by merely swabbing with tincture of iodine. He has used it exclusively during the last year and commends it to internists and general practitioners as the simplest and most effectual of all measures yet introduced.

132. Prevention of Venous Thrombosis in Typhoid.—Klempner has had no complications of this kind in his practice since he has introduced as a routine measure the passive exercising of the legs at the hip and knee. The nurse is trained to extend and flex the leg and thigh from 12 to 15 times at 2 or 3 hour intervals. This exercise is not exhausting while it prevents stagnation in the circulation and it has the further advantage that the nurse is busied with the patient more continuously. Before this measure was introduced he used to have venous thrombosis in about 10 per cent. of his typhoid cases but there has been nothing of the kind since.

Virchows Archiv, Berlin

December, CXCVIII, No. 3, pp. 385-572

- 133 Traumatic Necrosis and Regeneration of Striated Human Muscle. F. Pielsticker. Commenced in No. 2.
- 134 Histology of So-Called Accessory Pancreas. H. v. Heinrich.
- 135 Local Changes in Tissues Induced by Lead Salts. (Oertliche durch Bleisalze im Gewebe hervorgerufenen Veränderungen.) Kumita.
- 136 Primary Syncytium-Endothelioma of Lymph Gland in Carotid Region. C. Ciaccio.
- 137 Influence on Endocardium of Injection of Cancer Extract. (Beeinflussung des Endokards durch krebserregendes Material.) L. Panichi and C. Guelfi.
- 138 Elastic Tissue of Nipple. (Elastisches Gewebe der Mamilla im normalen und pathologischen Zustände.) E. Savini and T. Savini-Castano.
- 139 Partial Aplasia and Giant Growth in the Mammalian Ovary. H. Rehberg.
- 140 Pathology of Ovary in the Hen. (Hydrops follicularis, konglomerierte Fibrome und Adenom des Ovariums von Gallina domestica.) J. Buchholz.
- 141 Formations Resembling Infarcts in the Spleen of Tuberculous Guinea-Pigs. (Infarktartigen Gebilde in der Milz des tuberkulösen Meerschweinchens.) R. Kawamura.
- 142 *Sarcoma of the Esophagus. (Ausgedehntes Medullarsarkom des Oesophagus.) Rieke.
- 143 Abscess of the Spinal Cord. (Zur Kenntnis des Rückenmarksabszesses.) A. Wolff.
- 144 Arteriosclerosis and Resulting Changes in the Vessel Nerves. (Zur Frage der Arteriosklerose und der Gefässnerven-Veränderung bei derselben.) Y. Oguro.

145 Tubercle Bacilli in the Intermuscular Lymph Glands in General Tuberculosis in Cattle. (Untersuchungen zur Frage des Vorkommens latenter Tuberkelbazillen in den intermuskulären Lymphdrüsen generalisiert tuberkulöser Rinder.) W. Jouske.

142. **Sarcoma of the Esophagus.**—Rieke reports a case of extensive sarcoma of the esophagus causing no symptoms except the inexplicable slow decline, the patient dying of intercurrent pneumonia. He also tabulates the details of 29 other cases of sarcoma of the esophagus in the accessible literature. In all the other cases there was more or less pain, with signs of stenosis, but in the case reported the large tumor was unusually soft and there was no breaking down of tissue; the surface was thus left smooth and yielding and there was no interference with the passage of food although two-thirds of the esophagus were occupied by the knobby tumor, entirely encircling it but with no involvement of the environment.

Wiener klinische Wochenschrift, Vienna

December 23, XXII, No. 51, pp. 1777-1812

146 Theory of Respiration of the Tissues: the Intermediary Bodies. (Gewebeatmung durch Intermediärkörper.) S. Fränkel and L. Dimitz.

147 *Mode of Action of Adrenalin Administered by Various Routes. (Wirkungsweise des Adrenalins bei verschiedener Applikation und das Auftreten desselben im Harn.) W. Falta and L. Ivovic.

148 Destructive Action of Ovarian Substance on Tubercle Bacilli. (Einwirkung von Ovarialsubstanz auf Tuberkelbazillen.) H. Wittgenstein.

149 Non-Parasitic Cysts in the Liver. (Zur Frage der nichtparasitären Leberzysten.) H. v. Haberer.

150 The Absolutely Irregular Pulse. (Pulsus irregularis perpetuus.) C. J. Rothberger and H. Winterberg.

151 *Experimental Study of Phenomena after Removal of Both Suprarenals. (Einige Ausfallerscheinungen nach Exstirpation beider Nebennieren.) O. Schwarz.

147. **Action of Adrenalin Administered by Various Routes.**—Falta reports from v. Noorden's clinic at Vienna that adrenalin injected subcutaneously or into the peritoneum in laboratory animals has a marked toxic action and no adrenalin appears in the urine. On the other hand, 20 times this dosage and more, given by the mouth, causes no signs of toxic action, while considerable amounts of adrenalin are eliminated in the urine. He thinks that under the influence of the digestive juice and of the mucosa the adrenalin becomes bound in some way which deprives it of its physiologic and toxic properties. Further research seems to demonstrate that the deintoxication of adrenalin occurs, not in the liver, but in the gastrointestinal canal.

151. **Phenomena After Removal of Both Suprarenals.**—Schwarz announces that mature male white rats possess an accessory suprarenal at the head of the epididymis. This accessory suprarenal contains no medulla, consequently after removal of the other suprarenals the animal still has enough suprarenal tissue left for the vital processes while yet there is no possible production of adrenalin. The animals can thus be regarded as entirely free from adrenalin and yet they do not seem to suffer in the least from the loss of their suprarenals. They are thus peculiarly adapted for research on the properties of adrenalin. One of the most interesting facts learned is that phloridzin is intensely toxic for these animals, while injection of adrenalin seems to annul the toxic properties of the phloridzin. Other facts observed are the disappearance of the glycogen in the liver, increased elimination of nitrogen and general increase in weight.

Zeitschrift für klinische Medizin, Berlin

LXIX, Nos. 1-2, pp. 1-204. Last indexed Oct. 16, p. 1344

152 Infection of Man with *Distomum felinum*. W. Rindfleisch.

153 Topography of the Mediastinum with Heart of Normal and Pathologic Outline. (Zur Topographie des Mediastinum bei normaler und bei pathologischer Herzform.) O. Stoerk.

154 Transient Disturbances in Conduction of Heart Impulse. (Zur Kenntnis der vorübergehenden Ueberleitungsstörungen des Herzens.) E. Magnus-Alsleben.

155 Oral Pulsatory Expiration. E. Freund.

156 Kidney and Ureter Functioning in a Case of Exstrophy of the Bladder. (Nieren- und Ureterfunktion bei einem Fall von Ectopia vesicae urinariae.) J. Jankowski.

157 Experimental Transmission of Fowl Leucemia. (Uebertragungsversuche mit Hühnerleukämie.) H. Hirschfeld and M. Jacoby.

158 Aortic Aneurism in Youth and After Acute Articular Rheumatism. (Vorkommen von Aortenneurysmen im jugendlichen Alter und nach akutem Gelenkrheumatismus.) R. Bernert.

159 Diagnosis of Abdominal Cancers and Tumors with Special Regard to the Antitrypsin Test and Casein Reaction. (Beiträge zur Diagnostik der Abdominalkarzinome und Tumoren unter besonderer Berücksichtigung der Brägerschen und der Caseinreaktion.) R. Schorlemmer and H. Selzer.

Zentralblatt für Chirurgie, Leipsic

December 25, XXXVI, No. 52, pp. 1777-1808

160 Acetone-Alcohol Disinfection. (Der Azetonalkohol in der Desinfektion des Operationsfeldes.) O. v. Herff. See abstract 130 above.

161 *Means of Reducing Operative Loss of Blood. (Ueber Versuche, die operative Blutung zu vermindern.) W. Anschütz.

162 *Differential Pressure Procedure for Inducing Local Anemia in Cranial Surgery. F. Sauerbruch. First part in No. 47.

161. 162. **To Reduce Operative Loss of Blood.**—Anschütz states that for a year or so he has been attempting to reduce the amount of blood lost during operations by confining the blood in the arms and legs, thus shutting off this much from the general circulation. He applies a constricting band as for Bier's constriction hyperemia, and has used this technic in 100 cases with satisfactory results. The idea, he says, was suggested by Dawbarn's sequestration anemia in skull and brain surgery, but he applies his technic also for operations on the neck, chest and back, and does not use the boiling water as Dawbarn recommends. The constricting band is applied an hour before the operation, with the trunk slightly raised. The arterial pulse must be kept palpable. He has found it best to give scopolamin-morphin as a preliminary. The cutaneous incision bleeds as usual but in the deeper layers the venous and capillary bleeding is materially reduced. After ligating the bleeding vessels the wound is sutured and then the bands are removed, first from the arms and in 20 or 30 minutes from the legs too. The influence on the anesthesia and the value of having this large supply of blood free from the toxic drug, which can be returned again into the circulation merely by raising the limbs, are advantages of great moment. When the constricting bands are removed there is no after-bleeding. The Sauerbruch method of accomplishing the same purpose by the differential pressure procedures (mentioned in these columns Jan. 1, 1910, page 90) is much more effectual, Anschütz remarks, but the simplicity and ready application of the constricting band technic adapt it for many uses.

Zentralblatt für Gynäkologie, Leipsic

December 25, XXXIII, No. 52, pp. 1753-1776

163 *Treatment of Pelvic Cellulitis with Saline Injections. (Behandlung parametritischer Exsudate mit Injektion physiologischer Kochsalzlösung.) F. Kirstein.

163. **Saline Solution in Treatment of Exudates from Pelvic Cellulitis.**—Kirstein has obtained such uniformly good results with this technic that he wishes to acquaint others with it in order that it may be tested on a larger scale than is possible in his service at Göttingen. He relates his experience with it in four severe cases of parametritic exudates causing chronic weakness and comparative disability. In the first case the uterus seemed to be embedded in hard, immovable, only slightly sensitive masses. No limits to the hard masses could be palpated above, and they spread around the rectum, constricting it at one point. The patient was kept in bed, given a tepid full bath every two or three days, with iron tonics, and every day the vagina was swabbed out with 1 per cent. phenol solution through a speculum, and then from three to five syringefuls of physiologic salt solution were injected through the vagina into the region back of the cervix, the cannula being pushed in until it encountered a hard obstacle. Fourteen of these injections were made in all, the capacity of the syringe being 2.5 c.c. The tip of the cannula was pushed into the hard mass each time, and the latter seemed to soften almost at once. When the patient was discharged on the twenty-second day all subjective disturbances had ceased, the hard masses had materially softened and subsided, with no further pressure on the rectum; the uterus was movable, and the woman was able to return to hard work in field and garden without any pain although in sitting she still felt occasionally a little pain. She refused further injections as she felt perfectly well. He has made 60 of these injections to date, and the patients were discharged from the hospital in from 15 to 29 days. The difference in the conditions of osmosis may possibly have something to do with the prompt softening of the exudates, or the fluid injected may induce congestion in the parts, thus realizing therapeutic hyperemia.

Gazzetta degli Ospedali e delle Cliniche, Milan

December 19, XXX, No. 151, pp. 1593-1608

- 164 Precipitating Power of the Blood in Respect to Colloidal Silver. (Potere precipitante del sangue sull'argento colloidale.) G. Breecia.

December 21, No. 152, pp. 1609-1616

- 165 The Milk Seroreaction in Malta Fever in Goats in Sicily. (L'infezione maltese nelle capre di Catania.) F. Valenti and V. Panto.

Policlinico, Rome

December 10, XVI, No. 51, pp. 1605-1636

- 166 *Intravenous Chloroform Anesthesia. (Sulla cloroflebonarcosi.) R. Giani.
- 167 Pathology of Syphilides of Nervous System. P. Alessandrini.

166. **Intravenous Chloroform General Anesthesia.**—Giani here reports from Durante's clinic at Rome two cases in which a large angiosarcoma of the lip or a benign tumor in the hypophysis was removed under chloroform administered in salt solution saturated with the anesthetic. The injection was made into the saphenous vein about 4.5 cm. from its junction with the femoral. About 55 cm. were allowed to flow into the vein the first minute; 1,100 c.c. of fluid were used in all in the first case, representing 6.6 gm. The anesthesia lasted for forty minutes; seven minutes after cessation of the infusion the patient roused. Traces of albumin were found in the urine during the day but it was normal again by the following morning. There was no tendency to vomiting during the operation or afterward in either case. The relaxation of the muscles was complete by the fifth minute and by the fourth in the second case. In the latter, 1,500 c.c. fluid was infused, with 9 gm. of chloroform, during the 75 minutes required for the operation and the patient roused in five minutes. When the anesthesia was complete the infusion was suspended until the corneal reflex warned that more of the chloroform was required. He does not regard the method as responsible for the slight transient changes observed in the urine, the previous condition of the patients being sufficient to explain it. Nothing of the kind was observed in animals during his experimental research. He was favorably impressed with the advantages and harmlessness of this technic for operations on the head and throat.

Norsk Magazin for Lægevidenskaben, Christiania

December, LXX, No. 12, pp. 1129-1224

- 168 Urobilinuria. O. Hanssen.
- 169 *Benzidin and Guaiac Tests for Occult Blood in Feces. (Benzidinproven og guajakproven til paavisning af okkult blod i faeces.) O. Holmboe.
- 170 Cardiospasm. (Diffus dilatation af Oesophagus uden anatomisk stenose eardiospasmus.) H. Haerem.

169. **The Benzidin Test for Occult Blood.**—Holmboe applied both the guaiac and the benzidin test in 75 cases and the results showed a constant parallel between them, except that in a few instances the guaiac test gave negative findings until after chloroform extraction. The superior simplicity, inexpensiveness and other advantages of the benzidin test commend it, he declares, as superior to the guaiac technic.

Ugeskrift for Læger, Copenhagen

December 9, LXXI, No. 49, pp. 1347-1372

- 171 Seroreaction in Leprosy. (Wassermann-Reaktion ved Spedalsk-hed.) Ehlers and Bourret.
- December 16, No. 50, pp. 1373-1400
- 172 *Cure of Chronic Diphtheria Bacillus Carriers. (Uskadeliggørelse af Infektionsbærere ved Difteri.) A. Schiøtz.

172. **Method of Banishing the Bacilli in Chronic Bacillus Carriers.**—Schiøtz was impressed with the fact that an individual with staphylococcus sore throat, installed in the diphtheria ward under a mistaken diagnosis, did not acquire diphtheria. Also that after recovery from diphtheria in several other cases the positive bacteriologic findings in the throat became negative during an intercurrent ordinary sore throat. These experiences suggested that inoculation of the throat with staphylococci might drive out the diphtheria bacilli still lingering there months after convalescence. He has acted on this presumption in six cases inoculating the patients with staphylococci from a pure culture of staphylococci isolated from the throat of a patient in the surgical ward, apparently healthy except for the condition requiring operation. He thus inoculated a young man who had been detained in the hospital for three months as after recovery from moderate diphtheria bacilli were found constantly in his

throat. After inoculation with the staphylococci no further diphtheria bacilli could be discovered on two examinations and he was dismissed the fifth day, no longer a bacillus carrier. The second patient was a woman of 55 who had been in the hospital nearly two months; the positive findings became transformed almost at once into negative after the inoculation with staphylococci, so that she could be discharged the fifth day. The other patients were 3 children between 11 and 13 and a woman of 71; he did not wait so long for the bacilli to disappear spontaneously but inoculated them with the staphylococci at once after recovery from the diphtheria as the patients intended to travel or were imperatively needed at home. The experiment proved a complete success in every case, and he intends to make this a routine procedure when the diphtheria bacilli persist abnormally long in the throat, hoping thus to prevent the development of chronic bacillus carriers.

Books Received

All books received are acknowledged in this column and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender. A selection will be made for review in the interests of our readers and as space permits.

JAHRESBERICHT ÜBER DIE FORTSCHRITTE IN DER LEHRE VON DEN PATHOGENEN MIKROORGANISMEN umfassend Bakterien, Pilze und Protozoen. Unter Mitwirkung von Fachgenossen. Herausgegeben von P. Von Baumgarten, Professor der Pathologie an der Universität Tübingen, und E. Tangl, Professor der allgemeinen und experimentellen Pathologie an der Universität Budapest. Dreißigster Jahrgang 1907. Paper. Pp. 940. Leipzig: Verlag von S. Hirzel, 1909.

UEBER DEN EINFLUSS DER BASEDOW'SCHEN KRANKHEIT UND VERWANDTER ZUSTÄNDE AUF DAS LÄNGENWACHSTUM NEBST EINIGEN GESETZEN DER OSSIFIKATION. Aus der Poliklinik für innere Krankheiten am Serafimerlazarett in Stockholm. Von J. Holmgren, Leitendem Arzt der inneren Abteilung des Provinzialkrankenhauses zu Falun, Schweden. Paper. Pp. 244, with 2 plates. Leipzig: Druck von Metzger & Wittig, 1909.

OBSERVATIONS ON RABIES: With Special Reference to an Atrophic Form of the Disease Occurring in Animals. (Scientific Memoirs by Officers of the Medical and Sanitary Department of the Government of India. New Series, No. 36.) By Major G. Lamb, M.D., and Captain A. G. McKendrick, M.B. Paper. Pp. 34. Price, 9 pence. Calcutta: Superintendent Government Printing, India, 1909.

A COMPEND OF HISTOLOGY. (Blakiston's Quiz-Compend.) By Henry Erdmann Radach, M.S., M.D., Associate in Histology and Embryology and Demonstrator of Visceral Anatomy in the Jefferson Medical College. Cloth. Second Edition. Pp. 350, with 107 illustrations. Price, \$1 net. Philadelphia: P. Blakiston's Son & Co., 1909.

THE INSANITY LAW OF THE STATE OF NEW YORK. A compilation of Statutes Relating to the Insane and to Institutions for Their Care and Treatment; to Which are Appended the Official Orders and Regulations of the State Commission in Lunacy. By Frank P. Hoffman, 289 Clinton Avenue, Albany, N. Y. Pp. 93. Paper. 1909.

EXAMINATION OF THE URINE. A Manual for Students and Practitioners. By G. A. DeSantos Saxe, M.D., Instructor in Genito-urinary Surgery, New York Post-Graduate Medical School and Hospital. Second edition. Cloth. Pp. 448, with illustrations. Price, \$1.75 net. Philadelphia: W. B. Saunders Company, 1909.

TEXT-BOOK OF MEDICAL AND PHARMACEUTICAL CHEMISTRY. By Elias H. Bartley, M.D., Professor of Chemistry, Toxicology, and Pediatrics in Long Island College Hospital. Pp. 734, with illustrations. Cloth. Price, \$3 net. Philadelphia: P. Blakiston's Son & Co., 1909.

EIGHTH ANNUAL REPORT OF THE CENTRAL COMMITTEE OF THE ASSOCIATION OF THE PASTEUR INSTITUTE OF INDIA, together with the Report of the Director of the Pasteur Institute at Kasauli for the Year ending Dec. 31, 1908. Paper. Pp. 33. Lahore, 1909.

STATE OF NEW YORK STATE HOSPITALS BULLETIN. Published four times a year by authority of the State Commission in Lunacy. New Series, Vol. II, No. 3, December, 1909. Paper. Pp. 751. Price, 50 cents. Utica, N. Y.: State Hospitals Press, 1909.

A TEXT-BOOK FOR STUDENTS OF MEDICINE. By N. H. Aleoek, M.D., and F. O'B. Ellison, M.D. Preface by E. H. Starling, M.D. Cloth. Pp. 139, with illustrations. Price, \$1.50 net. Philadelphia: P. Blakiston's Son & Co., 1909.

THE APPROPRIATION OF PUBLIC FUNDS FOR THE PARTIAL SUPPORT OF VOLUNTARY HOSPITALS IN THE UNITED STATES AND CANADA. By S. S. Goldwater, M.D., Superintendent Mount Sinai Hospital, New York. Pp. 53.

THE COMING CONFLICT OF NATIONS, OR THE JAPANESE-AMERICAN WAR. By Ernest Hugh Fitzpatrick. Cloth. Pp. 306. Price, \$2. Springfield, Ill.: H. W. Rokker, 1909.

DISEASES OF THE HEART. By James Mackenzie, M.D. Pp. 419, with illustrations. First Edition. Cloth. Price, \$5.50. New York: Oxford University Press, 1910.

THE WELLCOME PHOTOGRAPHIC EXPOSURE RECORD AND DIARY. Cloth. Pp. 272. Price, 50 cents. New York: Burroughs, Wellcome & Co., 1910.

INDIVIDUAL RESPONSIBILITY. By Frank W. Patch. Pp. 37. Paper. Price, 50 cents net. New York: Moffat, Yard and Company, 1910.

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Address

IMAGINATION AND IDEALISM IN THE MEDICAL SCIENCES *

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NEW YORK

The presidential invitation in response to which I am about to address you to-day was welcome to me because it offered a rare chance to express some views of medical progress which I think are too seldom presented to the student. I have in mind the influence of imagination and idealism on the growth of medical discovery. Vividly recalling, as I do, the experiences of my own student days, more than a quarter century past, I fancy you as coming to the acquisition of the myriad facts of medicine with little to tell you of the intellectual forces and historical sequences by which those facts have emerged. If this surmise be correct, it follows that you incline to take a static rather than a dynamic view of the nature of scientific medicine, in the sense that you regard medical lore as something much more fixed than is actually the case. In reality, our science is fortunately plastic, constantly subject to revision of its facts, and ever ready to welcome new interpretations of old facts as well as new discoveries, both great and small. This very plasticity it is that makes progress attainable and fascinates our minds. But our text-books and our lectures are necessarily conservative and dispose us strongly to the notion of fixity of facts, making our minds static in conception. I would like to dispel, in a measure, this retarding conception by telling you something of the ways in which gifted and trained minds have enriched the medical sciences by significant discoveries. And of the qualities underlying such discoveries I would emphasize especially the rôle of imagination and idealism.

The fine humanitarian aim of medicine always has been and always will be one of the features that make men love to practice the art. And the idealism that delights in the relief of human suffering and disability will remain alive so long as the healing art itself. But we must not blind ourselves to the fact that this very attitude of eager desire to help our fellows in distress is a source of weakness as well as a pillar of strength. For he who would answer the calls of the sick must resort to direct methods and must generally tread the paths of the obvious. He has not time to turn aside to the indirect ways of winning the citadel, nor, indeed, is he likely to be in that frame of mind which urges to such an approach; he is preoccupied with the crying needs of

the suffering or dying man committed to his charge. Yet it is growing every day clearer that the progress of the medical sciences depends in a remarkable degree on discoveries made by indirect methods—that is, by methods not looking to the immediate relief of disease.

These discoveries are made chiefly by men who, while in deep sympathy with the humanitarian aims of medicine, nevertheless find time to turn aside to studies and experiments from which the active practitioners are, in general, excluded, by the circumstances of their lives and the intensely practical nature of their vocation. There was a time when the alert physician or surgeon, with little or no training in the experimental method, might make important contributions to knowledge by following rather evident suggestions derived from the study of patients. The Romans, operating for stone in the bladder; Paré, using the ligature to check hemorrhage on the field of battle; McDowell, successfully removing ovarian tumors, give us examples of great advances along rather obvious lines of development. To-day the chances for significant progress in such evident directions, although not exhausted, are far less frequent. The golden nuggets at or near the surface of things have been for the greater part discovered, it seems safe to say. We must dig deeper to find new ones of equal value, and we must often dig circuitously, with mere hints for guides. Our most effective tools are to be found in the experimental laboratory, where the fundamental sciences, physics and chemistry, come to the aid of physiology, biology, pathology and psychology. I should like to tell you of some of the many instances in which these sciences have come to the succor of medicine and have brought her riches of knowledge unattainable had she been limited to resources belonging to the accumulated experience which makes up the accepted material of medical teaching. If I incidentally say something of the personality of the men who have been the living instruments of this progress, it is in order to give you occasional glimpses into the workings of some of the most original and productive of minds.

I like to think of medicine in our day as an ever-broadening and deepening river, fed by the limpid streams of pure science. The river at its borders has its eddies and currents, expressive of certain doubts and errors that fringe all progress; but it makes continuous advances on the way to the ocean of its destiny. Very gradual has been the progress of its widening and deepening, for it is a product of human ingenuity and artifice, and only skilled engineers could direct the isolated currents of science into the somewhat sluggish stream of medical utility. The names of some of the greatest of these engineers are familiar to you—Vesalius, Harvey, Malpighi, John Hunter, Claude Bernard, Helmholtz, Virchow, Metchnikoff, Pasteur, Lister, Koch, Behring, Ehrlich, Emil Fischer, Weigert, Wright, Theobald Smith, Flexner. Different as have been the achieve-

* An address delivered at the College of Physicians and Surgeons, Columbia University, Sept. 23, 1909, at the opening of the Medical School.

* Considerations of space compel the abbreviation of this article in THE JOURNAL. The Complete article is in the author's reprints.

ments of these men, there are some qualities of mind and of heart which nearly all of them have shown in ample measure, and of such qualities none are more evident than imagination, or play of fancy, and personal idealism, using the latter term to mean a readiness to make sacrifices for the sake of lofty achievement. And I think we are quite safe in making the generalization that the discoveries for which we hold these thinkers in honor would have been impossible but for the exercise of these qualities. If this be true, the fact furnishes us with a clue to present tendencies in medicine and shows us to what sorts of gifts we have to look for the significant advances of the future. I, therefore, hope to make good my generalizations by a series of examples.

If we look over any list of the names of the makers of modern medicine, we shall find that they may be classed in two main and definite groups, according to the intellectual trend for which they stand. One group holds the men who look at the problems of medical science largely from the standpoint of structure and arrangement. They have the instincts and interests of the morphologists. They represent anatomy, embryology, pathological anatomy and histology. They have usually been men of powerful and logical minds, craving the positive, the definite and the attainable, either shunning somewhat the speculative aspects of science, or moving uncomfortably in the midst of ill-defined or challengeable facts. In this list belong Vesalius, von Baer, Bichat, Virchow and Weigert, who represent with maximal distinction the group of investigators with dominant morphological tendencies.

In sharp contrast with this definite type stands the second group, made up of men whose interests lie in the study of function, rather than structure, and whose minds, far from being dismayed by the speculative aspects of their studies, invite such speculation so long as it is severely controlled by frequent appeals to facts won by experiment. The members of this small group are dynamically minded, highly imaginative, delighting in the play of forces. They are essentially experimentalists, and their thoughts in leisure hours, as in the hours of work, turn always restlessly and uncontrollably in the same direction—to the planning of new experiments designed to answer the questions uppermost in consciousness, questions having nearly always to do with the phenomena of living beings. Claude Bernard, Helmholtz, Pasteur and Ehrlich are the unexcelled prototypes of investigators of life-phenomena in medicine, and we shall not go far astray if we fancy them as spirits inspired by

"All that is great and all that is strange
In the boundless realm of unending change."

We have also, I think, to recognize an intermediate group of great investigators who, while highly trained in a morphological way, have shown also a deep and productive interest in the functional aspects of organized nature, without, however, attaining the highest levels of achievement in thought on the dynamical side of medical research. In this category we may place Harvey, Malpighi, John Hunter, Johannes Müller, Cohnheim and Robert Koch. And I think we may safely add that most modern investigators, educated under the influence of the strong trend to physiological thought, belong in this intermediate position.

The examples of medical discovery which I shall first bring to your notice I shall select from the first and intermediate groups of workers, reserving the illustrations from the second group for later consideration.

The first great morphologist of modern times is Vesalius, whose claims to recognition rest not merely on his masterly and precise description of the parts of the human body, but also on his abrupt departure from the Galenic traditions and teachings, forced on him by the objectivity and sincerity of his studies. While we must regard the work of Vesalius as evidence of intellectual and logical power, it would be an error to credit him with the highest type of imagination or with elaborate esthetic reactions. The self-willed, clear-thinking man won his triumphs more by force of character and unswerving purpose than by creative intellect; and we see this type of worker repeated in some of our greatest modern anatomists, as also in some fields in which the experimental method is prominent.

The gain in scientific method, initiated by Vesalius, was fixed and established in England by the spirited, penetrating and imaginative William Harvey, whose monumental work proved that all the blood in the body travels in a circuit impelled by the beating of the heart. That a hugely skilled anatomist should have made this physiological discovery is significant evidence that studies in structure may stimulate a labile mind to serious investigation of the functional side of organic nature. Probably the work which Harvey did with his master, Fabricius, at Padua in the anatomy of the vascular system stimulated his interest in the discovery of experimental methods which should expose the true uses of this elaborate mechanism.

The lofty intellect of Harvey was linked with a generous and idealistic nature. His portraits show a formation of head and face that reminds us of representations of Shakespeare. Like Hunter and Darwin, he had the virtue of being extremely slow in publishing. He forgave his many antagonists, notwithstanding the troubles they brought into his life. He says:

I would not charge with wilful falsehood any one who was sincerely anxious for truth, nor lay it to any one's door as a crime that he had fallen into error. I am, myself, the partisan of truth alone; and I can indeed say that I have used all my endeavors, bestowed all my pains on an attempt to produce something that should be agreeable to the good, profitable to the learned, and useful to letters.

More than a hundred years after the death of Harvey there emerged from obscurity a Scotchman, John Hunter, of such power and versatility as to make him a worthy intellectual successor of the great Englishman. We may take him as our second example of an investigator of our intermediate group, combining the interests of morphologist and physiologist. One example—a celebrated instance—will illustrate the point I wish to make. It was in Richmond Park that Hunter saw the deer whose growing antlers awakened in his mind a singularly fruitful physiological question. What would happen if he shut off the blood-supply of the antler on one side by tying the corresponding carotid artery? Experiment showed that the antler lost its warmth and ceased to grow; but for a short time only was there this check to growth. After a time the horn warmed again and grew. Had he failed to really obstruct the blood flow in the artery? No. Examination showed the carotid to have been securely ligated. Whence, then, came the blood essential for the antler's growth? Through the neighboring arteries that had grown distended, through what we now call the collateral circulation. So was the fact of the collateral circulation revealed. The thoughtful and logical mind of the practical surgeon soon found an important application of this discovery to human pathology. No one had dared to treat aneurism by liga-

tion for fear of causing gangrene. But the existence of a collateral circulation held out a prospect of keeping the parts alive despite the ligation of an important artery. The first trial of the new method on a popliteal aneurism was successful, and the Hunterian operation, as you know it in surgery to-day, came into assured existence. An unimaginative man could not have made this discovery in this manner. Yet Hunter belongs to the logical, independent, matter-of-fact type with fancy well controlled, rather than to the dreamers and poets of science. He was a rough diamond, with an intensely objective nature, and he had corresponding limitations. He is said to have rebelled against the classical teachings of Oxford. "Why, they wanted me to study Greek. They wanted to make an old woman of me!" And when twitted with his lack of knowledge of the "dead languages" he said of his critic: "I could teach him that in the dead body which he never knew in any language, living or dead." The idealism of Hunter showed itself in devotion to work and in fortitude in the adversity of ill health.

I wish now to invite your attention to our second type of investigator—the essentially dynamical or physiological discoverer. The group, as I see it, is a small one. It includes Claude Bernard, Louis Pasteur, Hermann von Helmholtz and Paul Ehrlich.

An admirer said sententiously of Bernard: "He is not merely a physiologist; he is physiology itself"; and the saying has the merit of reminding us of the breadth and depth and originality of his researches. With equal skill he worked at the physical and chemical bases of physiology; and we owe to him our knowledge of the glycogenic function of the liver, the enzymes of the pancreatic juice, the vasomotor system of nerves, diabetes from puncture of the fourth ventricle, besides many minor discoveries and researches and a masterly correlation of the general facts of animal and plant life. Bernard was one of the founders of modern pharmacology. He also foreshadowed in a singular manner and under singular circumstances the modern conception of soluble ferments in micro-organisms, a view which unfortunately brought him into an unpleasant antagonism with his life-long friend, Pasteur.

The research that most fully shows the controlled imagination of Bernard is that which, extending over years, culminated in the discovery of the glycogenic function of the liver, a discovery of the very first significance to physiology and pathology. We know the steps which led him to this discovery, and in retracing these steps we get an edifying glimpse of the workings of Bernard's fertile mind. His ambition was to follow the three great classes of foodstuffs, carbohydrates, fats and proteids, through the organism. He soon felt the necessity of limiting himself to the fate of the carbohydrates, which, besides seeming relatively simple to study, especially attracted him on account of their mysterious relation to diabetes. The first step in the research brought out the fact that cane-sugar, when acted on by gastric juice, undergoes a transformation which adapts it for absorption and utilization by the tissues—namely, a change into dextrose (glucose). He knew from the experiments of Tiedemann that starch is changed into dextrose in the digestive tract before absorption. Bernard asked himself what was the fate of this dextrose. He proposed to trace the course of the sugar from the digestive tract, along the portal vein to the liver, from the liver to the lungs by way of the right heart, and finally from the lungs through the left heart to the

various tissues. His idea was that at one of these stations the dextrose disappears, is destroyed or in some manner changed. "If I am able," said he, "to suppress the activity of this station, sugar will accumulate in the blood and a condition of diabetes will be brought about." Here, then, was a highly interesting enterprise. The first thing to do was to feed a dog freely on carbohydrates, kill it at the height of digestion and examine the blood leaving the liver by the hepatic veins to see if any sugar were lost in the liver. Please note that Bernard was helped in this search for sugar in the blood and tissues by the eupric sulphate test for dextrose, just introduced by his friend, Barreswill—a very material help. Sugar was found in abundance in the blood of the hepatic veins; therefore, the liver was not the looked-for place of disappearance of dextrose. "But how do I know," thought Bernard, "that the sugar which I thus find in the hepatic vein is the same sugar as that which I introduced into the portal blood through the food?" To get an answer, Bernard fed a dog on meat only, knowing by experiment that no dextrose would then be present either in the digestive tract or in the portal blood. Then he examined the blood of the hepatic vein for sugar. Great was his surprise to find it loaded with dextrose. His keen intelligence at once drew the correct inference—that the liver is a sugar-making organ and makes sugar out of something which is not sugar, and, furthermore, that within the liver lies the secret of diabetes. Bernard now made a variety of experiments to test the correctness of his inferences. He soon found that sugar was contained in a simple decoction of the liver and that this sugar was dextrose, capable of fermentation and responding to all the known tests. But Bernard did not stop here. His fancy urged him to seek the substance in the liver from which the sugar is produced—the "glycogenic substance" whose existence was inferred from experiment. And in time he isolated the substance which we know to-day as glycogen.

Here, then, was a great triumph of the experimental method in the hands of an imaginative, critical and highly skilled technical worker. The completeness with which the discovery of the glycogenic function of the liver was worked out makes it a model of physiological research for all time. Moreover, the facts elicited by Bernard in this research possess a very broad bearing. They show that the liver has a function as important as, but far less obvious than, the secretion of bile—the first example of an internal secretion. And they prove that animals as well as plants can build up carbohydrate material—glycogen—by means of their own tissues. Finally Bernard very clearly showed that, while the production of glycogen from sugar is a vital act, in the sense of occurring only under conditions of life, the converse process, namely, the formation of sugar from glycogen, is independent of living tissues and may occur as the result of the action of a ferment in the blood.

As Sir Michael Foster said most aptly:

It is in the putting forth of the hypothesis that the true man of science shows the creative power which makes him and the poets brothers. His must be a sensitive soul, ready to vibrate to Nature's touches. Before the dull eye of the ordinary mind facts pass one after the other in long procession, but pass without effect, awakening nothing. In the eye of the man of genius, be he poet or man of science, the same facts light up an illumination, in the one of beauty, in the other of truth; each possesses a responsive imagination. Such had Bernard, and the responses which in his youth found expression in verses, in his maturer and trained mind took the form of scientific hypothesis.

That Bernard well understood the value of imagination in research and also its dangers is well shown by his admirable and memorable advice to his pupils:

Put off your imagination as you take off your overcoat when you enter the laboratory; but put it on again, as you do your overcoat, when you leave the laboratory. Before the experiment and between whiles, let your imagination wrap you round; put it right away from yourself during the experiment itself, lest it hinder your observing power.

Let us now bring to your attention some features of the mental life of another great physiologist, Hermann von Helmholtz, representing a very different phase of physiology from that developed by Bernard. Bernard, though accomplished as a morphologist and skilled in mechanical physiology, leaned strongly to the chemical side. He was essentially the animal experimentalist. Mathematics played only the most simple rôle in his researches. Helmholtz, on the other hand, approached physiology on its physical side, and, one may remark in passing, with a quality and amplitude of success unequalled before or since. He used the higher mathematics constantly and they proved keen tools in his hands. Although an experimentalist of the very first order, Helmholtz was not an animal experimenter except in a very limited way, the nature of his themes making vivisection for the most part unnecessary.

Even as a child the mind of Helmholtz was unconventional and inquiring, bent on understanding what was going on about him. The boy cut his own path through the mazes of unassimilable educational offerings. His tastes were definite. He obtained notions of geometry from the blocks with which he played, surprised his mother by experimenting on her linen with acids, made telescopes with spectacle lenses, read books on physics and enjoyed greatly his walks in the country. At the university he assimilated ideas with great ease and showed an increasing interest in physics, which he wished to follow as a profession. But his prudent father urged him to study medicine as a surer means of livelihood. And most fortunate it was for medical science that the gifted young man was willing to take up medical studies, for there arose in him a deep interest in the problems of physiology, destined to bear rich fruit. The duties of an army surgeon took only part of his time and the rest he gave to physics. His original researches began at the age of 21 and continued through a long lifetime, covering an extraordinary range of topics in an original and masterly way. Helmholtz contributes to minute anatomy, lays the foundations of physiological optics and acoustics (with all that this means for esthetics, psychology and metaphysics), gives to medicine the specific and golden gift of the ophthalmoscope, enriches physics with an imperishable statement of the doctrine of the conservation of energy and with original studies on vortex motion, on hydrodynamics, on electrodynamics, on dynamics, on meteorological physics. He broadens chemical theory by the influence of his vortex motion hypothesis and, in a somewhat incidental way, brings new theoretical conceptions into the realm of pure mathematics. As students of the psychical forces that have fertilized modern medicine it is interesting for us to note that Helmholtz disclaimed any intention to be practical in his work. If the themes that happened to absorb his attention led to practical and humanely useful results, he was pleased; but he seldom pursued a practical aim simply because of its utility. He chose his themes because they promised to be intellectually satisfying, giving little heed to the nature of the probable outcome. He framed his experiments so that

Nature would have to answer "Yes" or "No" to his questions, thus furnishing him with definite results.

The story of the invention of the ophthalmoscope illustrates the mental processes of Helmholtz in working out an idea. He did not set out to devise an instrument for studying the retina and the ocular refraction, but as he proceeded these important possibilities ripened into definite objects. He says:

I was endeavoring to explain to my pupils the emission of reflected light from the eye, a discovery made by Brücke, who would have invented the ophthalmoscope had he only asked himself how an optical image is formed by the light returning from the eye. In his research it was not necessary to ask it, but had he asked it, he was just the man to answer it as quickly as I did, and to invent the instrument. I turned the problem over and over to ascertain the simplest way in which to demonstrate the phenomenon to my students. It was also a reminiscence of my days of medical study, that ophthalmologists had great difficulty in dealing with certain cases of eye disease, then known as black cataract. The first model was constructed of pasteboard, eye lenses, and cover-glasses used in the microscopic work. It was at first so difficult to use that I doubt if I should have persevered, unless I had felt that it must succeed; but in eight days I had the great joy of being the first who saw before him a human retina.

The basis for this invention was Helmholtz's knowledge of the anatomy of the eye, his mastery of physiological optics, his experimental ability, and, as stated in his own language, his wish to devise an improved method of demonstrating a somewhat obscure phenomenon to his students. Modesty and generous impulse made Helmholtz say that Brücke could equally well have invented the ophthalmoscope had he only asked himself how an optical image is formed by the light returning from the eye. I doubt if it could be successfully contended that Brücke's actual information about the eye was less than Helmholtz's. Helmholtz himself says that Brücke "was just the man" to make the invention, and by this he must refer to equipment in knowledge. In what, then, did Helmholtz excel Brücke? I would answer, in creative fancy, in imagination. The controlled play of fancy, using the facts of the case for its playground, is what made Helmholtz see the possibilities and see them so clearly as also to make it appear worth while to put energy into the effort to see the retina.

It would be easy to multiply examples of the almost playful way in which Helmholtz utilized the children of his rich fancy to extend the bounds of scientific knowledge. The ease with which he made his intellectual progress is one of the most striking features of his wonderfully creative career. Often on solitary walks in the country he experienced ideas that seemed to clarify refractory problems. From the great wealth of his impressions and associated ideas, arising through the operation of active fancy or imagination, there seems to have been a process of controlled selection and rejection by which the finished products, the great ideas, were built up—a conscious selection not without analogies to natural selection in the upbuilding of the physical machinery. In the entire list of the masters of medicine I think there has been only one mind that can be regarded as belonging on the same lofty level as that of Helmholtz, in respect to controlled yet expansive powers of imagination combined with the energy of performance and the technical training necessary to apply those powers. The intellect of Pasteur, and his alone, has revealed associative power and logical sequences of thought culminating in discoveries fairly comparable to those of Helmholtz in respect to the depth of their

psychical basis. And it is probably no accident that the two greatest minds in medicine have entered it on the streams of pure science, Helmholtz as the biological physicist, Pasteur as the biological chemist.

As a human being Helmholtz takes rank with the noblest of men. Considerateness for others and a willingness to help worthy persons were prominent characteristics. He had a calm self-control which still left him natural and simple in human relations, although this fine dignity served as a check to the approaches of shallow and trivial people. Helmholtz was an idealist of the purest type, and never permitted personal interest to interfere with his best aims as a student of science. His was a poetic nature, apt in versification and in music, yet with an intellect so searching that he was not entirely satisfied by esthetic feeling and phantasy, but sought also to understand them. Modesty was one of his greatest charms, and this quality was attractively seen in the sentiment which he expressed on being awarded the von Graefe medal in recognition of his services to medicine through the invention of the ophthalmoscope:

Let us suppose that up to the time of Phidias nobody has had a chisel sufficiently hard to work on marble. Up to that time they would only mold clay or carve wood. But a clever smith discovers how a chisel can be tempered. Phidias rejoices over the improved tools, fashions with them his god-like statues and manipulates the marble as no one has ever before done. He is honored and rewarded. But great geniuses are modest just in that in which they most excel others. That very thing is so easy for them that they can hardly understand why others cannot do it. But there is always associated with high endowments a correspondingly great sensitiveness for the defects of one's own work. Thus, says Phidias to the smith, "Without your aid I could have done nothing of that; the honor and glory belong to you." But the smith can only answer him, "But I could not have done it even with my chisels, whereas you, without my chisels, could at least have molded your wonderful works in clay; therefore I must decline the honor and glory, if I will remain an honorable man." But now Phidias is taken away, and there remain his friends and pupils—Praxiteles, Paionios, and others. They all use the chisel of the smith. The world is filled with their work and their fame. They determine to honor the memory of the deceased with a garland which he shall receive who has done the most for the art, and in the art, of statuary. The beloved master has often praised the smith as the author of their great success, and they finally decide to award the garland to him. "Well," answers the smith, "I consent; you are many, and among you are clever people. I am but a single man. You assert that I singly have been of service to many of you, and that many places teem with sculptors who have decked the temples with divine statues, which, without the tools that I have given you, would have been very imperfectly fashioned. I must believe you, as I have never chiseled marble, and I accept thankfully what you award to me, but I myself would have given my vote to Praxiteles or Paionios."

If we turn now to Helmholtz's great contemporary, Louis Pasteur, we discern many points of resemblance in the mental endowments and in the careers of these two superlatively eminent masters of medical science. Pasteur, like Helmholtz, was greatly helped in early life by the patient guidance of earnest and capable parents, and, like him, showed a strong interest in poetry and art, the portraits made by Pasteur during his teens showing unmistakable artistic talent. Pasteur's considerable aptitude for mathematics developed later than that of Helmholtz and was of a less original sort, yet served him well, especially in his earlier researches. Both men were endowed with phantasy and associative power of the highest order, but, while Helmholtz seldom departed from the path of strict logical development of

his ideas, Pasteur, with his more impetuous nature, sometimes permitted himself to make speculative excursions of a more random kind. Both found their greatest enjoyment in dealing with the development of general ideas, but Pasteur, on realizing his power to help mankind through his discoveries, deliberately turned his rare gifts to the solution of practical problems in medicine, whereas Helmholtz was satisfied to continue to build the foundations for the physiology of the sense organs and for a better psychology and metaphysics. It is very noteworthy that both Helmholtz and Pasteur were deeply influenced in their outlook by certain conceptions of wide applicability. On the other hand, Pasteur's scientific and philosophical thought was influenced definitely and profoundly by the conception of molecular asymmetry in nature. His interest in this subject was awakened by the study of the salts of tartaric acid, which culminated in 1848 with the famous discovery that the optically indifferent or racemic tartaric acid crystallizes into equal quantities of the ordinary dextrorotary tartaric acid and of the newly recognized levorotary tartaric acid. It was Pasteur's interest in the problem of molecular asymmetry, and especially certain theoretical notions on which we need not linger here, that induced him to experiment on the action of micro-organisms on racemic ammonium tartrate, with the striking result that the living beings converted the optically indifferent solution of salts into a levorotary solution. This showed that the dextrorotary constituent of the indifferent racemic tartrate had been assimilated by the micro-organisms, while the levorotary constituent was unaffected. I emphasize these studies of Pasteur's because they were what excited his interest in the then obscure problem of fermentation, which in turn led him to take up those studies of the causation of disease by micro-organisms and those researches on immunity which have revolutionized the entire science and art of medicine. To do anything like justice to these extraordinarily fertile and original researches of Pasteur is wholly out of question here. I can merely direct your attention to the researches which in the fullest way exemplify Pasteur's gift of imagination and power of experimental control. There are six studies or groups of studies whose histories exhibit Pasteur's genius at its best—the research on the tartrates, the investigations on fermentation, the inquiry into the causes of the silkworm disease, and the methods of its eradication, the research on chicken cholera and immunity to it, the research on anthrax, with the extraordinarily dramatic scenes attending the public test of the immunization methods, and finally the masterly researches on hydrophobia.

In all these different groups of researches were displayed the most active powers of associative thought and phantasy, the most admirable capacity for self-criticism. As Pasteur made his publications in a terse, compact style, we cannot always reconstruct his logical processes by reading them. His method of thought and procedure were, however, well known to his colleagues, with whom he loved to discuss his ideas and plans of experiments. They found him spirited, fertile and imaginative in his conceptions, frankly communicative, generous in giving help and wholly absorbed in his work. Like many intensely serious men, Pasteur lacked somewhat the sense of humor. His feelings of partisanship were so strong that he could never overcome his resentment toward Germany, and he permitted this to color even his relations with German scientific workers. Yet one should dwell but lightly on these slight imperfections

in a nature of such great gifts and such lofty and unselfish purpose.

At the time when Pasteur was beginning his research on anthrax, a young student of medicine at the University of Strassburg, Paul Ehrlich, was laying the foundations for that uniquely fertile and versatile career of medical research which has made him the most original and picturesque of living investigators of medical science. Although at this time Ehrlich was especially under the direction of the anatomist, Waldeyer, he rapidly developed a capacity for chemistry which was a surprise both to himself and to the chemist, Adolf von Beyer, whose lectures had been systematically cut by the gifted but unconventional student. For unconventional he then was and ever has been, neglecting what he did not like and throwing himself with fervor and intense energy into the solution of the themes that attracted him. From the outset it was clear that Ehrlich would make a career as an experimental investigator. Much of the time he was supposed to spend in taking the usual medical courses he devoted to experiment. When Robert Koch was shown through the laboratory at Breslau by one of the professors his attention was called to a young student working at a desk covered with bottles of dyestuffs. "There is our little Ehrlich," said the professor; "he is a first-rate stainer of tissues, but he will never pass his examinations." The prediction about the examinations came perilously near fulfilment; Ehrlich made bad flunks and it is hinted that he would never have received his degree had not he made a discovery—namely, the existence of the peculiar type of leucocyte which is known to us as the "plasma-cell." The faculty reasoned that it would be improper to keep so promising and original a worker indefinitely in an undergraduate position, and it is suspected that they mitigated the rigor of the examinations in order to relieve their own embarrassment.

A noteworthy example of Ehrlich's free-lance method is seen in his peculiar way of working at chemical problems. Though a highly accomplished organic chemist, both as to theory and a singularly rich acquaintance with the properties of substances, Ehrlich rarely uses any but the simplest methods and quite refuses to work quantitatively. His personal experiments are almost exclusively test-tube experiments, most ingeniously contrived to yield a rich fund of knowledge. He says:

For the pure chemist, who proceeds analytically or synthetically, my way is only an unending *pons asinorum*. The chemist starts from two substances, *a* and *b*, both of which he knows, and by synthesis derives substance *c*. Through this procedure a sure insight into the nature of the process becomes possible. This is exactly as if one drew a circle with the calipers. On the other hand, one may define a circle by means of a large number of tangents, and the chemistry which I practice is a kind of tangent chemistry. Through my schooling in this tangent chemistry I have had a great advantage in dealing with immunity problems. If one cannot define chemically the components entering into action, as is frequently the case in immunity problems (for example toxin and antitoxin) one cannot draw the circle in the usual chemical way and the nature of the reaction process must remain a closed book. But for one who has worked for decades, as I have done, at tangent chemistry, the task is no longer so difficult; and I think that in this way, through the recognition of toxoids and their quantitative formation from toxins, I have succeeded in correctly bringing out the two functional groups, the toxophore and the haptophore, which indeed furnish us with the key to the entire doctrine of immunity.

Ehrlich's dominant interests during the student days were histology and chemistry, but his attitude toward these subjects was even then highly individual, original

and laden with the dynamic spirit—the spirit that seeks to gain a conception of what goes on in the living cells. Throughout his career Ehrlich has sought to use his knowledge of histology and of chemistry to gain light on the processes of life. The clarity of his visual perceptions and the tenacity of his visual memories have enabled him to cultivate a sort of chemistry peculiarly suited to this aim. Ehrlich early recognized that he had a peculiar gift of being able to recall and represent mentally the constitution of a large variety of substances and with little effort to picture vividly their interactions. He definitely states that he considers this chemioplasmic memory his greatest scientific endowment, and it is clear that the long line of his investigations is founded on this faculty and on his taste for rational therapeutics. Like Helmholtz and Pasteur, Ehrlich has been guided in his experiments by certain well-defined general conceptions. The most important of these in Ehrlich's case is the idea that the living cells have many different kinds of definite chemical affinities, by virtue of which they are able to enter into combination with some compounds and not with others. This idea is at the foundation of Ehrlich's well-known researches on the basophilic, acidophilic and neutrophilic leucocytes, on the distribution of dyestuffs in the so-called "intravital" staining, on the cell affinities of the different alkaloids, on the side-chain theory of immunity and the measurement of the strength of antitoxin, and on the organic chemical compounds of arsenic in relation to the trypanosomes of the sleeping-sickness.

The recital of Ehrlich's achievements in medicine would demand a voluminous space, for his activities have been intense and varied. The pharmacological studies, the work on immunity in its different phases (including the action of hemolysins), the experimental studies on carcinoma—each of these deserve the most careful study, not merely because of actual results gleaned, but on account of the luminous ingenuity of the methods employed.

It is in the field of immunity that Ehrlich has won his brightest laurels. The discovery that vegetable poisons like abrin and ricin excite antitoxicity, the development of a method of measuring the activity of the diphteria antitoxin—a standard method the world over—the extremely ingenious studies of hemolysins, the recognition of the laws of transmission of immunity from mother to child, and the discovery of immunity in trypanosomes exposed to the action of arsenical poisons, are all contributions of far-reaching import. And cementing all Ehrlich's special investigations of immunity, relating them also with his work on the distribution of dyestuffs, alkaloids and nutritive materials generally, stands the famous "side-chain" theory. This bold, elaborate and refined hypothesis of the nature of immunity, this offspring of rich phantasy and fertile experimentation, was long the source of discord and strife among bacteriologists and pharmacological theorists. At the height of the controversy Ehrlich once remarked: "They are shooting into my antitoxin tower and I will reply vigorously." To-day a welcome peace—perhaps merely a truce—has succeeded the sometimes heated contest, and only an occasional stray shot is heard. However widely the rival camps may disagree on certain points, there seems now to be a common ground. The centrally emergent conception in immunity appears to be the existence of a specific binding or anchoring avidity between the immunity-excitant or antigen and certain substances belonging to the living cell—the so-called receptors. This conception and the

extensions that follow from it—including, for example, the now familiar view that the antitoxin freed in the blood represents excessively multiplied receptors disengaged from the stimulated cells—are peculiarly original with Ehrlich. His mind reached this central idea, because it is a mind beset by chemical phantasy, a mind seeking to explain all biological phenomena in medicine by means of chemical principles. In the special case of the side-chain theory, Ehrlich's intimate knowledge of the chemical and biological properties of the dyestuffs played a very large part, and it should be noted that the theory is in this sense a hybrid, that it originates not from a purely chemical conception, but from a chemical and a biological idea. Slowly that theory grew to its present full proportions and its somewhat bewildering intricacies of superstructure. In this elaborate form there is doubtless much in the hypothesis that can be criticized if we turn to it in the hope of learning the absolute truth in respect to immunity. It is perhaps just to say that the value of the theory lies largely in the fact that it expresses relationships. Time and experiment will doubtless mold it anew. But whatever changes in form it may suffer, the data collected by Ehrlich and correlated by him will long remain a monument to his experimental genius and creative imagination. And the fair-minded critic will remember the great practical services which this theory has rendered and is still rendering to medicine, in enabling investigators to pursue their experiments in new territories of research in immunity by giving them points of attack and lines of advance. It is stated by Wassermann, the discoverer of the serum reaction of syphilis, that he could never have worked out this biological reaction had he not possessed the side-chain hypothesis as a guide. It seems clear, too, that the intelligent use of this hypothesis is destined to aid us greatly in learning something of the seat and mode of action of many drugs of which we now know but little. And, again, there are unmistakable signs that the side-chain conception will give many a clue to the understanding of the nutrition of cells.

Ehrlich's mind is singularly labile, playful and restless. It passes quickly and casually from one subject to another, yet without the least confusion. It is always on the alert, ready to dally with a new fact or a new idea, in the hope that it will illumine one of the many experimental interests with which consciousness ever teems. Ehrlich reads medical literature rapaciously but selectively, ignoring all but the themes in which he has a special interest, as one reads who reads for his pleasure and not for duty's sake. This unusual method is extremely effective and gives a highly serviceable command of facts likely to be helpful in extracting from Nature new facts by experiment. Even during holiday seasons, this spirituelle, penetrating mind knows no real rest, for the time is beguiled by the reading of detective stories, even second-rate ones, in the hope of finding some new and complicated situation, for which an ingenious solution can be invented.

It is a cheering sign of the times that the cultivated classes are beginning to recognize the essential rôle of imagination in the progress of the biological and medical sciences. President Eliot remarks that the nineteenth century has taught us that, on the whole, the scientific imagination is quite as productive for human service as the literary or poetic imagination. "The imagination of Darwin or Pasteur, for example, is as high and productive a form of imagination as that of Dante, or Goethe, or even Shakespeare, if we regard the

human uses which result from the exercise of imaginative powers and mean by human uses not merely meat and drink, clothes and shelter, but also the satisfaction of mental and spiritual needs." The history of medical discovery is a long chain of imaginative experiences whose links have been welded and fixed by passing through the fiery ordeal of appeal to experimental tests. And could we but set forth, in fitting language, the true story of these mental experiences, with all their vicissitudes of hope and despair, success and failure, we should certainly dispel for all time the wide-spread notion that medical research is a dry and painful task, to which only an unimaginative mind can turn with satisfaction.

There is a phase of imaginative thought and feeling which expresses itself in a strong desire to pursue ideal ends, even at the cost of the ordinary prizes of life, wealth, material power and physical comfort. This idealism has been a very pronounced attribute of the great masters of medicine. In a noteworthy degree they have all possessed it and some, like Helmholtz and Pasteur, have led lives of unpretentious, simple self-sacrifice in admirable harmony with the illustrious and superlative service they have rendered mankind. This idealism, while clearly a moral trait in the conventional sense, seems to be the offspring of the creative intellectual attitude and especially of an absorption in work, which leaves the mind neither time nor inclination to seek the petty advantages for which most men at some time in their lives find themselves struggling. For these reasons, indifference to vulgar aims and aloofness from commonplace interests are apt to be found where there is preoccupation in productive work of a high order, whether this be concerned with science or not. But in the medical sciences the rewards are so great, in the sense of personal satisfaction from superior achievement, that there is an especial and peculiarly potent incentive to repress those exaggerations of the self-preserved instinct which show so insistently in the selfish conduct of commonplace persons.

There is a special quality pertaining to the greatest masters of medicine which arrests our attention when we survey their life work. This is the wonderful variety and number of their discoveries. We are struck with this quality of productivity in the works of Hunter, Malpighi, Johannes Müller, Claude Bernard, Helmholtz, Pasteur, Koch and Ehrlich. In some instances the range of topics is relatively narrow, as in the case of Koch, or extraordinarily wide, as in the case of Helmholtz, but in nearly all instances the great masters have been repeatedly productive, and this varied productivity on a high plane is an unfailing mark of genius. On the other hand, it is necessary to recognize that very important discoveries in medicine have been made by men who once in their lives, and once only, have attained a high level of achievement. There are two examples of this singularity in discovery which I would bring particularly to your notice—one the discovery and development of the antiseptic method by Lister and the discovery of general anesthesia by Morton.

When Lister visited Pasteur in 1865 he was much impressed by the attitude of the great master in regard to the wide part played by micro-organisms in fermentation and disease. As a surgeon he had a deep interest in the diseases of wounds, and the idea established itself in his mind that such diseases might be due to a kind of fermentation which might be checked or prevented by the use of antiseptics. This idea, worked out by Lister with the utmost patience and superior intelligence, gave

the wonderfully far-reaching results with which we are all familiar. The important results of Lister's methods are not limited to the surgical diseases of human beings. By making it possible to experiment on animals in wholly new ways, these methods have placed in the hands of the physiologist a powerful instrument for the extension of medical and biological knowledge along most significant lines of progress. We have, therefore, to concede that Lister's discovery is one of such rich fertility as to make it rank among the great discoveries of medicine. Yet it cannot be claimed that Lister was a great scientist. In training, in originality, in versatility and in imagination he is far from being the peer of the great masters of whom we have spoken. And we see here, again, that the practical import of a discovery is no arbitrary measure of the scientific attainments of the discoverer.

Hardly less valuable an asset of practical medicine is the discovery of general anesthesia, but it appears that the qualities of mind revealed by Morton belong to a level less high than those of Lister. Morton was an alert, enterprising young dentist in Boston, who, while educating himself in medicine, successfully practiced his calling and invented an improved system of dental plates. The use of this system required the free removal of carious and otherwise diseased teeth, and this caused great pain. To relieve this pain, Morton pertinaciously sought an efficient anesthetic. After many unsatisfactory trials with different substances, he experimented with sulphuric ether, given him by Jackson, the professor of chemistry in the Harvard Medical School. In 1846 he succeeded in demonstrating the efficacy of sulphuric ether as a general anesthetic and thus gave to mankind a precious, almost unequalled boon.

This great discovery cannot be reckoned as one of high fertility, since, aside from anesthesia, it has not opened new lines of thought or practical service. Neither can it be said to have sprung from a scientific mind of exalted qualities and attainments. It has the earmarks of a child of empiricism. Morton's scientific knowledge was slight, and his mind had a strong commercial bent. The singularity of his discovery, the only one of his life, points neither to fertility of resource nor to lofty imagination, but to the fortunate combination of conditions under which he insistently exercised his ingenuity.

Having told you something of the qualities distinguishing the modern masters of medicine, I now ask your permission to speak of certain aspects of these qualities as they seem related to the career of the thoughtful student of medicine. And first of all I would correct in your minds any impression I may have made of a discouraging nature. Having drawn our examples of medical advance so largely from the work of supremely gifted men, workers in laboratories, many of whom have not been practitioners of medicine, or have only casually practiced, it may possibly appear that you are confronted with the paradox that an essential condition of the loftiest success in medical science is to abstain from the practice of medicine. There is, indeed, a measure of truth in this, for, as I have already tried to show you, entire absorption in the practical problems of medicine unfits men to pursue with the highest success the career of discovery. In this there is naught of real discouragement, but only a sign that the problems of disease, as we meet them by the bedside, are far too complex to permit solution there. There was a time when all medical discovery was based directly on observation at the bedside. Then, with the growth of anatomy, the invention of the microscope and the coming of the twin

hand-maids of medicine, physics and chemistry, the laboratories spring into existence. Much there was that could be discovered only by laboratory methods, and so it happened that some men were justified in working at medicine, and able to become masters of medicine, though they scarcely left their laboratories. But I would have you note well that we have now entered on a time when the clinics and the laboratories must work more and more closely together, aiding each other at every step to bridge the wide chasms of our ignorance. And just here lies one of the greatest opportunities for the alert student of medicine, undergraduate and post-graduate to do something worth while. For the problems are so many, so varied and so widely graded as to difficulties that for almost every earnest student there is at hand a theme suited to his powers and training.

I have intimated my belief that the powerful and controlled imagination is generally associated with a strong vein of idealism. The explanation is not remote; the imagination separates the wheat from the chaff in the realm of ideals, picturing vividly what will yield enduring satisfaction. In persons of average capacity and imagination, idealism is more halting because the perceptions of what is permanently worth while are less definite and carry less firm conviction. Hence in such persons idealism of conduct is less spontaneous and calls for conscious effort to sustain it. It is, indeed, a quality which may be deliberately cultivated if the germ exists in the character.

What I would like particularly to impress on your minds is that without idealism of purpose, without the willingness to make sacrifices of material comfort and much that the world overprizes, the career of the student and practitioner of medicine is almost certain to be pitifully limited and mediocre. He will do well who has the character to run his course in a strong spirit of independence, satisfied during the long years of professional preparation with the slender means that permit the prolongation of some phase of the student life long after graduation from the medical school. There is no surer road to hopeless mediocrity than that which leads the young physician to assume an active practice before he is ripe for it. On the other hand, the student physician who waits patiently, year by year, to strengthen his intellectual grip on the processes of disease, if possible under the guidance of some master of medicine, is laying the unshakable foundations of a telling and distinguished career. He need have no anxiety as to the future either on the score of professional recognition or the ability to earn a sufficient income. For the world needs and must ever seek the serious, well-trained, idealistic physician whose first thought is to render a high grade of service. The superior type of student will not dread the long years of preparation in laboratory and clinic. He will eagerly seek them and will count it the greatest privilege of his life to be able to utilize and develop his powers. The fascinating interest of his problem and the elevation of his ideals will keep him buoyant under circumstances of discouragement. If he be blest with a fair share of imagination and idealism he will never falter in the struggle to make a worthy career, for he will know that he is treading in the footsteps of the great masters of medical science and that in doing so he is helping to assuage human suffering, perhaps also to illuminate some of the dark problems in the baffling mystery of life. And in this consciousness will he find ample compensation for the self-abnegation which such a career must necessarily exact from its votaries.

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Original Articles

WHAT PHYSICIANS CAN DO TO IMPROVE THE PHARMACOPEIA *

HENRY LEFFMANN, M.D.

PHILADELPHIA

I may underrate the difficulty of my task, but it seems to me very simple. Physicians can improve the Pharmacopeia by taking a more direct and critical interest in it. I have had occasion lately in a paper read before the Philadelphia County Medical Society to present some facts concerning the change of control in the Pharmacopeia and to suggest radical changes in the method of revision. That paper has been deemed of sufficient importance by several pharmaceutic journals to be published in full.

It is not necessary to present in any detail the history of the nine issues of the Pharmacopeia. The important data are given in the book itself. The first issue (1820) was under exclusive medical control. No college of pharmacy then existed in this country, and advice was but indirectly received from pharmacists. Notwithstanding the fact that colleges of pharmacy were established before the first revision, no delegates from them or from pharmaceutic societies are recorded until 1850, and even then the revision of that period was issued as being under the "authority of the National Medical Convention," as the revisions of 1830 and 1840 had been. To the convention of 1850 the Philadelphia College of Pharmacy sent three delegates and the New York College two.

In the last revision the substantial control by pharmacists is seen on examining the composition of the Committee on Revision and the Board of Trustees. The Committee on Revision consists of twenty-six members, of which number twelve have the degree of M.D.; but several of these are surely much more closely connected with pharmacy than with clinical medicine. The Board of Trustees consists of seven, of which number two have the degree of M.D., and one of these is a professor in a college of pharmacy. I make no charges, nor do I entertain any thought that pharmacists have acted unfairly in these distributions of control. Physicians relaxed their interest and it was necessary for some one else to make up the work.

My hope is that physicians will see the advisability of asserting their opinions in regard to the ninth decennial revision. The medical profession is entitled to at least equal representation on the Committee on Revision and Board of Trustees by reason of its numerical strength in the nation at large, by reason of its historic relations to the revisions and by reason of the medical significance of the book. It is to be hoped that some system will be devised by which equitable representation in the convention will be secured. For the convention in 1900 twenty persons were elected in Philadelphia, of whom eleven were pharmacists and nine doctors. All the pharmacists were present and six of the doctors. I am at a loss to understand why the Alumni Association of the College of Pharmacy should have been allowed representation on the floor of the convention. The college itself was fully represented and also the State Pharmaceutic Society. An inspection of the roll of the last convention will show some phases of representation that can be best compared

to what is known in England as the "rotten borough" system. A convention should have a definite system of representation.

It is, in my opinion, now time to make the United States Pharmacopeia a national work in the full sense of that expression. We live in a very different world from that in which the book had its origin. The little band of doctors that met in Washington on New Year's day, 1820, in the hot youth of the Republic, when George III was king and James Monroe President, would have been shocked to hear that a time would come when Congress would make a law establishing the provisions of the Pharmacopeia as a legal standard. They would have regarded such a drift toward centralization as a blow to republican institutions and in destruction of American liberty. We moderns feel no such alarm, recognizing that all the steps toward a better union are over the ruins of state individualism. Now that penal enactments give the requirements of the Pharmacopeia the force of law, it is but wise and just that the framing of these requirements should be carried out under official sanction. The United States Government should summon the convention and provide for the expenses of the delegates. There is no need for the numerous attendance that has become customary of late years. There is no reason that every college and society of pharmacy and medicine should be authorized to send accredited delegates. The work of the last revision was done by a few men, not more than twenty-six authorized persons in all; and from what I have learned in a very large experience of committees, boards and commissions, I feel inclined to say that if the minutes of the Revision Committee were published, it would be found that a few competent and active spirits did most of the work and determined the main lines of policy. If the American Medical Association and the American Pharmaceutical Association were each authorized to send, say, ten delegates, and the medical departments of the Army, Navy and Marine-Hospital Service each, say, three delegates, a convention could be held fully as representative as any that has ever assembled for such a purpose. The publication should be carried out by the United States Government. A Committee on Revision should be designated which would have power to make necessary changes in the interval between revisions. Revisions should be once in five years. The decennial revision satisfied the conditions of 1820, but progress in pharmacy and medicine is too rapid now for such a long interval. The preparation of the revision should not occupy over one year. The circumstances that attended the publication of the last revision, namely, that it took five years to finish, are wholly inconsistent with the principle on which such a work is published.

During the preparation of the revision, the work should be brought before the public for discussion through publication of the more important suggested changes in the leading medical and pharmaceutic journals. In this manner important criticism will be available. Some errors and inconsistencies would be avoided and no injury would be done to any one. I think that the size of the book could be materially reduced, without interfering with its usefulness in the field for which it is intended. Many of the analytic processes could be included in special bulletins as is now done in food analysis work, and to these the special workers could refer.

A work that determines the conditions on which criminal proceedings are brought should originate and be controlled by official authority, not by private management. The framers of the current revision recognized that the

* Read in the Section on Pharmacology and Therapeutics of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

book had become a danger in this respect and placed it in a formal statement that it is a standard for drugs and not for foods. Under the sanction and control of the general government, the book will become in reality the "United States Pharmacopeia."

ABSTRACT OF DISCUSSION

PROF. JOSEPH P. REMINGTON, Philadelphia: I think every member present is conversant with the views held by the author. There is practically no change in the paper which was presented before the county medical society. It is full of inconsistencies. I do not desire to attack the paper in detail. I will only say that I do not think that a committee formed solely from the American Pharmaceutical Association and the American Medical Association would be nearly so representative of the whole country as would be the convention in the present form. Sooner or later I apprehend that the United States government will have more and more influence in the formation of the Pharmacopeia. Whether that will take place soon or late I do not know. I do not think any of us know. At any rate the U. S. Pharmacopoeial Convention is on pretty solid ground and it directs how the next Pharmacopeia shall be revised. Dr. Leffmann is not correct in his dates. He spoke of the Pharmacopeia of 1820. The first College of Pharmacy in the United States was founded in 1820 and he spoke of the pharmacists having no connection with the revision until 1850. In the Pharmacopeia of 1840 is an acknowledgement that the Pharmacopeia of 1840 was the work of the Philadelphia College of Pharmacy. The physicians had abandoned that Pharmacopeia entirely. In the preface of that Pharmacopeia is a statement to that effect. I am very tired of this contention as to who is going to be the greatest in the Kingdom of Heaven. It seems to me puerile in the extreme. I have no desire to sit at the head of the bench. What we want is not a pulling asunder, but a getting together, and we want the best assembly possible for the Ninth Revision Convention, and I am willing to help in organizing the American Chemical Society, which is coming in, the government interests which are coming in and all others entitled to representation, but the greater interest of the American Medical Association is what we want, and I am sure the question of supremacy, whether it will go to the doctor, the chemist or the druggist, can very well be left to the future.

DR. HENRY BEATES, Philadelphia: The official adoption of remedies comprises three conditions: One, proving through chemistry how they affect human kind; another, the effect of medicine on the human economy, empirically proved—whether the fact can be demonstrated and explained through chemistry or not; thirdly, by a physiologic or biologic demonstration of the manner of their action. In order to adopt any remedial agent, one or all of these conditions should be the determining reason for either official recognition or rejection, and it appears manifest, if this be true, that on the Committee on Revision, therefore, chemists, physiologists, biologists, and clinicians should be represented; and, because medicines are manufactured, the interests of the manufacturers should be represented. Such a title as "The Capture of the Pharmacopeia by the Medical Profession" engenders antagonism between the interests above mentioned, and lays the foundation for disintegration and serious trouble. To suggest such a revolution in the formation of the committee on Revision, as the paper suggests, is exceedingly dangerous. I believe the department of pharmacology in affiliation with the medical profession, should be strengthened by each individual, so trained himself, as to be able to act with freedom from prejudice and sentiment, and capable of approaching the subject with a broad and open mind, and acting intelligently and honestly. A man should have the courage of conviction, and be able to contend for that which he believes to be right. He should also be sufficiently brave to acknowledge error, should his attitude prove to be mistaken. I hope that the action governing the next meeting of the Committee on Revision of the United States Pharmacopeia will be characterized on the part of every one by the spirit manifested in the words of the martyred president: "With malice toward none, with charity for all, with firmness

in the right, as God gives us to see the right, let us continue in the cause we are in." It is only by such action that genuine progress is assured.

DR. M. G. MOTTER, Washington, D. C.: We heard in a paper that some ten or twenty years ago there were nine physicians appointed as delegates to a pharmacopoeial convention from Philadelphia. Among them was a delegate appointed to the 1890 Pharmacopoeial convention, appointed again a delegate to the Pharmacopoeial Revision Convention in 1900. He was not there on either occasion, but after at least twenty years he has waked up to the fact that he ought to do something for the Pharmacopeia.

DR. REID HUNT, Washington, D. C.: I think one thing is coming out in these discussions, viz., how far apart the physicians are among themselves as to what they want. We have some physicians who want to have ten thousand things in the Pharmacopeia and others who want about one hundred. We have some physicians who want to lean very largely on the chemical and pharmaceutical knowledge of the pharmacists and others who rather resent any suggestions from that quarter, and I am afraid the physicians have not come to see and know what they want any more now than in the last few decades.

PROF. JOSEPH P. REMINGTON, Philadelphia: In connection with the results of the work of this section we have not got hold of the men we want. We have discussed the United States Pharmacopeia, the National Formulary and all these interests, and all the papers of this symposium have been most interesting, but what have we done? Discussed it among ourselves, among the very men who do not need the information, but the great body of the American Medical Association, the rank and file, have not been here. I wish there were some way, Mr. Chairman, by which we could have had a general meeting. Next year the Decennial Convention for the Revision of the Pharmacopeia meets. We have heard about the American Medical Association taking such an interest in this work, but have there been any considerable number of the rank and file of the physicians here? I am not going to be in the position of the clergyman who gave out on a certain day that there was to be the largest outpouring of his congregation there had ever been. Well, on that day there happened to be a terrible snow-storm, and instead of having the church filled he had about ten faithful members. He was so disappointed that he got up in the pulpit and began scolding and berating the congregation, when one of the members whispered to him, "They are not the people you want to hammer, you want to go for the people who didn't come." So the clergyman ceased berating and said, "But just wait until I see the rest of the congregation who aren't here and see what I tell them." Time is pressing. I confess I have a feeling of disappointment. If there could only be a general discussion by the whole association in view of the fact that next year is to be the year for the convention, then we could have had some opinions valuable in educating and getting hold of the rank and file. We have to depend on the meetings between the present and the convention to see that the question of the use of the Pharmacopeia and the National Formulary is brought before the medical profession.

DR. REID HUNT, Washington, D. C.: In reply to the last question, I think there are prospects of different sections, through their committees, doing some work in the next few months. The action of the Committee of the Section on Ophthalmology enables each member of that section to express an opinion on what drugs he considers to be of importance; the same action will be taken by a number of other sections, and this will certainly give valuable material as to what representative physicians consider to be of value.

Mercuric Chlorid as an Insecticide.—Experiments conducted by the U. S. Public Health and Marine-Hospital Service show that bichlorid of mercury sublimed in a sealed room is effective in killing mosquitoes and flies, and to a less extent bedbugs and other insects. Further experiments are necessary, however, to prove its real value. The advantages of this agent are: facility of obtaining it, small quantity necessary (60 grams being sufficient for a room containing a capacity of 2,000 cubic feet), and simplicity of its employment.

SOME OF THE PREPARATIONS OF THE
UNITED STATES PHARMACOPEIA FROM
THE PRACTITIONER'S STANDPOINT *

M. H. FUSSELL, M.D.

PHILADELPHIA

Preliminary to the main subject of this paper I wish to make a few general remarks regarding the attitude of the general practitioner to the Pharmacopeia.

It is an undoubted fact that the ordinary physician has never seen the inside of a copy of the Pharmacopeia. It is likewise certain that pharmacopeial preparations are used in prescriptions much less frequently than they would be if the practicing physician had a good working knowledge of the preparations recommended by the book. Instead of a knowledge of those drugs and their efficacy or inefficacy, he has an acquaintance with the official or purely proprietary preparations of one or another manufacturing firm. He has probably not been taught while he was getting his medical training that drugs can be found in the Pharmacopeia, and mixtures of these can be found in its companion, the National Formulary, which will meet any emergency, and with which any disease can be treated. If he has had such training it has been allowed to atrophy because of the persistence of some manufacturing firm's detail man and because of the ease with which this firm's special constipation pill or cough mixture may be ordered.

Such facts are, at least, discouraging when one realizes that medication, to be efficient, must be simple and directed to the special case in hand. That we must treat the conditions found and not the name of the disease. Another fact has been impressed on me during this study, namely, that even we who boast of using very few drugs, as a matter of fact at one time or another run almost the entire gamut of drugs made lawful by the Pharmacopeia. I have particularly studied these points:

1. Some of the drugs recommended by the Pharmacopeia are obsolete.
2. Some of the mixtures recommended should be relegated to the National Formulary.
3. Some of the preparations should be omitted from both the Pharmacopeia and from the National Formulary.

THE OBSOLETE OR USELESS DRUGS

The Pharmacopeia should be our guide. As I have stated, it unquestionably contains practically everything that is known to be surely useful at the time of publication of the book. It therefore should have expunged from its pages drugs or their preparations which have become obsolete. In a fairly careful review I have selected thirty-one of the crude drugs which could be dispensed without crippling our armamentarium. I am aware that the number seems large. Some seventy titles can be dispensed with if the preparations of the drugs can be counted. I suppose that many men will not agree with my views of the usefulness of these articles, but nevertheless I believe I am right and that they should be expunged.

1. Acetum Opii is certainly little used and not as valuable as the deodorized tincture of opium.
2. Acetum Scillæ is so rarely used that it but cumber space.
3. Acidum Nitrohydrochloricum Dilutum is notoriously useless when kept for any length of time.

4. Berberis is notably valueless when compared with a preparation of Nux Vomica. It but helps to nullify any attempt at accurate medication.
5. Calamus is no tonic, its valuelessness being proved by its slight use.
6. Calendula is spoken of in the past tense by therapeutists.
7. Calumba has only its bitter taste to recommend it.
8. Chimaphila would never be used to-day in nephritis.
9. Chirata is said to be used in Hindostan. It does not maintain its reputation here.
10. Cinchonidinæ Sulphas has no value as compared with the valuable quinin.
11. Cusso may be valuable as a tenicide but it is notoriously impure and hence should be expunged.
12. Cypripedium has no place in modern therapeutics.
13. Enonymus is certainly not proved to be a hepatic stimulant.
14. Geranium is a beautiful flower, but as a medicine a nonentity.
15. Guarana is certainly much less efficacious than the alkaloid caffeine.
16. Infusum Pruni Virginianæ is so seldom used save by the laity that it seems useless to recommend it.
17. Krameria has such a doubtful value as compared with the newer astringents that it is seldom used.
18. Lactucarium is so inert as a soporific that it is now entirely displaced. Wood has tried it in large doses with no effect.
19. Lappa (burdock) has been—indeed, is now—recommended in secondary syphilis and "serofula." Is not that little less than criminal?
20. Leptandra is another makeshift as a biliary stimulant.
21. Lupulin should certainly be carefully investigated as to comparative value before it is replaced in the Pharmacopeia, though the odor of a hop poultice is soothing.
22. Mastiche is said to be never used except in the compound pill of aloes and mastie. Surely it can be dispensed with.
23. Matico also has possible values, but they are only problematical.
24. Matricaria (chamomile) as a tea is a popular remedy with the masses. It has no proper place in the Pharmacopeia.
25. Mezereum is chiefly valuable (?) as an irritant poison.
26. Pareira is one of the drugs which is impressed on my brain from student days. I doubt if it is ever used.
27. Phytolacca is gathered by the poor in lieu of asparagus. Is it ever used in medicine?
28. Sabal (saw-palmetto) has been largely advertised by certain firms. Its real use is problematic.
29. Sanguinaria is a relic of the past.
30. Stillingia is never used in syphilis with effect.
31. Xantholin is said to be "not well defined" as to its uses.

The uses of these thirty-one substances are certainly unsettled. It seems unnecessary to burden our literature with these doubtful drugs when we have abundance of others of certain value where these can be recommended.

MIXTURES WHICH SHOULD BE RELEGATED TO THE
NATIONAL FORMULARY

There are a number of mixtures recommended and made lawful by the Pharmacopeia. This is not the place to discuss the propriety of using ready-made formulas. Personally I believe it is a pernicious habit of which we are all more or less guilty. However this may be, there is the National Formulary which contains numerous recipes more or less useful, and these mixtures should find place there. Their presence in the Pharmacopeia appears to me at least to show a lack of appreciation of the great value of simple prescribing on the part of the learned and earnest gentlemen who make up the Committee on Revision.

* Read in the Section on Pharmacology and Therapeutics of the American Medical Association, at the Sixtieth Annual Session, held Atlantic City, June, 1909.

The Pharmacopeia is the book which should tell us what drugs are useful and how they may be manufactured. It is not its place to dictate formulas for innumerable mixtures, for a mixture is useless except when prescribed for certain conditions which cannot be foretold. The following mixtures, therefore, seem out of place in the Pharmacopeia:

Cataplasma Kaolini, Confectio Sennæ, Elixir Ferri, Quininae et Strychninae Phosphatum, Emulsum Olei Morrhuae Cum, Hypophosphitibus, Extractum Colocynthis Compositum, Fluid Extractum Rhamni Purshianae Aromaticum, Glyceritum Ferri, Quininae et Strychninae Phosphatum, Infusum Sennae Compositum, Liquor Antisepticus, Mistura Rhei et Sodae, Pilulae Aloes et Ferri, Pilulae Catharticae Vegetabiles, Pilulae Laxative Compositae, Pilulae Podophylli, Belladonnae et Capsici, Pulvis Acetanilidi Compositus, Syrupus Hypophosphitum Compositus.

These mixtures, with perhaps a few more, make up the class of preparations to which I refer.

PREPARATIONS WHICH SHOULD BE ENTIRELY DROPPED

Among these mixtures is the third class which it appears to me would be wise to expunge from both our publications.

I refer especially to Cataplasma Kaolini and Pulvis Acetanilidi Compositus.

These two mixtures and perhaps others are such palpable copies of widely advertised nostrums which are either valueless or dangerous that it would appear unwise to recommend them.

INFORMATION WHICH SHOULD BE CONTAINED IN THE PHARMACOPEIA

I have stated above that two facts, lack of instruction by the teaching authorities in regard to the undoubted sufficiency of the pharmacopeial preparations in the treatment of disease, and the persistence of the detail men, are potent reasons for the failure of physicians to use pharmacopeial preparations. But, it seems to me, there is still another reason. The Pharmacopeia contains the official name of the drug with the method of its preparation, its dose, and nothing besides this.

The method of preparation of a drug and its preparations is of little value to the practicing physician. He must know, however, the dose, the action and the uses of a drug. He is now compelled to turn to the various dispensatories or the innumerable works on therapeutics for this essential information. Dispensatories and many books on therapeutics very properly contain information on many articles which are *not* official.

Now, is it not in the province of the Committee on Revision of the Pharmacopeia to add to the information already given about official drugs a short and concise description of the action and uses of the drugs described? If this is not practicable, cannot this information be given in a second volume, to be used by physicians while the present information could be published in a volume for the use of pharmacists?

It would appear that so long as the Pharmacopeia has its present form just so long it will not be in common use by the practicing physician and he will be forced to depend on other sources for his information. Drug firms are ever ready to supply him with information.

It is impossible, moreover, however desirable, for the every-day doctor to use such names as "hexamethylenamin," "sulphomethanum" and "aetphenetidin" for "urotropin," "sulphonal" and "phenacetin." The Committee must find some synonym for these unpronounceable names. Better adopt the patented name than use the long chemical one

CONCLUSIONS

Certain drugs should be omitted from the next revision of the Pharmacopeia, because they are obsolete.

The mixtures should be relegated to the National Formulary or be dropped.

More information should be given in the Pharmacopeia about drugs.

Impossible names should have synonyms supplied.

421 Lyceum Avenue, Roxborough.

REPORT OF THE COMMITTEE ON THE UNITED STATES PHARMACOPEIA *

To the Board of Trustees of the American Medical Association:—Your Committee on the United States Pharmacopeia begs to report as follows:

The committee, soon after its appointment, sent a circular letter (copy of which is enclosed) to the medical organizations entitled to representation in the United States Pharmacopeia Convention, urging them to consider the appointment of delegates to the convention of 1910 and suggesting that they might find it advisable to appoint special committees on the Pharmacopeia. The letter was also sent to the officers of the Sections of the American Medical Association with the suggestion that they appoint committees to consider the Pharmacopeia from the standpoint of their specialties. This letter met with a cordial reception. Many of the medical organizations have appointed delegates to the convention as well as special committees on the Pharmacopeia. Several sections of the association have also appointed committees; some of these have done considerable work.

The responses to the letter indicate that there is a widespread interest in the Pharmacopeia and a willingness to work. It is evident, however, that some of the committees do not see clearly how they can approach certain of the problems of pharmacopeial revision.

As an illustration of the practical work a section committee can do, the action of the committee of the Section on Ophthalmology may be cited. Recognizing that the problem of revision in which the physician is most immediately interested is that of the scope of the Pharmacopeia, this committee, in order to determine which unofficial drugs are considered by the members of this Section to be most important and most worthy of recommendation for inclusion in the Pharmacopeia, selected from New and Nonofficial Remedies a list of fourteen drugs of special interest to ophthalmologists. This list was sent to the members of the Section (935 in number) with the request that each indicate the six which he considered of most value.

Other sections are preparing to take similar steps, and it is hoped that various medical organizations will do likewise, for your committee knows of no way in which the medical profession can better make its wishes known to the Committee on Revision of the Pharmacopeia. It is especially desirable that this work be done in the near future, for the data so collected may be valuable in connection with the formulation of the general policies to be pursued in the next revision of the Pharmacopeia. The collection and tabulation of such data will involve much labor and some expense, and we believe the American Medical Association should undertake it and not leave it to an already overburdened committee of revision. It is also believed that it would be advantageous for much of the clerical work to be done at the association's headquarters in Chicago, where permanent records could be kept. Since some of the work of the Council on Pharmacy and Chemistry is closely connected with this subject, we recommend that the Secretary of the Council be given authority to cooperate in this matter and that he be given the necessary assistance; the secretary could also serve as a medium of communication between the different committees.

* Read in the Section on Pharmacology and Therapeutics of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

Those who realize the possibilities of the Pharmacopeia and the need of greater familiarity with it, will agree that there are few objects for which the association could more profitably make a liberal appropriation.

The chairman of the Committee on Anesthesia of the Section on Surgery was written to with the object of ascertaining if the work of that committee could not be of assistance in suggesting and formulating more perfect standards for the important anesthetics of the Pharmacopeia. It was suggested that it would be highly desirable if such subjects as the following could be considered: the physiologic effects of alcohol-free and alcohol-containing ether; the effect of water and of alcohol on the volatility of ether; the effect of ethyl chlorid on chloroform; the admission of nitrous oxid into the Pharmacopeia; the advisability of recommending the admission of certain anesthetic mixtures, etc. The chairman of the Commission on Anesthesia replied, in part, as follows: ". . . We can hardly see our way, for this year at least, to take up the extensive chemical investigations which you suggest. . . . We had hoped that we might turn to your committee for chemical reports on the quality, composition, and value of the various anesthetics."

While most of the pharmaceutical and chemical problems connected with the Pharmacopeia should be left to the representatives of the pharmaceutical profession, there are a few such problems which should be approached from the standpoint of the physician and should be kept in close correlation with clinical and experimental studies.

The members of this committee believe that the chemical laboratory of the association at Chicago should be available for such investigations and recommend that additional assistance and facilities be given the chemist in charge for the more active prosecution of such studies.

It is evident that New and Nonofficial Remedies is being considered as a Pro-Pharmacopeia from which the best will be transferred to the Pharmacopeia. We believe that this work should be so regarded and that the Council should endeavor to emphasize this side of the work, which is largely independent of proprietary medicines.

It is considered especially important that careful consideration be given to the names under which new drugs are admitted to New and Nonofficial Remedies, for it is very desirable that these be brought to the attention of physicians under unobjectionable names suitable for inclusion not only in the United States Pharmacopeia but in foreign pharmacopeias, as the difficulty of effecting a reform in the nomenclature of drugs which have once come into general use has been well illustrated in the case of our own as well as of foreign pharmacopeias. Hence we urge the Council to use its influence with manufacturers to follow a more scientific system of nomenclature and through its corresponding members (the number of which should be increased) endeavor to secure an international agreement on this important subject.

Respectfully submitted,

S. SOLIS COHEN,
GEORGE DOCK,
R. A. HATCHER,
E. E. HYDE,
W. S. THAYER,
REID HUNT, Chairman.

NOTE. (January, 1910.) Since the above report was submitted, committees of three sections of the Association, viz., those on Practice of Medicine, Ophthalmology, and Stomatology, have submitted very valuable reports embodying their views as to the revision of the U. S. P. and including drugs which they consider should be admitted to or omitted from it. These reports were published in *THE JOURNAL*, Sept. 4, 1909, pp. 791-796 (cf. also editorial, October 30, p. 1491, and a letter, p. 1500).

Other sections have appointed committees as follows:

Obstetrics and Diseases of Women.—Drs. F. J. Taussig (chairman), H. T. Byford and G. L. Hunner.

Laryngology and Otology.—Drs. D. Bryson Delavan (chairman), D. Braden Kyle and Algerman Coolidge.

Dermatology.—Drs. Wm. Allen Pusey (chairman), M. B. Hartzell and G. T. Jackson.

It is hoped that these committees will submit reports before the meeting of the Pharmacopeial Convention in May and that the other sections will appoint similar committees.

Dr. J. H. Blackburn, director of the course of postgraduate study for county societies, has recommended that each society arrange for a meeting for the discussion of the revision of the Pharmacopeia.

Prof. J. P. Remington, chairman of the present Committee on Revision, recently wrote to the Secretary of the American Medical Association requesting that this Association present to the next Pharmacopeial Convention a "report on the articles and preparations which, in their opinion, should find a place in the ninth revision of the United States Pharmacopeia." Among the reasons given for making this request is the following: "When I state to you that in 1901 more than one year's time was consumed in settling the important questions of admissions and deletions you can see how much valuable time might be saved by having a report from the American Medical Association." Dr. Simmons replied, stating that as the American Medical Association does not meet again until after the meeting of the Pharmacopeial Convention, he presumed that Professor Remington's letter belonged to the Committee on Pharmacopeia and that he had sent it to the latter. The committee will endeavor, with the help of the reports of the section committees and others, to prepare such a report for the Pharmacopeial Convention.

THE U. S. PHARMACOPEIA AND THE NATIONAL FORMULARY

DO THEY CONTAIN A SUFFICIENT ARMAMENTARIUM FOR
THE MEDICINAL TREATMENT OF DISEASES? *

M. CLAYTON THRUSH, PH.M., M.D.

PHILADELPHIA

THE NEED OF A MORE INTIMATE KNOWLEDGE OF THE U. S.
PHARMACOPEIA AND THE NATIONAL FOR-
MULARY AMONG PHYSICIANS

The propaganda in favor of the U. S. Pharmacopeia and National Formulary which was begun but a few years ago has been reaching a higher state of development year after year, and if its future progress continues in corresponding proportions the time is not far distant when we will be able largely to overthrow by effective legislation, and in other ways, unethical proprietaries, secret nostrums and charlatanism.

This propaganda has been carried on vigorously by certain members of our own and the pharmaceutical professions and, of course, more enthusiastically in certain sections of the country than in others.

In order that this propaganda might be carried out effectively, several divisions of the subject became necessary, and each of these contributed its share of the labor and deserves corresponding commendation.

One of these was the formation of the Council on Pharmacy and Chemistry, which has passed on all the various pharmaceutical products on the market—in fact, acted as a clearing-house for the benefit of the medical profession. There is no question but that this Council has done an inestimable amount of good, and that its reports have been read with interest by all conscientious physicians. The influence of the Council can be appreciated when we note the large amount of money expended by certain firms to bring their products up to a passing standard. The medical profession can thank the Coun-

* Read in the Section on Pharmacology and Therapeutics of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

cil for the formulas of a number of well-known proprietaries which hitherto were kept secret. Its work should be continued; and some arrangement should be effected whereby the knowledge gained by the Council in its investigations should be utilized by the next Pharmacopoeial Convention, which meets one year hence, and this Council should act as an advisory committee to the Pharmacopoeial Revision Committee, and should carry out certain special investigations as they may arise in revising the next Pharmacopoeia.

The time that elapses from the meeting of the convention until the new Pharmacopoeia appears should be materially lessened, as five years is entirely too long a time for this purpose.

THE RELATIONS BETWEEN THE MEDICAL AND PHARMACEUTIC PROFESSIONS

Another factor is the relations that should and do exist between the medical and pharmaceutical professions. The more cordial the relations between the two professions, the more quickly will the proprietary medicine evil be eradicated. The interests of scientific pharmacy can be promoted by joint meetings between the branches of the American Pharmaceutical Association and local medical societies, a plan efficiently carried out at present in cities like New York, Philadelphia and Chicago. Such joint meetings should be encouraged, as I know of no better way to acquaint the physicians who are now in active practice with the knowledge of these preparations than to discuss them in common with their neighboring pharmacists. Another valuable plan is the one that has been in vogue in Philadelphia for the past two years, according to which the Philadelphia Association of Retail Druggists mails at various intervals to the physicians of the city small booklets of uniform size, suitable for preservation and binding, containing the names of official preparations arranged in systematic classes. The following was inserted in the cover-page of the first issue and shows the object for which they were sent out:

The foregoing formulas are confidently recommended to the medical profession in the belief that these preparations will meet the needs of the physician, without resort to the use of proprietary medicines.

The following subjects show the character of the booklets, as each contains the most valuable preparations as found in the U. S. Pharmacopoeia and National Formulary under the respective classes:

Non-toxic antiseptics, animal digestants and their preparations, including those used as vehicles and adjuvants, seasonable preparations for ethical prescribing, popular new preparations of the U. S. Pharmacopoeia and National Formulary, intestinal astringents and antiseptics, ethical tonics and alteratives, important vehicles, adjuvants and flavoring agents, the important stomachics, some important U. S. P. and N. F. preparations, diuretics and diaphoretics, the expectorants.

This is the complete list up to the present time. Another important and valuable book in this connection is the "Physician's Manual of the Pharmacopoeia and National Formulary," which is an epitome of all the articles contained in the latest editions of these two works, systematically and conveniently classified. This book should be in the hands of every practicing physician in the United States. It is published by the American Medical Association and sells for 50 cents a copy. Other valuable books in this connection which are published by the American Medical Association are: "The Pharmacopoeia and the Physician," "The Great American

Fraud," "The Propaganda for Reform in Proprietary Medicines" and "New and Nonofficial Remedies."

PHYSICIANS OFTEN IGNORANT OF THE PHARMACOPEIA AND NATIONAL FORMULARY PREPARATIONS

Many physicians are not acquainted with the contents, objects and meaning of the U. S. Pharmacopoeia and National Formulary; hence they are too often controlled by motives of convenience in their selection of remedies. Many physicians have the idea that the best drugs and preparations are to be found outside the Pharmacopoeia, and their prescriptions prove this fact.

The medical schools hold the key to the situation, as far as the future practitioners are concerned, as all students of medicine should be required to possess an intimate knowledge of the U. S. Pharmacopoeia and National Formulary as an essential requirement for graduation.

A more thorough course of pharmacologic instruction should be given in our medical schools. This subject was emphasized in a paper¹ which I read before this Section two years ago, in which the small amount of time allotted to this subject in all the various medical schools was demonstrated by a careful examination of their respective catalogues.

THE PHARMACOPEIA AS A MEDICAL AND LEGAL STANDARD

The usefulness of the Pharmacopoeia and National Formulary to the medical profession depends on the degree in which they fairly reflect the best tendency of modern prescribing. Their defects in this respect are referable to faults in the organization of the methods of revision—to secrecy, to infrequent revision, to want of responsibility and to a non-representative method of selecting substances for admission. Their cure depends largely on the active interest of the medical profession.

The U. S. Pharmacopoeia has for a number of years been recognized as the representative of the best pharmacopoeias in the world; its standards have been worked out most carefully by men of the highest character; its adoption as a standard by the federal law and the many state laws now in existence is but natural sequence. The Food and Drugs Act, which has proved of great value to the whole country, has furnished all that was necessary in order that the Pharmacopoeia might be recognized as a legal standard. Before the Pharmacopoeia was recognized as a legal standard many manufacturers were indifferent, believing that the standards employed for the purity of the various drugs and chemicals used in their products were variable, and each competitor adopted standards which were convenient to himself. Therefore they often employed drugs of inferior value, and the medical profession had no protection against them, as there was no legal standard on which to base a case for action against them. Soon after the law was passed, however, it was believed by almost all the various interests involved that many of the standards were too rigid.

The passage of the Food and Drugs Act assisted greatly in securing a definite standard for both drugs and foodstuffs, and the persistent endeavor of the proprietary medicine interests, on the one hand, and the manufacturers of foodstuffs, on the other, to obtain permission for the use of certain adulterants, preservatives or admixtures in their products furnishes the best evidence of the importance and necessity of such a law.

1. Thrush, M. C.: A Plea for a More Thorough Course in Practical Pharmacy and Prescription Dispensing in Our Medical Schools, THE JOURNAL A. M. A., Jan. 25, 1908, 1, 254.

THE SUFFICIENCY OF THE OFFICIAL DRUGS AND PREPARATIONS IN THE MEDICINAL TREATMENT OF DISEASE

And now, returning to the original question of the title of this paper, every conscientious and scientific physician cannot help but answer that we do possess in the drugs and preparations that are recognized by the U. S. Pharmacopeia and National Formulary a sufficient armamentarium for the medicinal treatment of disease. When we consider that the Pharmacopeia contains 958 drugs or preparations and the National Formulary 437, making a total of 1,395 drugs or combinations of drugs, surely this should be sufficient for any one who desires to treat disease. If a physician cannot relieve a given case with one of these, he could not do so if he had a million to select from. There are few physicians who make use of even one-half of the above list in their routine practice, and the majority do not use one-fourth of this number, a fact to which I know every one will agree. Then why should we desire any larger assortment or why should we order proprietary or nostrum preparations in preference? While scientifically treating disease, the amelioration of objectionable symptoms must not be forgotten; i. e., the patient must not be forgotten. Drugs or preparations should be ordered, the exact composition and physiologic action of which are known. Nature must not be left unassisted in her endeavor to overcome disease, and we should be broad-minded enough to employ any means or agents that may be indicated in a given case, without consideration of any "pathy" or school; in other words, we should not be allopaths, therapeutic nihilopaths or any other "paths," but practitioners of scientific medicine.

The Pharmacopeia and National Formulary should be purged of the useless drugs and prehistoric mixtures which they contain, and they should not be stocked at each revision with rather exact "imitation" formulas of all the various proprietaries which have become popular since the previous revision. This is a rather poor way to combat proprietary medicine evils and stock formula prescribing, is it not?

There should be frequent analyses made by the various state boards of health of the drugs found in the open market to see that they are up to the pharmacopeial standard.

The U. S. Pharmacopeia and National Formulary furnish all of the tonics, digestants, emulsions, antipyretics, hypnotics, nerve sedatives, cough mixtures and external applications that are needed in the medicinal treatment of disease.

HOW MUCH IS THE MEDICAL PROFESSION RESPONSIBLE FOR THE PREVAILING USE OF NOSTRUMS?

Much deception, prompted by commercialism, is practiced on an unsuspecting profession in introducing new remedies; and various pet schemes, including the giving of stock, commissions, souvenirs, building lots, blotters, literature, etc., are resorted to in order to induce physicians to use such remedies. Often lack of training and discrimination causes physicians to prescribe such remedies, and on solicitation to recommend them to others. Accompanying literature to catch the eye of the laity converts these prescribed semisecret pharmaceuticals into remedies which may be prescribed by the patient. Druggists often aid the laity in the habit of prescribing for themselves; medical journals which admit unethical semisecret remedies into their advertising pages likewise foster this practice. Often physicians thoughtlessly or through laziness or ignorance prescribe secret remedies,

thus increasing and maintaining this evil. The remedy lies in educating the profession in the manner that has been suggested before in this article. Hence I feel confident that I voice the sentiments of every conscientious scientific physician when I say that we possess in the drugs and preparations that are recognized by the U. S. Pharmacopeia and National Formulary a sufficient armamentarium for the medicinal treatment of disease, and for the following reasons:

1. All the various proprietaries and secret nostrums as found on the market are merely mixtures or compounds of drugs and preparations as found in the U. S. Pharmacopeia and National Formulary, and they could be easily compounded by any educated pharmacist.

2. These proprietary preparations are manufactured and sold, not for the benefit of either suffering humanity or the doctor, but for the money that can be made out of them for the manufacturer by fleecing the people who are compelled to pay more for this medicine when made under their special proprietary name than it would cost if dispensed by a reputable pharmacist, and with a legitimate profit.

3. Physicians can prescribe these semisecret proprietaries or nostrums only because of inability to prescribe or formulate a proper prescription through lack of knowledge or for pecuniary returns through financial interest in the company that manufactures the medicine.

4. It is a rare exception when it is necessary to resort to a drug or preparation that is not found in the U. S. Pharmacopeia or National Formulary, as all the best drugs are found in these two books in some form or other. It is ethical and proper to use a certain preparation of such drugs as are official, even if the preparation itself is not official.

5. The valuable drugs that are not official, with but very few exceptions, are found in the list of New and Nonofficial Remedies as passed on by the Council on Pharmacy and Chemistry.

6. It is perfectly proper and legitimate to specify a certain firm's make of an official drug or preparation if the physician so desires, as we may have more confidence in the products of certain firms. There is no question that some manufacturers send out much more reliable and active preparations than others. We should use drugs and preparations from reliable sources only, and the price should be a matter of secondary consideration.

Hence, in conclusion, it is rarely necessary for a physician to prescribe a drug or preparation that is not recognized in some form or other either in the U. S. Pharmacopeia or National Formulary; and in the few instances in which such a drug or preparation should be the one prescribed it would be more rarely when it would not be found in the list of New and Nonofficial Remedies as approved by the Council, provided it possesses any medicinal virtues to warrant its use. For all practical purposes, therefore, we can safely limit our prescribing to drugs and preparations recognized by the U. S. Pharmacopeia, National Formulary or Council on Pharmacy and Chemistry of the American Medical Association.

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ABSTRACT OF DISCUSSION

ON PAPERS OF DRS. FUSSELL AND THRUSH AND ON THE REPORT OF THE COMMITTEE ON THE U. S. PHARMACOPEIA

PROF. JOSEPH P. REMINGTON, Philadelphia, Pa.: If we could have had such an active interest in the Pharmacopeia ten years ago, or twenty years ago, on the part of the medical profession as that shown in this meeting, I am sure that a

great many of the criticisms which have been made on the Pharmacopeia would not have been necessary and therefore I am confident that the Committee on Revision of the United States Pharmacopeia will welcome this active interest on the part of the medical profession. Now the points which were made by Dr. Fussell have been made a number of times before. The one which seems to cause the greatest criticism among the medical profession is that of the nomenclature. Our versatile secretary touched off the question of nomenclature very well this morning, I think, as it affects the medical profession, and I can only repeat that I think the medical profession find a great deal more difficulty in the chemical names than they do in their own. So I don't think they are quite consistent in hammering the Pharmacopeia for its chemical nomenclature. The physicians do not use the nomenclature in their prescriptions. In prescriptions the names of preparations are always abbreviated; even the simple word "tincture" is always "tinet." or "tr." the entire word "pilula" is never given in prescriptions. I see no reason why physicians cannot abbreviate these long chemical names with equal facility. They particularly mentioned hexamethylen tetramin. There is no reason why the physicians should not abbreviate this word, and write "Hex"; every druggist would understand this. I believe the only exception is in Berks and Lehigh counties, Pennsylvania, where they use the word "hex" in another sense. I think we can all agree that our U. S. P. nomenclature is really not a very serious question. The question of enlarging the scope of the Pharmacopeia by the addition of medical properties comes up at every revision. Certainly there can be no objection if this information can be compressed into sufficient space so as not to make the book too large. If anyone familiar with the subject were to study carefully the pharmacopeias of the world I think that it would be found that nearly all the large pharmacopeias and all the important pharmacopeias of the great countries of the world are books of standards. The U. S. Pharmacopeia is a book of legal standards, especially since it has been adopted by the Food and Drugs Act. It is not intended to express the individual opinions of certain authors as to doses and choice of certain medicines. If it did go into this work to any extent a great outcry would come from all over the country, and there would be far more objection than in keeping it as it is now, a book of standards. I do not suppose that many of us realize the great work that Professor Hallberg is doing as chairman of the Committee on Statistics. It is no small job to compile the statistics for a million prescriptions all over the United States, or even 100,000 or 125,000 and in the short résumé which he gave this morning of the work that has been done I feel very much like telling Professor Hallberg to go ahead and give us by next May, from the large number of prescriptions, an idea of what the country is using, by what the physicians are using. I think that this will be of the utmost value to the next Committee on Revision.

DR. M. G. MOTTER, Washington, D. C.: There is a report of a committee before this Section and some specific action must be taken on it. In view of the fact that the report of the Committee on Pharmacopeia embodies certain resolutions and that they involve a possible expenditure of funds of the American Medical Association, I suggest that these recommendations be forwarded in due course to the Board of Trustees. [Carried.] I am perfectly willing to admit that the medical profession is inconsistent in regard to nomenclature, but the Pharmacopeias are not altogether consistent in this particular. A few weeks ago, while looking through a volume of "The Chemist and Druggist," of London, I came across an article on pharmacopeial nomenclature in which the author, Rudolf, cites the names of several of the quinin salts masquerading in different pharmacopeias and trade journals. He gives the title Quininæ hydrochloridum as being in the British Pharmacopeia published in 1898; chlorhydras quiniens in the Codex Medicamentarius or French pharmacopeia for 1884. Then he gives the title from four trade lists: Quininæ hydrochloras (Howard), Chininum hydrochloricum (Boehringer), Quinia hydrochlorid (Whiffen), and Burgoyne caps the climax with Quininæ hydrochlor. It struck me as this question would probably come up here, it might be interesting to run over the pharmacopeial names, and I have arranged them as follows:

U. S. Pharmacopeia, ed. 8 (1890): Quininæ hydrochloras.
German Pharmacopeia, ed. 4 (1900): Chininum hydrochloricum.
Spanish Pharmacopeia, ed. 7 (1905): Chlorurum quiniæ.
U. S. Pharmacopeia, ed. 8 (1905): Quininæ hydrochloridum.
Dutch Pharmacopeia, ed. 4 (1905): Hydrochloras Chinini.
Belgium Pharmacopeia, ed. 3 (1906): Chininum Hydrochloricum.
Chlorhydras quiniæ.
Austrian Pharmacopeia, ed. 8 (1906): Chininum hydrochloricum.
Japanese Pharmacopeia, ed. 3 (1906): Chininum hydrochloricum.
Swiss Pharmacopeia (1907): Chininum hydrochloricum.
French Codex (1908): Chininum monoehlorhydricum.
Swedish Pharmacopeia (1908): Chloretum ehininium.

Six out of thirteen pharmacopeias give it Chininum hydrochloricum, while the U. S. P. changed from Quininæ hydrochloras, in 1890, to Quininæ hydrochloridum, in 1905.

DR. H. C. WOOD, JR., Philadelphia: When I was a resident in the University Hospital I remember we had a case of chronic sulphonal poisoning brought in. My chief, who has now passed to the better world, a man whose name is familiar to you all, a man of great intellectual powers, said to me—like most of these patients with sulphonal poisoning, the woman was suffering from insomnia—"I think for her insomnia we will give a little trional." I said, "Don't you think it is rather contraindicated on account of the similarity of the chemical constitution?" He didn't know anything about the mere substitution of the ethyl for the methyl radical. The trional was given. Now that woman died. Whether it was the continuation of the poisonous sulphone through the ignorance of the physician, or whether she would have died because she was already too full of poison, I cannot say, but at any rate he continued pouring into the woman through his ignorance that poison which killed her. My contention is that those names which approximate chemical accuracy suggest to the physician pharmacologic relations. There is another instance in the great popularity of the proprietary veronal. Most physicians associate it pharmacologically with sulphonal because the name sounds so similar, whereas as a matter of fact we have the ethyl carbonate closely related chemically and equally efficacious for about one-fourth the price.

I think that the practice of specifying drugs of certain firms is not only unnecessary but undesirable. If tincture of bella donna is sold as tincture of belladonna it must contain 1/30 per cent. of alkaloid. If it contains more than the Pharmacopeia percentage it is poisonous; if it contains less the man who sells it is liable to prosecution under the national and state laws. All tinctures of belladonna which are sold in the United States contain the same amount of active ingredient, and there can be no reason for preferring one make to another.

Dr. Fussell used a term which is very common in these discussions; he spoke of the Pharmacopeia "recommending" certain drugs, as the compound acetanilid powder. As a matter of fact, the Pharmacopeia recommends nothing. The Pharmacopeia has been made a fetish and we have been taught that we should prescribe only the things taught in the Pharmacopeia, and if the Pharmacopeia names a drug that is a good reason why we should prescribe it. This is an absolutely erroneous conception of the book. The Pharmacopeia is simply a standard whereby if the physician wishes to use a drug he can know just what his patient is getting. I maintain that if the physician wishes to use a drug, whether the rest of the profession regard it as inert or not, he ought to be at least assured that he is getting what he thought he ordered. I believe that every drug used in medicine, whether of value or not, should be in the Pharmacopeia. Of course, this would make a book so big that we would have to build a special library to hold it. At one of the recent meetings of the Philadelphia County Medical Society Dr. Solis-Cohen suggested that an edition of the Pharmacopeia, once published, should always be a standard until it had been revoked; that when the ninth edition of the United States Pharmacopeia is published, the preface should state: "All substances in the eighth pharmacopeia whose standard is not changed in the ninth shall be considered of the strength and purity which is laid down in the last edition of the Pharmacopeia."

J. W. ENGLAND, Philadelphia: I think it would be entirely practicable for the Committee on Revision to frame contractions of the full chemical names of such compounds that would be as indicative of composition as the full names. Thus, hexamin could be used for the official hexamethylenamin, sulpho-

methane for sulphonmethane or sulphonal, sulphoethane for sulphonethylmethane or trional, and acetphenetin for acetphenetidin or phenacetin. In other words, instead of using the full chemical names, employ contractions, and in a short time the medical profession would come to know what they stood for and use them.

DR. HENRY BEATES, Philadelphia: Many of the points have been well taken, but the discussions are dealing largely with effects and ignore causes. The very question of the necessity for the existence of the National Formulary is raised by its containing elixirs that apparently are imitations of certain valuable proprietaries. Proprietaries of intrinsic value must not be swept away in the effort at annihilation of proprietaries that are worthless, and to be in the position of imitating meritorious proprietaries is not a desirable or wise one.

As to nomenclature, yesterday we heard from one of the papers that phenolphthalein is known under some twenty different names, because of proprietary business, in its bad sense. If these things are to be corrected, the question underlying the practice of the prevalence of such evil must receive serious consideration. I believe that the lax patent and copyright laws of this country supply a great opportunity for this undesirable sort of commercialism to thrive. There is nothing in which the possible usefulness of this Section promises so much good as attention to and correction of these lax laws. Both patent and copyright laws are abused here and abroad, and manufacturers are supplied with exceptional opportunity to indulge in unprincipled commercialism, by which the medical profession is forced to play the cat's paw.

The Pharmacopeia, because of expiration of patent, has in it to-day (under its official name of "acetphenetidin") phenacetin, a useful and valuable medicament, of which the manufacturers formerly controlled the cost, thus robbing afflicted humanity of a valuable remedy except at extortionate prices.

The entire Galenic materia medica is seriously affected by the conspicuous absence of official preparations made according to physiologic standardization. Thus the absence of official standardization, not of a certain percentage, but of a uniform degree of strength, invalidates the entire materia medica. Professor Wood just referred to belladonna. I may be a very poorly informed practitioner of medicine, but I did not know until then that the tincture of belladonna could be regarded as a standardized Galenic preparation, representing 10 per cent. of something, and that any pharmacist who gives more or less than that standard is subject to prosecution.

As to naming manufacturers because of tested reliability in certain remedies, this has its advantages and disadvantages, but certain it is that in our present chaotic condition, those physicians who practice medicine for the best interests of their patients must specify the product of some well-known and tested manufacturer. It is to be hoped that the influence of this Section will focus itself at least on the careful study of the all-important matter of patent and copyright law, so that by 1910, when the Committee on Revision of the United States Pharmacopeia will meet, something will have been achieved by which we can have a common standard of physiologic or therapeutic value, to which we can conform in standardizing Galenic preparations.

PROF. CHARLES CASPARI, JR., Baltimore, Md.: As chairman of the subcommittee on nomenclature it has been my privilege for many years to assist in the revision of the Pharmacopeia. The aim of the subcommittee on nomenclature was to place in the Pharmacopeia names that were truly indicative of the character of the product selling under that particular name, making it as simple as possible and yet not in the least destroying its identity. For that reason acetphenetidin and similar names were introduced where it was not possible to use another name, unless the trade-mark name would be adopted. A great deal has been said this morning in regard to either insufficient or objectionable nomenclature of the Pharmacopeia, and yet I think physicians as well as pharmacists will recognize, if they pay attention to the subject, that the names are as simple as it is possible to make them without encroaching on the field of trade-markism, as we might call it. While phenacetin was still a proprietary product, protected by the laws of this country, it was impossible to introduce that name into

the Pharmacopeia for the reason that phenacetin was selling at an exorbitant price, much above its real value. The object was to place in the hands of physicians an article of identical composition and merit with phenacetin but at a very much lower price by using the term "acetphenetidin"; the former was selling at 85 cents an ounce, whereas the latter could be had for \$3 a pound. Of course, the expiration of the patent on phenacetin has helped the matter largely. I want to assure all physicians in this country that the only object of the Committee on Revision has been to place in their hands names as simple as the particular case would justify and yet truly characteristic of the chemical character of the drug. Objection has also been made by one of the speakers this morning to introducing the elixir of iron, strychnin, and quinin. Perhaps never has a preparation been more largely prescribed than this one by the medical profession. Prior to introduction in the Pharmacopeia probably fifty preparations were offered by various manufacturing houses, no two alike, and often differing greatly in strychnin or quinin content. It was thought desirable to have a preparation so largely used by physicians uniform in composition the country over and have its name indicative of the composition. We have now a solution of true phosphates in such form in the official preparation. There is no denying the fact that the preparation is used in immense quantities; barrels of it are made by manufacturers. While a few physicians still cling to the product of some particular manufacturer, I believe the evil has been abated which required the druggist to carry ten or fifteen brands of the one product, with attendant change, gelatinization, etc., all of which brought pocket-book loss to him and great discredit to the manufacturers and also to the physicians. The fact that the medical schools, unfortunately, do not pay the attention they should to teaching the students of medicine the character and contents of the Pharmacopeia is, I think, recognized. One of the disadvantages under which the medical student finds himself to-day when he leaves the university and starts out in medicine is that he has very little knowledge of the Pharmacopeia and its character, but he is quite familiar in many instances with books which treat largely of prescription-writing and ready-made prescriptions.

DR. JOHN J. TAYLOR, Philadelphia: I feel that I am under the necessity of sounding a somewhat discordant note. I want to say that, in the work of this Section we are not always working along the right tracks. We are not doing what we should to lay the foundation. The place where our preliminary work should be done is before the Council on Medical Education. We want to encourage there a more thorough training of medical students in materia medica and therapeutics. The last speaker has very justly said that, when a medical student passes out of the school, he practically has to learn his materia medica. Students have a little theory given to them, but we have very little training in prescription-writing, whether it be for a single remedy or for a suitable combination of remedies, or in putting up prescriptions. I have observed that those students who have passed a preliminary course in practical pharmacy before taking their medical course have understood the teaching in therapeutics much better than those who have not had such instruction. As physicians we have to deal with real things and we ought to know these things themselves and their peculiar characteristics, so it is not teaching we want so much as training, and that means more than we get in our medical colleges to-day or ever have done. We also need training of the pharmacists. When the physician has prescribed a National Formulary preparation for something which he has heretofore had as a proprietary and gets a muddy conglomeration at a high price instead of a well-made mixture at the proprietary's price, he becomes discouraged and justly so. The National Formulary, as it has developed later, seems to be a list of substitutes for things the physician is already using. I think any substitute for what the physician is using should be eliminated.

DR. L. F. KEBLER, Washington, D. C.: One point made by Dr. Fussell, namely, that certain products should be eliminated from the Pharmacopeia because of their little use appeals to me from one point of view but not from another. When we remember that there are promoters of medicines who take

advantage of every possible situation that presents itself we should be very circumspect about giving any questionable drug standing. For example, *phytolacca*, referred to by Dr. Fussell, is one of the common constituents of a large number of anti-fat remedies, and I also recall its presence in a so-called magic foot-draft remedy. When these people are given hearings and the worthlessness of the drug pointed out, for the purpose advertised, what do they say? "That is recognized in the Pharmacopeia. It is approved by the medical and pharmaceutical profession." While I knew that caffeine was used to a large extent in various combinations I did not think the medical profession was increasing its use. Dr. Hallberg's statement that the use of opium by physicians is apparently decreasing is very gratifying. While the use of opium has not been increasing during the past ten years, judging from the imports, there is still a large amount of opium used improperly, and, moreover, other habit-forming drugs are replacing opium and morphin.

MR. M. I. WILBERT, Washington, D. C.: Where one is absolutely handicapped and has no other recourse for a reasonable standard than the name of the manufacturer, specifying that name may be justified, but where one has a reasonably just standard that can be enforced by law, there is no justification for it. We have at our command the machinery to maintain a standard and every one who is interested in the preparation or use of medicine should be interested in getting that machinery in order and putting the established standards into force. The functions of the retail druggist or of the pharmacist are the preparation, verification, preservation and the dispensing of medicine. For many years he has confined himself largely to the dispensing of medicine and he appears to think that his only function is to dispense medicine on physicians' prescriptions, and the physician, in accepting this limitation, is prescribing preparations of this man's manufacture and that man's manufacture in the mistaken belief that his patient is getting the very best that is to be had. Yesterday morning Dr. Wood showed us that fluid extract of ergot is not fluid extract (Smith) because it comes out of a fluid extract of ergot (Smith) bottle. He showed us that this preparation can be ruined in a few hours and certainly deteriorates in a week or a month, so that if you prescribe any given manufacturer's ergot you are not getting what you think you are getting, but what the pharmacist happens to have in the bottle. Those of you who have seen the Hygienic Laboratory Bulletin on the "Standardization of *Digitalis*" will appreciate the need of going further than specifying some particular manufacturer's name. You physicians must develop pharmacists in the country, you must develop them to do more than dispense, they must verify and must know how to preserve their medicines. Unless they know how to preserve their medicines and to verify them from time to time you are not getting what you think you are getting because you happen to specify some manufacturer's make. The need for this is becoming more and more apparent and the justice of it is also apparent. The retail druggist is responsible for the things that he is dispensing under existing laws; so that as soon as he removes a cork from the bottle he is responsible for the contents of that bottle, and if he is not capable of verifying it you have recourse under law to compel him to discontinue the business or to improve himself. The medical profession should compel the retail druggists of this country to qualify in such a way that they can verify their medicines and assure physicians they are getting what they are prescribing, and if they confine themselves to the established standards they will get what they expect to get.

PROF. H. P. HYNSON, Baltimore, Md.: The statistics Professor Hallberg is collecting really show very plainly that therapeutic nihilism has not increased; there is still something for the pharmacist to do. Should statistics control the contents of the Pharmacopeia? We have reached that stage in pharmacology where we should seek something higher than that. Its mere local or national popularity does not seem enough to determine whether or not a substance shall be introduced into the Pharmacopeia. It seems to me that it ought to have real pharmacodynamic value. I do not say therapeutic value, because I do not believe therapeutists have reached a point where they have established standards. When an article's

place in the Pharmacopeia is dependent on its actual pharmacologic action, which has been established or on its adjuvant use or action, then we shall have established a Pharmacopeia which will be a credit to science and to the age.

MR. F. M. APPLE, Philadelphia: From observations in my store I would attribute the increase in the use of caffeine to the commendable custom of the physicians of formulating their own prescriptions in preference to using one of the compound acetanilid mixtures. My experience proves that the caffeine is almost invariably prescribed with acetanilid or some other depressing drug; hence the question arises, can the medical men be justly condemned for the increased use of caffeine?

DR. C. S. N. HALLBERG, Chicago, Ill.: With reference to the mixtures, there is one point as disclosed by elixir of quinin, iron and strychnin which is that a preparation of that kind cannot be successfully made extemporaneously. If physicians prescribe mixtures of that kind they must be made in advance in order to compare with those made by manufacturers, and therefore the recognition of the formulas in the Pharmacopeia and that applies to a great many preparations of a similar character. Besides, the time does not admit of the expenditure of any particular skill or experience in the preparation of many of these mixtures in ordinary prescription quantities when a larger quantity can be made just as well. The criticism of Dr. Taylor in reference to the National Formulary has been largely exploded. It is not true that the National Formulary has substitutes for proprietaries or that it is based on them. The National Formulary is the survival of a collection made by the American Pharmaceutical Association as far back as 1868 by J. F. Hancock of Baltimore, Md. (who is present here to-day), and for forty years we have been collecting formulas and manufacturers have taken these formulas which have appeared in the proceedings of the American Pharmaceutical Association, sometimes changed the color and flavor and vastly extended the claims for their virtue. That credit is what they are entitled to and nothing more. There is scarcely a preparation which is due to any originality on the part of any of the present proprietary pharmaceutical manufacturers.

With reference to the pharmacodynamic and adjuvant effect of drugs the difference between the pharmacologic and the psychologic is a wide one, and yet there is a very close relationship as illustrated this morning with reference to the extended use of the elixir of lactopeptin. It is sometimes difficult to draw the line as to whether it is the action on the heart and respiration, or whether it is simply the gustatory effect, or the effect of the optic nerve that is supposed to produce the medicinal effect.

DR. M. CLAYTON THRUSH, Philadelphia: When the time arrives that every pharmaceutical manufacturing house in this country adheres strictly to the Pharmacopeia and every pharmacist is a reputable pharmacist and adheres to this standard, it will not be necessary to specify a certain manufacturer's drug. For example, every physician in this room knows that there are different qualities of drugs on the market, that some druggists dispense more reliable drugs than others, that some pharmaceutical firms send out better products than others. I know as a reputable pharmacist that eight prescriptions out of ten specify Squibb's when chloroform is prescribed. I am sorry that physicians have to do this. But the fact remains that they do it, and we know why they do it, and it is perfectly nonsensical to say that they do not do it. I know that Squibb's ether, chloroform and ergot are specified eight times out of ten. I will give a beautiful illustration of this. I was ready to operate on a patient, the physician proceeded with the anesthetic, but he could not get the patient under the effects of the chloroform with the usual quantity and he had to use two or three times the usual quantity for the second stage of anesthesia. This occurred every time this particular make of chloroform was used. Fortunately, in refilling the bottle used on these occasions, instead of Squibb's I noticed the pharmacist gave me chloroform out of a large pound bottle that had been opened and allowed to stand, although it was from a firm considered one of the best firms in this country. It was labeled "U. S. P. Chloroform, For Anesthesia Purposes Only." That is simply one illustration of an occurrence that every practicing physician meets frequently. I don't think there is any

basis for the study of medicine more valuable than a good classical education, except a thorough knowledge of pharmacy. Every man who wishes to practice medicine should take a course in pharmacy. There is a great field in the future for our colleges of pharmacy. Almost all our colleges of pharmacy, with the exception of a few of our largest, are connected with medical schools, and I do not see why even our largest could not do as Harvard and others which confer a combined degree of A.B. or B.S. with the M.D. for a certain course which curtails a year or more than when taken separately. Why could not we combine pharmacy and medicine, likewise giving a little more time than we have been, just the same as the combined M.D. degree and classical degree? That would turn out all men having a good practical knowledge of pharmacy as well as of medicine. Every physician who has graduated in pharmacy will tell you that it has been the greatest help to him in the practice of medicine.

PROF. H. P. HYNSON, Baltimore, Md.: What possible difference could there have been in these chloroforms mentioned by Dr. Thrush?

DR. M. CLAYTON THRUSH, Philadelphia: The chloroform as sent out by this particular firm was not up to the official standard. We required three times as much on the average to produce anesthesia.

PROF. H. P. HYNSON, Baltimore, Md.: Do you mean it was diluted with alcohol?

DR. M. CLAYTON THRUSH, Philadelphia: I do not know, as no chemical test was made to determine this point.

PROF. CHARLES CASPARI, JR., Baltimore, Md.: In reply to the remarks made about co-education of pharmacists and physicians, I would like to say that this is, I believe, prohibited by the very charter of your Association of Medical Colleges. I have been informed by very good authority that the simultaneous attendance of students in schools of medicine and pharmacy is positively prohibited. If the association will recede from that position and allow the students to attend lectures in pharmacy then the ideal condition will prevail.

DR. REID HUNT, Washington, D. C.: There has been considerable discussion in the Public Health and Marine-Hospital Service as to what ether should be used; some manufacturers complained that they were discriminated against, since surgeons frequently specified a certain brand and this was supplied. A number of samples of ether from various manufacturers were bought on the open market and examined. All met the requirements of the U. S. P. There were absolutely no difference between them. Either the physicians were mistaken in believing one to be superior or the tests of the United States Pharmacopeia do not suffice fully to determine the value of the ether. As regards chloroform, it is a question whether the percentage of ethyl chlorid may not be important; if it is, the present requirements in the Pharmacopeia are insufficient.

DR. BERNARD FANTUS, Chicago, Ill.: How many patients of Dr. Thrush showed this peculiarity in reference to requiring three times the usual amount to induce anesthesia? My experience shows that some patients, especially alcoholics, will be refractory to anesthetics.

DR. M. CLAYTON THRUSH, Philadelphia, Pa.: It was tried in fifteen cases. In every case this chloroform showed the same result.

Nutmeg Poisoning.—At the meeting of the Royal Society of South Africa, Oct. 20, 1909, Dr. M. Wilson called attention to the small number of cases recorded of poisoning by nutmeg, which he thought worthy of special remark since the condiment is so widely used. The explanation offered was that the activity of the poison was due to partial germination of the seed, which was rarely the case in the commercial article. In support of this he directed attention to what he considered an analogous case, that of a fir seed (*Dana pitje*) which was largely eaten by children near Cape Town without any bad results, but after partial germination had caused serious consequences. The nutmeg is generally supposed to be a powerful narcotic when taken in large quantities but we have not seen before anywhere this theory of the poison being developed by arrested germination.

METHODS OF SERUM DIAGNOSIS IN BACILLARY DYSENTERY (INFECTIOUS DIARRHEA) IN INFANTS*

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This article deals with a systematic study of certain methods of diagnosis from the blood serum in infants suffering from dysentery (infectious diarrhea). It is assumed from previous work in this field, and is further evidenced by the present study, that this type of summer diarrhea, denominated in the wards of the Boston Floating Hospital "infectious diarrhea," has direct etiologic relation with one or more of the varieties of organisms now grouped under the species name of *Bacillus dysenteriae*. In all the cases of infectious diarrhea considered, and in the control cases as well, a thorough search has been made in the stools for the dysentery bacillus. It was not deemed advisable, in so far as the serum tests were concerned, to consider varieties of the bacillus beyond the first generally accepted division of these organisms into mannit fermenters (Flexner type) and mannit non-fermenters (Shiga type); a more detailed consideration of the varieties of dysentery bacilli obtained in relation to the clinical aspects of the individual cases will later be taken up by one of us (Schorer).

SERUM DIAGNOSIS BY W. P. LUCAS AND J. G. FITZGERALD

Two recognized methods of serum diagnosis, namely, the reaction of agglutination and the reaction of fixation, and one new method, the reaction of conglutination, have been tried, as far as possible, with the blood serum of each case in conjunction with both a mannit-fermenting (Flexner) and a mannit-non-fermenting (Shiga) variety of the dysentery bacillus. In many cases these tests have been repeated at intervals in the course of the disease.

The agglutination reaction has been employed by all investigators who have studied cases of bacillary dysentery attentively since the first publication of Shiga, who used this reaction as a proof of the etiologic relation of his bacillus to the disease. The value of the reaction in diagnosis, owing to its delayed appearance and its relative infrequency in the disease, would not, by common consent, appear to be great (Shiga,¹ Lentz²). The percentage of positive reactions has varied considerably in the hands of various observers, owing largely to individual differences in technic as well as to the dilution accepted as indicative of a positive reaction. No observers, as far as we are aware, have used as uniform a method as would seem desirable (see below under "Technic"). And apart from individual variations in method the following factors would seem of importance in determining the value of the agglutination reaction in dysentery:

*From the Laboratories of Serum Diagnosis, Harvard Medical School and of the Boston Floating Hospital.

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1. Shiga: Bacillary Dysentery, Osler's Modern Medicine, ii, 781.

2. Lentz: Dysenterie; Kolle and Wassermann's Handbuch der Pathogenen Mikroorganismen, 1909, II Ergänzungsband, 391.

1. The susceptibility to agglutination of the organism employed as a reagent; this "agglutinability," we believe, best explains the clumping of certain bacteria by normal sera (Bordet,³ Levi della Vida⁴). From this aspect the mannit-fermenters, and especially the Flexner strain, are better agglutinators than the non-fermenters (Shiga-Kruse).

2. The relation of the organism employed to the bacillary type causing the infection of the patient under consideration (Lentz,² Amako⁵). In this connection it may be noted from Amako's results that the Flexner strain is the most representative mannit-fermenter and agglutinates well with the sera of patients suffering from infection by the other mannit-fermenting types. Our results, then, obtained with the Flexner bacillus may be taken as indicative of a reaction to any one of the mannit-non-fermenters which are the preponderating organisms in infantile dysentery.

The reaction of fixation (Bordet-Gengou) has been employed with success as a means of diagnosis in adult dysentery by Dopter.⁶ The reaction was shown in his results to occur with greater constancy and earlier in the disease than the agglutination reaction. It was particularly noted by Dopter that the reaction is present with both mannit-fermenting and mannit-non-fermenting strains, irrespective of which was the causative organism in the case in question. This and similar observations have given rise to the erroneous opinion that the fixation reaction is less specific than agglutination. That such, however, is not the case has been shown by Haendel, who showed that in properly chosen minimal doses the individual strain of bacillus producing the immunity or infection would alone cause fixation with the serum.

The reaction of conglutination has been hitherto largely of interest in the more theoretical studies of the mechanism of immunity. In 1906 Bordet and Gay⁷ described a thermostabile (56 C.) "colloidal" substance in bovine serum which has the property of producing a characteristic clumping and increased dissolution of red blood cells that have been treated with both a sensitizer (heated hemolytic serum) and an alexin. A probably analogous substance was described at about the same time by Manwaring.⁸ Bordet and Gay outlined in detail the conditions under which this substance acts, and their work was later amplified by Bordet and Streng.⁹ A wholly analogous effect by bovine "conglutinin" (Bordet and Streng) on bacteria has since been described by Streng.¹⁰ Streng has clearly shown that this conglutinin bears no relation to the normal agglutinins for various bacteria present in bovine serum which he removes by specific absorption before employing the bovine serum for the reaction. He suggests the possible employment of this reaction for the diagnosis of infections of bacterial origin and mentions positive results obtained with

the serum of two cases of typhoid (sensitizer) on adding typhoid bacilli, alexin (guinea-pig) and bovine serum deprived of its normal agglutinins for *B. typhosus*. This article comprises the first systematic study of this method as a means of diagnosis. Tables 1 and 2 present the essential results of our investigation and are preceded by a description of technic and explanation of the tables.

TECHNIC OF SERUM DIAGNOSIS

Blood in all cases was taken from either the finger or toe in amounts varying from 1 to 4 c.c. The method employed to obtain this amount is simple. The hand or foot was immersed in hot water, dried thoroughly, and a bandage applied from the elbow or knee down to the hand or foot. The puncture was made with an arrow-headed lancet. The blood was taken up in an ordinary teat pipette and, as occasion demanded, emptied into a small test-tube. The serum was separated and centrifugalized and the clear serum decanted. The amount of clear serum varied from 0.5 to 2.5 c.c.

The bacteria used for the reactions were in the form of suspensions from large agar cultures (Blake bottles) suspended in 0.9 per cent. salt solution to which 0.1 per cent. formalin had been added. The sterility of the suspension was complete in from forty-eight to seventy-two hours. Each suspension prepared was then standardized by diluting it with salt solution to the opacity of a standard suspension of barium sulphate (0.3 gm. barium sulphate to 100 c.c. of distilled water). We had found from previous experimentation that a formalinized culture was more sensitive to agglutination than a twenty-four-hour living suspension.¹¹ Such standardized and formalinized suspensions of both the Flexner and the Shiga organisms were prepared at intervals and used for all our tests.

AGGLUTINATION TESTS

Small test-tubes, 7.5 by 1 cm., containing 4 to 5 c.c., were used, and all our dilutions were so arranged as to give us a volume of 1 c.c. of the dilution wanted. Thus, 0.2 c.c. of a patient's serum was put into each of two test-tubes, one for the Flexner series and one for the Shiga series. To each of these was added 1.8 c.c. of 0.9 per cent. saline, giving us in each tube a double amount of 1-10 dilution. One c.c. from each of these tubes was transferred to the tubes to be diluted to 1-20 and 1 c.c. of sodium chlorid solution added, and so on until the limit of dilution desired was obtained. When all the dilutions were made up, two drops of our formalinized, standardized culture of Flexner or of Shiga were added to each tube of a given series. The tubes were placed in a special wooden rack and allowed to stand at room temperature for twenty-four hours before readings were taken. These readings were taken without disturbing the tubes from the time they were set up, so that there was no shaking at any time except at the initial mixing. These readings were considered final and were compared with a control of 1 c.c. of salt solution containing formalinized culture of Flexner or Shiga. The criterion of a positive reaction was complete sedimentation of the bacteria. Our ordinary dilutions were 1-10, 1-20, 1-40, 1-80, 1-100, 1-200, 1-400, 1-800, and if all were positive the test was repeated, if possible, in higher dilutions.

FIXATION

Our steps in this were as follows: 0.1 c.c. of eighteen-to twenty-four-hour guinea-pig serum ("alexin") was

3. Bordet: Studies in Immunity (Gay), John Wiley and Sons' New York, 1909, p. 496.

4. Levi della Vida: Sul fenomeno dell' agglutinazione spontanea di alcuni batteri nelle soluzioni saline, Ann. d'ig. sper., 1905, xv, 413.

5. Amako: Dysenterie Epidemien und Bazillen Typen, Ztschr. f. Hyg., 1908, ix, 93.

6. Dopter: Sensibilisatrice spécifique dysentérique, Ann. de l'Inst. Pasteur, 1905, xix, 753.

7. Bordet and Gay: Sur les relations des sensibilisatrices avec l'alexine, Ann. de l'Inst. Pasteur, xx, 1906, 467; Studies in Immunity, p. 363.

8. Manwaring: Auxiliysins, Jour. Infect. Dis., 1906, iii, 225.

9. Bordet and Streng: Les phénomènes d'adsorption et la conglutinine du sérum de boeuf, Centralbl. f. Bakteriologie, I. Abt. Orig., 1909, xlix, 260; Bordet-Gay: Studies in Immunity, Wiley and Co., New York, 1909.

10. Streng: Studien über das Verhalten des Rindereserum gegenüber den Mikrobien: Versuch einer neuen sero-diagnostischen Methode, Centralbl. f. Bakteriologie, I. Orig., 1909, l, 47.

11. Analogous results as to the superior delicacy of formalinized cultures over living suspensions have been obtained in the case of *B. typhosus* by Dr. M. E. Morse in the Laboratory of Serum Diagnosis, and will shortly be published.

always used. To this was added 0.1 c.c. of patient's serum (heated to 56° for half an hour) plus 0.9 c.c. of 0.9 per cent. salt solution and one drop of the formalinized suspension of Flexner or of Shiga in separate series. This was incubated at 37° for one hour and then the hemolytic serum composed of 1 c.c. of 5 per cent. washed sheep's corpuscles and 1 c.c. of a dilution of inactivated hemolytic serum (s. rabbit > sheep 56°) containing three times the minimal hemolytic dose was added, and the tubes incubated again at 37° until the controls had hemolyzed, i. e., from fifteen to thirty minutes. The following controls were made in each case (1) salt solution was substituted for patient's serum; (2) salt solution substituted for the Flexner or Shiga suspension; (3) a number of sera were tested at the same time, and where there were positive as well as negative fixations the negative serums acted as complete controls. Readings were taken as soon as the controls showed complete hemolysis, or at the end of one-half hour. In many positive cases complete fixation (absence of hemolysis) was also present at the end of twenty-four hours, but this was not considered necessary for a positive reaction; a "partial fixation" was noted where there was a marked difference between the controls and the tubes being tested, but such partial fixation was estimated only when the controls were completely hemolyzed.

CONGLUTINATION REACTION

We prepared our bovine serum for the tests by removing the normal agglutinins by absorption, by repeatedly adding formalinized suspensions of Flexner and Shiga alternately for periods of twenty-four hours each at 0°, centrifugalizing and filtering each time through filter paper until the serum failed to agglutinate either strain employed. One tenth c.c. of this bovine ("x") serum (conglutinin) was used in each experiment, plus 0.1 c.c. of twenty-four-hour guinea-pig serum (alexin) and a dilution of the patient's serum prepared as for a simple agglutination test. In these tests three drops of our standardized, formalinized culture was added. Controls with (1) bovine serum ("x") alone; (2) alexin alone; and (3) patient's serum alone, i. e., simple agglutination tests, were made, also (4) controls with salt solution instead of patient's serum. In this, as in the fixation tests, a number of sera were tested at the same time, so that the negative cases also acted as controls. The tubes were allowed to stand for twenty-four hours at room temperature, and then final readings were taken. In a few cases definite changes were noted at the end of a few hours, but most satisfactory results are to be derived from taking readings at the end of eighteen to twenty-four hours. Positive readings are those in which there is complete clearing of the tube with the organisms in flakes or granules, either clinging to the sides of the tubes as granular material or at the bottom as flaky granular sediment.¹² The clearness of the tube in comparison with the characteristic opacity of the controls is quite striking. No reaction was considered positive unless the tube was completely clear; partial clearing was not accepted at all.

BACTERIOLOGIC INVESTIGATION BY E. H. SCHORER

In the bacteriologic examination of the stools the following method was used:

Stools were received on sterile napkins from 8 a. m. to 6 p. m. at the Laboratory of the Floating Hospital directly from the wards, and those stools examined which

showed mucus, blood or pus, except in the control cases, in which any specimens that might be obtained were examined. Repeated examinations were made until a considerable number of cultures of *Bacillus dysenteriae* were obtained in the positive cases. In a number of cases stools were examined even after a number of isolations had been made, so that the relative frequency of *Bacillus dysenteriae* from day to day might be determined.

Suspensions of favorable material were made in bouillon, after which they were allowed to stand for a few minutes, then a series of plates, seven to eight in number, were made. These were then incubated for twenty-four hours, after which all colonies resembling *Bacillus dysenteriae* were picked off into glucose, semi-solid medium, prepared after the method of Hiss and titrated to 1.5 per cent. acid. Twenty-four hours later all cultures not showing gas or motility were transferred to litmus milk. It very frequently happened that organisms which did not produce gas in the regular manner would show gas on stirring with a platinum needle. Such cultures were rejected. After twenty-four-hour suspension in litmus milk all cultures not coagulating the milk were transferred to agar slants, and from these, when twenty-four hours old, the morphology and Gram stain was determined. All cultures of Gram-negative bacilli were transferred to mannit, glucose, saccharose and dextrin serum-water media. Inoculation into gelatin and Dunham's solution were also made. Observations were daily made on the different sugars, and on the gelatin and Dunham's solution after ten days' incubation. Certain isolations from each case which up to this time had shown the cultural characteristics of *Bacillus dysenteriae* were tested for their agglutination with two normal horse sera and with antidysenteric sera obtained from Dr. Flexner, the same being called "anti-Shiga" and "anti-Flexner" serum. These agglutinations were made from cultures on agar slants twenty-four hours old suspended in normal salt solution. Dilutions of the different sera were made with normal salt solution to 1-10, 1-20, 1-40, 1-100 and 1-200. Macroscopic agglutination tests were made by taking 1 drop of the suspended bacilli, 1 drop of the different dilutions of sera and 8 drops of normal salt solution to make 1-100, 1-200, 1-400, and 6 drops of salt solution to make 1-800 and 1-1600 dilutions, so that the suspensions were all fairly uniform in amount, varying at most 2 drops. These were then incubated for one hour, after which they were allowed to stand at room temperature for twenty-four hours, when the readings were made. In some cases where there was doubt, microscopic examinations were made. Inasmuch as some of the organisms were agglutinated by normal horse sera as high as 1-50, no agglutination tests lower than 1-100 were considered of diagnostic value.

Discussion of Tabulated Results

Table 1 includes 45 cases studied, in which the clinical history and diagnosis indicates infection with *B. dysenteriae*. In 38 of these cases (84.4 per cent.) the dysentery bacillus was actually obtained. Of these, all but two had shown blood in the stools at some time. The various serum reactions were positive at some time in the disease in the following percentages of cases:¹³

12. This adhesion to the side of the tube was especially emphasized by Bordet and Gay in their work with red blood cells.

13. No doubtful reactions are included in the following estimations. They will be found, however, in all instances, to preponderate in the positive cases.

Agglutination to Flexner strain positive in 25 of 45 cases tested = 55.5 per cent.
Agglutination to Shiga strain positive in 12 of 45 cases tested = 24.4 per cent.
Fixation to Flexner strain positive in 18 of 43 cases tested = 41.8 per cent.
Fixation to Shiga strain positive in 19 of 42 cases tested = 45.2 per cent.
Conglutination to Flexner strain positive in 24 of 38 cases tested = 63.1 per cent.
Conglutination to Shiga strain positive in 8 of 37 cases tested = 21.6 per cent.

If we limit our estimation to those 38 clinically positive cases from which *B. dysenteriae* was actually iso-

lated, the relation of percentages of positive results is but little changed:

Flexner agglutination positive in 57.8 per cent.
Shiga agglutination positive in 26.3 per cent.
Flexner fixation positive in 43.2 per cent.
Shiga fixation positive in 47.2 per cent.
Flexner conglutination positive in 60.6 per cent.
Shiga conglutination positive in 21.8 per cent.

Before considering further the comparative value in diagnosis of the three methods, we may first summarize the results obtained in the cases in which the clinical history did not indicate an infection with the dysentery bacillus (Table 2).

TABLE 1.—CASES IN WHICH THE CLINICAL HISTORY INDICATES AN INFECTION WITH *B. DYSENTERIÆ*

Case No.	Clinical Diagnosis.	Day of Disease.	No. Days Blood Found in Stools.	No. of Stools Examined. m=Mucous. b=Bloody. f=Fecal.	Tubes of <i>B. Dysenteriae</i> and Character,§	P=Positive. N=Negative.					
						Agglutination.†		Fixation.		Conglutination.‡	
						Flexner.	Shiga.	Flexner.	Shiga.	Flexner.	Shiga.
1	Infectious diarrhea.....	10	10	1 b & m...	1 M.....	P 100.....		P		P 100*	
2	Infectious diarrhea.....	14				P 320+...	P 20+...				
		9	2	2 b & m...	15 M.....	P 80.....		N		P 100	
		12				P 80.....	P 10+...	P	N	P 200+...	P 200
5	Acute infectious diarrhea.....	15				P 80.....	P 40+...	P	P		
7	Acute infectious diarrhea.....	9	2	1 b & m...	2 M.....	P 30.....	P 120+...	P	P		
		6	4	2 b & m...	25 M.....	P 320.....	P 40+...	N	N	P 200.....	P 200
		7				P 160.....	P 80.....	P	P		
14	Acute infectious diarrhea.....	1	1	2.....	24 M.....	N 10+...	P 20.....				
15	Infectious diarrhea.....	5	3	2 m.....	16 M.....	P 40+...	P 40+...	P	P		
16	Infectious diarrhea.....	21	3	2 b & m...	5 M.....	P 400.....	P 200+...	?	?		
17	Subacute infectious diarrhea...	14	1	2 m.....	9 M.....	P 100+...	P 40+...	P	P		
19	Acute infectious diarrhea.....	9	3	6 b & m...	1 M.....	P 40.....	P 40.....	P	?		
		21				N 10.....	N	P	P	P 400*....	P 10
20	Chronic intestinal indigestion..	12	4	2 m.....	3 M.....	N 10+...	P 20+...	N	?	P 800*....	P 20
21	Infectious diarrhea.....	25				N 20+...	N 10.....	N	P		
		3	2	4 b & m...	8 M.....	N	N	P	?		
		14				P 80+...	N	P	P	P 100.....	N
24	Infectious diarrhea.....	8	2	3 b & m...	8 M.....	P 100+...	N	N	N	P 200.....	N
25	Infectious diarrhea.....	2	0	3 m.....	19 M.....	N	N	P	N	P 100.....	N
		8				P 100+...	N	P	P		
27	Infectious diarrhea.....	4	4	1 m.....	3 M. N.....	N	N	N	N	?	20.....
29	Infectious diarrhea.....	7	3	5 b & m...	2 M. N.....	P 100.....	N	N	?	P 400.....	N
33	Acute infectious diarrhea.....	6	6	3 b & m...	31 M.....	N	N	N	N	N	N
		12				P 100+...	N	N	N	P 400.....	N
34	Infectious diarrhea.....	17	Pus.	5 m & b...	13 M.....	N 10+...	N	N	N	P 500.....	N
35	Acute infectious diarrhea.....	5	0	4 m & b...	12 M.....	P 40+...	N	N	N	P 400.....	N
		16				N	N	N	N		
36	Infectious diarrhea.....	10	5	4 b & m...	7 M.....	P 200+...	N	P	P	P 800.....	N
38	Infectious diarrhea.....	8	2	3 b & m...	8 M., 3 M. N.	N	N	?	?	N	N
40	Infectious diarrhea.....	8	8	1 m.....	16 M.....	N	N	N	N	P 100.....	N
41	Infectious diarrhea.....	7	7	2 m.....	5 M.....	N	N	N	N	N	N
		14				P 80+...	N	N	N	N	N
44	Infectious diarrhea.....	6	3	2 m & b...	7 M.....	P 40.....	N	P	N	P 100.....	N
42	Infectious diarrhea.....	7	4	2 b & m...	19 M.....	N 10+...	N	N	N	N	N
		10				N	N	N	N	N	N
47	Infectious diarrhea.....	9	And pus.	4 b & m...	41 M.....	N	N	N	N	?	40.....
48	Bronchopneumonia; infectious diarrhea.....					N	N	N	N		
49	Infectious diarrhea.....	3	3	1 b & m...	7 M.....	N	N	N	N	?	20+....
50	Infectious diarrhea.....	12	7	1 m.....	14 M.....	P 80+...	N	N	N	N	N
57	(Infantile paralysis) intercurrent infectious diarrhea.....	2	0	2 m.....	10 M.....	N 10.....	N	N	N	?	20.....
						N	N	N	N		10+
59	Infectious diarrhea.....	4	?	2 b & m...	5 M.....	N	N	N	N	N	N
60	Infectious diarrhea.....	21	9	4 b & m...	2 M. N.....	N 20.....	N	P	P	?	20.....
61	Infectious diarrhea.....	12	8	4 m & b...	4 M.....	P 80.....	N	P	P	N	N
64	Infectious diarrhea.....	12	6	5 m.....	1 M.....	N 10.....	N	N	N	P 800.....	P 20
62	Infectious diarrhea.....	9	8	2 m & b...	25 M.....	N	N	N	P	P 800.....	N
26	Infectious diarrhea.....	9	9	1 m.....	2 M.....	P 100+...	N	P	P	?	40.....
		35	3 ?	3 b & m...	27 M.....	P 100.....	N	N	N	P 200.....	N
		50				P 80+...	N 10.....	N	P		
28	Infectious diarrhea.....	7	3 ?	7 b & m...	2 M.....	P 40+...	N	N	P	N 10.....	N
		17				P 40.....	N	P	P	P 800.....	P 40*
31	Infectious diarrhea.....	4	0	5 b & m...	20 M.....	N	N	N	P	N	N
11	Scurvy. Infectious diarrhea...	3	3	3 b & m...	0.....	P 40.....	N 10+...	N	N	P 200.....	P 200
8	(Intestinal indigestion.) Recovered. Infectious diarrhea.....	60	60	3 f.....	1 M.....	N 10+...	N	N	N	P 400.....	N
45	Infectious diarrhea.....	3	3	2 f.....	0.....	N	N	N	N	P 100.....	N
46	Infectious diarrhea.....	9				N 10.....	N	N	N	?	2.0.....
		8	?	8 b & m...	0.....	N	N	?	?	P 200.....	N
		14				N	N	?	?		
9	(Indigestion.) Convalescent. Infectious diarrhea.....		0	1 f.....	0.....	P 80.....	P 40.....	P	P		
18	Infectious diarrhea. Recovered.	30	0	1 m.....	0.....	P 200+...	P 200+...				
22	Lobar pneumonia. Infectious diarrhea.....	1	1	4 b & m...	0.....	N	N	P	?	?	40.....
		12				N	N	P	P	P 200.....	N
23	Infectious diarrhea.....	4	4	2 m.....	0.....	N 10+...	N 10.....	N	N		
		6				N 10.....	N	N	N		

§ In this column M stands for mannit-fermenters, MN for mannit-non-fermenters, and O for no *B. dysenteriae*.

† Reactions to the Flexner type of 1-40 (in one instance 1-30) and above are called positive ("P"); with the Shiga reaction at 1-20 are positive. In each case the high limit of agglutination is given except where the figures are followed by an asterisk, in which cases it was not obtained. A plus sign (+) following the figures indicates that partial reactions were obtained in higher dilutions. When "Negative" alone is given it indicates that no action was obtained in the lowest dilution (1-10). The interrogation point (?) is used to indicate partial reactions.

‡ 1-80 and above constitutes a positive reaction to Flexner; 1-20 and 1-40 (indicated by the interrogation point) are doubtful (as having been found to occur in a few control cases.) A dilution of 1-10 and above with Shiga is positive. These limitations are of necessity arbitrary but are apparently borne out by our controls which are the only data on this subject as yet in existence.

Fifteen cases were clinically negative, from one of which only was the dysentery bacillus isolated. In these cases the reactions were positive as follows:

- Agglutination to Flexner positive in 1 of 15 cases tested = 6.6 per cent.
- Agglutination to Shiga positive in 0 of 13 cases tested = 0 per cent.
- Fixation to Flexner positive in 4 of 14 cases tested = 28.5 per cent.
- Fixation to Shiga positive in 0 of 14 cases tested = 0 per cent.
- Conglutination to Flexner positive in 0 of 11 cases tested = 0 per cent.
- Conglutination to Shiga positive in 0 of 10 cases tested = 0 per cent.

Comparing the results from the two sets of cases we find:

- As regards the Flexner strain of bacilli:
- Agglutination occurs rarely in negative cases (6.6 per cent.) and frequently in cases of dysentery (55.5 per cent.). Fixation occurs not infrequently in negative cases (28.5 per cent.), but more frequently in positive cases. Conglutination does not occur in the negative cases but occurs in 63.1 per cent. of the positive cases.

bacteriologically positive cases (27, 29, 38), in no one of which, curiously enough, was any reaction to the Shiga bacillus obtained.

The occurrence of positive fixation reactions to Flexner in over a quarter of the negative cases is not easily explainable. The fact that it occurs more often in positive cases adds little to its diagnostic value. Had it been possible to employ several doses, a minimal dose for positive cases would doubtless have given no reaction in negative cases. At any rate, the occurrence of fixation with the Shiga strain in even a higher percentage of the positive cases, whereas it did not occur in negative cases, would indicate that this organism is better for such tests.

It is already evident that the conglutination reaction is superior to the other two tests in the diagnosis of dysentery infection, from the standpoint of its non-occurrence, at the arbitrary limit chosen, in control cases, the high percentage of occurrence in positive cases, and as the relatively better indicator of the bacillary type of infection concerned, judging from the low percentage of occurrence of the reaction to Shiga (21.6 per cent.) and

TABLE 2.—CASES IN WHICH THE CLINICAL HISTORY DOES NOT SUGGEST INFECTION WITH B. DYSENTERIÆ

Case No.	Clinical Diagnosis.	Day of Disease.	No. Days Blood Found in Stool.	No. of Stools Examined. m=Mucous. b= Bloody. f=Fecal.	Tubes of B. Dysenteriae and Character.	P=Positive. N=Negative.					
						Agglutination.		Fixation.		Conglutination.	
						Flexner.	Shiga.	Flexner.	Shiga.	Flexner.	Shiga.
3	Feeding.....		0	2 f m.....	0	N 20+					
4	Feeding.....	4	0	1 f m.....	0	N		N	N	N 10	
13	Feeding.....		0	1 f.....	0	N 10.....	N 10	?	?		
12	Chronic intestinal indigestion..	60	60	1 f.....	0	N 10.....	N 10.....	?	?		
30	Chronic intestinal indigestion. (Diarrhea.).....	?	0	4 m.....	0	N	N	N	N	N	N
		+7				N	N	P	?	?	?
32	Gastrointestinal indigestion....	3	0	2 f m.....	0	N	N	P	?	N	N
		7				N	N	N	N	N	N
39	Feeding.....		?	1 m b.....	0	N	N	N	N	N	N
43	Acute intestinal indigestion....	8	0	3 f m.....	0	N	N	P	N	?	?
		12				N	N	P	N	?	?
52	Intestinal indigestion.....	19	0	2 f m.....	0	N	N	N	N	N	N
53	Feeding.....	21	0	1 f.....	0	N	N	N	N	N	N
54	Intestinal indigestion.....		0	1 f.....	0	N	N	N	N	N	N
55	Feeding.....	60	0	f.....	0	N	N	N	N	N	N
56	Intestinal indigestion.....		0	f.....	0	P 40.....	N	N	N	?	?
58	Pneumonia.....		0	f m.....	0	N	N	P	N	N	N
37	Feeding.....	6	2	2 m.....	7 M	N	N	?	N	N	N

- As regards the Shiga strain of bacilli: Positive reactions do not occur in negative cases. In the positive cases agglutinations were present in 24.4 per cent., fixations in 45.2 per cent. and conglutinations in 21.6 per cent.

It is impossible to say to what extent the reaction of the Flexner strain in low dilutions to the sera of supposedly non-infected cases is due to the agglutinability of the organism and to what extent to the presence of saprophytic or mildly infecting mannit-fermenters in the body. That such organisms are at times present has been shown and was true in one of our negative cases (No. 37), which case, however, failed to give any serum reaction. An attempt to avoid such reactions has been made by placing the minimal positive figure to Flexner at 1-40, and even at that dilution one undoubtedly negative case (No. 56, marked "Pos.") gave a reaction. It would not, however, seem fair to rule out all the positive cases in which reaction was obtained at 1-40 only, although such a division would further emphasize our most novel contribution, the superior value in diagnosis of the new conglutination reaction. The agglutination of the Shiga type would seem to be due to "common" agglutinins rather than to real infection with this variety of the bacilli, as it was found in 3 only of the 38

the high occurrence to Flexner (63.1 per cent.) in these cases, due to mannit-fermenters.

It may be well at this point to reiterate that the conglutination reaction is not to be confused with agglutination. This is evident not only by the different appearance of conglutination (flocks on side of tube), but by certain other data from our tables: Thus, in 29 estimations in which either or both agglutination and conglutination were positive to the Flexner organism, conglutination was present (often 1-400 or 1-800) and agglutination absent in 11 instances; conglutination was present in higher dilutions (from two to twenty times) in 11 instances. The disproportion in percentages of reactions to the Flexner and Shiga strains is also greater with conglutination.

The striking superiority of the conglutination method as a means of diagnosis is further evident in considering the time of occurrence of the various reactions in the course of the disease. It is admitted by Shiga and others that few positive agglutination reactions can be expected before the second or third week in the disease; it is this fact in particular which renders the test of little value in the diagnosis of infants in whom the malady is characteristically acute. In Table 3 are summarized results

from our tables as regards the percentage of positive reactions according to days of the disease, obtained with the Flexner strain and by the three methods:

TABLE 3.—PERCENTAGE OF POSITIVE RESULTS TO FLEXNER ORGANISM OBTAINED IN RELATION TO DAY OF DISEASE

Days	Agglutination		Fixation		Conglutination	
	% Pos.	Number Estimations	% Pos.	Number Estimations	% Pos.	Number Estimations
1-4	9	11	27	11	50	6
5-8	56	16	28.5	14	60	10
9-12	59	17	53.3	15	72.7	11
13-16	75	6	60	5	66.6	3
17+	54	11	44.4	9	100	6

In respect to early diagnosis the conglutination is thus markedly superior to the other two methods. The apparent superior value of fixation over agglutination (27 per cent. to 9 per cent.) in the first four days is fictitious, as a positive reaction was obtained in 28.5 per cent. of the negative cases. The results with the Shiga organism show a similar course, except that they are lower in percentages, with the exception of the fixation reactions. The conglutination with Shiga is relatively and absolutely (with the exception of the initial days) lower than with the other reactions.

TABLE 4.—PERCENTAGE OF POSITIVE RESULTS TO SHIGA ORGANISM OBTAINED IN RELATION TO DAY OF DISEASE

Days	Agglutination		Fixation		Conglutination	
	% Pos.	Number Estimations	% Pos.	Number Estimations	% Pos.	Number Estimations
1-4	8	11	0	9	11.1	9
5-8	19	16	21.4	14	9.9	11
9-12	27	15	45.4	11	18.1	11
13-16	50	6	60	5	0	3
17+	27	11	62.5	8	42.8	7

CONCLUSIONS

Of 45 cases of infantile dysentery ("infectious diarrhea") dysentery bacilli were isolated in 38 cases (84.4 per cent.). In 35 of these bacteriologically positive cases mannit-fermenting strains only were isolated. The mannit-non-fermenting variety (Shiga) was isolated in 3 cases, in one of which it was found in conjunction with fermenting strains. Dysentery bacilli (acid mannit) were found in one of 15 control cases.

Evidence of reaction on the part of each patient to either mannit-fermenting or mannit-non-fermenting types of dysentery bacilli was sought in the blood serum. In every case, so far as practicable, three methods of serum diagnosis were employed, the well-known reactions of agglutination and of fixation, and one novel reaction, the reaction of conglutination (Bordet and Gay, Streng). The serum in many cases was tested at intervals in order to determine the time of occurrence in the disease of a positive reaction by each method.

Reactions with the Flexner strain were much more frequent than those with the Shiga strain; this is owing not only to a direct relation to the organisms producing the infections under consideration, but also, in all probability, to a greater agglutinability of the Flexner organism.

In the doses employed, fixation reactions were obtained with the Flexner, but not with the Shiga strain in over a quarter of the control cases (28.5 per cent.). It was found with both Flexner and Shiga much more frequently (50 to 60 per cent.) in the positive cases subsequent to the first week.

A positive agglutination reaction was obtained in one control case to Flexner; it occurred in 55.5 per cent. of the positive cases with Flexner ranging from 9 per cent. during the first four days to 75 per cent. at the third week (thirteen to sixteen days). In about half as many cases a reaction was obtained with Shiga.

No positive conglutination reaction was obtained in control cases. The reaction was present more frequently than either agglutination or fixation during the disease (63.1 per cent. to Flexner). In addition, conglutination was obtained with this organism in 50 per cent. of the cases during the first four days of the disease. Reactions with the Shiga type as given by conglutination were absolutely and relatively fewer than by the other methods. This would seem to indicate a more absolute specificity for this reaction.

It would seem, then, that in the conglutination reaction we have a means of serum diagnosis in infections by the dysentery bacillus which is far superior to any other as yet devised. The further investigation of this new reaction as applied to diagnosis of other bacterial infections is of immediate interest.

In conclusion, we wish to express our thanks to Dr. F. P. Gay for suggesting this investigation and for advice during its pursuit.

SCOPOLAMIN AND MORPHIN IN NARCOSIS AND IN CHILDBIRTH

Report to the Council on Pharmacy and Chemistry

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[The following report was submitted to the Council on Pharmacy and Chemistry of the American Medical Association, which authorized its publication.

W. A. PUCKNER, Secretary.]

E. Schmidt isolated scopolamin from several solanaceous plants and described it about ten years after Ladenburg had obtained hyoscin from the mother liquors in the manufacture of hyoscyamin. Schmidt's studies were more complete and exact than those of Ladenburg, and the name scopolamin is now applied correctly to the substance for which Schmidt first gave the true formula, $C_{17}H_{21}NO_4$, Ladenburg having given the formula for hyoscin, incorrectly, as $C_{17}H_{23}NO_3$. The term scopolamin was at first applied to levo-rotary hyoscin by Schmidt, while Hesse called the racemic form atropin, and this term is still used commercially by Merek.

The scopolamin, or hyoscin, sold was often impure, and, since different individuals showed marked differences in reaction even to the pure substance, dependent on a variety of conditions which will be discussed later, certain investigators maintained for a time that scopolamin and hyoscin were not identical, at least in physiologic action, but this question may be considered as definitely settled now, and chemists and pharmacologists agree that scopolamin and hyoscin are identical, and it may be taken that whatever is said here concerning scopolamin is intended to apply equally to hyoscin.¹

The abuse of scopolamin in anesthesia has arisen largely through a misunderstanding of its pharmacologic action, and, since an understanding of these actions is essential to a comprehension of the question at issue, they will be summarized briefly before the general question of the use of scopolamin and morphin in anesthesia is considered.

PHARMACOLOGIC ACTIONS

Kobert² states that scopolamin exists in the optically active and inactive forms. Large doses act like atropin

1. For a discussion of this point, see THE JOURNAL, Dec. 21, 1907, p. 2103.

2. *Pharmakotherapie*, Second ed., p. 481.

on the pupil, accommodation, skin, heart, lungs, intestines and on all glands, but quite small (therapeutic) doses have a different action; thus the vagus is slightly stimulated, not depressed, and the pulse rate is therefore slowed, and only after large doses is there vagus paralysis. Small doses abolish cerebral excitement, this narcotic action being so strong that the maximal dose at first was placed at 0.5 milligram (1/130 grain) in all countries, but now, unfortunately, and without sufficient reason, this amount has been doubled. Kober believes this larger dose to be applicable to the optically inactive form alone.

Kochmann states that small doses stimulate the vasomotor center, with a rise of blood-pressure and little change in the pulse rate; large doses cause a fall of blood-pressure from injury to the excitomotor apparatus in the heart. Moderate doses cause vagus paralysis in the rabbit, but this does not follow the use of even large doses in the dog. He states that scopolamin has no sedative action on the rabbit, while in man and the dog it induces sleep without analgesia.

Normal dogs survived enormous doses of scopolamin, and only those which had been previously injured succumbed. Normal frogs could not be killed by the largest doses.³ The rabbit exhibits primary paralysis of respiration, as man does, but man suffers no injury from therapeutic doses. Scopolamin is excreted by the kidneys.

These results of Kochmann's are confirmed for the greater part by Kionka (1908), but his results with dogs were slightly different, in that Kionka observed some analgesia and two distinct types of action, some becoming somnolent at once, while others exhibited restlessness, incoordination, hallucinations and sank to sleep gradually.

Kionka also tested the solutions which Kochmann had used two years previously and found no quantitative or qualitative differences in physiologic action, though the optically active had become optically inactive. Kionka also compared the physiologic actions of optically active and inactive scopolamin in freshly prepared solutions and could detect no essential difference between them, but differences were seen in the actions of the same specimen of scopolamin on different individuals of the same species. These differences in individuals were perceptible in the frog, and, becoming more pronounced with the cerebral development of the species, were more marked in the dog than in the rabbit, and, of course, attained their maximum in man.

Ernst perfused the spleen and kidney with solutions of scopolamin of various concentrations, but there were no constant effects on the blood vessels in the series of twenty-two perfusions. Cushny found that levo-rotary lyosecin acts twice as energetically as the racemic form on the terminations of the secretory fibers in the salivary glands and on the inhibitory fibers in the heart, but that they act alike on the central nervous system in man and other mammals, and on the terminations of the motor nerves in the frog, but that they do not act on the central nervous system of the frog even with the largest doses.

The physiologic actions of morphin are so well known that they do not require exhaustive discussion here.

Schneiderlin, Korff and Blos were the earliest advocates of the use of scopolamin and morphin in narcosis, and their statements of the physiologic actions and antagonisms of these two alkaloids have been summarized by Kochmann about as follows:

1. Morphin slows the pulse; scopolamin increases the rate.
2. Morphin slows the respiration and renders it shallow; scopolamin causes it to become deeper and quicker.
3. Morphin paralyzes sensory nerves; scopolamin paralyzes the motor.
4. Morphin induces miosis; scopolamin, mydriasis.
5. Morphin is a vasodilator; scopolamin, a vasoconstrictor.
6. Morphin leaves the secretions unchanged; scopolamin paralyzes them.

The synergistic action in narcosis and the wide-spread antagonisms of side actions have been the chief arguments used by Schneiderlin and Blos in support of their claims concerning the value of the combination, but it is hardly necessary to say that the antagonisms are more apparent than real, or that they are in part purely imaginary. Thus, while morphin is, indeed, a miotic and scopolamin a mydriatic, the action of morphin is purely a central one, while the mydriatic action of scopolamin is purely peripheral. As to the paralysis of the sensory endings, it may be said that there is no evidence in the literature of any such action from morphin, and, on the contrary, it is well known that its analgesic action is purely central, while the paralysis of motor endings by available doses of scopolamin occurs only to a very limited extent, and then to the detriment of the heart.

There is no antagonism between scopolamin and morphin on the respiration in the doses often used by Schneiderlin, Korff and Blos. The effects of morphin on the circulation, according to Sollmann,⁴ are complicated and variable and of but little importance, as they are pronounced only with very large doses. The effects of scopolamin and morphin on the pulse rate are alike quite as often as they are unlike.

Since the recommendation of scopolamin with morphin was based on such a complete misconception of true conditions, it is not surprising that, after the sacrifice of perhaps thirty lives (and just how many no one can say positively), we are back to almost the identical position in which we should have been but for the unfortunate enthusiasm of the early advocates of this combination; i. e., its use preliminary to inhalation anesthesia—precisely the object which Schneiderlin had in view when he administered the very first dose.

Those who wish to pursue this phase of the question are referred to the papers of Kochmann, Kionka, II. C. Wood, Jr., Cushny, de Stella and others who have studied the pharmacologic actions of these two drugs.

Schneiderlin was led by his observations of the effects of scopolamin on the insane to use scopolamin and morphin for the purpose of reducing to the minimum the amount of chloroform required for anesthesia in the case of a patient suffering from carcinoma of the breast. The results so far exceeded his expectations that he experimented further and found that scopolamin and morphin alone sufficed in some cases for light anesthesia. He gave amounts up to 2.5 milligrams (1/25 grain) of scopolamin and 7 centigrams (1 1/6 grains) of morphin in the space of an hour and fifteen minutes.

3. Githens reported a case in which 4/5 of a grain (52 mg.) of scopolamin had been taken at one dose without injury. The results in this case have been widely quoted, but the evidence concerning the actual dose is circumstantial, the patient having taken all that was left after previously using some of the solution. The solution was not sterile and it had been kept standing for some time. Finally, the precise quantity originally present in the bottle is not vouched for by Githens.

4. Text-book of Pharmacology, Second ed., p. 186.

Although he found the effects of scopolamin variable and his observations extended only to some ten cases, he drew rather broad deductions, concluding that scopolamin and morphin are not dangerous; that the unforeseen accidents of chloroform inhalation were thereby avoidable; that the constant attendance of the physician is unnecessary, merely an attendant to be at hand in case the tongue should fall back into the throat and the respiration cease; the condition of the pupils was urged as a guide to the administration of the two drugs, than which, as we have seen, nothing could be more fallacious.

This paper of Schneiderlin's is not readily accessible to the general reader, in this country at least, and it is remarkable how considerably the average critic has dealt with Schneiderlin's reasoning and deductions.

I believe that we should be inclined to consider as little less than reckless one who would pronounce a new anesthetic harmless, because ten patients had survived its administration. Apparently Schneiderlin had no idea of its possibilities for degenerative changes on the internal organs. He even went so far as to advise initial doses of 1 milligram of scopolamin and 3 centigrams of morphin if in haste to operate. It must be said, in justice to Schneiderlin, that he did not pretend to have perfected the technic of scopolamin-morphin anesthesia.

Schneiderlin's truly remarkable announcement was soon followed by observations by other surgeons. Bloss took up the investigation within a month of the appearance of Schneiderlin's paper and about two years later he published his results in 105 cases. Bloss repeats the fallacious statements made by Schneiderlin concerning the antagonistic actions of the two alkaloids, and, despite one death in his series, which he attributed to an accident that could be avoided thereafter, he commended the method warmly. Bloss gave even more morphin than Schneiderlin had done—up to 12 centigrams (2 grains) in two portions—and was more enthusiastic in his praise of the combination. In this connection it is interesting to note that about three years later Bloss wrote to de Manrans, stating that he rarely used the method after leaving the hospital.

Korff reported on 80 cases in which he used scopolamin and morphin, employing doses of 1.2 milligrams (1/50 grain) of scopolamin and 3 centigrams (1/2 grain) of morphin in three portions of 0.4 milligram (1/150 grain) scopolamin and 1 centigram (1/6 grain) morphin each. Korff modified this dose somewhat after about a year, but still adhered to doses that have been abandoned by conservative surgeons. The use of such a dangerous combination could hardly fail to cause a number of deaths, and there was the inevitable reaction, many abandoned the method altogether, while others continued to use it in a modified form.

Disregarding the early methods, which no longer obtain among well-informed surgeons, but which are considered in order to gain a better understanding of the question, we will discuss the use of scopolamin and morphin preliminary to general anesthesia and to induce the so-called twilight sleep in obstetrics.

SURGICAL USES

The principal advantages and disadvantages have been observed by numerous investigators, and it is useless to enumerate these observations in each case. Therefore the opinions of the majority are considered collectively, except when it may be necessary to call attention to opposing views.

ADVANTAGES

The advantages which can be claimed conservatively for scopolamin and morphin in anesthesia may be briefly summarized as follows:

1. It permits economy of chloroform or ether, with the attendant advantages; it reinforces spinal anesthesia.
2. There is lessened postoperative nausea and emesis, with the decreased danger of pneumonia and other side-actions.
3. The stage of excitement is lessened or abolished, and the fear of anesthesia is eliminated largely.
4. The course of anesthesia is rendered smoother and more uniform.
5. There is decreased salivation after ether and a diminution of pneumonia.
6. There is sleep of some hours following operation, with the avoidance of pain which commonly follows operations with chloroform or ether.
7. In addition to those mentioned, there are minor advantages which will be mentioned later.

1. *Economy of Chloroform and Ether.*—It is claimed by a very large majority of observers that scopolamin and morphin effect an economy of chloroform and ether. While this is a matter of prime importance, it is so purely a surgical question that it cannot be considered exhaustively here, but the following citations illustrate the point: Zadro (1909) states that 60 grams (2 ounces) of Billroth's mixture and 100 grams of ether suffice for an operation of an hour, but with 0.5 milligram (1/130 grain) of scopolamin and 1 centigram (1/6 grain) of morphin. 25 grams (5/6 ounce) of Billroth's mixture and 80 grams (2 2/3 ounces) of ether, or 120 grams (4 ounces) of ether, suffice. Among others who report economy of ether is Flatau, who states that this economy is not attended with lessened emesis. Schoemaker (1909) reports that he found no marked economy of chloroform or ether, but he admits that these act less injuriously after scopolamin and morphin. If the latter statement is correct, we must conclude that less than usual of chloroform and ether were actually used.

2. *Lessened Nausea and Emesis.*—Bloss states that patients take food almost immediately after an operation following the use of scopolamin and morphin, and that recovery is rapid in consequence. Several observers state that patients look fresher and better than after chloroform or ether alone. Hartog (93 cases) states that nearly all patients show an extraordinary good condition after operation following the use of scopolamin and morphin, and Klein remarks that such patients recover quicker and better than after long chloroform narcosis alone. A great majority of observers report that there is less emesis immediately following operations, with scopolamin and morphin, than with chloroform or ether alone.

The disadvantages and dangers of this postoperative emesis do not require detailed discussion here, but, in addition to the fatal pneumonia, which it causes so often, there are many minor disadvantages resulting from it. Flatau says that postoperative emesis is often the cause of hernia as well as hemorrhage. Bloss calls attention to the increased viscosity of the blood commonly resulting from emesis and the inability to take water. Korff claims that the ability to take food soon after an operation greatly lessens the danger of hemorrhage, and that many stitches are pulled out during emesis. The ability to take food soon after an opera-

tion certainly hastens repair and increases the resistance to infection.

The testimony is conflicting in regard to the actual frequency of emesis after operations following scopolamin and chloroform or ether, but the real benefits of scopolamin and morphin in this respect cannot be shown by tables giving merely the frequency of emesis; the interval before its occurrence is of even greater importance. This is illustrated strikingly in Ries' report. Ries states that emesis occurred in about 60 per cent. of his cases in which chloroform was used after scopolamin and morphin, and in about 36 per cent. of those where ether followed, but only once in the series of 185 major operations did emesis occur within twenty-four hours, and he did not have a single case of pneumonia in the entire series.

As to the actual frequency of emesis after scopolamin and morphin and chloroform or ether, there is little doubt that it is materially decreased in the first twenty-four hours following operation, and, indeed, in the whole period concerned. Schoemaker (1909) states that there was emesis in about 10 per cent. of his 3,000 cases in which scopolamin and morphin were used, which was a marked reduction from that seen when he used chloroform or ether alone.

Flatau claims that emesis is not lessened by small doses of scopolamin and morphin, but the effective doses used by Grimm and by Schoemaker were quite small, 0.5 milligrams of scopolamin, and 1 and 1.5 centigrams of morphin, respectively, and the results obtained by Ries, previously mentioned, were obtained from the use of 0.65 milligram of scopolamin and 1.0 centigram of morphin (1/100 grain scopolamin, 1/6 grain morphin).

The lessened tendency to postoperative pneumonia after scopolamin and morphin with chloroform and ether, owing to lessened emesis and lessened salivary secretion after ether, is shown by the following figures: Boesch states that there were only 0.7 per cent. of cases of postoperative pneumonia following 2,000 operations with scopolamin and morphin and inhalation anesthesia since 1905, and even less than that of late. Zadro gives 0.9 per cent. (it should be 1 per cent.) in 770 cases against 4.8 per cent. with chloroform alone in 1908. He cites the results in Kummel's clinic, where there were 0.7 per cent. of postoperative pneumonia when scopolamin and morphin were used, against 2.5 per cent. without them. In other clinics as high as 5 per cent. of postoperative pneumonia is reported where scopolamin and morphin are not used.

Grimm reports that there were 43 cases of pneumonia with 18 deaths following 1,754 laparotomies between 1895 and 1905 when scopolamin and morphin were not used, but there were only 6 cases of pneumonia and none fatal in 839 laparotomies where scopolamin and morphin were used before inhalation anesthesia.

If the averages just given are sustained by the observations of other surgeons, there can be little doubt of the beneficial action of scopolamin and morphin in preventing postoperative pneumonia, and in that event we must consider them indispensable, despite a higher immediate mortality than with ether or chloroform alone. The foregoing does not take account of the possibility of fatty degeneration of different organs resulting from scopolamin and morphin, but that probably does not occur with small doses.

3. *Lessened Excitement.*—It is so nearly universally admitted that there is lessened excitement in the early stage of anesthesia following the use of scopolamin and

morphin, that the subject may be dismissed with a few words. Sieber states that morphin alone is preferable for the purpose, and Zadro claims that there is no influence on the stage of excitement in the case of alcoholic patients, but this is denied by Grimm. Hartog reports the case of an hysterical patient in whom tonic and clonic convulsions followed the injection of scopolamin and morphin, but these subsided when anesthesia was induced by inhalation.

4. *Anesthesia Smoother.*—Zeller states that no other anesthetic produces such smooth narcosis in severe operations as scopolamin and morphin. Several observers refer to his effect of scopolamin and morphin, and those who work with dogs in laboratory experiments have noted this effect of morphin.

5. *Decreased Saliva.*—The profuse flow of saliva during the inhalation of ether is said to be a prolific source of pneumonia following its aspiration, and of emesis, from the effects of the ether in the saliva swallowed. Scopolamin checks this secretion very effectively, and it may indeed lead to extreme dryness of the mouth and throat difficulty in swallowing, intense thirst and diminished expectoration, which may prove a serious disadvantage.

6. *Long Sleep.*—Many observers mention the prolonged sleep following operations after the use of scopolamin and morphin with chloroform or ether, and state that the patient is thereby spared much suffering, which is otherwise experienced so often. Zeller states that patients often sleep from four to six hours, and Terrier and Desjardins say they may sleep as long as eight or ten hours. While this sleep is usually an advantage, there are conditions under which it may prove distinctly detrimental. Routier denies that postoperative pain is materially lessened by the use of scopolamin and morphin.

7. *Miscellaneous Advantages.*—Various individual observers mention minor advantages in addition to those already discussed, including the following: There is no mask to interfere with asepsis of the face when scopolamin and morphin are used alone for anesthesia (Blos); scopolamin and morphin anesthesia is suitable in cases in which chloroform and ether are unavailable (Dirk and others); but this is hardly borne out by what has been said of the physiologic actions of the two alkaloids and by the experience of Ely, Sexton and others. Penkert says that scopolamin and morphin "twilight sleep" and spinal anesthesia constitute the most humane method of narcosis at our disposal. Grimm is one of the few who advocates the use of scopolamin and morphin for use in general practice. Roith states that the method is more reliable than that with other anesthetics, and not more troublesome.

DISADVANTAGES

The disadvantages of scopolamin and morphin preliminary to chloroform or ether anesthesia may be summarized as follows:

1. They frequently fail to produce the desired effect.
2. They often act injuriously on the respiration and circulation.
3. There are numerous contraindications, of which many are not sufficiently defined.
4. The action is variable with different individuals.
5. They are not suited for general practice.
6. They have caused a number of fatalities.
7. There are several minor disadvantages that will be discussed later.

1. *Failure to Produce Effect.*—Nearly all observers agree that in a fairly large percentage of cases the objects sought are not attained by the use of scopolamin and morphin, whether these objects are limited to the avoidance of the stage of excitement with small doses, such as Kochmann and most observers advise, or the effort is made to economize chloroform or ether greatly, as Korff (1908) still attempts by somewhat larger doses. Twenty-five per cent of failures is probably a fair estimate, but this does not apply to the prevention of post-operative pneumonia, in which, as stated, the results appear to be far better.

2. *Effects on Respiration and Circulation.*—It is well known that morphin depresses the respiration in all doses that produce any perceptible systemic action. The effects of scopolamin are, unfortunately, not so well known, and the effects of the two when combined are even less understood, though there is considerable evidence that their synergistic action in narcosis is sometimes extraordinary, in that their combined action is then much greater than the sum of their separate actions would be.

This is not a wholly anomalous condition, though it is one which is frequently overlooked. Gottlieb and Eeckhout's results with opium furnish us with an example of this peculiar synergistic action. They found that tincture of opium acts with more energy than can be accounted for by the potency of the separate alkaloids which it contains. Honigsmann states that the action of a mixture of chloroform and ether is sometimes far greater than the sum of the action of the two acting separately. Wholly analogous to this is the action of atropin in antagonizing pilocarpin. Magnus states that 250 times as much atropin is required to produce stimulation when it acts alone as that required to overcome the depression from pilocarpin.

This remarkable synergy of actions has been observed on precisely those structures, i. e., those of the nervous system, in which we would expect the greater variation in reaction because of their highly specialized character, and it is with narcotics—even the identical narcotic that we have under consideration—that these peculiarities have been observed.

We are familiar with wide variations of actions, or idiosyncrasies, toward morphin, and it is possible that we are to become equally familiar with idiosyncrasies toward scopolamin. Scopolamin in large doses paralyzes the respiration, and it is apparent from the testimony of many clinical observers in cases in which death followed the use of the mixture, that the synergistic action of scopolamin and morphin is occasionally exerted on the respiratory center in a very remarkable way. Unfortunately, we do not know the precise conditions which call forth this unusual synergistic action, but we do know that whatever tends to depress the respiratory center favors this unfortunate reaction. The respiratory depression may be direct, or it may be caused indirectly through anemia, general weakness or extremes of life.

The evidence is irrefutable that scopolamin and morphin may cause death from paralysis of respiration—a paralysis against which artificial respiration and all means of stimulation are ineffective.

Sieber (1908) stated that Hartog alone had mentioned the lasting increased pulse rate after scopolamin and morphin, but the phenomenon is mentioned frequently thereafter, and its occurrence is in accordance with de Stella's statement that toxic doses of scopolamin increase the pulse rate, and furthermore, that toxic symp-

toms appear and disappear rapidly. Any considerable increase in the pulse rate after scopolamin and morphin must be considered an untoward symptom unless it can be accounted for satisfactorily.

Sieber mentions a case in which the pulse rate was 80 previous to the injection of a small dose of scopolamin and morphin, but in one hour the rate was 160. The heart, lungs and kidneys were apparently sound. This case of Sieber's must be considered as very unusual, and I am not aware of any case in which a dose not exceeding 0.5 milligram (1/130 grain) of scopolamin and 1 centigram (1/6 grain) of morphin has caused the death of a patient in fairly good condition and with sound organs, but the death reported by Ely very nearly fulfills these conditions. His patient was reported to have been in good general condition, but succumbed two hours after the administration of 1/100 grain scopolamin and 1/8 grain morphin (0.65 mg. scopolamin; 0.8 cg. morphin). There is no better authenticated cause of death from a narcotic than this one.

3 *Contraindications.*—Foremost, then, among the contraindications for the use of scopolamin and morphin are to be placed all conditions whereby the respiratory center is depressed, or is likely to be injured directly through prolonged anesthesia, or indirectly through the circulation by shock, hemorrhage or other cause. They are certainly contraindicated in all severe cardiac diseases and other conditions which interfere with the circulation. They are available for operations for simple goiter, but nearly all authorities agree that they are contraindicated in the presence of Graves' disease, which is to be inferred from what has been said. They are contraindicated in operations about the throat and mouth, since the prolonged sleep and interference with expectoration favor the aspiration of the blood. One death has been attributed partly to this, pneumonia, due to aspiration of blood, being the immediate cause of death.

The question of special indications and of contraindications for scopolamin and morphin has probably caused more disagreement than any other in connection with the subject of their use. Sick thinks there are no contraindications, while Sieber declares that there are no indications for their use. Sieber closes his article with the following exclamation: "*Also Weg bei der Narkose mit diesem unberechenbaren, meist nutzlosen, gefährlichen Gifte*" ("Away with narcosis by this uncertain, mostly useless dangerous poison").

Much of the controversy could have been avoided had greater attention been paid in the beginning to the physiologic actions of scopolamin and of morphin, and of the mixture acting as a unit.

4. *Variable Action.*—That the action of scopolamin and morphin is variable with different individuals follows naturally from what has been said, and it is impossible, of course, to foresee all of the conditions in man which will cause a greater or less deviation from the usual effects, and when a natural idiosyncrasy is intensified by disease or untoward conditions even small doses of scopolamin and morphin may prove fatal, as in the cases reported by Toth, Ely, Sexton and others.

These individual differences in reaction varying from no perceptible action in some cases to a fatal intoxication in others with precisely similar doses, constitute one of the greatest disadvantages of the use of scopolamin and morphin. Usually, however, the same patient reacts similarly at different times, but Hotz maintains that the same patient reacts differently at different times, and the possibility of this is precisely what is to

be expected in view of the disturbances of the respiration and circulation which may arise, and on which the untoward results depend.

5. *General Practice.*—The method is not usually considered as suited for general practice because of the constant attention required until the action has finally worn off, as the untoward symptoms may not arise until some time after the operation. It must be considered as unsafe to leave a patient without surgical care so long as sleep continues. There is probably little danger from small doses of scopolamin and morphin for patients whose general condition is good, and who show no serious effects from the operation, but the cautious surgeon will remain within call until the patient awakens.

6. *Fatalities.*—The ultimate fate of scopolamin and morphin in anesthesia must depend largely on their relative safety as compared with other agents, particularly chloroform and ether. While this is a surgical question for the most part, it must be considered with reference to the physiologic actions of these agents if we are to arrive at a correct estimate of the value of the method, for in fatal surgical operations there are so many factors involved that it is often impossible to determine the true cause of death. But when we see a series of deaths in which the clinical observations agree with what we know of the actions of the agents in question, the evidence is certainly very much stronger than it would be if the clinical observations did not agree with those actions.

H. C. Wood, Jr., studied the cause of death in 23 cases in which scopolamin and morphin had been used, and he concluded that at least 9 of those deaths must be attributed to the scopolamin and morphin, the death rate being about 1 to 250 narcoses by this means. Roith collected statistics of 18 deaths in 4,000 cases of scopolamin and morphin narcosis, but he does not agree that scopolamin and morphin should be blamed for these deaths. De Maurans attributed 22 deaths to these agents up to November, 1905. Viron and Morel (1906) noted 25 deaths in 2,000 cases collected from the literature.

With the methods now in vogue with the more conservative surgeons, who use only small doses of scopolamin and morphin in connection with other anesthetics, the death rate is very much lower than the figures just given would indicate, but there is no reason to suppose that better results can be obtained when scopolamin and morphin alone are relied on to induce the anesthesia.

These figures are given by way of illustration of the question of scopolamin and morphin anesthesia, and are not intended as a complete statistical study of the subject, and when statistics are considered a sharp distinction should be made between those cases in which death follows large doses of scopolamin and morphin, intended to replace chloroform or ether wholly or chiefly, and those in which only small doses of scopolamin and morphin are used for the purpose of securing freedom from excitement, lessened emesis, smoother anesthesia and freedom from some of the more annoying minor symptoms. In the light of what has been said of the pharmacology of morphin and scopolamin, it is also necessary to distinguish between the results obtained by those who use the method for all cases and those in which there is careful selection of suitable cases.

The argument has been advanced, that certain deaths following the use of scopolamin and morphin, particularly those reported by Israels, were not due to scopolamin, because there was marked fatty cardiac degeneration, but de Stella concluded that scopolamin causes widespread fatty degeneration, and Israels said he had

never seen fatty degeneration from such small amounts of chloroform as had been used in those cases. Sexton's patient died within an hour and fifteen minutes of the injection of 1/6 grain of morphin (1 cg.) and 1/100 grain of scopolamin (0.65 mg.), with the usual symptoms of scopolamin intoxication, paralysis of respiration and rapid pulse. Rigidity of the muscles prevented artificial respiration in this case, but in the light of experience in other similar cases, it would, in all probability, have done no good.

7. *Minor Disadvantages.*—Among the minor disadvantages which have been mentioned by different investigators are the following: When the morphin and scopolamin are once injected they are wholly beyond control. One surgeon writes of his emotions at seeing his patient die while he and his assistants stood by helpless to counteract the effects of the drugs they had administered.

Every additional narcotic complicates the anesthesia.

Scopolamin does not cause muscular relaxation, a disadvantage, when used with spinal anesthesia particularly, and we have seen that muscular spasm interfered with artificial respiration in one fatal case at least.

The prolonged sleep may prove a disadvantage, as already mentioned. Hirsch mentions its interference with expectoration after operations about the mouth, and it is said that the prolonged sleep and the attendant respiratory depression may favor pulmonary edema.

Intense thirst, dryness of the mouth and throat and the difficulty in swallowing are sometimes complained of by patients.

Different investigators have attempted to explain many of the accidents which occurred early in the history of scopolamin and morphin anesthesia, on the ground that the drugs employed were impure or that the solutions underwent changes whereby toxic substances were formed.

Kionka maintains that apotropon is the only impurity which could be concerned in the increased toxicity of the scopolamin, but he had never been able to detect this impurity in any of the specimens of scopolamin examined, hence he thought it must be extremely seldom that this impurity could be present. Apotropon may be detected by Kessel's method. Potassium permanganate causes a brown precipitate when one part of apotropon is present in 20,000 parts of the solution. Morphin and many other alkaloids give this reaction, hence it is not applicable to the mixture of scopolamin and morphin. The Swiss Pharmacopeia (1907) does not mention this substance as an impurity in scopolamin. Kobert attributed the death of a man who had scopolamin to apotropon, which was said to be present as an impurity.

While solutions of scopolamin do undergo some unimportant physical changes as previously mentioned, it is probable that sterile solutions do not undergo any essential change in the course of a few months. Ries was unable to observe any difference between the effects of those solutions which had been freshly prepared and those which had been kept for some weeks. This agrees with the results of Kionka's experiments with freshly prepared, and old, solutions of scopolamin. Hotz states that milk sugar is said to prevent the deterioration of scopolamin solutions. The physical changes observed are said to be probably due to the alkali of the glass.

(To be concluded in the next issue. The bibliography of this article will be found at the end of the concluding portion.)

CORN AND PELLAGRA

A CONTRIBUTION TO OUR KNOWLEDGE OF THEIR RELATION
AS PROBABLE CAUSE AND EFFECT *

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The recent conference held at Columbia, S. C., under the auspices of the State Board of Health of that commonwealth emphasizes and confirms the opinion that in some unknown way there is a connection between our well-known cereal and the disease in question. Very many, perhaps a majority of those who took part in the discussion and in the papers read as reported in *THE JOURNAL*¹ subscribed to the statement of Dr. Sandwith of London, that "it is not good maize or good maize flour which produces pellagra; the disease requires for its production the habitual use of damaged maize in some form."

Respecting this disease and its cause two statements can be made with great confidence in their accuracy:

1. Where corn is not eaten, pellagra does not exist.
2. The eating of good corn or corn-meal will not produce pellagra.

The latter proposition is self-evident. Otherwise the whole population of the great corn belt of the world comprised in these central Western states would be victims of this plague. On the contrary, the food-value of this staple cereal is without question and its healthfulness is attested by millions of the best-fed people of the world.

There need be no fear on the part of agriculturists and dealers in this grain that there is a menace to their occupation by the growing prevalence in this country of a disease which has been known in other corn-growing sections of the world for nearly two centuries.

The only wonder is that it did not appear at an earlier time in our history or that it remained so long unrecognized. In my judgment, however, both these facts are capable of explanation. It is recognized that no class of people is exempt from possible attack, but it is evident that the poorer people of the South and the Atlantic border states are victims in greater numbers than are the same classes in other parts of the country.

This fact is also capable of explanation and affords strong presumptive evidence that damaged corn-meal is the causative factor in the pellagrous attack.

1. Rich people may get damaged meal in places where it is kept in stock. Such use for them would be accidental and not habitual, as it is with the poor in the same locality.

2. Damaged corn-meal is sent to the South and the South Atlantic border of our country for the express purpose of finding a market. It would find no market in the North and any use of such meal would be purely accidental. No dealer would dare to offer to consumers in this or other corn states a meal which would not stand the closest inspection. Europe and the South are the markets for such stuff and thither it goes.

In the hope that some light may be thrown on this traffic, and incidentally on the infection under consideration, allow me to quote from a letter written by a friend who has been a dealer in cereal products for many years and who is fully informed on all phases of the foreign and domestic trade in grain. It will be apparent that, while there are tricks in all trades, there are also honest men in the grain business whose consciences have not

been seared by the virus of ill-gotten gain so that they utterly deny personal responsibility in a brother's distress. The letter follows:

As you know I have been connected with the grain business, in some branch or other, since the sixties. I have handled corn at all seasons of the year, and in varying quantities, but have never had trouble with corn shipments until within about the last half dozen years.

There are many farmers who make no effort to cure the crop sufficiently so that it may bear transportation. They force it on the market as early as possible, as the more moisture it contains the heavier it will weigh. What is the result?

Before it can reach its destination, cool and sweet, as the shipping contracts read, it has become heated. If it becomes too bad to use the consignee will refuse it, in which case it is rushed to the nearest terminal and put through a dryer. There are times when these dryers must work day and night, for seven days in the week, to keep the constantly arriving corn from total destruction. As fast as it is dried and cooled it is disposed of. Where does it go? I do not know to a certainty. I formerly thought it went to the distilleries, and a portion of it may go there, but I fear much of it is sold to the mills at a discount of from 10 to 50 per cent. Some of it is exported after mixing with good corn. The best is selected and made into meal, and, costing so much less, can be sold at a very attractive price to those whose means are limited.

There are very many people who look more at cost than quality and eventually pay the penalty. The exporters also reap advantage because the poorer Europeans, especially the Italians, know no better, and they, too, pay the penalty.

I know positively that corn has reached European ports badly out of condition. I remember that, some four years ago, nearly every shipment, from November until March, arrived at destination out of condition. The following year it was not so bad, yet there was enough. Every year during the germinating period—the months of April and May—there is plenty of it unless great care is taken. From this it would appear that our pure food inspectors should investigate and find out where the poisonous stuff goes, and stop the killing of people for money. It will no doubt be very hard on some dealer occasionally to have his entire cargo condemned and destroyed, but the practice of shelling and shipping corn before it is properly cured should be broken up root and branch.

The Atlantic and Gulf coasts are the greatest sufferers from pellagra, and they get their supply of meal from the North, as the Southern states raise but little corn. Philadelphia, Baltimore, Buffalo, Cleveland and Columbus, Ohio, have very extensive driers and large mills and the South is an excellent customer. The temptation of unusual profits is great; no doubt advantage is taken of the opportunity, and the result is death and destruction to the poor and the ignorant who are unable to help themselves.

I have learned that the distillers do not use much, if any, spoiled corn. It will not make good spirits. It does not make good fertilizer. At least it would not be profitable to use it for that purpose. The real profit comes through mixture with good grain. For example, a cargo of 100,000 bushels, costing \$70,000, mixed with 10,000 bushels at a discount of 20 cents, would pay a profit of \$2,000 over and above the legitimate margin. The millers near the terminals are not blind to this opportunity, and will, I fear, take it until restrained by the strong arm of the law. This inferior corn in large quantities is begging for an outlet, and the great territory along the Atlantic coast is hungry for provisions and will take anything so it is cheap. Inferior meal fills the bill.

That this inference is fair is strengthened by the fact that the last half of this decade, the time in which we have had most trouble with spoiled corn, is the very period in which pellagra has made such strides as to draw the attention of the whole world.²

2. This letter was written by Mr. Thomas B. Marshall, ex-president of the Ohio Grain Dealers' Association, a man of the highest character, whose motives in making these statements can be attributed only to a high sense of Christian responsibility, and a sincere desire to aid the medical profession in its most altruistic work of tracing a possible connection between one phase of the grain trade and the disease in question.

* Read at the meeting of the Northwestern Ohio District Medical Association, at Bellefontaine, O., Dec. 8-9, 1909.

1. Nov. 13, 1909, lili, 1659

Whether the inference drawn in this letter be correct or not, the facts should be easily accessible to the commission appointed by the Surgeon-General of the Public Health and Marine-Hospital Service, and if these facts sustain the charge, steps should be taken to stop this traffic in spoiled corn.

It is a mistake to suppose that any exposure of this kind will hurt legitimate trade, for it is expressly stated that the eating of good corn-meal will not produce pellagra.

It is said that there are already about 5,000 victims of the disease, and many thousands more will be added to the list if the traffic continues unabated. What a commentary on those blind leaders of the blind who oppose now, and ever will oppose, the formation of a national health bureau and almost every form of national health legislation!

It is worthy of remark that the policy of purchasing supplies for public institutions by the method of competitive bidding is one fraught with great danger. It supplies a powerful motive for fraud and evasion of the Food and Drugs Act.

No system will probably be devised that will circumvent the schemes of the designing, but to purchase in the open market as need requires is a safer policy than that which really offers a premium for the delivery of inferior (because cheaper) foodstuffs or other material required by the wards of the state in her penal, reformatory, educational or other institutions.

It is possible that to this policy may be traced the comparatively large number of pellagrins found in asylums and schools. At a Baptist orphanage at Nashville, Tenn., there were 17 cases, and the physician in charge says that there was every evidence that the disease was contracted in the institution. It is true that another asylum not far away used the same grade of meal made by the same miller and no cases developed. The same was said and proved during the preserved meat controversy, the outcome of the Spanish-American War. Thousands of soldiers used the stuff and survived the ordeal, but there can be no doubt that other thousands were victims to the vicious policy of the government of giving out contracts for army supplies to the lowest bidder.

With equal truthfulness and propriety it can be said that eternal vigilance is the price of liberty and of good food. The public looks to us for protection, and it is hoped that the hint herein contained may lead to a solution of a perplexing problem.

923 North Main Street.

PRIMARY SARCOMA OF THE SPLEEN

CAMILLUS BUSH, M.D.

SAN FRANCISCO

Why neoplasms of the spleen are so rare has never been satisfactorily explained, and doubtless never will be until we know the causes of tumors in general. We might speculate on the protected position of the organ, its freedom from irritation of any sort, such as comes to most other organs by the nature of both their position and work. The spleen escapes the unpleasant results of all but the most wide-spread calamities of the body, such as the septicemias and toxemias. The damage it sustains is commonly that carried to it by the blood-current.

Speculation even is not so easy when it comes to accounting for the rarity of its metastatic invasion in

cases of the most extensive dissemination of tumor tissue. Its lymphatic supply is abundant enough, as is its blood-supply, to expose it to lodgment of circulating cells. If, however, we recognize the Hadley exposition of the spread of cancer as along fascial planes in its peripheral advance, we may again think of the sequestered position of the spleen and its lack of broad ligamentous attachment, or continuity of its coverings with surrounding fascias.

However these things be, primary neoplasms of the spleen are of great rarity. The consideration of such tumors narrows practically to a consideration of sarcoma, as the only other tumor reported has been fibroma, and that only once or twice as a growth from the capsule. Most reporters agree that there never has been reported a convincing case of carcinoma of the spleen.

In 1904 Jepson and Albert¹ described a case of primary sarcoma of the spleen, the patient being treated by splenectomy, and well ten months later. In that article they reviewed the literature and collected the cases of primary sarcoma of the spleen. Since their contribution one case has come to my knowledge, that of a patient of Dr. Willy Meyer, in 1906, treated by splenectomy and dead in a few weeks from recurrence.

In all, there have been 24 undoubted cases of primary sarcoma of the spleen. Eleven of these were discovered at autopsy. Ten other cases possibly coming in this category are autopsy cases, and are so ambiguously described as to be necessarily discarded. This leaves 13 cases treated by splenectomy. Four patients died as an immediate result of the operation. Of the 9 survivors, 4 died of recurrence and 1 was lost sight of. Two remained well after several years, being cured. The last 2 were living at the time of the Jepson and Albert report, but have not been reported on since. It may be, then, that 4 of the 13 were cured.

Sarcoma may arise from the spleen in three ways: from the capsule and trabeculae, giving rise to fibrosarcoma; from the lymphoid structure, causing lymphosarcoma; and from the endothelial cells along the trabeculae, giving rise to large round-celled sarcoma. No instances of angiosarcoma have been seen.

A study of the reported cases does not suggest any difference in malignancy of the various forms as the cases that recurred included all three varieties. Lymphosarcoma, having a number equaling the other two forms combined, was naturally responsible for most of the cases that recurred. The rapidity of recurrence does not throw any light on the comparative malignancy of the three varieties. As to the diagnosis of primary sarcoma of the spleen, little is to be said. It must be made by exclusion. I think it should usually be made with some probability. The pain will bring the patient, and enlargement of the spleen will be found. Then comes the routine exclusion of the other forms of splenic enlargement—a matter of no great difficulty, as a rule. Splenectomy, of course, is the treatment, and the outlook is poor enough unless the growth be very young.

To the short list of cases already reported I take this opportunity to make an addition.

Patient.—On March 25, 1908, I saw in consultation with Dr. Herbert Moffitt, at St. Luke's Hospital, John B., aged 48, a cattleman from Southern California. He had entered the hospital complaining of pain in the left side.

History.—The family history was unimportant. None of the patient's people had had tuberculosis or cancer. He had living, healthy brothers and sisters. In his past history were

1. Jepson, W., and Albert, F.: Primary Sarcoma of the Spleen and Its Treatment by Splenectomy, *Ann. Surg.*, July, 1904.

mumps, measles, and malaria before his ninth year. Since that time he had been perfectly healthy. For many years he had had a slight digestive disturbance, characterized by flatulency after imtemperate eating. He denied syphilis. On an average he had taken one drink of whisky a day for some years. Three years before he fell heavily on his left back, striking in the splenic region, across a beam. After this, for six weeks he suffered pain, which gradually disappeared. This accident did not prevent his working. Turning on the left side relieved the pain to a great extent. He said that the pain was similar to that which he had had since the onset of the present illness.

Present Illness.—This began eight weeks before admission, with pain in the left side, first noticed after a long railroad journey. This pain gradually increased in intensity and was unrelieved by changes in posture. The patient, however, continued riding horseback up to the time he started for San Francisco. Associated with the pain there had been a little flatulent indigestion and a tendency to constipation. The patient had lost in weight about twenty pounds. There had been no urinary disturbance, and the urine, examined from time to time, had been reported normal. No hemorrhoids.

Examination.—This showed a stout, healthy-looking man of good color, not confined to bed. There was a hard, slightly irregular tumor in the left hypochondrium, emerging from under the ribs toward the navel on deep breathing. It was superficial but not tender, filled the upper half of the flank, but had its lower border higher than the level of the umbilicus. The area of splenic dulness was greatly increased. When inflated, the stomach lay to its right. The tympany of the colon reached the edge of the tumor below, but did not pass in front of it. The mass was evidently the spleen. Physical examination was otherwise negative. No glands were to be felt. The liver did not exceed its normal size. The rectal examination was negative. The urine was normal. There were no evidence of syphilis or tuberculosis. The leucocyte count was 8,900; the polynuclear leucocytes 75 per cent. There were no malarial parasites and no anemia. The blood-picture was the ordinary one. The temperature ran a normal course. There was nothing in the stools to suggest loss of pancreatic function, neither was there blood or pus. The examination for occult blood was negative. The stomach content showed the presence of free hydrochloric acid, many staphylococci, and long rod-shaped bacilli, a few large squamous cells, and some cuboidal cells.

Course of Disease.—It was judged that the condition was probably a primary splenic tumor, and exploration was decided on for the following Monday, the day of examination being Wednesday. On Friday afternoon he took a rather long ride in the street-cars, and returned in the evening with more than his usual pain, and went to bed in his room. During the night the nurse heard a fall in his room, and when she ran in, found him lying on the floor in a faint. He quickly revived, however, and was put back to bed. The pulse was noted as quick at this time. During the remainder of the night he was restless and ill, but did not vomit. The house officer in charge was not called. The patient was not seen until 9 a. m., when Dr. Moffitt and I visited his room. It was immediately apparent that he was in collapse. He was restless, thirsty, with pinched face, the pulse 140 to 150 and thready; respiration 40. The intense cyanosis was striking. The abdomen was held quiet, the respiration being costal; there was some distention. The left side was held rigid, was tender and presented movable dulness. It was evident that there had been some grave accident, probably a rupture of the spleen, as the picture was one of hemorrhage rather than perforation of a viscus. The patient was immediately given salt solution by rectum and under the skin. An hour afterward, having rallied a little, he was taken to the operating-room. Leucocyte count was 27,800; polynuclear leucocytes, 90 per cent.

Operations.—The abdomen was opened by an incision to the outer border of the left rectus. Free blood ran out as soon as the peritoneum was incised. The enlarged irregular spleen presented in the wound. There were one or two whitish bosses on its surface, suggesting sarcoma. On the mesial surface of the organ was a superficial rupture into the splenic tissue

from which blood was rapidly oozing. At the splenic flexure was an extravasation of blood between the folds of the colonic mesentery, but apparently no thrombosis. The blood was hastily sponged out and a tampon of iodoformized gauze placed to the rent in the spleen. The wound was closed about the gauze with interrupted sutures through peritoneum and muscles. The skin was closed separately. No lesion other than the splenic was discovered in the abdomen, though the examination was hasty. During the following week the patient gradually recovered strength and the hemoglobin rose to 60 per cent. The gauze to the spleen was not touched. There was considerable ooze. Six days after the first operation the splenectomy was performed under ether anesthesia. The previous wound was reopened; it was healing *per primam intentionem*. Light adhesions were separated and the gauze tampon removed, followed by considerable hemorrhage from spleen. The incision was enlarged into a T-shaped one by cutting directly across the muscles, toward the flank. Intestines, stomach, and omentum were packed off, the spleen delivered after freeing a few adhesions, the splenic ligament clamped from outside the spleen, then the pedicle clamped from inside, and the organ removed. The vessels were not enlarged. The stump was transfixed with silk ligatures and tied. There was some oozing from the tail of the pancreas, which had been adherent to the spleen. A cigarette drain was placed to this point. The diaphragm was left lax and wrinkled. The wound was closed in layers around the small drain.

Postoperative History.—The patient left the table in good condition. After about four hours he suddenly collapsed, with cyanosis, sweating, rapid respiration, scarcely countable pulse. There was tympany high into the left axilla. The heart was displaced toward the right side, and as the abdomen was negative to examination, the condition was judged to be one of acute dilatation of the colon or stomach due to the removal of the large spleen and the readjustment of the neighboring viscera. The patient slowly responded to infusion and caffeine and strychnin with morphin. During the ensuing days the improvement was steady. The hemoglobin rose to 50 per cent., the pulse and temperature remained normal but he had some pain in the region of the wound, which was thought to be due to the drain. Any attempt to remove the drain was accompanied by extreme sickening pain, referred to the pancreatic region. Almost daily attempts were made to remove it, but without success, until finally, after three weeks, under nitrous oxid anesthesia, the gauze was forcibly dragged out. Meanwhile the skin stitches had been removed and the wound had healed *per primam intentionem*, except for the sinus of the drain. The leucocytes, which on the day following operation were 28,000 (polymorphonuclears 90 per cent.), steadily declined to 10,000 three weeks later with 80 per cent. polymorphonuclears. A few eosinophiles continued to be present. For a time the urine contained a trace of diacetic acid. There were no other peculiarities in the blood-picture, except that of stubborn depression of the hemoglobin, 60 per cent. About five weeks after the operation the pain, which had persisted to a moderate extent, became very intense. At the same time the liver rapidly enlarged, coming down almost to a level with the navel. The pain was mostly referred to the liver. The patient stopped gaining strength and had to be given opiates. Recurrence seemed sure in liver. The patient was put on x-ray exposures and Coley's artificial serum, with some benefit. The liver gradually decreased, and the patient again gained strength till he returned to his home, in the southern part of the state. Letters from Dr. Petit of Visalia, the patient's home physician, kept me apprised of his further condition. He never fully regained his strength, but after three or four months began to lose steadily and have increased pain. The liver enlargement had disappeared, but a mass had formed in the left hypochondrium. This increased in size till his death, six months after operation. Before he died the stomach became intolerant, and the vomitus contained blood. Old blood appeared in the stools.

PATHOLOGIC REPORT

The removed spleen weighed 2 pounds and 14 ounces. It was somewhat irregular, with two low bosses on its anterior border. These looked whitish as compared with the remainder

of the purple splenic surface. When sectioned the spleen contained a number of separate nodules of new growths, the largest about 7 cm. in diameter, the smallest 3 cm. across. The nodules were fairly well circumscribed, the smaller being grayish and translucent, the largest whitish and necrotic in the centers. There was hemorrhage into the largest nodule. In no place had the growth invaded the capsule. The rupture was in healthy tissue, was superficial, and apparently caused



Fig. 1.—Primary sarcoma of spleen; A, sarcomatous cells; B, remnant of splenic tissue; C, area of degeneration; D, diffuse hemorrhage. (Zeiss ocular 12, B. and L., objective $\frac{2}{3}$.)

by increased intrasplenic tension, possibly from the hemorrhage into the largest tumor mass.

The report of Dr. Ophüls, the pathologist, was "large-celled sarcoma." In view of the absolutely negative examinations of the abdomen at the two operations, it was judged that the condition was certainly one of primary sarcoma of the spleen. Death was due to recurrence in the region of the wound. Fortunately, I was permitted to perform an autopsy, which I think confirmed the diagnosis. The report of the autopsy follows:

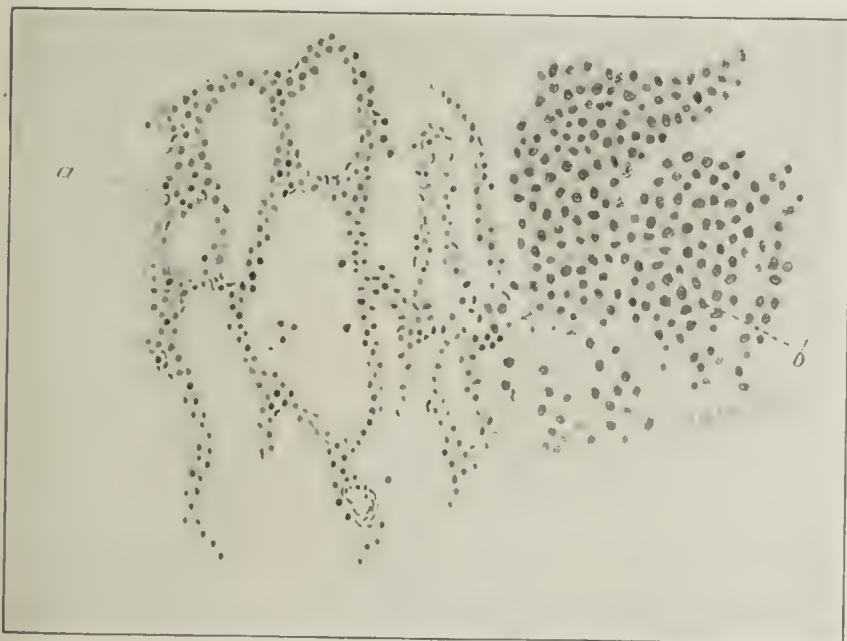


Fig. 2.—Metastases in lung; A, lung tissue; B, sarcomatous cells. (Zeiss ocular 18, B. and L., objective $\frac{2}{3}$.)

"Sept. 7, 1909: Without giving the details of the examination, the findings were as follows:

"Omentum adherent to old scar in epigastrium. Together the pleural cavities contain about a liter of slightly turbid brownish fluid. The lungs contain, evenly scattered through them, a small number of whitish nodules the size of small peas. The liver, which, it will be remembered, was greatly enlarged at one time, is hypertrophied, but presents a normal appearance

on surface and section (measures 22 by 35 by 10 cm.) and reaches only to costal margin. No evidence of metastases. The splenic flexure, descending colon and sigmoid are imbedded in a mass of dense adhesions extending along the whole of the left flank.

"There is a cystic mass the size of a large grape-fruit occupying the splenic area. To it are adherent, above the diaphragm, on the right, the cardia and posterior wall of the stomach and the tail of the pancreas. The upper pole of the kidney and suprarenal are embedded in the mass.

"When the diaphragm is stripped off it ruptures easily, suggesting that at a previous time there might have been a perforation into the pleural cavity. The stomach is reddened and injected with many ecchymotic spots, each measuring about 1 mm. The tumor mass itself measures, roughly, 13 by 15 to 10 cm. The surface is covered with uneven, irregular-sized nodules, all of which, except the smaller ones, show fluctuation. The posterior surface of mass is smooth except for small, irregular, hard, opaque nodules, similar in all respects to those found in the lungs. There are numerous enlarged mesenteric glands averaging the size of millet seed. On the surface of the bowel, especially of the cecum, seemingly in the peritoneal covering, are small opaque plaques the size of a pin-head.

"On sectioning the tumor mass the cystic areas are found to be filled with grumous, bloody, broken-down tumor material. The left kidney is not invaded by the growth, but the suprarenal body is apparently completely replaced by the tumor which has broken into its capsule on the mesial surface.



Fig. 3. Sarcomatous cells; on the left, from the lung; on the right, from the spleen; A, mitotic; B, cells in stage of rest. (Leitz ocular 4, objective $1/12$.)

"The tail of the pancreas is partly replaced by the growth which has also encroached on the wall of the stomach.

"The microscopic sections made from the various tissues show that there were recurrences in the lungs and that the large recurrence involving stomach, pancreas, and suprarenal, possessed the same cells and structure as did the original splenic tumor. The liver sections showed a normal organ."

In review then: we have a strong man developing a sarcoma of the spleen, some three years after a suggestive injury. The growth was rapid and accompanied by pain, and led to a rupture of the spleen. The removal of the spleen was followed by anemia of more than moderate grade, though the presence of a malignant tumor masks the value of this observation; by a transient leucocytosis, but by no lymphocytosis such as was described by Jerome Meyers;² by hypertrophy of the liver reaching its maximum five weeks after operation and gradually subsiding to time of death, and finally by recurrence of the growth and death in six months. Autopsy showed that metastasis had occurred in three ways: (1) through the blood-stream to both lungs as the nodules were scattered uniformly; (2) through the lymphatics to neighboring glands and tissues; (3) probably by direct implantation from cells in the free cavity falling on the peritoneum of the bowel.

2. Meyers, Jerome: A Study of the Blood after Splenectomy Following Trauma, *THE JOURNAL A. M. A.*, April 17, 1909, 11, 1231.

A point that I wish to mention again is the occurrence of intense cyanosis after the rupture of the spleen. It is an occurrence that we see in lesions of the upper abdominal organs, such as perforation of a gastric ulcer (especially of lesser curvature) and acute pancreatic disease (as mentioned by Halsted).

The significance of the cyanosis has never been explained. Appended is the report of the microscopist.

REPORT OF MICROSCOPIC EXAMINATION BY DR. LEE

"The following study is based on observations of a neoplasm, primarily located in the spleen and followed by metastasis. The new growth was undoubtedly a sarcoma. While a number of organs were invaded by the neoplastic cells, the spleen and lung foci can be taken as types of their morphology and tinctorial characteristics.

"The splenic tissue is, in the main, displaced by cells quite different from those seen in the normal organ. Commonly, these cells are at the very least three times the diameter of an erythrocyte, although it is no unusual finding to see them running from seven to nine times the breadth of a red blood-corpuscle, especially if in the stage of division (Fig. 1a). The cells in the stage of rest have large oval or round nuclei, nearly centrally placed. Their linen filaments are wide-meshed, and, naturally, take the hematoxylin but faintly. At the nodal points, however, well-marked chromatin bodies appear. The nucleolus is generally found near the periphery of the nucleus (See Figs. 3 and 4, b, b). Their protoplasm is rather scanty, faintly reactive to eosin, and of polygonal outline. Comparatively speaking, the sarcomatous cells in the resting stage are scarce. It would not be far from truth to say that for every three of them at least one undergoing mitosis exists. Most of these mitotic figures represent the various epochs in karyokinesis, although direct division appears to occur in rare instances. Some of the karyokinetic steps are illustrated in Figures 3 and 4, a, a.

"Comparing the individual neoplastic cells in the spleen and the lung, the same type prevails, in respect to both size and minute anatomy. Perhaps division-forms are more plentiful in the pneumonic metastatic areas than in the parent tumor in the spleen, although this was by no means irrefutably determined.

"In the spleen large areas of degeneration are met, appearing here in the midst of the new growth, and there in the splenic pulp. Nevertheless, as a rule, both the spleen and the neoplasm contribute about equally to the degenerative fields (Fig. 1, c). In the specimens examined that were taken from the lung, degeneration is certainly not as common as in similar quantitative areas from the spleen.

"In the spleen large and small diffuse hemorrhages form prominent features. In the lungs they are not so frequent, or so extensive. New-formed blood-vessels are extremely rare. The diffuse hemorrhage in the spleen is shown in Figure 1, d.

"The suprarenal gland likewise shows a metastatic focus, but its component cells do not differ from those found in the spleen and lung."

126 Stockton Street.

LARYNGEAL DIPHTHERIA EXPERIENCES *

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ST. LOUIS

Since the discovery of antitoxin, perhaps the most thought and judgment in diphtheria treatment is required in handling the laryngeal type, which gives a much higher death rate than diphtheria infection in the upper air-passages. Laryngeal diphtheria occurs most frequently in children under 10 years of age and may develop at any time of the year; more cases, however, are seen during the winter and spring seasons.

The immediate complications in diphtheria of the upper air-passages are usually of minor consequence in

comparison with those of the laryngeal type. Here serious complications frequently occur early and may give the first indication for calling medical assistance. The physician usually finds conditions which demand his best judgment and immediate action. Symptoms of obstruction of varied intensity frequently occur early, and severe dyspnea may be preceded by few prodromal symptoms. Dyspnea occurs in direct ratio to the aperture of the glottis, and is due to swelling and thickening of the cords or loose membrane. The peculiar, harsh, prolonged respiratory sounds, coming from the larynx, with a negative history of aspiration of foreign substances, lead one to suspect laryngeal diphtheria. In most cases it is impossible to see any portion of the membrane without a special laryngoscopic examination. Distress is severe, according to the degree of obstruction, and antitoxin is only a valuable adjunct in the treatment.

The methods to be employed in attempting to relieve dyspnea depend largely on the degree of obstruction and the general condition of the patient. The point for decision is whether or not to attempt relief by medical means or to resort to surgical measures—intubation or tracheotomy.

If dyspnea is increasing slowly, exhaustion not severe, cyanosis slight, and the surroundings favorable, medical treatment may be instituted. Constant intelligent nursing is necessary, and the physician should be within easy call. In hospital practice, where the resident physician may visit the patient frequently and has the assistance of trained nurses, I have frequently seen patients in great distress, but without severe exhaustion, relieved by medical treatment. From observations made in infectious wards I feel that non-instrumental methods are worthy of more frequent trial in the above-described class of cases. When such methods are to be used, the patient should be placed in a well-ventilated room, free from drafts; on a mattress or blanket bed over which is erected a tent which is as impermeable as possible to the medicated vapors to be released underneath. It is well to have the sides of the tent fall to within four or six inches of the mattress and it should be large enough to cover the patient's entire body. The vapors may be generated in a croup kettle—a teakettle or a coffee-pot with an extension spout. A quart of boiling water is placed in the vessel, which may be heated with an alcohol, gas or gasoline burner, or an electric heater. I have used several medicaments with satisfaction; four to six drams (15.5 to 23 gm.) of compound tincture of benzoin, or four to eight drams of a turpentine mixture, formula as follows:

R.	gm.	
Olei eucalypti	31	or ʒi ʒviii
Phenolis, aa.	248	
Spiritus terebinthinae		

may be added to the water, which is kept at the boiling point. The kettle spout is placed in such position, under the edge of the tent and not far from the patient's head, as to prevent direct inhalation of the hot vapor. As such patients are frequently very restless, careful watching is necessary. The tent is kept moderately full of vapor, and it is well to raise the sides occasionally to allow a few breaths of fresh air. Cold applications may be made over the larynx. The gown and bed-covers should lie loosely and lightly. The inhalations may be continued for several hours and intermittently over a period of several days, depending on the strength of the patient as an index.

* Read before the St. Louis Medical Society, Oct. 16, 1909.

Vomiting frequently relieves, especially if obstructive symptoms appear late and are produced by loosened membrane. A mild emetic, or gagging with the finger, may be used.

General medical treatment consisting of antitoxin and stimulation as necessary, diuretics, cathartics, etc., should be given as in pharyngeal diphtheria, or in the laryngeal type without obstruction.

Antitoxin is absolutely indicated in all forms of diphtheritic infection and should be used as early as possible. According to the degree of toxicity and nature of the case, 3,000 to 6,000 or more units may be given as an initial dose. It has been our experience that moderate-sized doses repeated every four to six or more hours are more effective and less depressing than massive ones—15,000 to 20,000 units. When the infection is of such severity as to tempt the use of massive doses, as many or more patients recover by using moderate doses repeated as above suggested. Polyvalent antistreptococcus serum has not proven of definite value in the cases of mixed infection with severe toxemia.

When a patient suffering from laryngeal diphtheria with dyspnea is found very weak, toxic, or much cyanosed, or is in unsatisfactory surroundings for medical treatment, mechanical or surgical measures must be instituted. It is usually necessary to obtain quick relief, and decision must be made between intubation and tracheotomy.

The operation of intubation was made possible by Dr. Joseph O'Dwyer, of New York, who perfected a series of special tracheal tubes and forceps to introduce and extract them. A special set of instruments and considerable experience is necessary before one can feel confident of being able to successfully intubate a patient; by aid of the sense of touch in children, and by laryngoscopic mirrors in adults. Those proficient in the introduction of the "intubation tube" are prone to become enthusiastic, and it may be used in many instances where inhalations and medical measures would suffice. The art of introducing the tube, once learned, is not easy to forget, and those familiar with its use usually succeed at the first attempt. The patient's body, with the arms to the sides, should be wrapped in a blanket or other convenient covering and held on the lap and against the body of the assistant, who places one arm around the patient and supports the head and holds the mouth-gag in position by placing the opposite hand flat over the side of the head and face. Some prefer to place the patient prone on a table, but I have been better able to control struggling with fewer assistants by the first-mentioned method. The manipulations necessary to introduce the tube are clearly described in the textbooks. A tube numbered to correspond with the age of the patient is usually selected, but not infrequently proves too small or too large—more frequently the latter.

If dyspnea be due to loosened membrane protruding into the glottis, indicated by more or less easy inspiration and difficult, prolonged expiration with a moist, rattling, laryngeal sound, extreme care must be exercised after inserting a tube. In such cases a small tube may be inserted and withdrawn to dislodge the loose membrane, and not infrequently it is expelled and any further instrument is unnecessary. After such an event, inhalations may be used to advantage.

Intubation may be employed in cases of severe dyspnea with exhaustion and cyanosis, and more or less dry respiratory sounds indicating recent or closely adherent membranes.

It is well to remain with the patient some little time following this procedure, for when sufficient strength has been regained after free respirations, the tube may be expelled by the strengthened expiratory efforts, and dyspnea may return with its original severity. Recently intubation was performed by a physician in a private home. The patient did well for two days and then expelled the tube suddenly and was asphyxiated before a physician could be summoned. In hospital practice a patient was intubated in the evening, enjoyed free and easy respirations for twelve hours and then quickly became cyanosed and dyspneic, and expired in a few minutes, and before a physician on the same floor could be summoned. The tube was found plugged with membrane which had loosened during the night.

When severe exhaustion exists, injury may be done by failing to accomplish intubation in one or two attempts. The strength is severely taxed by the strug-



A position permitting of rapid adjustment for tracheotomy.

gles incident to the closure of the glottis by the tip of the finger guiding the tube. It is well, when unable to intubate successfully after two or three trials, to do tracheotomy early lest death ensue from acute dilatation.

If a very close-fitting tube is employed, a pressure paralysis may result. I had such a case, in which it was necessary to leave the tube in position nearly four weeks. I have seen 6 or 8 cases, in an institution where intubation is routine treatment for dyspnea, in which paralysis lasted from several weeks to nearly two years, it being necessary to keep a tube in the larynx during the entire time. There they have a "chronic tube ward," and it is frequently necessary to do tracheotomy before removing a tube which has been used to relieve dyspnea due to paralysis.

The glottis may admit only a tube which is readily expelled, and to introduce a large tube is either impossible or inadvisable because of the danger of pressure paralysis. One patient expelled the tube six times dur-

ing a period of ten hours, gaining only temporary relief. It then became necessary to do tracheotomy on account of the increasing weakness.

Tracheotomy is usually made after unsuccessful intubation or in extremely severe cases of obstruction, and a portion of the increased death-rate of tracheotomy over intubation may thus be explained. It is usually the operation of necessity with the private physician. With the exception of a tracheotomy tube, every physician has sufficient instruments for the operation in his pocket case, and, in the absence of a tube, a wire may be so bent as to keep the trachea edges separated, or a rubber tube prepared as suggested in Keen's "Surgery" (vol. iii) by Brewer.

Tracheotomy is indicated in obstructive cases in which it is impossible to introduce a tube large enough to be retained in position; those in which the patient is very weak and deeply cyanosed, or in which the membrane is loosening and cannot be dislodged by vomiting or introducing a tube and withdrawing. In the latter class of cases cyanosis may be intermittent. It is the operation of necessity in the absence of an intubation set and when the disease has passed the stage at which medical treatment can be used. That such conditions frequently occur there can be no doubt, and they are a strong argument in favor of every physician familiarizing himself with the methods and technic of this life-saving operation.

The fear of hemorrhage has prevented many from performing tracheotomy promptly and when first indicated. The improper handling of hemorrhage has materially raised the death-rate due to the operation. It is seldom that an unpremeditated tracheotomy is performed without some bleeding. Blood coagulates rapidly in the trachea when the air passes through and over it during respiratory struggles immediately following incision of the trachea. If the patient is not in a position to allow fluids to gravitate from the trachea into the mouth, asphyxiation may occur after the opening is made. To assist in avoiding such accidents, I have placed patients in a recumbent posture with the head well lowered. Such a position has the advantage of allowing blood to escape through the mouth, should unexpected or unavoidable hemorrhage occur, and has a beneficial influence, as well, on the circulatory and respiratory systems.

Since the majority of cases for tracheotomy occur in children, a method has been used for conveniently placing the patient in a readily adjustable position with the head well down. An assistant sits on an ordinary chair with the body leaning well forward (see illustration). An impermeable covering is placed over his back, on which the patient is placed, head downward, one leg on either side of the assistant's neck, the knees being flexed and the legs grasped by the assistant. This position is comfortable and rapidly adjustable from a horizontal to a perpendicular position at the command of the operator. The patient's neck is on a tension with head well extended, and affords free space for operation. The hands may be tied or held by an assistant. An anesthetic (seldom necessary) may be given, the operator outlines the trachea and makes a one-half inch incision through the skin below the cricoid cartilage. A tenaculum hook is passed under the first ring and traction is made on the hook, thereby bringing the trachea into prominence. The skin incision is enlarged and the soft tissues separated by blunt dissection with the scissors or knife handle. The trachea should be incised by cutting from below upward to avoid hemor-

rhage. The tracheotomy tube is inserted and tied in proper position and the patient placed in a bed with the foot elevated. The foot of the bed should be kept elevated for twenty-four to forty-eight hours after operation. Several layers of warm, moist gauze are laid loosely over the tube and should be changed frequently.

Emergency tracheotomy in adults may be more safely performed by lowering the head. A chair or box may be placed under one edge of a table, or the Trendelenburg position used if an operating table be available.

It may be necessary to leave the tracheotomy tube in position for several days or a week, but it may be removed and reinserted after the first twenty-four to thirty-six hours for cleansing purposes. In this length of time the wound edges are retracted sufficiently to allow passage of air. The inner tracheotomy tube should be removed and cleaned every three or four hours.

When the membrane has disappeared the tube may be carefully removed and if breathing is free through the normal route, which may be determined by placing the finger over the wound, it may be left out; otherwise it should be reinserted. A gauze dressing should then be applied and general treatment continued during the period required for recovery. Owing to the degenerative changes of all the organs, especially the cardiac muscles, produced by diphtheritic infections, it is advisable to have patients remain quiet in bed for two weeks or more after all signs of infection have disappeared. Acute cardiac dilatation with serious results may occur suddenly and without warning.

CONCLUSIONS

Physicians should be prepared and expect to treat laryngeal diphtheria, which usually presents as an emergency.

Although possessing intubation instruments, the physician may find himself without them in an emergency and be compelled to attempt tracheotomy.

Non-instrumental methods of relief are worthy of more frequent trial, especially in institutional work and in those cases in which dyspnea is increasing slowly, exhaustion is moderate, cyanosis is not severe and the surroundings are favorable.

Intubation may be performed in cases in which the symptoms indicate recent and closely adherent membranes. It should be employed only when intelligent nursing may be had and when the physician is within easy reach.

Every physician should be familiar with the technic of tracheotomy. The cadaver or lower animal may furnish opportunities in this direction.

Tracheotomy may be more easily and safely performed by using the tenaculum hook for tension on the trachea, as described above; and by placing the patient in the position illustrated.

City Hospital.

Diphtheria Antitoxin in Pneumonia.—T. Romero writes to the *Siglo Medico*, Nov. 27, 1909, to call attention to the way in which pneumonia seemed to be mitigated or aborted in a number of cases in his experience in which he injected daily from 10 to 20 c.c. of diphtheria antitoxin. In two typical instances related in detail the patients were men of 73 and 74, and defervescence was observed the fourth and fifth day of the disease, which was the second and third day after the first injection. It seems to augment phagocytosis, and the mortality was only half of the usual death rate from pneumonia. Nothing else in his experience displayed such efficacy in modifying the severity of the disease.

A NEW PROLAPSUS PESSARY

GEORGE B. SOMERS, M.D.

SAN FRANCISCO

The severer forms of prolapse of the uterus are often very difficult to relieve by mechanical means. The pessaries commonly used are of two forms: (1) those supported externally by belts or straps, like the O'Leary;

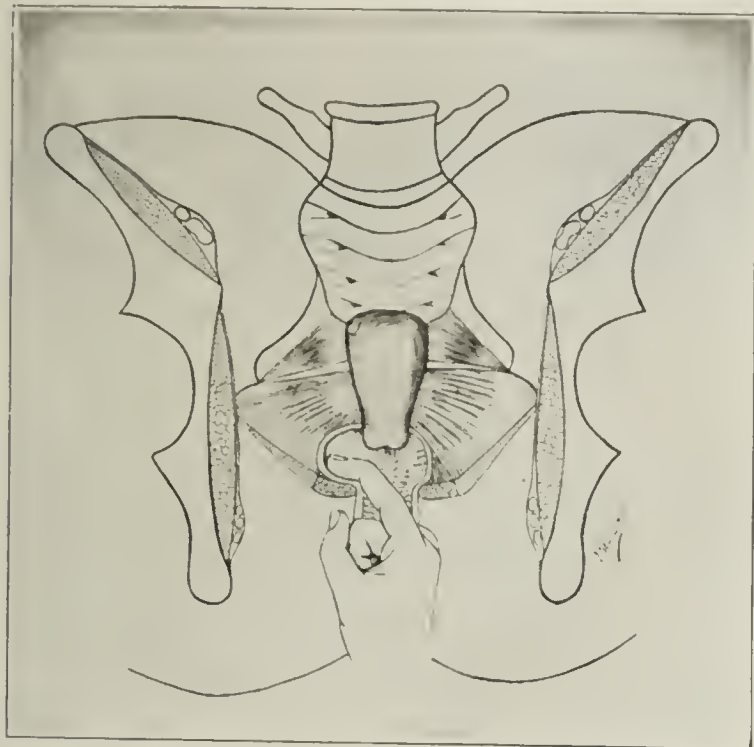


Fig. 1.—Diagram of the relations of the vaginal cavity to the levator ani.

(2) those which are self-retaining, which are in the form of discs, rings or balls.

The self-retaining theoretically should be the most convenient and comfortable, but practically they are often failures because they cannot be made to stay in place.

When it is found that the ring, the disc, or the ball will not stay in place, it is natural to ask why, and the



Fig. 2.—Diagram showing how a ring or ball pessary acts as a wedge, forcing apart the edges of the levator ani.

accompanying diagrams have been worked out in an attempt to show the reason.

If in preparing to fit a pessary we examine the vaginal cavity, we will find on either side a shelf (Fig. 1). This is on the upper or rectovesical surface of the levator ani muscle and corresponds to the pubococcygeal portion thereof.

Self-retaining prolapsus pessaries are inserted with the idea of simply distending the vaginal cavity and

blocking the descent of the uterus. The basis of support must, in such cases, be the above-mentioned shelf portions of the levator ani.

The reason why self-retaining pessaries work their way out is sufficiently explained by comparing Figure 1 with Figure 2. It will be seen that a ring or ball acts like a wedge and tends to force apart the edges of the levator ani.

If we modify the shape of our pessary, so as to take advantage of the shelf-like supports, we find that such a shape will often give relief in cases of prolapse in which other pessaries have failed. A ring bent so as to

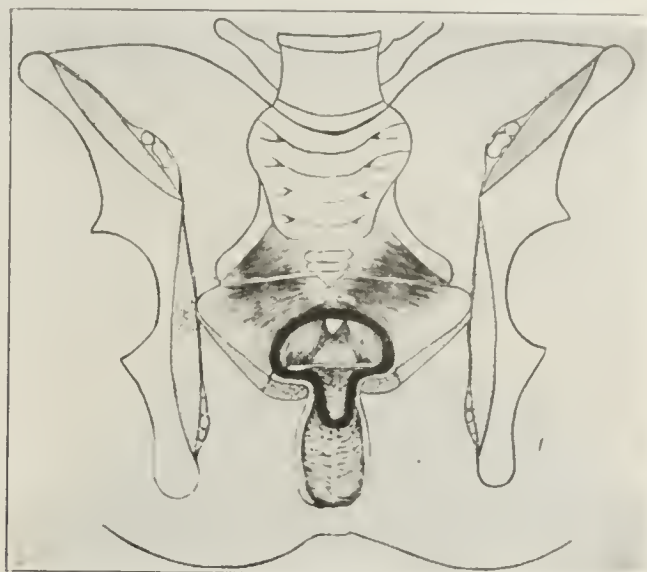


Fig. 3.—Pessary bent to follow the outlines of a mushroom.

follow the outlines of a mushroom, as shown in Figure 3, has been used in the gynecologic clinic at Cooper Medical College for several years with much satisfaction.

135 Stockton Street.

FORCEPS FOR HOLDING BONE AND PLATE

ROBERT J. JAMES, M.D.

SEATTLE, WASH.

The instrument herewith shown is a forceps for holding bone and plate, devised to simplify the repair of fractured long bones with the plate and screws. With



Bone and plate-holding forceps.

this forceps in place, the holes can be drilled and the screws put in quickly without much traumatism to the tissues.

1314 Ninth Avenue.

Typhoid in Infancy.—In most cases the onset of typhoid is gradual and so insidious that several days may elapse before the true nature of the disease is suspected. In this respect, it conforms to the adult type.—A. F. Hamilton, in *Indian Medical Gazette*.

DERMOID CYST, ACCOMPANIED BY APPENDICITIS, IN ABDOMEN OF BOY FOUR YEARS OLD

J. NORMAN WHITE, M.D.

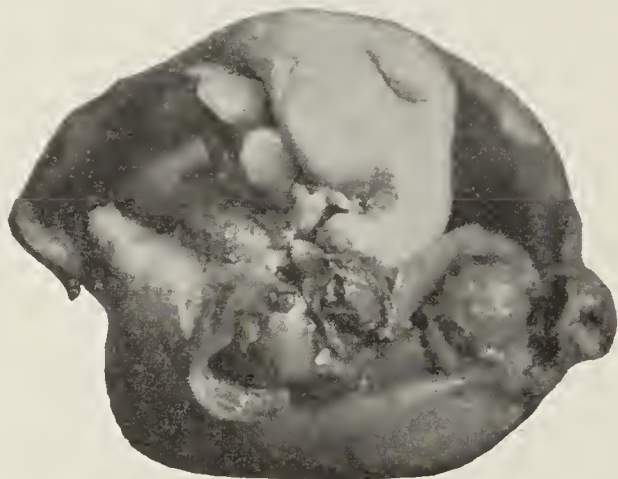
SCRANTON, PA.

The following case is of interest because of the unusual location of the cyst and the obscurity of its origin.

Patient.—A. R., boy, aged 4, previous history negative. About one month before present illness the boy's mother noticed, when he was turning in bed a "bunch" the size of an orange in his abdomen about two inches to the right of the umbilicus. The bunch gave him no symptoms and she did not consult a physician about it.

Present Illness.—About seven days before examination, the patient began to have pain in the abdomen. He had some diarrhea and vomiting; pain, at first all over the abdomen, then localized at McBurney's point. All symptoms grew worse and the boy was admitted to Dr. Reed Burns' private hospital Sept. 10, 1909.

Examination.—Boy fairly well nourished. Large mass plainly felt and easily perceptible a little above McBurney's



Postperitoneal dermoid cyst removed from abdomen of boy 4 years old.

point. Entire abdomen distended and pressure caused pain. Boy very sick. Temperature 103, pulse 160, respirations 30. Diagnosis: Appendicitis with peritonitis, but nature of the mass uncertain.

Operation.—By Dr. Burns. Incision in middle line. Pus free in abdomen, intestines distended, dark in color with patches of dirty, yellow, inflammatory exudate. Appendix ruptured, gangrenous, and adherent to the mass. Behind the peritoneum in the upper right hypochondriac region was a cyst the size of a large fist. The cyst contents had become infected, for pus was oozing out together with the pulsatious material which it contained. Patient was in a desperate condition. Pulse was imperceptible. Cyst was removed with difficulty *in toto*, appendix tied off with catgut, abdomen flushed with salt solution, glass drain placed in pelvis, gauze pack at site of the cyst.

Patient reacted but little from operation and died a few hours later.

Tumor.—The cyst contained a putty-like material mixed with hair and pus. A rudimentary premaxillary bone with four fairly well-formed incisor teeth and an upper lip were found. There was also a piece of amorphous bone the size of a chestnut.

Dermoid cysts, except ovarian dermoids, are congenital and are the result of cutaneous inclusions. They are most common about the face, neck, sacral and ovarian regions.

The origin of this cyst is as interesting as it is hard to explain, there being no viscus in this part of the body originating from the epiblast.

Bland Sutton, in Keen's "Surgery," says:

For many years I held the opinion that dermoids had never been found growing primarily from any abdominal viscus save

the ovaries, but in 1903 Mr. Arthur Hall sent me a specimen for examination in which a piliferous dermoid grew in the angle formed by the junction of the ileum and cecum between the layers of peritoneum. The parts were removed from the man after death. It is difficult on any theories adduced to explain the origin of this dermoid.

This case illustrates the well-known fact that we should teach our patients that any tumor, bunch or growth should receive surgical attention regardless of whether it gives symptoms or not. If this child had been operated on when the mother first saw his trouble, the cyst and appendix removed, his life would have been saved.

349 South Main Avenue.

A SIMPLE AND INEXPENSIVE APPARATUS FOR MAKING PHOTOMICROGRAPHS

RICHARD L. SUTTON, M.D.

KANSAS CITY, MO.

In making permanent case records of rare or unusual skin affections, a photomicrograph which shows the most typical and striking of the changes that have taken place is often of decided value. The very considerable cost of an outfit for making these pictures, however, has prevented many individual workers from possessing them.

Formerly, I employed an instrument improvised from an ordinary hand camera, the end of the microscope barrel being fitted directly to the lens board of the machine, and sunlight serving for illumination. As might be expected, the pictures secured were far from perfect, but they were better than none. At present I am using a somewhat similar but much more efficient apparatus, which was constructed at a very small cost. Figure 1 gives a fairly clear idea of the general outlines of the appliance. It consists of a base, or platform, on which is placed a focusing-box, a microscope, a ray-filter, and a small arc-lamp. The principle on which it is built is a very old one, and of course no claim to originality is made.

The dimensions of the various parts are dependent on the size of the photographs to be taken. In this instance a 5-by-7 dry plate is employed, and the outer box, or sleeve, of the "camera" was made sufficiently large to fit the ground-glass frame and holder of a view camera in which these plates are used. Both boxes are of the same length, 31½ feet, and the inner one is constructed to fit smoothly but loosely in the outside casing, so as to telescope easily. Both are made of soft white pine, stained black inside. One end of the smaller box is partly closed by means of a wooden cap, in the center of which is a round hole, 1½ inches in diameter, for the barrel of the microscope. To prevent light leakage, this opening is surrounded by a loose sleeve of soft, black cloth. On one side of the box, near this end, is screwed a small anchor block of wood, measuring 1 by 1 by 4 inches, which fits into a corresponding niche between two blocks attached to the platform. The platform is a smooth board of seasoned hardwood, 6 feet long, 9½ inches wide, and 1 inch thick. Near one end a clamp is attached, for firmly holding the microscope in place, and, eight inches back of this, are fastened two short, transverse, parallel cleats which serve to hold between them the anchor block on the bottom of the inner box when the machine is in use. At the other end of the platform, and extending forward for a distance of 4 feet, two narrow strips of wood are attached, one on either side, to prevent any lateral movement of the focusing box.

In order to prevent blurring of the plate, the intervention of a color-screen between the lens and the source of light is absolutely essential. A solution of potassium bichromate is commonly employed for this purpose, but, acting on the advice of Mr. L. S. Wood, of the Pathological Department at Harvard University, I am now using a saturated aqueous solution of picric acid. It serves the purpose admirably, and is easier to handle than the chromic acid salt. A carefully selected bottle,

placed on the rear end of the platform and arranged to reflect the image cast on the screen, is a great aid and time saver.

After the machine has been focused, a small metal cup, which serves as a lens cap, is placed over the end of the lamp-barrel, the plate-holder inserted and the slide withdrawn. An exposure, varying in length from five to sixty seconds or more, is made by simply removing and replacing this cap.



Fig. 1.—Apparatus for making photomicrographs.

made of bright, clear glass and having perfectly flat sides, makes a very good container.

The source of the light to be used is often a puzzling matter. A stereopticon lamp is excellent, but it is clumsy and is not always readily obtainable. For this purpose I employ an ordinary dark-field illuminator. It is somewhat lacking in candle-power, but is powerful enough to bring out the details when the lower magnifications are used.

In order to secure good definition the sections must be thin and well stained. In the majority of instances hematoxylin-eosin is a very satisfactory dye. In mounting the specimens, too much balsam should not be used, and the section should be made to lie snugly between the slide and the cover-slip.

Dr. T. Casper Gilchrist, of the Johns Hopkins Medical School, who has done some very excellent photomicroscopic work, prefers to flatten the sections by first gently warming the preparation over an alcohol lamp, in

Isochromatic dry plates give the best results. Autochrome plates can, of course, be used, but the time and care required for developing them outweighs their value to anyone other than an enthusiast.

610 Commerce Building.

REPORT OF CASE OF OVARIAN PREGNANCY

E. M. PRINCE, M.D.

Gynecologist, St. Vincent's Hospital; Surgeon, Hillman Hospital
BIRMINGHAM, ALA.

History.—E. I., aged 35, married, came to me with a large tumor of abdomen. The patient's mother had borne eight children. The patient had always been healthy up to time of present illness. She had none of the usual diseases of childhood; her weight at 15 years of age was 180 pounds. She was the mother of four children, the eldest 16, the youngest 10 years of age. Between these children twins were born, who lived to be 8 months old. The patient had been married seventeen years.

Present Illness.—This began in June, 1907, at which time the patient thought she became pregnant, as she had cessation of menstruation, nausea and fainting spells. In August, 1907, she had slight return of menses and pain in abdomen. At various times during this month pain in abdomen was quite severe. Her digestion was exceedingly poor. In November, 1907, she felt violent movements of the child and had a severe uterine hemorrhage. In February, 1908, the movements of the child were pronounced, and hemorrhage continued, some clots and "pieces of flesh" being passed. On March 1, 1908, the patient had a severe chill, lasting one and a half hours, followed by high fever for forty-eight hours. During this month menstruation returned and was normal as to time and quantity after this, and the patient suffered very little pain during her flow. Save for the large tumor in the abdomen her health was good.

Examination.—The patient appeared to be a well-nourished woman of ordinary intelligence. There were no enlarged glands of neck except a slight enlargement of the thyroid, but there were no symptoms referable to this enlargement. Her lungs and heart were normal. The liver was not enlarged and its area of dulness changed on deep inspiration, showing no adhesions between this organ and the abdominal wall. There was no tenderness over the epigastrium, and the spleen was not palpable. A large tumor was found in the lower abdominal region, which seemed more to the right than the left side. This tumor was firmly fixed and vaginal examination revealed the fact that the tumor was more to the right side and filled the entire pelvis. The tumor felt irregular, seeming to have nodules and indentations. The patient's temperature was $98\frac{2}{5}$, pulse 80. The white blood count was 7,800; red blood count, 4,500,000; hemoglobin, 95 per cent (Tal.). The urine

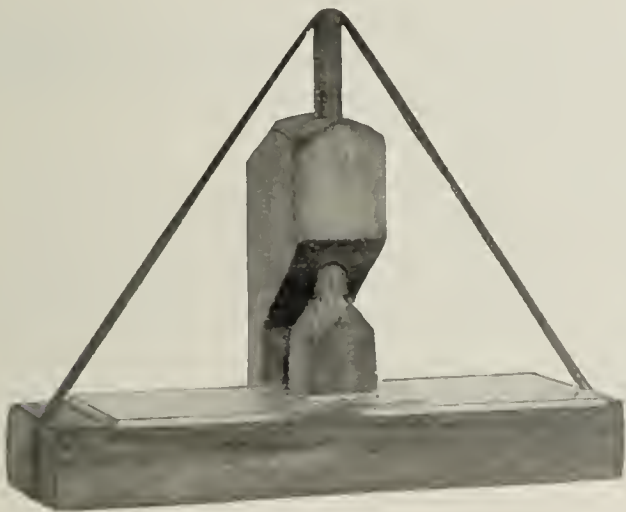


Fig. 2—"Pile-driver" compressor for flattening sections.

order to soften the balsam, and then allowing it to remain beneath a rather heavy weight, as a large book, for twelve or twenty-four hours. Similar results can be more easily secured by the use of the small "pile-driver" compressor shown in Figure 2. The pressure is furnished by an elastic rubber band which passes over the top of the hammer and beneath the base of the little machine. The head of the hammer rests on the center of the cover-slip, while the slide lies on the platform.

When working alone it is sometimes rather difficult to focus the object properly on the ground-glass, a procedure best accomplished by manipulating the adjustment screws on the microscope after the camera box has been extended the desired distance. A small mirror,

was negative. A diagnosis was made of dermoid cyst of right ovary, and operation was advised.

Operation.—The patient was prepared by cleansing the bowels thoroughly with castor-oil, and finding amount of urine for twenty-four hours preceding operation (52 ounces). One-half gram spartein sulphate was given hypodermatically at intervals for twenty-four hours preceding operation as a prophylactic against urinary suppression. The abdomen was prepared in usual manner and patient was placed on operating table at 8:27 a. m., April 30, 1909. A median incision was made and a mass of adhesions encountered in which bowel, uterus, right tube and a large mass were matted together. These were dissected and torn away and the mass removed, which proved to be the right ovary enormously enlarged and distended. The tube could be made out on one side of this organ. The raw surfaces were covered over in the best manner possible, using as suture material for this purpose plain catgut No. 1. For ligation of large vessels chromic gut No. 2 was used. The appendix was also removed, as it was bound down by adhesions. The abdominal wall was closed by layers. The operation was completed at 9:11 a. m. Gas-oxygen anesthesia was used, supplemented by two and a half ounces of ether. The patient's pulse was 96 at commencement of operation; 100 on leaving the table.



Pregnant ovary, removed and cut open, exposing child.

Postoperative History.—The patient had no nausea or vomiting and her convalescence was uneventful. She left the hospital on the sixteenth day after the operation in good condition.

Macroscopic Examination of Specimen.—The tumor was opened and found to contain a dead child fully developed, weighing 7½ pounds. (The accompanying illustration represents the tumor after incision. The sac was submitted to Dr. J. S. McLester of this city for a pathologic examination in order to identify tissue. His report is below. Owing to the findings of the pathologist and the fact that the right tube could be demonstrated as separate and distinct from the tumor I feel that I am justified in calling this a case of true ovarian pregnancy.

Microscopic Examination of Specimen.—The specimens of tissue which were removed from six (approximately equidistant) points on the sac in your recent case of ectopic pregnancy, were frozen for sectioning and present the following appearance: In each of the six specimens are seen corpora lutea, or, more properly speaking, the remains of these bodies, the so-called corpora albicantia. The stroma is identical in appearance with that ordinarily found in the ovary. I feel justified in concluding from the presence of the above mentioned structures, that each specimen was taken from the ovary.

109½ North Twentieth Street.

AN IMPROVED METHOD OF USING TRACTION IN THE TREATMENT OF FRACTURE OF THE FEMUR

LEWIS A. STIMSON, M.D.

Professor of Surgery, Cornell University
NEW YORK

Certain practical disadvantages in the use of Buck's extension in the treatment of fractures of the femur have long been familiar to the profession. They are the relative fixation of the limb to the bed, with its consequent relative immobilization of the body, and the lack of efficient lateral control of the broken ends of the fragments. Volkmann's chariot did something to re-



An improved apparatus for traction in treatment of fracture of the femur.

lieve the former, in that it permitted the position of the limb and body to be shifted up and down in the bed, but we are all still familiar with the irksomeness of the confinement and with the frequently repeated requests of the patients to relieve their discomfort by some shift of position or adjustment of the dressing.

The Hodgen suspended splint was a great improvement in this respect, and, in addition, gave the opportunity measurably to control the ends of the fragments by adjustment of the supporting bands, and for many years in my practice it has almost wholly superseded the Buck and Volkmann combination.

In fractures close above the condyles and in those of the neck in the old, it is eminently satisfactory. But

it has the drawback that the amount of traction cannot be accurately measured or always efficiently maintained without constant attention, and that it cannot always be so adjusted as to give and maintain the powerful traction often needed in fractures of the mid-shaft in the robust and in some of the neck in the young.

For about three years now I have employed a combination of the two—traction by weight and pulley and suspension by the Hodgen splint—and have found the results so satisfactory that I desire to make the method more widely known. The traction can be accurately measured and maintained, transverse displacement can be corrected and prevented by adjustment of the supporting bands, and the comfort of the patient is vastly increased. Whenever I substitute it for a Buck's extension that has been worn for a week, the patient testifies to prompt and gratifying relief.

The materials required are the adhesive plaster, pulley and weight of Buck's extension, a Hodgen splint, and provision for suspension. For the Hodgen splint of the shops a substitute can be made of a stout iron rod bent to the shape of an elongated U, the arms of which are nearly as long as the limb; it should be slightly bent at the point corresponding to the knee in the direction of flexion of that joint. The curve of the U is to lie below the sole of the foot.

For those who are not familiar with the use of the Hodgen splint some details may be useful. From side to side of it should loosely pass five or six doubled pieces of roller bandage on which the limb is to rest; the center of each piece should encircle one side-bar of the splint, and the ends should be tied together over the other so that it can be readily tightened or loosened. Or single bands made fast with safety-pins can be used. To each side-bar a cord is attached, one end just above the ankle, the other a little below the upper end, each cord being about half as long again as the distance between its attachments, and a single cord for suspension is tied about their bights. This latter cord may be attached to a stout hook in the ceiling or to any other improvised fixed point, which, preferably, should be 3 or 4 feet above the bed. A convenient support can be made of two pieces of gas-pipe united by an elbow, as shown in the illustration.

The wheel over which the cord bearing the weight passes should be twelve or eighteen inches beyond the sole of the foot, in order that lateral shifts of the patient's position in the bed may not notably affect or be affected by the line of traction.

The adhesive straps are applied to the limb, and their ends to the spreader and the cord bearing the weight, as in arranging for Buck's extension. Then the supporting bands attached to the splint are passed under the leg and thigh, the bands being of such length that the side-bars will be a little below the level of the anterior surface of the limb, the supporting cord attached, and the limb raised so as to swing clear of the bed. Then such adjustment of the supporting bands of the splint as may be needed for the patient's comfort or to make the support uniform, is made.

After the full effect of the traction has been obtained, such coaptative pressure on the fragments as may be indicated can be obtained by tightening or slackening one or the other of the bands supporting the thigh to move the affected end antero-posteriorly; or, to move them laterally, by two bands attached one to each side-bar and tightened to make lateral pressure in opposite directions upon the two ends. In the latter case the upper ends of the side-bars must be held apart by a hoop-spreader, as shown in the illustration.

THE TYPHUS FEVER OF MEXICO (TARBADILLO)

PRELIMINARY OBSERVATIONS *

H. T. RICKETTS, M.D.

AND

RUSSELL M. WILDER

CHICAGO

It will be recalled that Nicolle¹ and his associates recently have greatly advanced our knowledge of typhus fever by two achievements. First, it was shown that the disease could be transmitted to the chimpanzee by the injection of the blood of human patients, and in a similar way from the chimpanzee to the macacus monkey (*Macacus sinicus*). Strangely they were not able to infect the macacus directly with virulent human blood.

Their second important result consists in the transmission of the disease from macacus to macacus by means of the ordinary body louse (*Pediculus vestimenti*). From the epidemiologic conditions which prevail in Tunis they were able to rule out the flea and the bed-bug as carrying agents.

When the monkey has once been infected with the louse, they attempted to transfer the disease from animal to animal by means of injection from the first monkey, but the experiments resulted only in what were considered abortive attacks of typhus. Hence they concluded that the virus underwent a loss of virulence in the monkey.

They obtained apparently typical eruptions in both the chimpanzee and the monkey, but not uniformly in the latter.

Recently also, Anderson and Goldberger² apparently have been successful in transmitting the typhus fever of Mexico to a macacus and a capuchin by the direct inoculation of virulent human blood.

Their success in this regard and Nicolle's failure (i. e., to infect the monkey by direct injections of human blood) would seem to bring into question the identity of European typhus with that of Mexico. Prominent Mexican physicians, indeed, for some years have contended that the two are not identical, the chief difference being in the slower onset and defervescence of the Mexican disease. This is particularly true in adults. In children the onset and defervescence of the Mexican disease resemble the European more closely.

It seems that the relationship of the two cannot be decided definitely without a more detailed experimental comparison. They may be very closely related, though perhaps not absolutely identical, particularly in view of the fact that both are probably carried by the body louse.

We may now describe some of our own experiments bearing on the transmission of the disease to the monkey and the non-filterability of the virus.

I. TRANSMISSION TO THE MACACUS BY INJECTION

We have been able to confirm the probable susceptibility of the monkey to inoculations with the blood of patients suffering from the typhus fever of Mexico, as reported briefly by Anderson and Goldberger, and to obtain additional information regarding the degree of susceptibility of this animal.

In the two monkeys which apparently were infected by Anderson and Goldberger, multiple inoculations were

* From the University of Chicago (Department of Pathology), and the Memorial Institute for Infectious Diseases, Chicago.

1. Compt. rend. Acad. sc., July 12, 1909, cxlix; Sept 6, 1909, cxlix.

2. Anderson and Goldberger: Pub. Health Rep., Dec. 24, 1909.

used. Their macacus received a total of 20 c.c., divided into three injections, and the capuchin a total of 8 c.c., in two injections.

In our inoculations single injections were given, the animal being *Macacus rhesus*.

On January 11, a quantity of blood was drawn from the median basilic vein of José Hernandez, a patient in the *Hospital General* (Mexico City) on the eighth day of his sickness. The fever and condition of the patient were typical for an attack of typhus of this duration, the attack being one of moderate severity. Although the skin was quite dark, the spots, not yet petechial, could be seen over the abdomen, chest, axillary skin, arms, legs and back, and the conjunctivæ were reddened characteristically. The spleen showed little or no enlargement on percussion, and it could not be palpated. Since the blood was drawn the patient has passed through a typical "crisis," which occupied about three days, and is now convalescent.³

Two cubic centimeters of the blood of the patient planted in 50 c.c. of broth have remained free from discoverable micro-organisms, which corresponds with the usual results of cultivation experiments with typhus blood.

Blood Inoculation Experiment.—Inoculations of 1, 5 and 10 c.c. of defibrinated blood were made respectively into Monkeys 5, 6 and 7. No. 5 died five days after its inoculation, showing a consolidation of the lungs, and since it had had no fever, it was discarded from the experiment. In addition, Monkey 4 received 8 c.c. of the serum from the same blood.

The blood after defibrination stood at room temperature (15 to 20 C.) and in diffuse light, for from six to seven hours before injection.

The 5 c.c. of blood which Monkey 6, weighing 2010 gm., received was diluted to 15 c.c. with sterile physiologic salt solution, and the entire amount introduced intraperitoneally. Its temperature on successive days was as follows:

9:00-10:00		3:00-4:00		9:00-10:00		3:00-4:00	
a. m.		p. m.		a. m.		p. m.	
1/11	.....	100.9	1/17	100.2	104.9		
1/12	99.0	.....	1/18	97.6	104.3		
1/13	99.3	101.4	1/19	103.3	101.8		
1/14	100.1	102.4	1/20	97.0	101.0		
1/15	100.4	103.6	1/21	99.1	93.0 *		
1/16	97.3	102.7					

* Death.

On January 17, six days after inoculation, the animal ate little, and sat "huddled-up," with hairs more or less erect. This condition continued, and on the 19th there was increased secretion from the conjunctivæ, and the animal coughed moderately. The illness appeared more severe on the 20th; there was no resistance to manipulation; emaciation; moderate diarrhea. On the 21st, when the temperature became subnormal the animal was still somewhat responsive until about the middle of the afternoon, when its condition grew rapidly worse, and at 9 o'clock it was moribund.

The autopsy, which was performed at once, showed nothing distinctive, and very little that appeared abnormal. The lymph-glands generally were moderately enlarged, but were not congested or hemorrhagic. Those of the axilla and groin were the seat of old pigmentation. The lungs were pink, and showed no inflammation or other alteration except for a slight amount of atelectasis at the upper border of the left lower lobe. The pleuræ were free from signs of inflammation. Moderate swelling of both the kidneys and liver were present, but they were not degenerated. The spleen was rather firm but not distinctly enlarged. No evidence of infection was found in the peritoneal cavity. The meninges and cerebral cortex were free from congestion, edema or other signs of inflammation.

A bouillon flask culture from the heart's blood, and agar slants from the viscera, remained sterile.

Monkey 7, a male weighing 2150 gm., received 10 c.c. of the same defibrinated blood, made up to 20 c.c. with salt solution. One-half the quantity was injected intraperitoneally, the other half subcutaneously. Its temperature on successive days is given below.

9:00-10:00		3:00-4:00		9:00-10:00		3:00-4:00	
a. m.		p. m.		a. m.		p. m.	
1/11	.....	104.0 *	1/19	102.2	105.2		
1/12	101.8	102.6	1/20	102.7	105.6		
1/13	100.8	102.9	1/21	102.4	105.6		
1/14	100.2	102.7	1/22	103.2	106.6		
1/15	100.5	104.1	1/23	100.6	104.8		
1/16	101.4	104.3	1/24	105.1	105.4		
1/17	98.0	105.1	1/25	103.2	104.6		
1/18	100.4	104.7	1/26	103.1	107.2		

* Before injection.

The animal first began to appear sick on the 16th, the second day of fever. On the 17th it made little resistance to manipulation and from this on it appeared distinctly ill and ate little. It developed no marked diarrhea, although the stools became rather soft. While the temperature became high the animal at no time lost its responsiveness. The conjunctivæ were not noticeably reddened, and a distinct eruption could not be identified. After a rather long and severe course, the animal recovered.

Monkey 4, weighing 1800 gm., received 8 c.c. of serum of the same blood; the serum was obtained by defibrination and centrifugation. This quantity was diluted to 25 c.c. with salt solution, one-half being injected intraperitoneally, the other half subcutaneously. The temperature on successive days was as follows:

9:00-10:00		3:00-4:00		9:00-10:00		3:00-4:00	
a. m.		p. m.		a. m.		p. m.	
1/11	.....	103.6 †	1/17	104.2	104.2		
1/12	100.0	.....	1/18	101.5	104.2		
1/13	99.4	103.3	1/19	103.2	103.5		
1/14	99.7	102.1	1/20	101.1	103.0		
1/15	100.4	103.4	1/21	100.6	103.7		
1/16	101.3	102.9	1/22	*	**		

† Before injection.

* Too low to register.

** Death at 6 p. m.

On the 17th, the first day of distinct fever, the animal, which had hitherto appeared vigorous and healthy, looked sick, unkempt, its hairs stood up, and it "huddled up" even in the sun. This condition continued, food was refused, and emaciation developed. On the 20th a moderate diarrhea appeared and continued until death. On the afternoon of the 22d it became soporose, and died at about 6 o'clock. An eruption which could be referred positively to the infection, or bearing a resemblance to that of typhus fever, could not be identified. An "eruption" which did appear on the skin of the lower chest and the upper portion of the abdominal skin probably was accidental. On the 18th, the second day of fever, the monkey had been bled from the heart, for cultivation and other experiments. A small amount of blood escaped through the skin when the needle was withdrawn, and at autopsy it was found that some subcutaneous hemorrhage had occurred and that the blood had "diffused" posteriorly in the form of a rather narrow band, following the median line. The "eruption" was roughly median although it extended about an inch beyond the visible limit of the subcutaneous extravasation. In character, it was at first pink, that of the early rose spot, and seemed to disappear on pressure. It appeared two days after the heart had been punctured and on the fourth day of fever. On the following day and subsequently it became darker, more or less cyanotic in color, and could not be effaced by pressure. The spots were rather ill-defined, and appeared to consist of collections of minute punctiform hemorrhages. A similar condition could not be identified on other parts of the body, and in view of the subcutaneous hemorrhage which complicated the situation, it seems probable that the eruption had its source in the latter rather than as a manifestation of typhus fever.

At the autopsy, the lungs were found of a normal pink color; there were no signs of inflammation. On the visceral pleura, particularly of the left lung, were a number of small, circular, dark-red hemorrhages from 0.5 to 1.5 mm. in diameter. The pleural cavities were normal; the heart normal; no inflammation of the valves or pericardium. The liver was apparently somewhat enlarged, pale, as if fatty, but showed little or no congestion; the lobules were well marked; anterior border distinctly rounded. The spleen was about 1.5 cm. longer than that of Monkey 6, and perhaps a few millimeters broader; was distinctly enlarged, bluish red in color, and of rather firm consistence; contained no hemorrhages.

3. Both the onset and the crisis of the typhus fever of Mexico are said to be less abrupt than in the classical European typhus. This has been contended by prominent Mexican authorities, and has appeared in their literature, for a number of years.

The kidneys were perhaps a little enlarged and moderately congested; cortex and pyramids of a homogeneous normal color; striations normal; the cortex had a relation to the medulla of about one to one.

The mucous membrane of the colon was much reddened, and perhaps even hemorrhagic; the colon contained a large amount of glairy mucus but no blood or feces. The mucous membrane of the ileum appeared normal, and the ileum contained nothing but a slightly viscous yellowish fluid; there was a short intussusception with no inflammatory or obstructive signs of the parts involved. The duodenum contained bile-stained mucus, the mucosa being normal. The stomach contained some undigested banana and mucus.

The lymphatic nodes everywhere seemed more or less enlarged but were not congested or hemorrhagic. Those of the groin and axilla were almost black from some previous pigmentation.

The meninges showed a good deal of congestion and edema, the fluid being perfectly clear. The cerebral cortex appeared normal. Other parts of the central nervous system were not examined.

Cultures, as in the case of No. 6, remained sterile, including those from the meninges.

As basis for interpreting these experiments, we have for consideration: the existence of an incubation period which was approximately the same in all three animals, and during which they remained healthy; the occurrence of illness and fever followed by the death of two of the animals; the sudden onset of fever and illness, and the rapid defervescence in the animal which recovered; the negative outcome of cultures; and the more or less negative findings at autopsy, corresponding with the condition in typhus in man.

The temperature curves of Monkeys 4 and 6 suggest that the interpretation of infection purely on the basis of the fever manifested may be attended by difficulties in some instances. The variations between the morning and afternoon temperatures of uninfected and apparently healthy monkeys is often considerable, and in our experience has not been constant in the same animal from day to day; marked variations have been encountered when different animals, apparently healthy, were compared. The morning temperatures of healthy controls have habitually been from 0.8 to 1.8 or 2.0 degrees lower than those of the afternoon. The former is commonly below 102.0, and may lie between 99.0 and 101.0 for several days in succession; whereas in the afternoon (from 3 to 4 o'clock) it commonly is found at some point between 102.0 and 103.0. The comparatively cold nights and the warmer days may have some influence on the more extreme variations. We have attempted to eliminate this factor as much as possible by warming the room from the hours of 5 p. m. to 9 a. m., the temperature at night being about 15 C. During the warmer portion of the day the animals have been placed where they could avail themselves of the sun.

It is noteworthy that No. 6 on only one day, the 19th, exhibited a morning temperature (103.3) which was distinctly above the normal for that hour, and that on only two days after illness began (17th and 18th) was it distinctly above the normal for the afternoon, yet from the 17th on it was manifestly a very sick animal. The temperature was subnormal for two days preceding death.

In No. 4 the morning temperature was above the normal limit on two days (17th and 19th) and in the afternoon on five successive days, the period of subnormal temperature preceding death being much shorter than in the case of No. 6.

In No. 7 the morning temperature was somewhat above the expected normal (being from 102.2 to 103.2)

for four successive days, and in the afternoon there was rather marked elevation for ten successive days.

The short course of the fever and the fatal termination in Nos. 4 and 6 may perhaps be accounted for by a relatively low resistance on their part.

In drawing the line between the end of the incubation period and the onset of disease, the general appearance and behavior of the animal appear to be of equal or greater importance than the temperature alone; taken together they are a sufficiently satisfactory index.

There is some difference between the incubation period of Nos. 4 and 6, on the one hand, and No. 7, on the other. In the two former it lay between five and six days, whereas in the latter it was reduced to four days or less. The difference in dosage may have accounted for this.

It is worthy of comment that the smaller dose (5 c.c.) which No. 6 received seemed more virulent than the 10 c.c. administered to No. 7. Differences in the resistance of individuals may, of course, be called on to explain this. No. 6 received its entire injection intraperitoneally, whereas in No. 7 the amount was divided equally between the peritoneal cavity and the subcutaneous tissue. Whether there is a difference in virulence depending on the route of injection has not been determined. No. 4 is hardly comparable with 6 and 7 in this regard inasmuch as it received serum rather than defibrinated blood.

We may further call attention to the fact, as mentioned at the outset, that a single injection of virulent blood, as well as the multiple injection used by Anderson and Goldberger, is capable of producing infection, and this with a short incubation period. It is unfortunate that the animal which received 1 c.c. of the virus died of other causes, since it was hoped that this injection might furnish some index regarding the degree of susceptibility of the monkey. This is important from the point of view of insect transmission, which would seem to demand an animal of rather high susceptibility. The more exact susceptibility of the species will be studied further.

It is of some significance, too, that the serum appears to be infective as well as the defibrinated blood. As yet we have no data concerning the relative infectivity of the two, further than that 8 c.c. of serum appeared to be as virulent for No. 4 as 5 c.c. of blood was for No. 6.

The material injected was diluted with salt solution on theoretical grounds, and because experience with Rocky Mountain spotted fever suggested that dilution of the virus might favor infection. Dilution is known to render less effective specific antibodies which may be destructive to the virus, and there can be little doubt that blood drawn from typhus patients on the eighth day of the disease contains germicidal antibodies, particularly since the disease is one which, clinically, is known to cause the development of distinct immunity. Dilution may also favor infection through the peritoneal route by affording better conditions for rapid absorption or dissemination of the micro-organisms. In experiments with spotted fever we have noted occasionally that smaller doses of virus would cause infection when larger doses of the same material would not, the injections being intraperitoneal. Small doses, as 0.01 c.c., are usually diluted with 2 or 3 c.c. of salt solution, whereas larger doses, as 5 c.c., are diluted to a much less degree or not at all.

The moderate diarrhea which appeared in No. 6 was probably of no significance, inasmuch as certain of the uninoculated animals were similarly affected. We may, however, call attention to the fact that some Mexican

observers insist that there is a certain degree of intestinal disturbance in typhus in man, manifested frequently by diarrhea, and the right iliac region is habitually examined clinically for signs of such disturbance. We have observed such disturbance in a number of instances, but have no personal knowledge of its relationship to typhus fever.

We are hardly in position as yet to make a thorough comparison of the infection in the monkey with that in man. It may be stated, however, that the incubation period as obtained by this method of infection was shorter than that which is accepted for man, the latter being in the neighborhood of ten to twelve days. Manifestly this is subject to considerable variation in experiments, since in the macacus infected by Anderson and Goldberger it was twelve days, and in our No. 7 only four days.

The duration of typhus in man varies, according to Dr. Genaro Escalona, from about twelve days in children, in whom it is comparatively mild, to twenty-one or twenty-four days in adults. In Monkey 7 the course lasted for approximately twelve days.

The onset in all three animals was sudden and the defervescence in No. 7 moderately rapid, comparable to the conditions in human patients. In man the temperature is said to rise gradually for from three to four days, when the fastigium is reached, the morning remissions being marked, as in the case of the experiments described. In man also defervescence occupies from three to four days, followed by from two to four days of subnormal temperature, corresponding to the conditions in Monkey 7.

Bacteriologically the conditions are similar, in that attempts at cultivation by ordinary methods have given negative results.

Likewise the findings at autopsy are similar, nothing distinctive being found in the animals, as is the case in human beings. The cerebral congestion and edema of No. 4, the slight or moderate enlargement of the spleen, congestion of the abdominal viscera, doubtful or moderate enlargement of the lymph-glands, and the absence of localized inflammations, are conditions which are commonly found in man. The negative findings appear to be of more diagnostic significance when considered with the clinical course, than positive anatomic changes. Degeneration of the liver and kidneys are frequently found in man, but they are not a necessary accompaniment of fatal infections.

In the experiments performed so far, there is a lack of correspondence with the human infection, in that no eruption resembling that of typhus appeared in the animals. Although it would be gratifying to reproduce this phenomenon, failure to do so can hardly constitute a valid argument against the character of the infection in the monkeys. We recall that not all monkeys and guinea-pigs infected with spotted fever exhibit the eruption, and the conditions may be similar in typhus.

Eventually it seems probable that the nature of the infection in all cases of recovery can be checked up by means of immunity tests. The disease appears to be one which, in man, confers distinct immunity, and animals which have once suffered from the infection should be immune to further inoculations. This will be investigated and reported on at a future date.

II. FILTRATION EXPERIMENT

With the desire of obtaining information about the virus of the disease, especially as having a possible bearing on the approximate size of the micro-organism, we

have performed a filtration experiment which it is desirable to report.

Of the blood referred to in the previous experiments, 34 c.c. were centrifugated until the corpuscles occupied approximately the lower three-fifths of the column. The overlying serum was drawn off and replaced by an equal amount of sterile salt solution. The corpuscles were thoroughly mixed or washed with the latter and again centrifugated moderately, after which the overlying fluid was added to the first portion. This was repeated again and the three fluid portions then combined. It seemed probable that through this procedure one might obtain a larger quantity of micro-organisms in the fluid than by resorting to a single more vigorous centrifugation. This seemed better also than to attempt to filter the uncentrifugated blood, which indeed is an almost impossible task with moderate pressures.

It seems sufficiently accurate to consider that the defibrinated blood consisted of about equal parts of serum and corpuscles, and that we obtained the equivalent of about 17 c.c. of serum by this washing process.

For the purpose of filtration the serum was diluted to 51 c.c. by means of salt solution, and this quantity was divided into two equal portions, one to be filtered and the other to be injected without filtration.

The first portion was passed through a small Berkefeld candle, and with the threefold dilution it filtered readily. The filter was washed by passing through it an additional 5 c.c. of salt solution, this filtrate being added to the first.

The interval between the drawing of the blood from the patient and the injections was from six to seven hours, as in the preceding experiments.

The total quantity of each portion was approximately 25 c.c., of which one-half was injected intraperitoneally, the other half subcutaneously, after suitable preparation of the skin.

The result of the injection of the unfiltered serum into Monkey 4 was given in the first part of this paper, it being our conclusion that the animal became infected with and died of typhus fever.

No 3, which received the filtered serum, exhibited the following temperatures on successive days:

	a. m.	p. m.		a. m.	p. m.
1/11		103.2	1/18	102.6	102.5
1/12	102.5	102.6	1/19	103.6	101.6
1/13	102.8	103.3	1/20	102.6	103.6
1/14	102.7	103.6	1/21	101.9	103.9
1/15	103.6	103.8	1/22	102.6	104.4
1/16	103	102.6	1/23	101.6	102.7
1/17	103	102.8	1/24	101.7	103.6

In spite of rather high morning temperatures, the animal has been in apparently perfect health since the date of inoculation, which is in distinct contrast with the course shown by No. 4. As stated previously, the latter, after an incubation period of about six days, developed fever, grew sick, and died eleven days after inoculation, with findings which are in harmony with those of typhus fever.

We may therefore conclude that the virus did not pass through the filter employed, or if it did, that it did not pass through in a quantity sufficient to produce recognizable infection. It seems probable, therefore, that the virus of the typhus fever of Mexico may be classed with the unfilterable. It is, of course, to be understood that the micro-organisms may find their way through filters of greater porosity which may be encountered, or through filters with thinner walls. It is possible, too, that they may even pass through filters of the type and thickness employed in this experiment, in quantities which are sufficient to vaccinate, but not suffi-

cient to produce virulent infection. As affording an analogy for this possibility, it may be mentioned that we have on several occasions produced extremely mild attacks of spotted fever in the guinea-pig, resulting in permanent immunity, by the injection of very small doses of virus. This possibility will be investigated.

III. THE QUESTION OF CONTAGIOUSNESS AND TRANSMISSION BY INSECTS

Although the old idea that typhus is a contagious disease still has strong supporters in Mexico City, the conception that insect transmission is in better accord with the epidemiologic conditions is prominent in the minds of those who are in daily contact with the disease.

Without giving a detailed presentation of the conditions at this time, it may be stated that of the three insects which are most open to suspicion, i. e., the louse (*Pediculus vestimenti*), the bedbug and the flea, only the first would seem to merit serious consideration, because of the epidemiology of the disease. This conclusion is, of course, strongly supported by the results already obtained by Nicolle.

The season of greatest predominance of typhus in Mexico City (the spring) does not coincide with the period of greatest prevalence of the flea (summer). And, regarding the bedbug, we have knowledge of individual cases which, it would seem, could not possibly have been carried by this insect.

Although our own experiments with the louse, which have been under way for some time, have not yet resulted in transmission, they will be carried further and reported in detail at a future date.

We take pleasure in acknowledging our great indebtedness to the local authorities and physicians of Mexico City who have cooperated with us in various ways: more particularly to Dr. Gavino, Director of the Bacteriologic Institute, where we enjoyed the advantage of a well-equipped laboratory, and to his assistant, Dr. Girard; as well as to Drs. Fernando Lopez and Genaro Escalona, of the General Hospital.

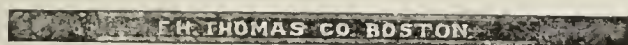
1360 Fifty-eighth Street.

A STOPPER FOR BLOOD-COUNTING PIPETTES

MALCOLM SEYMOUR, M.D.

BOSTON

This device is intended to keep the contents of an ordinary blood-counting pipette from flowing out of either end, while being carried in the apparatus case. It was designed to take the place of the ordinary rubber band commonly used for this purpose. It consists of a piece of hollow rubber tubing of sufficient caliber and



length, closed at both ends with solid rubber plugs which are vulcanized to the rubber tubing. The tubing between the plugs is cut in halves longitudinally, thus allowing the insertion of the pipette. Its advantage is that it does not admit of the pipette being forced through the ends of the rubber by reason of the tension thereof, thus allowing the escape of the contents of the pipette, as may happen with the simple rubber band.

405 Marlborough Street.

Therapeutics

SUGGESTIONS FOR THE PHARMACOPEIA OF 1910

USEFUL DRUGS OF THE PHARMACOPEIA OF 1900

OLIVER T. OSBORNE, M.D.

Professor of Materia Medica and Therapeutics in Yale Medical School

NEW HAVEN, CONN.

(Concluded from page 377)

EXPECTORANTS

The best drugs to increase the secretion of the mucous membranes of the upper air tract are ammonium chlorid in small doses, ipecac, and iodids.

While ammonium chlorid is disagreeable to take, if given in a sour mixture it is not seriously unpleasant. Just because a patient happens to have a cold of some sort it is no reason why he should have his stomach knocked out, his digestion interfered with, and his appetite lost by nasty, sweet-tasted expectorant mixtures. There is no need for squills in any form as an expectorant. There is no need for senega in any form as an expectorant. The syrup of tolu makes a nice, smooth menstruum, but still is sweet. Tolu has no expectorant properties whatsoever. The syrup of wild cherry is not unpleasant, but still is sweet, and any sedative effects from the minute amount of hydrocyanic acid that it contains is mythical. These last two syrups, however, should be retained in the Pharmacopeia as making a change in the appearance and taste of a cough mixture that must be repeated if the previous taste palls on the patient. There is no use for the fluidextract of wild cherry.

Of all expectorants or stimulants to mucous membrane secretion, there is none yet offered that is better than ammonium chlorid. Small doses of it in the early stages of congestion, frequently repeated, and larger doses, infrequently repeated, in the second and third stages of bronchitis, or an allied condition, should be given.

Ipecac is another valuable drug to increase the secretion of mucous membranes. It renders the mucus more liquid and less tenacious. The dose as an expectorant should be very small, as large doses, of course, will cause nausea. There is also no specific ability of ammonium chlorid and ipecac to act only on the mucous membranes of the upper air passages. They are just as valuable for catarrh of the bile ducts, or any other mucous membrane.

The following combination as an expectorant is a good one:

R.	gm. or c.c.	
Codeinæ sulphatis	20	gr. iv
Ammonii chloridi	5	3iss
Syrupi ipecacuanhæ	5	or fl.3iss
Syrupi acidi citrici	25	fl.3i
Aquæ, ad	100	ad. fl.3iv

M. et Sig.: A teaspoonful, in water, every two hours.

The above prescription is simply a frame. The codein might be omitted if there were no unnecessary cough, i. e., cough without expectoration. Heroin might be used in its place, if one preferred. The dose of the ammonium chlorid might be increased, and the frequency of the administration decreased. The ipecac might be omitted, if the expectoration were free. If the patient were a child, the syrup of citric acid might be changed to syrup of tolu or syrup of prunus virginiana, if deemed best.

If the syrup of tolu is used it must always be remembered that it is a saturated syrup, and to dissolve salts, as ammonium chlorid, water should be added to the prescription. The syrup of wild cherry, on the other hand, will take up more salts. The above sour preparation, however, will not disagree with any stomach, provided that the ipecac is carefully measured by the druggist, and not carelessly and thoughtlessly "just poured" into the bottle.

There is no reason for using ammonium carbonate as an expectorant. It is too irritant and will upset most stomachs, and has no expectorant advantages over ammonium chlorid. If stimulation is required, it should be obtained in some other manner.

The value of iodids in asthma and chronic bronchitis is unquestioned. The dose can only be determined by the need of the patient and his susceptibility to it. The best way to administer iodid is in a saturated solution, and as many drops given as seems advisable, either in a considerable amount of water or in milk, either directly or in an hour after meals. If it seems better to order the iodid in larger solution, in teaspoonful doses, plain water should be used, and this given well diluted as above.

There is no tangible reason why the old syrup of sarsaparilla compound should be perpetuated, either for itself or on account of its frequent use as a menstruum for iodids. It is disagreeable and useless. Sarsaparilla soda and sarsaparilla water make very pleasant drinks, but sarsaparilla as a drug has no standing. There is also probably no reason for perpetuating guaiac. It is nasty and probably inert. Thus the next Pharmacopeia could be relieved of sarsaparilla, its fluidextract, its compound fluidextract, and its compound syrup; and guaiac, its tincture, and its ammoniated tincture.

To decrease a profuse secretion of the mucous membranes of the air passages, larger doses of ammonium chlorid are valuable, given three or four times in twenty-four hours. Terpin hydrate is valuable, and atropin is a temporary symptomatic treatment, or, if deemed advisable, codein, heroin, or morphin may be given. The narcotics should, of course, not be used in prolonged catarrhal conditions without careful decision as to the necessity.

A most valuable drug in profuse catarrh of the upper air passages is terpin hydrate. It is useless to give this drug in solution when no solution will dissolve more than 2 grains to the teaspoonful, and 2 grains is too small a dose. The foolish, sickish, syrupy, sticky white pine, codein and terpin hydrate mixtures are very bad treatments for the stomach. Terpin hydrate in capsule, or in tablet (which should be crushed) in a dose of 0.30 gram (5 grains) every four hours, combined, if deemed advisable, with a very small dose of codein or heroin, is valuable treatment, and perfectly satisfactory.

Creosote expectorants will soon disturb the stomach and interfere with the pancreatic digestion, and, however valuable some may think creosote is in pulmonary tuberculosis, it is certainly entirely unnecessary to administer a poison, as is creosote in any form, to a patient with simple bronchitis. The permanent value of creosote in pulmonary tuberculosis is still a matter of doubt. The primary diminution of secretion and the primary stimulation of the appetite is almost invariably followed by a secondary condition of depression, bad digestion, loss of appetite, coated tongue, and irritation of the kidneys.

CARDIAC DRUGS

The drugs used to act on the heart and blood vessels are mostly of great importance. As veratrum acts very similarly to aconite, personally, I should be willing to

have it removed from the Pharmacopeia. This would remove also its tincture and its fluidextract. As the use of cardiac depressants has become less and less frequent, and even aconite is very much less frequently used than it was, and as the coal-tar antipyretics have their place and usefulness in the first stages of acute disease, aconite could represent all of the cardiac depressant action that is needed. As previously stated, veratrina, its oleate and its ointment should be removed from the Pharmacopeia.

Convallaria and its fluidextract could be omitted, as its activity is very slight, and it is much inferior to other cardiac tonics.

As the alkaloid strychnin is never used as such, it being only used as one of its salts, it and other pure alkaloids could be omitted from the Pharmacopeia and the bulk of the Pharmacopeia would be less.

ANTISPASMODICS

The various drugs used as antispasmodics or cerebral stimulants, some of which have psychic effect alone, may perhaps be well continued in the next Pharmacopeia. It is doubtful if asafetida or valerian have any special activity outside of their carminative effect, but the former might be perpetuated in the pill. The tincture is not needed, and it is doubtful if the emulsion is of any value, even in children. If disagreeableness is looked for in the activity of valerian, the ammoniated tincture of valerian might be continued. The fluidextract and tincture are unnecessary. The zinc valerian might well be omitted.

Sumbul, its fluidextract and extract are not needed in the next Pharmacopeia, as an activity from sumbul is open to great doubt.

Cannabis indica is of such uncertain activity and strength that it would seem best to perpetuate only the preparations that are most likely to be of value, viz.: the fluidextract and the tincture. The extract is not needed.

An hypnotic that could well be omitted is sulphonal (sulphonmethanum). Its action is perfectly similar to trional (sulphonethylmethanum), and the trional is much more quickly and satisfactorily active.

Potassium bromid and sodium bromid are the only bromid salts that are needed. Ammonium bromid is disagreeable and carries with it no stimulant action from the ammonium. The lithium bromid is irritant to the stomach and has no different activity from the first two salts. The calcium bromid is also not needed. The strontium bromid is less soluble and thought to be better tolerated by the stomach, but, as larger doses must be given to obtain the bromin effect desired, it has no advantage over potassium or sodium bromid. Therefore the extra expense of this salt is not justified. Dilute hydrobromic acid is not needed, as it can cause all the disagreeable symptoms that potassium bromid can cause. Excessive doses of bromid are not now frequently administered, as it has been found that the same sedative brain effect may be caused in epilepsy by smaller doses of a bromid if sodium chlorid is removed from the diet. For prolonged use, the sodium salt is the best, as the sodium element is less depressing than the potassium element. To give bromid, for any reason, for any length of time is to acknowledge defeat in the treatment of the condition, as it is only symptomatic treatment, but at the same time, in epilepsy, at least, it is often a valuable one.

DRUGS USED AS SPECIFICS IN CERTAIN DISEASES

The drugs used for specific objects are not many, but cinchona in some form is a specific in malarial fever. The unnecessary number of preparations of cinchona

has already been mentioned, and the list need not again be enumerated.

While colchicum is a specific in gout, the number of its preparations should be reduced. Either the root is better than the seed or the reverse; and certainly the Pharmacopeia wants the better. One is superfluous. If the wine of the root is considered the best liquid preparation, there is no need for the extract of the root, for the tincture of the seeds, the wine of the seeds, or the fluidextract of the seeds.

Though iron is a specific in any anemic condition, it is not necessary to offer thirty-one different preparations of it in the Pharmacopeia, to say nothing of the number of preparations that are official in the National Formulary. As it takes less time to enumerate the needed iron preparations, these may be mentioned as: ferri carbonas saccharatus, massa ferri carbonatis, pilulae ferri carbonatis, ferri hydroxidum cum magnesi oxidum, ferri sulphas, ferrum reductum, tinctura ferri chloridi, and syrupus ferri iodidi. Some of the other iron preparations may be valuable, but the above give a sufficiently wide range of choice. The saccharated oxid of iron (*Eisenzucker*) should be added to the Pharmacopeia. There is no reason that any organic iron should be added, as there is nothing that can be done with iron therapeutically that cannot be done with the inorganic salts.

Mercury, the specific against syphilis, has official, besides itself, fifteen preparations. Certainly some of the ointments, the mercurial plaster and the liquor arseni et hydrargyri iodidi are not needed.

COMMENTS

While the above discussion of the drugs of the Pharmacopeia is destructive, it is not wise here to discuss the new drugs that should be made official in the next Pharmacopeia. This is a subject for the decision of the Committee on Revision.

To show the similarity of opinion on the other side of the water, viz., in Great Britain, as to the drugs which a Pharmacopeia should represent, I once more repeat the list of suggestions with which these articles were introduced, and then add the suggestions of the Therapeutic Committee of the British Medical Association for the Revision of the British Pharmacopeia.

MY SUGGESTIONS

1. Let the new Pharmacopeia contain such drugs only as are of positive therapeutic value.

2. When a drug or preparation of a drug is prescribed that is not official in the Pharmacopeia of 1910, let it be officially declared that the standard of purity and the method of making preparations not recognized in the Pharmacopeia of 1910 be the standard set and the methods of preparation ordered in the last Pharmacopeia in which the preparation was recognized.

3. Let it contain such new drugs as have been proved of therapeutic value.

4. Let there be issued a supplement to the Pharmacopeia, in 1915, which shall make official such new drugs as have been proved to be of therapeutic value during the years of 1910-1915.

5. Let the 1910 Pharmacopeia give the most simple titles possible to all new drugs, especially to the synthetic drugs. If it is considered impossible, or inadvisable, to make an official title of a drug simple, an official abbreviation should follow the name of the drug.

6. Let the 1910 Pharmacopeia give official approval to only the best of the preparations of the official Galenic drugs, and not officialize the little used and useless preparations of these drugs.

7. Let the 1910 Pharmacopeia not give official approval of all of the known salts (of iron and mercury, for instance), but officialize only the best. [The Committee on Revision can just as well decide this question as it can decide the new drugs that are worthy of a place in the United States Pharmacopeia, or as it can decide the strength a tincture shall have, and certainly the tinctures were radically changed in the 1900 U. S. Pharmacopeia, whether everyone was pleased or not.]

8. Let the average adult dose appear after each drug and each preparation of it, not the range of dose, i. e., minimum to maximum, as there is no exact under- or over-limit of dose. The dose is enough to accomplish the object aimed at by the prescriber, and all he cares to know is the average dose.

9. As the U. S. Pharmacopeia gives the official titles of drugs in Latin, it should also give the genitive after each title. This would be of special value in teaching the correct writing of prescriptions. It is not always easy to determine the declension to which a Latin noun belongs, or whether it may not be indeclinable.

10. Let the official preparations of a drug be enumerated under the title of that drug.

SUGGESTIONS OF THE THERAPEUTICS COMMITTEE OF THE BRITISH MEDICAL ASSOCIATION¹

1. Crude drugs which contain an active ingredient possessing all the desirable actions of the crude drug might be replaced by this active ingredient if it can be obtained commercially and its identification and purity ensured. If such an active principle is official, the crude drug might be deleted. For example, jaborandi leaves, coca leaves, elaterium and many crude drugs yielding only volatile oils might be deleted.

2. Drugs and their preparations possessing no obvious and serviceable action should be deleted, e. g., arnica rhizome, cuspari bark, hemidesmus root, lupulin, mezecon bark, serpentary rhizome.

3. Unnecessary duplication of the preparations of a drug should be avoided. Thus one 1 per cent. solution of a morphin salt, or one solid extract of belladonna, is sufficient.

4. Purely diluent preparations of a drug should be avoided, so far as possible, e. g., solutions of potassium permanganate, almond mixture.

5. Substances which do not require to be defined officially for the protection of the practitioner, or the vendor or purchaser, e. g., prunes, figs, brandy, sherry, might be omitted.

6. Substances of no therapeutic importance, which are used only in the making of preparations and are not contained in the final products, should be deleted or transferred to an appendix, e. g., benzol, solution of iron persulphate.

Favorable Influence of Intercurrent Infections on Cerebral Disorders.—A Russian writer, L. Omorokoff, recently reported in the *Obozryenie Psichiatric*, 5, four cases of serious psychoses in which intercurrent typhoid or acute tuberculosis restored apparently normal brain conditions. Two patients were young army officers, one with catatonic stupor for four years, the other with catatonia for six months. The mind gradually became clear in each with the onset of acute tuberculosis. Another patient was an epileptic boy of 14 with several seizures daily; the seizures ceased entirely during the three months following the onset of typhoid, but they then recurred as before. The fourth patient was a young woman with a severe form of insanity, the prognosis after sixteen months seeming hopeless, but reason returned then in the course of an intercurrent typhoid and recovery followed.

1. Brit. Med. Jour., 1908, ii, 319.

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[For other information see second page following reading matter]

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THE DISSEMINATION OF TETANUS BACILLI

Tetanus is always looked on as the best example of a purely local infection with constitutional symptoms, in that the bacteria are supposed to remain strictly localized at the point of inoculation, while the diffusible toxin produced by them acts on the remote central nervous system. Undoubtedly, tetanus is as strictly localized as any other known infection, or more so, but there is increasing reason for believing that this localization is relative and not absolute. While cultures made from the blood and internal organs at autopsies on persons dying of tetanus have almost always failed to yield the tetanus bacillus, yet experimental work with laboratory animals has furnished evidence to several investigators that tetanus bacilli or spores may be readily found in the blood and viscera of animals that have received subcutaneous inoculations, sometimes persisting two or three months after inoculation. The usual failure to find them in the circulating blood during life or in the viscera after death in human cases is undoubtedly due to the technical difficulties that so often make the isolation of this organism unsuccessful, rather than to an almost absolute localization of the tetanus bacillus in the infection wound, for enough successful cultivations have been reported to make it seem probable that man does not differ so very widely from laboratory animals in this respect.

Two recent reports speak especially strongly in favor of this view. Reinhardt and Assim¹ made cultures from four fatal cases of tetanus coming to autopsy, and in two found the tetanus bacilli in tissues remote from the infected wound. In one case they were found in the regional lymph glands, the liver, kidney, lung and heart's blood; in the other only in the liver and spleen; in all four cases many other tissues, fluids and organs were carefully examined by favorable bacteriologic methods, but *B. tetani* could not be found in them. Richardson examined the inguinal glands of two patients with tetanus from infection of the foot, the glands having been removed at operation by Porter,² and found the tetanus bacillus in both cases.

The authors of both these creditable reports lay much weight on this evidence of the escape of tetanus bacilli from the inoculation wound and their presence in deeper tissues. Reinhardt and Assim believe that such

migrated bacteria or their spores may remain latent for a long time, and give rise either to symptoms after the local injury has healed, explaining some cases of remarkably long incubation period; or they may become active under favorable conditions of lowered resistance or of trauma, and cause otherwise inexplicable cases of "idiopathic" or chronic tetanus. Porter and Richardson suggest that it may be desirable to remove the regional lymph glands when treating tetanus-infected wounds, since the bacilli are present in the glands as well as in the wounds. It should, therefore, be emphasized that the mere finding of tetanus bacilli in lymph glands and viscera does not signify much until we know whether these migrated germs were multiplying in the places where they were found, or were merely stragglers carried away by lymph or leucocytes, which happened to be isolated by the bacteriologist before they were destroyed by the tissues in which they had lodged.

The few successful inoculations obtained by Reinhardt and Assim, despite the extensive search and favorable technic, do not speak in favor of any multiplication of the transplanted bacteria having taken place. For this reason there should be experimental evidence in support of the procedure before the routine practice of removal of the regional glands in tetanus infection can be recommended. It is a well-established fact that injury to the tissues, and particularly the presence of blood clots, favors the multiplication of tetanus bacilli, and therefore by removing lymph glands which contain a few bacilli that could be destroyed by the intact glands we might establish conditions that would permit the few bacilli escaping us to take on vigorous growth. Before taking this additional step in the treatment of tetanus we need to know that the bacilli in the glands will do harm if left there, and, if so, that our efforts to remove them will not favor the bacilli rather than the host.

A NEW SPUTUM TEST FOR DISTINGUISHING BRONCHIAL FROM PULMONARY DISEASE

Within the last century the diagnosis of diseases of the lungs and bronchi has been revolutionized. The first and greatest advance resulted from the work of the two pioneers, Auenbrugger and Laennec. A tremendous stimulus to study of intrathoracic diseases was the ultimate result of their work, and in time the foundation laid by these two physicians was enlarged and their methods popularized by others, giving us the refined methods of physical examination which we have to-day. The second great advance toward more exact diagnosis came with the careful systematic examination of sputum, both macroscopic and (more especially) microscopic, to which impetus was given by Koch's discovery of the tubercle bacillus. Various other discoveries, tending to greater precision in diagnosis, such as the recognition of the *Bacillus influenzae* of Pfeiffer, the tuberculin reaction, Roentgen ray and the finding of the *Paragonimus*

1. Centralbl. f. Bakteriol., Abteil. 1, Orig., 1909, xliv, 82.

2. Boston Med. and Surg. Jour., Dec. 23, 1909, clxi, 927.

westermanii in the sputum in pulmonary distomiasis, have constituted important advances.

The newest of the methods for differential diagnosis of pulmonary and bronchial affections is that of Falk and Tedesko.¹ The test is based on the fact that salicylic acid and its salts may be found, after administration by the mouth, in any of the serous fluids (pleural, peritoneal, bursal, etc.) and, pathologically, in inflammatory exudates; but it is not found in glandular secretions, such as the saliva, or in the secretion of the bronchial mucosa. If found in the sputum it is believed to be evidence of involvement of the lung substance itself.

The salicylate is detected in the sputum by the addition of ferric chlorid, which produces a violet color. Certain substances always present in the sputum, however, interfere with the direct testing of the sputum. It is necessary to make the test by extracting with a volatile solvent, evaporating and testing the residue with ferric chlorid for salicylic acid.

No trace of salicylic acid could be found in the sputum in diseases limited to the bronchi; i. e., acute catarrhal bronchitis, the chronic bronchitis of pulmonary emphysema, bronchial asthma, purulent bronchitis, bronchiectasis, or the stasis-catarrh of cardiac disease. In lobar pneumonia, on the other hand, the salicylate appeared in the sputum in excessive quantities. In one case of central pneumonia (proved by autopsy), without physical signs, there was a strong positive reaction, while in another with bilateral pneumonic gangrene there was an intense reaction. Variable results were obtained in tuberculosis; in all cases a positive reaction was obtained, but its intensity did not run parallel with the clinical findings. In general, the authors found that the acute cases gave a more striking reaction than those of long duration.

From their studies, Falk and Tedesko believe that a negative reaction, when obtained repeatedly, is strong evidence that a disease process in the lungs is limited to the bronchi. A very strong positive reaction indicates an extensive inflammatory (exudative) process in the lung. In doubtful cases, in which the diagnosis lies between bronchitis and tuberculosis, a positive reaction indicates pulmonary involvement (tuberculosis). Furthermore, cases of central pneumonia, unrecognizable by physical signs, should be strongly suspected in the presence of a marked positive reaction.

PAUL EHRLICH

The progress of medicine, like that of other sciences, depends on the leaders, of whom there are two classes. To the one class belong those to whom the slow, steady and safe advances are due. These leaders are identified with established lines of research or practice and stand in the front rank of their profession, from the best ele-

ments of which they are not separated by a conspicuous gap. Their number is not small, and they usually hold the first positions in the gift of the profession, while they are, as a rule, the distinguished pupils of masters of their own type.

To the other class, however, belong those who precipitate, as it were, long-suspended and hitherto unperceived elements of knowledge, so that orderly truth seems to crystallize in the twinkling of an eye out of what appeared hitherto but a baffling jumble of facts. Men of this class are not born in every generation; in none are they numerous. Theirs are the master-minds; as a rule they have been, in the strict sense, nobody's pupils. It seldom or never happens that the first class of leaders remain unappreciated by their contemporaries; but not infrequently the second class of leaders find no followers in their own day and generation.

To the happy circumstance of the rise in rapid succession—and in part concomitantly—of several master-minds are the great advances in medicine of the present period due. The impulse of the genius of Pasteur, Koch, Metchnikoff and of Paul Ehrlich, has transformed medical science and practice and produced the most brilliant chapter in medical history. It is eminently true of all these men that they were no man's followers or pupils, and that their creations did not at once assimilate with the existing branches of medicine; neither were they or their teachings at first acceptable to those who were then leaders of medicine; but, none the less, medicine to-day bears the unmistakable impress of their work.

The four men present individual types. Koch is a monumental figure, and his contributions to medicine insure him the first rank in the history of medicine. Yet he belongs to that group of great minds who use up their great mental gifts within a brief period of time. His epochal work, indeed, hardly exceeds one decade. Metchnikoff's lasting contribution, on which his high eminence rests, is the theory of phagocytosis, which he has developed into a comprehensive doctrine. Pasteur's genius is less definable in a brief statement and was not only much broader in scope, of far more enduring metal, but also of fundamental basic quality; on it rests the entire superstructure of modern bacteriology in its broadest biologic sense.

Paul Ehrlich presents a phenomenon of still different type. He graduated in medicine in 1878 and within a year his epochal studies on blood corpuscles began to appear. In rapid succession the foundations were laid for a magnificent edifice in medicine, in which scores of investigators have found a permanent home. Not so Ehrlich. He has laid other and not less important foundations since then; and within a year—and thirty years after his first attainments—he has electrified the world by brilliant contributions to the science of experimental therapeutics.

To what branch of medicine does Ehrlich belong? Is it to immunity, or hematology, the therapeutics of the

1. Falk and Tedesko: Neue Untersuchungen zur Sputumdiagnose, Wien. klin. Wchnschr., 1909, xlii, 954; abstr. in THE JOURNAL, August 21, p. 662.

protozoa, or the investigations of malignant neoplasm? The comprehensiveness of his genius is exhibited by the many chapters in modern medicine in which his has been the master-hand to shape the form and furnish the content. Ehrlich was, from the first, nobody's pupil. His life-long interest in colors may have begun in his student days in Breslau, where his cousin, the celebrated and genial Weigert, then assistant to Cohnheim, was working on the staining methods which he later introduced into pathologic histology. But Weigert would have been the last person to claim mastership over Ehrlich. Even less does Ehrlich's work bear the marks of influence of Frerichs and Gerhardt, under whom he was clinical assistant. Ehrlich has never published anything that was a mere repetition of work done by others. Either he began with a new problem, or he made an old one new by giving it a fresh and original form. Ehrlich introduced new technical principles and made contributions to morphology and yet, apparently, he was never deeply interested either in the technical or morphologic aspects of his subjects. His interests centered in the functional aspects of his problems and in their more general connotations. Although he introduced the technical method of the differential blood-count into medicine, yet it was less the distinctions among the white cells than the classifications of the stains according to their chemical affinities and the functional significance of the cell-granules that interested him chiefly. Blood, dyes, chemical affinities are the elements that appear again and again in the course of Ehrlich's many investigations.

Thus his fundamental work on blood corpuscles was followed (1880-81) by an investigation of toxic hemoglobinuria and the discovery of a method of studying the condition in living human blood. He now brought forward methylene blue as a means of studying bacteria, and soon after Koch announced the discovery of the tubercle bacillus (1882) Ehrlich invented a more perfect method of staining that organism and formulated the theory of the penetration of stains through bacterial membranes. His interest in dyes next led him to the discovery of the diazo reaction and to highly important studies on ocular fluorescence through the use of the mother substance of eosin. Next followed the remarkable series of studies (1884-85), by means of methylene blue, on the oxidations and reductions in the tissues, which were brought together in his fundamental work, "*Das Sauerstoff-Bedürfniss des Organismus*," and on the vital staining of nerves. The dawning of the ideas, later to be so rich in results, relating to receptors in cells and the unequal distribution of toxic and therapeutic substances in the body, came with these studies. The next period (1886-90) was one of less outward activity, but manifested an interest in therapeutics, since it was associated with Ehrlich's work on detoxication by sulpho-radicals, the alleviation of pain by means of methylene blue, and with studies on the cocain group, etc.

Ehrlich's connection with the Berlin Institute for Infectious Diseases (1891) gave a new impetus and direction to his work. The fundamental studies on antitoxic immunity with ricin and abrin were not only the first product of the new activity, but they led him into paths which he has not yet forsaken. It is of interest to conjecture how deeply these early studies on antitoxic immunity cut along the path through which diphtheria antitoxin was somewhat later to be sent into the world. This was also the period of Ehrlich's first incursions into the specific treatment of protozoal disease, for he introduced (with Guttman) methylene blue in the treatment of malaria. Diphtheria antitoxin having been produced and found valuable, Ehrlich was chosen by the Prussian government to work out a method of standardization, the high importance of which choice cannot well be overestimated; for it was the uncovering of the complications of the structure of the antitoxins that led to the theoretical considerations regarding their compound nature and to the development of the side-chain theory of immunity (1897). This prolific theory was greatly extended in the next years through the studies on hemolysins which appeared from him and his associates. It is no matter what opinion one may entertain of the ultimate fate of the theory, since friend and foe alike will admit that in point of fruitfulness it stands unrivalled in all medical history.

The genius of Ehrlich is exhibited not only in his choice of subjects of investigation and the success with which, like a skilful conjurer, he helps himself with ingenious hypothesis, but, almost to an equal degree, by the instinct for leaving a field which is becoming barren. Hardly any one has lost so little time and energy in unprofitable byways of research and discussion. When the harvest has been reaped, he has always left the field to be gleaned by scores of lesser men. In 1904 Ehrlich took up the study of the experimental therapeutics of trypanosome disease which represents a revival of interest in dyes and at the psychologically and chemically propitious moment. For the discoveries in parasitic protozoology, on the one hand, gave a deep practical significance to the work, as the advanced chemistry of colors and of the organic arsenical compounds provided a basis for a wide scale of therapeutic experimentation. Ehrlich's success in this field has been as great as in any other he has trodden. Within the last period Ehrlich entered the arena of the investigations of malignant neoplasm, which center about the transplantable tumors of mice and rats, and here again he became the leader in the field. This last period is still the active one for him and the end of his endeavors has not yet come to view.

The value of Ehrlich's work has long been recognized and it is gratifying to learn that this recognition is taking a substantial form. Elsewhere in this issue is recorded the fact that the board of directors of the Rockefeller Institute for Medical Research has placed at the disposal of Professor Ehrlich \$10,000 to further his investigations into the chemical therapy of the proto-

zoon diseases. Paul Ehrlich is still comparatively a young man, not yet 56 years old. There is, therefore, good reason to hope that medical science and practice will owe him a greater and deeper debt than the large one already due him before he retires covered with honors from the field of his chosen work.

FLEXNER'S DENIAL OF ANTIVIVISECTION CANARDS

Dr. Simon Flexner, director of the Rockefeller Institute for Medical Research, has replied through the columns of the *New York Times* to the sensational articles recently published in the *New York Herald*, alleging that needless and uncalled for cruelties were inflicted on animals in the institute. To those who have followed the admirable work of the Rockefeller Institute, no vindication is necessary. The absurdity of supposing that men of the highest scientific attainments, recognized for their learning and culture both in this country and Europe, would devote weeks of time and would derive insane enjoyment from the needless torturing of animals, as was practically charged, is apparent to every one except the hopeless fanatic or the well-meaning but indiscriminating sentimentalist, who is not mentally capable of being guided by either common sense or ordinary evidence. Dr. Flexner's statement is given in full in General News and Comment in this issue. It is so conclusive and convincing as to require no further comment and so moderate and rational as to need no corroboration.

Evidently the efforts of the antivivisectionists are to be centered on New York in the hope of securing the passage of some kind of restrictive legislation in that state which can be pointed to as a precedent. It is not so strange that ignorant scrubwomen should set themselves up as authorities on scientific work as that misguided fanatics are willing to give credence to their garbled and indiscriminating statements. The most painful fact, however, is that great city newspapers, in order to be able to spread sensational headlines on front pages, will mislead the public by traducing an institution which is doing a splendid work, solely for the public good. At the time that Mr. Rockefeller established the hookworm commission the newspapers emphasized as one of his characteristics that he always carefully investigated any proposed scientific or philanthropic organization or purpose before he gave his money to it and that he never contributed to any object unless it could be shown that results commensurate with the expenditure could be secured. Is it possible that Mr. Rockefeller is contributing millions to support an institution in which brutal scientists and insane surgeons amuse themselves by inflicting needless pain on helpless animals? Such a conception of his shrewdness is not in line with popular ideas on this subject. Mr. Rockefeller knows that Simon Flexner and his collaborators have reduced the mortality in cerebrospinal meningitis—that scourge of the infant world—from 75 per cent.

to 25 per cent. and perhaps Mr. Rockefeller considers that an institution that saves fifty baby lives out of a hundred is a good investment, no matter what it costs. Perhaps the mothers of the babies think so, too. But the *New York Herald* is willing to take the word of a scrubwoman that the Rockefeller Institute exists in order to gratify the brutal and inhuman instincts of men who are striving to save babies from death.

It is almost unbelievable that any newspaper would so far sacrifice its reputation to a desire for sensationalism as to print such a story as that which appeared in the *New York Herald*, December 27.

Medical News

ARKANSAS

Contract for Sanatorium Awarded.—The contract for the erection of the buildings of the Arkansas Tuberculosis Sanatorium, Booneville, have been awarded to an Ozark contractor for \$26,564. The contract provides for the erection of an administration building, one ward room for 24 patients, two cottages each accommodating 8 patients, four cabins, two eight-room cottages, and five tent houses.

Society Meetings.—At the annual meeting of Sebastian County Medical Society in Fort Smith, Dr. Dred R. Dorente was elected president; Dr. J. Homer Buckley, vice-president; Dr. Clark S. Wood, secretary, and Dr. Charles W. Garrison, treasurer, all of Fort Smith.—Greene County Medical Association, at its meeting in Paragould, January 10, elected the following officers: Dr. Paul L. Dickson, Paragould, president; Drs. George T. Hopkins, Paragould, and Jones H. Lamb, Beech Grove, vice-presidents; Dr. Olive A. Charles Wilson, Paragould, secretary-treasurer, and Drs. Robert J. Haley, Felix M. Scott, and James G. MacKenzie, all of Paragould, censors.

CALIFORNIA

High License in Chico.—The city trustees of Chico have adopted an ordinance imposing a license of \$100 per day on itinerant practitioners, with a penalty for violation of the ordinance of a fine of not less than \$250 or imprisonment for not more than 90 days or both.

Arberry Sentenced.—Dr. John J. Arberry, San Francisco, whose trial and conviction for obtaining money under false pretenses was noted in THE JOURNAL, January 29, page 388, is said to have been sentenced to two years in the state penitentiary, San Quentin, January 21. A ten days' stay of execution was secured.

Refuse to Pay Local License.—Drs. Frank C. Newton, Daniel E. Osborn and J. A. O'Connor, St. Helena, are said to have been found guilty of violating the town ordinance by refusing to pay a license of \$3 per quarter. The attorney for the defendants has applied for a writ of prohibition, claiming that the ordinance is unconstitutional.

GEORGIA

Society Meetings.—At the annual meeting of the Georgia Medical Society, held in Savannah January 11, the following officers were elected: Dr. Thomas J. Charlton, president; Dr. Joseph G. Jarrell, vice-president; Dr. John M. Sigman, secretary; Dr. Ralph M. Thomson, treasurer; Dr. John L. Farmer, censor, and Drs. Henry H. Martin and Thomas P. Waring, delegates to the state society, all of Savannah.—At the annual meeting of Fulton County Medical Society, held in Atlanta, Dr. J. Ross Simpson was elected president; Dr. Edgar G. Ballenger, vice-president; Dr. Richard R. Daly, secretary; Dr. Arnold H. Lindorme, treasurer, and Dr. Stephen T. Barnett, censor, all of Atlanta.—At the annual meeting of Richmond County Medical Society, held in Augusta January 5, the following officers were elected: President, Dr. William R. Houston; vice-president, Dr. James R. Littleton; secretary, Dr. George A. Traylor; censors, Drs. John C. Wright and Moses S. Levy; delegate to the state association, Dr. Noel M. Maqre, and alternate, Dr. Albert A. Davidson, all of Augusta.

ILLINOIS

Physicians' Club Meet.—At the annual meeting of the Lincoln Physicians' Club, held January 13, the following officers were elected: President, Dr. William W. Houser; vice-president, Dr. Calvin C. Montgomery; secretary-treasurer, Dr. Harry S. Oyler, and trustees, Drs. Carl H. E. E. Rembe, Frank M. Hagans, and Lewis T. Rhoades.

Hospital Elects Officers.—The board of trustees of the Passavant Hospital, Jacksonville, at its annual meeting, January 18, elected the following officers: President, J. P. Loar; vice-president, S. W. Nichols; secretary, Dr. Carl E. Black; treasurer, F. E. Farrell; members of executive committee, Dr. Thomas J. Pitner and J. G. Ames, and medical trustee, Dr. Elmer L. Crouch.

Personal.—Dr. Samuel M. Wylie, Paxton, who was operated on for carbuncle at the Henrotin Memorial Hospital, Chicago, January 8, has returned home.—Dr. J. S. Alexander, Waverly, fell on the ice January 18, breaking his right hip.—Dr. Hugh K. Schussler sailed for Europe January 20.—Dr. P. S. Wiedman, Edwardsville, fell January 20, and sustained severe contusions.

Chicago

Fight Against Tuberculosis.—Under the head "Fighting Tuberculosis," the health department, in its current bulletin, details the methods and agencies employed in the local control of that disease.

Clairvoyant Fined.—Mrs. Ella Seibert, a fortune teller and clairvoyant, is said to have been convicted by a jury, January 18, of practicing medicine without a license, and to have been fined \$100 and costs. The fine was paid.

Money for Charity.—By the will of Mrs. Francis E. Curtis, \$30,000 is devised to the Presbyterian Hospital.—As the proceeds of a comedy presented at Sinai Temple under the auspices of Baron Hirsch Woman's Club, \$1,200 was netted for the Winfield Sanatorium.

KENTUCKY

Personal.—Dr. Robert L. Bone, Madisonville, is reported to be critically ill with septicemia following an operation on the nose, performed in Baltimore during the Christmas holidays.—Dr. Frederick A. Stine has been elected president of the Newport Board of Health.

Society Meetings.—The Medical Society of Warren County held a jubilee meeting and banquet January 12 in Bowling Green in honor of the oldest practitioners of the county. The following officers were elected: President, Dr. Frederick D. Cartwright, Bowling Green; vice-presidents, Drs. James W. Lewis, Oakland, and John H. Blackburn, Bowling Green; secretary-treasurer, Dr. Lillian H. South, Bowling Green.—McCracken County Medical Association, at its annual meeting in Paducah, elected Dr. Henry P. Sights president; Dr. Henry G. Reynolds, vice-president; Dr. Delia Caldwell, secretary; Dr. William J. Bass, treasurer, and Dr. Horace T. Rivers, censor, all of Paducah.

MARYLAND

Separate Hospital for Advanced Phthisis.—A proposition is now made that advanced cases of consumption shall be treated in a separate hospital, leaving Endowood and Sabillasville for incipient cases.

Personal.—Dr. Clarence E. Collins, Cristfield, slipped and fell on the ice January 12, breaking his left arm, cutting his face, and rendering him unconscious.—Dr. Henry W. McComas, Oakland, is said to have been removed from the position of registrar of vital statistics of Garrett county, because of the failure of the state board to obtain satisfactory records.

Unification of State Colleges.—Senator Linthicum's bill to unite all the leading colleges and universities in the state under one governing body, a board of regents, is to be discussed by a special committee appointed January 21. On this committee are representatives of the Western Maryland College, St. John's College, University of Maryland, Washington College, Baltimore Medical College, College of Physicians and Surgeons, and Maryland Medical College.

Faculty Approves Compromise Bill.—The Medical and Surgical Faculty of Maryland has given its approval to the compromise pure food bill, the final draft of which contains "those features considered vital to make it an operative law, justly and honestly administered." The bill does not correspond entirely to the views of the society, but the differences are not sufficiently great to jeopardize the passage of an effective law, by having two bills before the legislature.

The greatest danger is in the form of amendments while the bill is in passage. Notice has been given that any such efforts to destroy or seriously injure its usefulness will be met by the introduction of the original bill approved by the society which the profession and public will be urged to cause to be enacted.

Baltimore

Appropriations Reduced.—Following the recommendations of the governor, the Board of State Aid and Charities, in its report recommends a reduction of \$593,300 in the appropriations to the state institutions, hospitals, reformatories, etc., as compared with the appropriation made by the last legislature. The amount recommended by the board is \$1,585,100 less than that applied for by the institutions.

New Hospital.—The charter for the new South Baltimore Hospital was signed January 18. The hospital is to contain 100 beds and to cost about \$100,000. It will include, it is said, the Good Samaritan Hospital, the South Baltimore Eye, Ear and Throat Hospital, and the Woman's Evening Dispensary. The directors of the institution include the mayor, Drs. James Bordley, Jr., Harry E. Peterman, Anna S. Abercrombie, Lillian Welsh, Guy L. Humber, and John D. Blake.

MASSACHUSETTS

Estate Given to Psychologists.—Mrs. Martha S. Jones, of Portsmouth, N. H., has made clear her faith in the practicability of the modern specialized method of psychologic treatment, by giving her estate at Echo Park to Prof. Boris Sidis of Harvard University.

Personal.—Dr. Thomas F. Rearden has been reelected a member of the board of health of Springfield.—Dr. Edwin P. Seaver has been appointed physician to the overseer of the city poor, New Bedford, vice Dr. Clarence E. Burt, resigned.—Dr. Oliva G. Duhamel has been elected city physician of Marlboro.—Dr. Charles J. Ferguson has been elected fleet surgeon of the South Boston Yacht Club.—Dr. John J. Martin has been appointed school physician of Beverly.—Drs. Frank A. Conlon, Carl L. Moeckel, John H. Bannon, Myer Schwartz and Watkins R. O'Conner have been elected school physicians by the Lawrence Board of Health.—Dr. George B. Fenwick has been appointed a health commissioner of Chelsea, vice Dr. Edward S. Johnson, resigned.

MICHIGAN

Personal.—Dr. Charles B. Norden, Bad Axe, who was operated on for appendicitis at Hubbard Memorial Hospital, December 18, has entirely recovered and resumed practice.—Dr. Christian Schneider, Cross Village, has been taken to the Petoskey Hospital for a surgical operation.—Dr. Herman Ostrander, Kalamazoo, has been appointed assistant superintendent of the Michigan Hospital for the Insane.—Dr. John W. Whiteside has been placed in charge of the Oliver Iron Mining Company's Union Hospital, Ironwood.

Work Against Tuberculosis.—The Kalamazoo Antituberculosis Association, at its annual meeting January 14, reported that during the year 14 patients had been cared for, three had been cured, and two had been materially improved, and all benefited. Dr. Herman Ostrander was reelected president, Dr. David J. Levy was elected vice-president, Dr. John B. Jackson secretary, and Dr. S. Randolph Light treasurer.—At the annual meeting of the Michigan State Association for the Prevention and Relief of Tuberculosis, held in Ann Arbor, Dr. Victor C. Vaughan, Ann Arbor, was elected president; Drs. Guy L. Kiefer, Detroit, and Edward T. Abrams, Dollar Bay, vice-presidents; Dr. Alfred S. Warthin, Ann Arbor, secretary; Dr. Henry J. Hartz, Detroit, treasurer, and Drs. Guy Kiefer, Detroit, Collins H. Johnston, Grand Rapids, Emil H. Webster, Sault Ste. Marie, Edward T. Abrams, Dollar Bay, Robert B. Harkness, Houghton, Frank W. Shumway, Lansing, and Alfred S. Warthin, Ann Arbor, directors, and Dr. Charles G. Jennings and Guy L. Kiefer, Detroit, and Frank W. Shumway, Lansing, members of the executive committee. The association has filed articles of incorporation.—The Coldwater Antituberculosis Association has been organized with Drs. William H. Baldwin and Samuel Schults as members of the board of trustees.—The annual report of the State Tuberculosis Sanatorium, Howell, for the fiscal year ended June 30, shows that at the beginning of the year there were 34 patients in the institution. During the year 103 were discharged and at the end of the year there were 44 patients in the sanatorium. Twenty patients were discharged apparently cured, 27 were so improved that they were able to leave, and only two deaths were recorded. A temporary infirmary with a capacity of 8 beds has been erected, and it is hoped that a permanent structure may be erected in the near future.

MINNESOTA

Medical Building Burned.—The medical building at the University of Minnesota was destroyed by fire December 24, with a loss of about \$75,000.

Personal.—The governor has announced the following appointments on state boards: State Board of Medical Examiners, Drs. F. B. Hicks, Grand Marais; John W. Andrews, Mankato, and Charles Bolsta, Ortonville; and Advisory Commission, State Sanatorium for Consumptives, Dr. George F. Roberts, Minneapolis (reappointed).—Dr. Jacob H. Heilmann, Gary, has been appointed physician of Norman county.—Dr. Evans E. Brubaker, Northfield, is reported to be seriously ill.—Dr. DeWitt C. Jones, St. Paul, has succeeded Dr. Arthur W. Miller as coroner of Ramsey county, and Dr. Edmund Stevens has been appointed chief deputy.—Dr. Thomas N. McLean, Fergus Falls, is ill with cholelithiasis, and will probably undergo operation in New York or in Rochester, Minn.—Dr. Kurt, Albert Lea, sustained the total loss of his office furniture and fixtures by fire recently.—Dr. and Mrs. Pierre A. Hilbert, Melrose, and Dr. George H. Freeman, St. Peter, have gone to Europe.

MISSOURI

Personal.—Dr. Horace D. Quigg, Blackwater, has succeeded Dr. Charles B. Simcoe as superintendent of the Missouri Colony for Feeble-Minded and Epileptics, Marshall.—Dr. Kearan C. Cummins, Maryville, who was seriously injured several weeks ago by falling from the roof of his porch, is convalescent.—Dr. J. Park Neal has resigned as assistant superintendent of the General Hospital, Kansas City.

State Board Election.—The State Board of Health, at its annual session in Jefferson City, January 10 to 12, elected the following officers: President, Dr. Ira W. Upshaw, St. Louis; vice-president, Dr. Ernest F. Robinson, Kansas City; and secretary, Dr. Frank B. Hiller, Kahoka (reelected). The board has appointed 900 registrars in the counties of the state to obtain statistics on births and deaths under the law enacted by the last general assembly. The board has also decided to move the office of state bacteriologist to Jefferson City, and to equip a laboratory there in connection with that of the State Board of Health.

Medical Library Open to Profession.—The University of Missouri medical library has been made a free circulating library, open to the physicians of the state. Any reputable physician of the state may borrow a book from the library for a period of two weeks with an extension of two weeks, the only expense to the borrower being the postage or express charges. A brief catalogue of the number of works in the medical library is soon to be published and will be mailed on application. For information regarding the library, address Mr. H. O. Severance, librarian, or Dr. Clarence M. Jackson, dean of the University of Missouri, Columbia.

St. Louis

Purchase Site for Medical Building.—Washington University has acquired 100 feet of ground on the east side of King's Highway for \$9,000. The property is eventually to be utilized for a medical school building.

Against Tuberculosis.—At the Columbian Club, \$93,000 was subscribed in less than two hours by members of the Jewish Educational and Charitable Union to erect an orphan's home for Jewish children and a home for incurable consumptives.—Francis H. Peters has donated \$1,000 toward the erection of a tuberculosis sanatorium in memory of his son.

Personal.—Dr. Joseph Grindon has been chosen a corresponding member of the French Society of Dermatology and Syphiligraphy.—Dr. Morris C. Tuholske has been elected secretary of the Society for the Relief and Prevention of Tuberculosis.—Dennis E. Kimbrough, a senior student of the St. Louis College of Physicians and Surgeons, died at his home January 24, from septicemia following an attack of tonsillitis.

Faculty Appointments.—The following appointments have been made by the faculty of the St. Louis University School of Medicine: Dr. Guthrie McConnell, assistant professor of pathology; Dr. Jules M. Brady assistant professor of diseases of children; Dr. Orville H. Brown, assistant professor of physiology; Dr. Rudolph Bulman, assistant in surgical pathology; and Drs. Llewellyn Sale and Heber B. DePew, assistants in medicine.

NEBRASKA

Meat Inspection Ordinance Passed.—The city council of Omaha has passed the ordinance approved by the Omaha-Douglas County Medical Society, requiring all meat sold in the city of Omaha to be properly tagged showing that it has

been examined by government inspection or by a regularly appointed veterinarian and meat inspector of the city of Omaha.

Society Meetings.—The annual meeting of the Omaha-Douglas County Medical Society was held in Omaha January 11. A resolution was adopted by the society endorsing the local ordinance for meat inspection and asking the mayor and city council to pass the ordinance. A loving cup was presented to Dr. Richard C. Moore, dean of the medical profession in Omaha, as a token of esteem and in honor of his forty-five continuous years of practice in the city. Dr. Joseph M. Aikin was elected president; Dr. Charles Rosewater, vice-president; Dr. Robert R. Hollister, secretary, and Dr. Millard Langfeld, treasurer, and Dr. John P. Lord, censor, all of Omaha.—Johnson County Medical Society, at its annual meeting, held in Tecumseh, January 20, elected Dr. Sullivan Howard, Elk Creek, president; Dr. John W. Archerd, Cook, vice-president; Dr. Albert P. Fitzsimmons, Tecumseh, secretary-treasurer and delegate to the state society, and Dr. James W. Turner, Sterling, censor.—At the annual meeting of Adams County Medical Society, held in Ingleside, January 11, Dr. James V. Beghtol, Hastings, was elected president; Dr. Mark W. Baxter, Ingleside, vice-president and censor; and Dr. Edward A. Weir, Hastings, secretary-treasurer.—Gage County Medical Society, at its annual meeting, held in Beatrice January 11, elected Dr. Charles S. Curry president; Dr. C. A. Bradley, vice-president, and Dr. John I. McGirr, secretary-treasurer, all of Beatrice.

NEW MEXICO

Win Malpractice Suit.—In the case of Drs. David H. Galloway and Howard Critcher, Roswell, and Charles M. Murrell, Alida, charged with malpractice by Jesse P. Kelley, the court has decided in favor of the defendants.

Personal.—Dr. James A. Massie has been elected president of the Santa Fe Commercial Club.—Dr. William R. Saltz-gaber has been appointed manager and resident physician of the Alamogordo Sanatorium.—Dr. Thomas B. Hart, Raton, fell into an open cellarway recently, spraining his ankle and sustaining painful injuries.—Dr. William J. Hammer, medical director of St. Joseph's Sanatorium for Tuberculosis, Silver City, has gone to Europe.

NEW YORK

New Hospital for Queens.—The Little Sisters of the Poor have filed plans for a new hospital to be located in Woodhaven and to be known as St. Anthony's General Hospital. The building is to cost \$500,000.

State Medical Society Election.—At the one hundred and fourth annual meeting of the Medical Society of the State of New York, held in Albany, January 25 and 26, it was decided that the meeting for 1911 should be held in Albany. The following officers were elected: President, Dr. Charles Jewett, Brooklyn; vice-presidents, Drs. Charles Stover, Amsterdam; Joseph W. Grosvenor, Buffalo; and Charles W. Brown, Elmira; secretary, Dr. Wisner R. Townsend, New York City (reelected), and treasurer, Dr. Alexander Lambert, New York City (reelected).

New York City

Columbia Will Accept Women Students.—At the summer session of Columbia University women will be admitted to the courses in law and medicine. They will not obtain degrees, however, unless they have been accepted as students in the Law School or in the College of Physicians and Surgeons. It is not believed that the authorities contemplate a revision of the rules governing these departments. The College of Physicians and Surgeons will offer five new courses this year, namely, pathology, bacteriology, medical diagnosis, physiological chemistry and pathological nutrition.

Personal.—Dr. James J. Walsh has returned from New Orleans, where he lectured before the nurses about old hospitals; before the Orleans Parish Medical Society on "Old Superstitions in Medicine and New Ones," and before the Medical Department of Tulane University on "Some Landmarks in Six Thousand Years of Medicine."—Dr. J. Bergen Ogden has been appointed assistant medical director of the Metropolitan Life Insurance Company.—Dr. Joseph H. Byrne has succeeded Dr. Peter Hughes as medical officer of the finance department of Brooklyn.—Dr. Everett C. Brennan, Brooklyn, sustained a dislocation of the shoulder in a fall on the ice, January 5.

Health Board in Food Fight.—As a result of the agitation concerning meat prices, Health Commissioner Ernest J. Lederle has ordered an immediate investigation of all the cold storage plants in the city. Hitherto the department has only con-

cerned itself with watching meat after it reached the retailers, but instances have come to light where food has been unfit to eat within forty-eight hours from the time it was taken from cold storage.—Two bills have been sent to the legislature, one prohibiting the sale of produce that has been kept in cold storage for more than thirty days and one providing for the inspection of cold storage warehouses in New York City by the Board of Health.

Disease in the Schools.—Physicians of the Board of Health have completed the examination of 323,344 school children, about half the number in the public schools of the city and find that less than one-fourth have no physical defects. It is taken for granted that the percentage of defective children among those that have not been examined is about the same. Among those examined it was found that 242,048 were in need of medical or surgical attention. There were 56,620 cases of trachoma, 3,850 pupils were excluded because of the contagious diseases of childhood, 38,329 children were suffering from defects of vision, 73,058 from defects of nasal breathing, 3,471 from defects of hearing, and 183,869 from defective teeth. The physicians found 145,066 cases of pediculosis. The children suffering from malnutrition numbered 11,749, and those suffering from anemia numbered 2,408.

OHIO

Rockefeller Aids Dispensary.—Dr. John D. Rockefeller has agreed to build a hospital to cost \$25,000 for the Women's and Children's Medical and Surgical Dispensary, Cleveland, a charitable dispensary which has been maintained by the women physicians of the city for thirty years, on the condition that \$25,000 is raised as an endowment fund.

State Board Election.—Dr. Sylvester M. Sherman, Columbus, has been elected president of the State Board of Health, vice Dr. Augustus Ravogli, Cincinnati; Dr. Edward J. Wilson, Columbus, vice-president and treasurer, and Dr. George H. Matson, Columbus, secretary (reelected). John W. Hill, stationery engineer, Cincinnati, has been appointed a member of the State Board of Health, vice Dr. Byron Stanton, Cincinnati, term expired.

Personal.—Dr. Mark Millikin has been reelected health officer of Hamilton.—Dr. Guy T. Goodman has been appointed a member of the board of health of Mansfield, and Dr. Maxwell J. Davis has been reelected health officer.—Dr. Martin Friedrich has been reappointed health officer and Dr. Clyde E. Ford, health superintendent of Cleveland.—Dr. Leroy C. Eberhard has been made president pro tem of the board of health of Akron.—Drs. Herbert C. Haning and James E. Welliver have been appointed members of the board of health of Dayton.—Dr. Dana O. Weeks has been elected president pro tem of the Marion Board of Health.—Drs. Herman S. Rhu, Cary T. Wiant, and A. Melville Crane have been appointed members of the health board of Marion.—Dr. Charles A. Poindexter, Middleport, has been made local surgeon for the K. and M. Railroad.—Dr. Sterling B. Taylor, health officer of Columbus, has resigned.—Dr. Leo S. Talaska has been appointed physician to the Toledo Isolation Hospital.

Cincinnati

Neumann in Cincinnati.—Dr. Henrik A. Neumann, professor of diseases of the ear in the University of Vienna, was a guest of Dr. Christian R. Holmes during his stay in that city. On January 13, Professor Neumann was the guest of Dr. Allen B. Thrasher at a dinner at the Queen City Club, and on January 23, Dr. Holmes gave a buffet supper at his home in Avondale in honor of Professor Neumann.

Personal.—Dr. Nathaniel P. Dandridge, after a service of 38 years, has resigned his position as surgeon to the Cincinnati Hospital and Dr. Horace J. Whitacre has been appointed to fill the vacancy.—Dr. Christian R. Holmes has resigned as one of the medical directors of the City Hospital to accept the appointment as a member of the commission to build the new city hospital and has been succeeded by Dr. N. P. Dandridge. Dr. Horace J. Whitacre has been transferred from the south surgical service of the City Hospital to fill the vacancy made by the resignation of Dr. Dandridge; Dr. Charles E. Caldwell has been transferred from the department of orthopedic surgery to the south surgical service; Dr. Robert Carothers has been promoted from junior to senior in charge of the orthopedic service; Dr. J. Louis Ransohoff, at present cystoscopist, has been made junior on the orthopedic service; Dr. Jesse Wyler, junior oculist; Dr. Samuel Iglauer, junior laryngologist; Dr. Gustave A. Hinnen, junior otologist; and Dr. William R. Abbott, assistant resident pathologist.

PENNSYLVANIA

Elections.—The Slate Belt Medical Society, at its annual meeting, held in Pen Argyl, elected the following officers: President, Dr. Benjamin F. Dilliard, East Bangor; vice-president, Dr. Irwin N. Johnson, Pen Argyl; recording secretary, Dr. Clinton F. Stofflet, Pen Argyl, and treasurer, Dr. David H. Keller, Bangor.—The Columbia College of Physicians and Surgeons, at its annual meeting, January 19, reelected the following officers: President, Dr. George W. Berntheizel, Columbia; vice-president, Dr. J. Henry Musser, Lampeter; secretary, Dr. Walter S. Brenholtz, Lancaster; treasurer, Dr. Chester F. Markel, Columbia; and judicial council, Drs. John J. Newpher, Mount Joy, Jacob R. Lehman, Mountville, and Leroy K. Leslie, Bareville.

Personal.—Dr. Fannie Davis has been elected president of the Oil City Medical Club.—Dr. Donald Guthrie, of Wilkes-barre, has been elected physician and surgeon-in-chief of the Robert Packer Hospital, Sayre.—Governor Stuart announced, January 25, the following reappointments: Drs. Daniel P. Maddux, Chester, and Christian P. Seip, Pittsburg, members of the Homeopathic Medical Examining Board; Drs. William H. Blake, Philadelphia and Luther F. Crawford, Tyrone, members of the Eclectic Medical Examining Board; Dr. James B. Walker, Philadelphia, member of the Board of Medical Examiners, representing the Philadelphia County Medical Society, and Dr. Adolph Koenig, Pittsburg, member of the Board of Medical Examiners, representing the Medical Society of Pennsylvania, vice Dr. Guy McCandless.

Philadelphia

Personal.—Dr. George A. Piersol has been elected president of the American Association of Anatomists.—Dr. William Pepper has been chosen president, Dr. George E. de Schweinitz, vice-president, and Dr. R. H. D. Swing, treasurer of the Class Officers' Association of the University of Pennsylvania.—Dr. Joseph S. Evans, who has become professor of clinical medicine in the University of Wisconsin, was given a dinner by his associates January 28, at which he was presented with a loving-cup.

The Scott Memorial.—A number of friends of the late Dr. J. Alison Scott, deeming it proper that some memorial should be raised as a token of the general appreciation of his life and character, have decided to make an endeavor to raise \$10,000 to found a fellowship in the Medical Department of the University, and to offer the privilege of contributing to this fund, not only to his classmates and contemporaries, but also to his friends at large. Dr. William Campbell Posey is chairman of the committee, Dr. Joseph P. Tunis, secretary, and George H. Frazier, Esq., treasurer.

Medical Schools May Join Lehigh.—It can be stated that negotiations are now under way toward the possible union of Jefferson Medical College, the Medico-Chirurgical College and the Philadelphia Polyclinic and School for Graduates in Medicine as the medical department of Lehigh University. The Medico-Chirurgical College is about to lose its buildings through the completion of the Parkway, while Jefferson has what is admitted to be one of the finest hospitals in the United States, if not in the world. Its situation, in the center of a large population and its accessibility to both railway stations and the ferries give it great clinical material. It has now become an established fact among educators that the modern professional school must be associated with a university in order to accomplish the most good and to enjoy the most prestige. The affiliation of Jefferson with some university has been discussed before and Princeton has been the institution most frequently mentioned, but this would make difficulties in organization and in the reception of state aid.

WISCONSIN

Personal.—Dr. Joseph N. Arbin, Peshtigo, fell on a slippery sidewalk January 22, breaking his left leg.—Dr. Douglas L. Saucrhering, Wausau, is said to have given up practice and will engage in farming.—Dr. Robert G. Sayle has been elected president of the medical and surgical staff of the Johnston Emergency Hospital, Milwaukee, and Dr. Daniel Hopkinson, secretary.—Dr. Louis P. Valentine, Corliss, who has been ill in St. Mary's Hospital, Racine, has recovered.

Society Meetings.—Rock County Medical Society, at its annual meeting, elected Dr. Daniel R. Connell, Beloit, president; Dr. Thomas W. Nuzum, Janesville, vice-president; Dr. Edwards B. Brown, Beloit, secretary-treasurer; and Dr. Lewis F. Bennett, Beloit, delegate to the state society.—Physicians of Neenah and Menasha have completed the organization of the Neenah-Menasha Medical Club and have elected the following officers: President, Dr. James R. Barnett, Sr.,

Neenah; vice-president, Dr. Frank M. Corry, Menasha; and secretary-treasurer, Dr. Samuel G. Todd, Neenah.—Brown County Medical Society, at its annual meeting, held in Green Bay, January 20, elected Dr. Richard H. Sweetman, Green Bay, president; Dr. Wenzel M. Wochos, Kewaunee, vice-president; Dr. Thomas J. Oliver, Green Bay, secretary-treasurer, and Dr. John R. Minahan, Green Bay, censor.—At the annual meeting of the Douglas County Medical Society, held in Superior, Dr. Lewis Moody, Superior, was elected president; Dr. Fred. G. Johnson, Iron River, vice-president; Dr. Thomas J. O'Leary, Superior, secretary-treasurer; Dr. John Baird, Superior, censor; Dr. Herbert J. Orchard, Superior, delegate to the state society, and Dr. Thomas J. O'Leary, Superior, alternate.—Manitowoc County Medical Society held its annual meeting in Manitowoc, January 11, and elected the following officers: Dr. Charles M. Gleason, Manitowoc, president; Dr. Albert M. Farrell, Two Rivers, vice-president; Dr. Adolph J. Shimek, Manitowoc, secretary-treasurer; Dr. Eugene Gates, Two Rivers, censor; Dr. Emil Christensen, Two Rivers, delegate to the state society, and Dr. Frederick S. Luhmann, Manitowoc, alternate.

GENERAL NEWS AND COMMENT

Congress Postponed.—The House of Representatives, on January 27, passed a joint resolution previously adopted by the Senate, postponing the invitation to the International Congress on Hygiene and Demography to hold its session in the United States, until 1911 or 1912.

Alumni to Meet.—The next meeting of the Alumni Association of the Lying-in Hospital of the City of New York will be held February 8, at Harvard Club, New York City, at 8:30 p. m. A paper will be presented by Dr. J. Whitridge Williams, Baltimore, on "My Experiences with Pubiotomy in the Treatment of Contracted Pelvis."

Ehrlich Fund.—Mr. John D. Rockefeller, having learned of the distinguished services to medical science which have been and are being rendered by the researches of Professor Paul Ehrlich of Frankfurt, Germany, has presented to the Rockefeller Institute for Medical Research the sum of ten thousand dollars to be placed at the disposal of Professor Ehrlich for furthering his investigations into the chemical therapy of the protozoan diseases.

Personal.—Dr. James C. Perry, chief quarantine officer of the Canal Zone, left for his annual leave of absence, January 2.—Lieutenant-Colonel Charles Richard, M. C. U. S. Army, has taken charge of the Division Hospital, Manila.—Major Edward L. Munson, M. C. U. S. Army, has been awarded the Seaman Prize of \$100 by the Military Service Institute for the best essay on "Should the Medical Officer be Responsible for the Sanitation and Health of the Troops with Which He Serves; and if so, What Should be His Duties and Responsibilities?"

Defense of Medical Research.—The following statement from Dr. Simon Flexner, director of the Rockefeller Institute for Medical Research, appeared in the *New York Times*, January 17. This statement is in reply to sensational articles which have appeared in the *New York Herald* in the past month, charging brutal and needless cruelty on the part of members of the staff of the institute. The principal authority for the charges was a Mrs. Kennedy, who called herself an "assistant nurse" but who, according to Dr. Flexner, was employed as a scrubwoman. The matter is commented on editorially this week. Dr. Flexner's statement follows:

"Within the last few weeks an effort has been made by the New York Anti-Vivisection Society, by charging it with wilful cruelty, to discredit the Rockefeller Institute for Medical Research, and through and with it other institutions in this country in which animal experimentation is being employed to extend our knowledge of human and animal diseases.

"I wish to state with all the emphasis and definiteness that I can place on the words that cruelty is not practiced at the Rockefeller Institute, and would not be tolerated. I wish also to state, with the same emphasis, that no concealment is practiced there, but that the results of its work are published in full detail to the world, and qualified persons are freely admitted to witness the experiments. It is, moreover, an imposition on a lay public, uninformed and properly so of the methods of the hospital operating room, to parade as wanton cruelty when applied to the brute creation the very means which are in daily use to save life and limb in the best hospitals in this country and Europe.

"The character of the witnesses employed by the New York Anti-Vivisection Society to make the charges of cruelty may be gathered from the following facts: The Kennedy woman,

the chief witness relied on, was employed as a scrubwoman. The men Dutton and Smith, the other witnesses, were ex-employees discharged for sufficient cause. Since the Kennedy woman stated under oath that the employment in the operating room was very distasteful to her because of the cruel way in which the animals were treated, it is of some importance to learn that she secured, surreptitiously brought to the institute in a bag, and offered for sale for 35 cents, to be used for experimental purposes, the pet cat of her neighbor, and when rebuked by Miss Lilly, the trained nurse, on the ground that the act constituted a theft, she attempted to exculpate herself by saying that as the cat strayed into her rooms, she had a right to it.

"The true value of the so-called damaging testimony against the Rockefeller Institute is, however, further exhibited by a statement, in my possession, made under oath by an ex-employee, to the effect that Mrs. Kennedy, accompanied by two other women, visited her, endeavored to make her say that she had witnessed cruel treatment of animals at the institute, and offered her \$100 for information, and that one of the women showed her the money in a bag.

"The purpose of experimental surgery being the extension and perfection of the art of human surgery, it is inconceivable that any but the most precise and perfect means would be employed in the care and treatment of animals used for experiment. In Dr. Carrel, the Rockefeller Institute has had the rare fortune to get a highly distinguished surgeon to carry on this phase of its work. The institute spares, indeed, no expense and pains in providing for the care and comfort of the animals employed there, and the provision made for the animals will compare favorably with the provision made in the leading hospitals for the care of human patients.

"The scientific staff of the Rockefeller Institute has been chosen from among the distinguished scientists in America and Europe. The different universities are the training schools for the staff of the institute. The themes upon which the workers are engaged demand a degree of precision and care that is difficult or impossible of description, in order that the results of the experiments may be trustworthy and valuable. Any roughness or carelessness would spoil the experiment and nullify the result.

"I desire, therefore, to deny totally the statements of cruelty made in the affidavits of Mary L. Kennedy, Samuel Francis Dutton, and Matthew Smith, and to state unqualifiedly that the allegations are false, ignorant, and wilfully misleading."

CANADA

University News.—The Medical Faculty of the University of Toronto is founding a scholarship in surgery, to commemorate the memory of the late Dr. George A. Peters, formerly professor of surgery in the institution.—Mr. W. J. Gage, Toronto, has donated money to found several scholarships in tuberculosis in the University of Toronto.

Personals.—Dr. John L. Davison, Toronto, is recovering after an operation for appendicitis.—Dr. George R. McDonagh, Toronto, has recovered from an attack of pneumonia and has sailed for the Mediterranean.—Dr. Andrew Macphail, Montreal, editor of the *Montreal Medical Journal* and the *University Magazine* will be the editor of the new *Journal of the Canadian Medical Association*, which is expected to be issued about June of the present year.

New Medical Organization.—A new social medical organization has just been founded in Toronto known as the Æsculapian Club. Its membership is limited to sixty and to practitioners of ten years' standing. The first meeting was held January 14, when Justice Riddell delivered an address on "The Relation of Law to Medicine." The February meeting will be addressed by Dr. W. A. Rupert Mitchell, ex-surgeon to the Shackleton Antarctic expedition, who is about to locate in Toronto.

Hospital News.—Lord Strathcona has cabled \$25,000 toward the maintenance of the emergency typhoid fever hospital in Montreal. He is willing to contribute \$100,000 if a citizens' fund is established toward removing the cause of the outbreak.—In connection with the Toronto General Hospital, the Ontario Clinic for Nervous and Mental Diseases has recently been established, to be in charge of Drs. Charles K. Clarke and Ernest Jones of the Toronto Provincial Hospital for the Insane.—Dr. Charles H. R. Lafontaine, seigneur of Chambly, Quebec, has bequeathed \$20,000 to the hospital for incurables, Montreal, and \$1,500 to the hospital at Chambly.

Conservation of the Health of Canadians.—The government of the Dominion of Canada lately appointed a commission on

how best to conserve Canada's natural wealth, one section of which will be devoted to public health, with Mr. E. B. Osler, M. P., Toronto (brother of Dr. Osler) as its chairman. In a masterly address on the aims and scope of the commission, the Hon. Clifford Sifton, its chairman, referring to the question of public health matters, stated that while the federal government had spent and was spending hundreds of thousands of dollars in eradicating diseases in animals, practically nothing was being done toward meeting the ravages of diseases among human beings, such for example, as tuberculosis. It is expected that the public health section of the commission will be able to work out an acceptable and useful plan.

LONDON LETTER

(From Our Regular Correspondent)

LONDON, Jan. 15, 1910.

Asphyxia Due to Displacement of Artificial Teeth

The danger of going to sleep with artificial teeth in the mouth is well recognized, but cases in which such teeth have proved dangerous during the waking hours are rare. An inquest has been held on a man, aged 52, who was found dead on the highway with a set of false teeth wedged across his throat over the larynx, making it impossible for him to breathe. The medical evidence showed that the teeth were held in position simply by suction, and it was suggested that while walking up hill the man breathed heavily, drew the teeth back into his throat and was unable to release them.

The Pasteur Treatment of Hydrophobia in India

The Kasauli Pasteur Institute has issued a very satisfactory report for 1908. The total number of patients treated was 1,389, of whom 342 were Europeans and the remainder natives. The percentage of failures was only 0.36, the lowest on record in the history of the institute. The method of preparing the vaccine has been altered to that introduced by Professor Höyges of Budapest. This differs from Pasteur's original method, in that the vaccine is prepared from fresh instead of from dried spinal cords. The emulsion can be diluted to any proportion, and the advantages over the older method consist in simplicity of preparation, accuracy of dosage and lessened disturbance of the patient. In all, 2,500 patients have been treated by this method. Every facility is given by the institute to those bitten in any part of India. In the case of a dog bite immediate cauterization of the wound and the securing of the animal, if possible, and keeping it under observation for ten days is advised. If it is alive and well on the tenth day it is not suffering from rabies. If it shows any signs of rabies the patient is directed to proceed to the institute immediately and to bring with him a portion of the dog's brain preserved in glycerin or Zenker's fluid. He should be accompanied by all persons bitten or licked by the animal. All animals bitten by a rabid animal should be segregated for six months, and all infected persons should undergo Pasteur treatment at once. The report gives statistics showing the frequency with which hydrophobia followed the bites of rabid animals. Of 108 persons bitten by supposedly rabid dogs and untreated, 44 died; of 154 bitten by supposedly rabid jackals and untreated, 48 died.

PARIS LETTER

(From Our Regular Correspondent)

PARIS, Jan. 14, 1910.

Retirement of Professor Bouchard

Dr. Bouchard, professor of general pathology and therapeutics in the Paris college of medicine and a member of the superior council of public instruction, has just addressed to the minister of public instruction a request to be allowed to retire. In an interview Professor Bouchard said that he wished to retire in order to take some rest and to devote himself entirely to his scientific researches. Eighteen months ago, just before vacation in 1908, he expressed an intention to retire, but at the desire of his colleagues, he remained to preside over the *concours d'admissibilité à l'agrégation* during the month of September following. I have already mentioned the tumultuous incidents to which the program drawn up by Dr. Bouchard for this *concours* gave rise (*THE JOURNAL*, Jan. 16, 1909, lii, 223). Since that time no new *concours d'admissibilité à l'agrégation* has taken place and no new *agrégé* has been chosen for the college of medicine. The next *concours* (expected to be held in May) will probably elicit numerous new protests and disturbances. Dr. Bouchard has probably no desire to take the responsibility again.

Medical Service in the Industries in which Employees are Exposed to Lead Poisoning

Conformably to a decree prescribing the hygienic measures in the industries in which employees are exposed to lead poisoning, the minister of labor has just issued a decree organizing a medical service in the establishments where these various trades are carried on. A physician chosen and paid by the head of the concern will make examinations and reports. No workman will be employed without a certificate from the physician stating that he presents no symptoms of lead poisoning or of a disease susceptible of being dangerously aggravated thereby. Each certificate must be renewed a month after the workman's entrance and thereafter once every three months. Apart from these periodical visits the head of the concern is bound to have any workman examined at the latter's request or statement that he is unfavorably affected by the work on which he is occupied. A special register is to be constantly kept up to date and held at the disposition of the industrial inspector with specific mention, for each workman, of the dates and duration of absence on account of any illness whatsoever, the dates of the certificates to justify these absences, the medical particulars they contain, the name of the physician who has given them, and the instructions given by the physician of the establishment.

General Assembly of the Corporative Association of Medical Students

The Corporative Association of Medical Students held a general assembly January 10. It decided that this year the association would bring its efforts to bear on the following two points: (1) liberty of the hospital *stage* based on the distribution of *stagiaires* in all the services (to-day the *stagiaires* are distributed among seven or eight services only) and limitation of the number of students in the service in order to improve clinical instruction for the good both of the profession and of the patient; (2) propaganda, and, if necessary, manifestations in order to bring about the nomination of a superior medical council composed of professors and practitioners, students to have a consulting voice.

Death of Prof. A. Queirel

Dr. A. Queirel, professor of clinical obstetrics at the Marseilles medical school, has just died. Dr. Queirel, who had been national correspondent of the Academy of Medicine since 1892, was elected national associate last July.

BERLIN LETTER

(From Our Regular Correspondent)

BERLIN, Jan. 12, 1910.

Personal

Professors Bernhard Schultze, of Jena, and Hegar, of Freiburg, have been elected honorary members of the Gynecologic Society on the occasion of the fiftieth anniversary of their doctorate.

Centennial of the Hufeland Society

On the first of February the Hufeland Society of this city will celebrate its centennial. Prof. v. Hansemann will deliver an address on Hufeland and the Hufeland Society, and Professor Strauss will speak on Hufeland as physician and Professor Brieger on Hufeland as a balneologist. The society has decided to elect Robert Koch, W. A. Freund, Franz König and Lister as honorary members on the occasion of the jubilee.

Founding of an Imperial Chemical Institute

For some time there has been in contemplation the establishment of an imperial chemical institute for the advice of the authorities in matters pertaining to chemical industry, similar to the physico-technical imperial institute which has been in existence for a number of years, the first president of which was Helmholtz. A definite principle has not been established as to the particular functions of the new institute. The establishment has been delayed because of the financial stringency and insufficient funds of the empire, and also because chemical industry requires for its assistance certain conditions which it is somewhat difficult to fulfill. At present the wholesale chemical industry has established an imperial society which decided at its last meeting to appropriate \$225,000 (900,000 marks) for the founding of an imperial chemical institute. As a preliminary the association formulated the demand that the federal government should furnish the ground and that the Prussian department of education should supply a regular professor (*Ordinariat*) from the University of Berlin as president of the institute, and a professor extraordinary as director of one department.

Suicide of School Children

The head of the Prussian National Statistical Bureau, Privy Medical Counsellor Dr. Behla, makes a report in the *Medizinische Reform* on suicide among school pupils in Prussia based on official data. From 1883 to 1907, 1,293 school pupils committed suicide, 1,102 boys and 191 girls. The yearly variations remain in general the same both in the lower and in the higher schools. On the average a suicide occurs each week. Since 1883 the population and the number of institutions have increased, there is therefore a relative decrease in suicide among students. As to the causes of student suicide, it has been shown that in Prussia more than one-fourth of such cases are caused by mental disease; and of the other cases a large proportion are referable to psychic influences. As other causes the tables given by Behla indicate the following: an injured sense of honor, nervousness and competitive work, failure to secure certificate or diploma, lack of promotion, fear of punishment, etc. More than one-third committed suicide from fear of punishment on account of some offense at school or insufficient success in studies. Mental or nervous diseases form the causative factor in 10 to 15 per cent. of cases. With reference to the important question whether the greater blame for the lamentable occurrences should fall on the home or the school, Behla remarks that unquestionably the severe criticisms which have been lately raised against the higher schools are exaggerated. The causes to a large extent lie entirely outside of the schools. On the other hand it should not be overlooked that here and there an unfit teacher has contributed to the catastrophe by corporal punishment and injury to the sense of honor. But on a closer analysis of the motives it appears that causes related to the individual himself, such as mental disturbance, nervous diseases, hereditary taint, insufficient capacity, the development of puberty, etc., play a greater rôle than external influences, among which often only trifles are involved. Behla concludes that educators should exercise greater supervision of the children and control their mental life, and that the teacher should take greater account of the individuality of the pupil.

Results of Radium Therapy

In the Berlin Society for Internal Medicine a short time ago Dr. Löwenthal of Braunschweig, who has had especial experience in this field as a neurologist, delivered an address on radium therapy, which was closed by an interesting discussion. According to Löwenthal one must distinguish between the external and internal action of radium. For external application the radium salts are used. In this case it has been shown that the radium radiations are not essentially different from those of the x -ray. It is, however, distinctly more expensive than the latter. For internal treatment probably only the emanations are applicable. The emanation, which is a gas absorbable by liquids, and which can be introduced into the body in any desired quantity, is found, as is well-known, in atmospheric air and in greater concentration in cellars and subterranean cavities. The identity of the action of emanations with that of natural baths (*Wildbäder*) Löwenthal considers as established. Whether the other healing springs which are of value in metabolic diseases act partly through their content of emanation is unsettled. In the debate Prof. M. Wolff reported experiments which he had made with radium in the treatment of tuberculosis. A bactericidal action of the medium on tubercle bacilli could not be established. All animals that were inoculated with irradiated cultures perished from tuberculosis. Similar results were obtained by the application of the emanations. For this reason Wolff opposes the theory of a bactericidal action of radium on the tubercle bacillus. Finally Wolff applied radium to tuberculous glands in animals but here also the remedy failed completely. The irradiation was continued for seventy-seven days and the action on the skin and hair was so intense that the skin could be pulled off in shreds, but the tuberculous glands showed no retrogression. Dr. Friedländer reported the success in skin diseases from the former clinic of Lassar. Chancreoids that had been treated unsuccessfully with the x -ray healed completely under radium. It was also possible to cure many cases of nevus vasculosus which had withstood the x -ray and carbonic acid treatment. Pure radium bromid was applied in a strength of from 4,000 to 20,000 mits of radioactivity. No injurious or unpleasant action occurred even with two children. It must not be forgotten that radium, like the x -ray, may show its irritant action only after days or weeks. For this reason the treatment should be interrupted on the slightest appearance of redness, or the application made in a place not previously treated. Dr. Friedländer also had not been able to establish a bactericidal action for radium. Dr.

Fleischmann has applied radium emanations in arthritis in the first medical clinic and has repeatedly observed a favorable action. In order to get an idea of the most suitable method of introduction of the emanations four experiments were made on rabbits. After intravenous injections the emanation disappears from the blood in a very short time because it is immediately exhaled by the lungs. On the other hand, after the introduction of water containing emanations into the stomach by means of the sound, the blood was still strongly impregnated with the emanation after one and a half to two hours. Introduction by the stomach is therefore the more suitable. A long-continued inhalation may also be recommended. Brieger has shown that in tuberculosis the temperature rises after inhaling the emanation in proportion to the severity of the case, to the extent of 1.8 C. (3.2 F.). Consequently it may be concluded that radium has a certain activity in respiratory diseases.

The Relations Between the Birth-Rate and Infant Mortality in Prussia

Dr. Hillenberg has published in the *Journal for Social Science* (*Zeitschrift für Sozialwissenschaft*) an interesting study on this important question on which no unobjectionable conclusion has yet been obtained on account of an insufficient statistical basis. In order to answer the question, the birth-rate and infant mortality statistics from 1886 to 1905 of the individual governmental districts of Prussia have been collated in two tables, divided into four sections of five years each, with a separation of the figures referring to the city and the country. As a result it is shown that although in some districts a certain correspondence appears to exist, no regular relation between the two factors of population can be established. In a very large number of the above statistical periods the birth-rate and the infant mortality move in exactly opposite directions. For instance, in the province of Köslin (country) from 1886 to 1890 the birth-rate was 38, the infant mortality 21, and in the same district from 1891 to 1895, the birth-rate and infant mortality were respectively 38.5 and 20.3; from 1896 to 1900, 38.3 and 20; from 1901 to 1905, 38.7 and 18.7. Still more remarkable are differences for the provinces of Trier (country). For 1886 to 1890 the birth-rate and infant mortality were, respectively, 38 and 16; 1891 to 1895, 39.9 and 15.7; for 1896 to 1900, 40.5 and 15.2; from 1901 to 1905, 40.5 and 14.5. The objection that other factors affecting the infant mortality—change of diet, economic and hygienic relations—are more or less uncompensated by the influence of the birth-rate, and so may have occasioned the deviation, is rejected by the author as untenable. He comes to the conclusion that the two chief factors in determining the population, the birth-rate and infant mortality, are independent of each other in Prussia.

VIENNA LETTER

(From Our Regular Correspondent)

VIENNA, Jan. 7, 1910.

Proposed Reorganization of Medical Institutions in Lower Austria

The situation of the public hospitals in this country has been hitherto very precarious owing to the uncertainty of their income. The administration of the hospitals here belongs to one of three governmental bodies, the general government, the provincial government, or the municipality. A number of old hospitals, among them the famous old *Allgemeines Krankenhaus*, were endowed with a special fund at the time of foundation (some 130 years ago). This fund, called the *Krankenhausfond*, though it has been bankrupt for over 40 years, still exists as a legal fiction and is responsible for the expense of treating thousands of patients gratuitously. None of the three governmental bodies mentioned above cares to take the "fund" over, as it would mean the expenditure of many millions before things are put in right order again, and at the same time there is no absolute certainty as to who has to care for the new patients. There is a constant shifting of responsibility among the three corporations, with the result that there is a constant lack of hospital accommodation in this city. These abominable conditions, the result of medieval privileges and unwillingness of the bureaucracy to awake to the duties of modern life, have been often exposed in public and severely criticized without any improvement. On the contrary, the bankrupt *Krankenhausfond* has built the new general hospital and is still building it, without fixing the responsibility for the deficit.

Finally an arrangement has been concluded which has been kept as secret as possible for political reasons, but the details

are now leaking out. The following plan has been adopted, which is ready to be submitted to the Diet of Lower Austria for enactment into law. A special sanitary commission is to take charge of all public medical institutions, including hospitals, asylums, sanatoriums, clinics and street ambulance corps. The property of all these institutions is to remain their own. All funds, grants, gifts, donations, present or future, are also to be administered by the commission, which would also represent these institutions before the courts and the public magistrates.

The chief point is the division of the hospitals into those of Vienna and those of Lower Austria. In Vienna there are the following hospitals:

		Beds, Wards. Normally.	Beds Maximally.
Allgemeines Krankenhaus	...	150	1,933
Wiedner Krankenhaus	.....	32	565
Rudolfstiftung	.....	59	860
Franz Josef Spital (isolation)	...	143	726
Elisabeth Spital	.....	72	560
Stephanie Spital	.....	8	108
Wilhelmina Spital	.....	53	425
			550

and two smaller hospitals, besides the children's hospitals, numbering five altogether; the Leopoldstädter Kinderspital, with 117 beds; the Kronprinz Rudolf Kinderspital, with 72 beds; the St. Josef Spital, with 100; the St. Anna Spital, with 120, and the Karoliner Spital with 50 beds, and the Poliklinik with 130 beds; thus institutions with nearly 7,000 beds will be managed by the commission in Vienna, while another 1,300 beds in the country hospitals will also come under the influence of this body. In order to bring the equipment of all these institutions up to the necessary standard, and for purposes of new establishments, a loan of 38,000,000 crowns (\$7,500,000) is necessary. The charge per patient per day will be 2.60 or 3 crowns (52 or 60 cents), which must be paid either by the patient or by his native municipality, if he is without means.

There are several points in connection with this grand scheme which require careful consideration on the part of the profession. First of all, at present, the ruling party in Lower Austria is not too friendly with medical men as a body. The management of the entire hospitals gives this party an enormous influence over doctors, and the ruling party has never shown that it abstains from using its power for its own benefit without heeding anything else. As one of the points of the new arrangements deals also with the appointment of medical men, and as this is also proposed to be at the discretion of the managing board—only restricted in so far as the appointment must be given to one of three men recommended by a combined board of medical men and county councilors—an enormous danger threatens the profession. Already a very active resistance is prepared in medical circles against this clause. It is intended to remove all interference on the part of the commission in all matters pertaining to hospital appointments except as regards payment. We have seen too much of party nepotism to expect good results from this kind of control of public hospitals. Another clause which concerns us very deeply is the fact that also the clinics are to be handed over to the commission. In several letters to THE JOURNAL it has been explained what difficulties were encountered when a vacancy had to be filled by a competent, eminent professor. This would make matters worse still, owing to the well-known opposition of the party in power to all advance of science. And there is little hope that in a short time its power could be overthrown. Therefore it is expected that due pressure will be brought to bear on the government to retain control over all teaching institutions, including clinics, and to hand over to the commission only the other hospitals. The announcement of the entire plan has not been received by the public with uniform satisfaction, because the enormous expenditures of public money (as it is said, in party interests) in building the Steinhof Asylum has made the population rather distrustful of the financial management of their "fathers." On the other hand, the existence of a certain body responsible for the management of all hospitals, endowed with full power to erect new houses for medical purposes and possessing sufficient funds, instead of the eternal conflicts of the present day, would be a boon to the sick poor of the country. The population of Lower Austria being some 3,500,000, it must be conceded that 8,300 beds are not sufficient for the needs of poor patients. If the commission would actually fulfil its alleged purpose, then its existence would tend toward the public welfare. At all events, we must be careful and watch over the interest of the public as well as over our own

Pharmacology

TWO MORE "CANCER CURES" CHECKED*

The Chamlee Cancer Cure Declared a Fraud by the Post-office Department

Three weeks ago we called attention to the scheme which S. R. Chamlee, M.D., of St. Louis, was working to get around the restriction that had been imposed on his cancer "curing" activities by a fraud order issued by the government. Chamlee, it will be remembered, operated one of the now fast-disappearing "cancer cure" frauds and attempted to frighten the impressionable by advertising that "in woman's breast any lump is cancer." After the postal authorities had refused the use of the United States mails to Chamlee he sent out letters to his prospective victims telling them to send their money by express money order addressed to the "St. Louis Sanitarium Company" and he would send the "medicine" by express. As soon as the attempted evasion was brought to the attention of the officials the fraud order was extended to cover the "St. Louis Sanitarium Company."

As these lines are being written it has been brought to the attention of THE JOURNAL that Chamlee is now soliciting business under the title "United Specialists Cancer Cure Company" at the same address as of old; doubtless the fraud order will receive yet further extension.

In the memorandum submitted to the postmaster-general Chamlee's methods are described at some length. Chamlee represented that he could "cure cancer without knife or pain" by sending certain medicines to the patient to be used at home. The treatment was, of course, "the greatest discovery and wonder of the world," and the "cure" was "absolutely guaranteed," for Chamlee possessed the "only perfect cancer cure known to science." There were many more falsehoods to the same effect.

The price asked for the "medicine to cure the cancer . . . including everything necessary," was \$25, which was reduced to \$15 if the first few letters failed to "land" the victims. A patient who filled in a question blank and sent \$15 received a twelve-ounce bottle containing a dark colored liquid labeled "Dr. Chamlee's Cancer Specific." This was to be taken internally, a teaspoonful in water before or after meals. Another bottle came with the "treatment" and contained a dark colored liquid with directions to "apply to the surface of sore twice a day. Let dry a moment, then cover over with the black salve spread thinly on a cloth." There were five packages of the "black salve." Analysis of these "remedies" made in the government laboratories gave the following results:

No. 1.—"CANCER SPECIFIC" FOR INTERNAL USE

Strychnin	}	.....traces
Iron		
Saccharin		
Alcohol	.....	6.00 per cent.
Water	.....	93.50 per cent.

No. 2.—EXTERNAL APPLICATION

Alcohol	.....	22.00 per cent.
Water	.....	21.81 per cent.
Glycerin	.....	large amount
Tannin		
Carbolic acid		
Opium		

No. 3.—"BLACK SALVE"

Resin
Beeswax
Fat

And these were the materials with which the cancer was to be "cured" at from \$15 to \$25 a "treatment."

The assistant attorney-general, in summing up his recommendations to the postmaster-general, said:

"I am satisfied that said [Chamlee's] business is not conducted in good faith, but merely as a scheme to fraudulently

* A much more complete account of these two cases is published in pamphlet form, entitled, "A Duo of Cancer Fakes;" it is sold at four cents a copy. This is a companion pamphlet to "A Trio of Cancer Fakes," which deals with the Curry Cancer Cure Co., the B. F. Bye Sanitarium and the L. T. Leach Cancer Cure; it also sells for four cents a copy.

extort money without intending to return therefor the services promised and without any belief that patients with cancer can be cured as represented. . . . I therefore recommend that a fraud order be issued against said party." This recommendation the postmaster-general accepted and the fraud order was issued.

The William O. Bye Cancer Cure Declared Fraudulent

The Bye family is well known to all who have given even a cursory study to the "cancer cure" phase of quackery. The latest—and we believe last—one of this family to be put out of business by being denied the use of the United States mails is W. O. Bye of Kansas City, Mo. This individual had his license to practice medicine revoked by the Board of Health of the State of Missouri in 1908, but by appealing to the courts he, unfortunately for the good name of the state, compelled the setting aside of the order of revocation.

Bye is associated in his business of "curing" cancer with one B. F. Freeman, M.D., and the business is also conducted under the name of Drs. Bye and Freeman. As may be remembered, the members of the Bye family "cure" cancer by means of a "soothing, balmy oil," which unimaginative chemists have shown to be nothing more wonderful than ordinary cottonseed oil. W. O. Bye used the methods common to his kind: lying claims, imitation typewritten letters, "testimonials," etc. He, too, had "an infallible cure for all forms of cancer" which would "remove every vestige of the cancer virus," for the moderate price of \$25, reduced when victims hesitated to \$12.50. A patient sending for the treatment received three bottles of liquid, a box of tablets and three boxes of ointment. These were analyzed by the government chemists and the results obtained were briefly as follows:

No. 1.—"Prescription No. 0.:" Practically the same as syrup of sarsaparilla.

No. 2.—"Prescription No. 4.:" Almond oil mixed with cottonseed oil.

No. 3.—"Prescription No. 120.:" Compressed tablets of talcum and sugar."

No. 4.—"Prescription No. 90.:" Petrolatum.

No. 5.—"Prescription No. 220.:" Practically the same as cataplasma kaolin.

In attempting to vindicate his method of treatment Bye relied largely on the deposition of witnesses that had been taken in his fight against the Missouri State Board of Health. These depositions were to the effect that the witnesses had been afflicted with, what their local physicians had in many instances pronounced, cancer, and which Bye's treatment had cured. The government officials produced correspondence from the physicians referred to in the depositions showing that in nearly every instance the physicians denied having made the diagnosis claimed, and in every instance showing that no microscopic examination had been made from which it could have been positively said that the trouble was cancer.

Summed up, the evidence showed that Bye and Freeman were conducting a fraudulent scheme, and on the recommendation of the assistant attorney-general the postmaster-general issued a fraud order against them.

Meeting of the Board of Trustees of the United States Pharmacopeial Convention

The board met at the Chittenden Hotel, Columbus, Ohio, January 28 and 29. The following were present: Dr. James H. Beal, Seio, O., acting chairman; F. W. Meissner, La Porte, Ind.; Prof. Joseph P. Remington, Philadelphia; Dr. George H. Simmons, Chicago, Ill.; Dr. H. M. Whelpley, St. Louis, Mo., and the secretary of the board, Dr. Murray Galt Motter, Washington, D. C.

A special committee reported on use of the text of the Pharmacopeia by other books. A signed agreement with one publisher was submitted and a committee, consisting of Beal, Remington and Motter was appointed with power to act in protecting the Pharmacopeial copyright in a case which has not been satisfactorily settled.

The constitution of the U. S. P. convention provides for the admission of delegates to the May 10, 1910, convention from

certain classes of organizations and from certain specifically named associations and government departments. Amendments to the constitution must receive the affirmative vote of at least five members of the board of trustees before being submitted to the convention, where a three-fourths vote of the delegates constituting the convention is required to pass an amendment to the constitution. The board of trustees received a long list of communications from various local associations, some national organizations, state boards of pharmacy, state associations, teaching institutions, and other pharmaceutical and medical bodies, not provided for in the constitution, all requesting the board of trustees to submit to the convention amendments to the constitution, providing for the admission of additional delegates. The board decided to submit for the consideration of the convention amendments providing for delegates from the National Wholesale Druggists' Association, the National Dental Association, the Association of State and National Food and Dairy Departments, and the Department of Commerce and Labor of the United States Government. It will require a three-fourths vote of the convention to adopt these amendments and seat the delegates.

The board of trustees passed a resolution recommending to the convention that representatives of the University of Havana be accorded the privileges of the floor.

The board passed a vote of thanks to Professor Diaz of the University of Havana for the services he has rendered pharmacy in translating the text of the United States Pharmacopeia into Spanish.

A motion recommended to the convention an amendment to the constitution, reducing the required period of incorporation for teaching institutions and state associations represented in the convention from five to two years, was lost.

The board will recommend to the convention an amendment to the constitution, providing for a general committee on revision of fifty members which is to elect from its own number an executive committee on revision of fifteen members. The amendment will provide certain duties for each committee.

The text of the various amendments will be submitted to the pharmaceutical and medical journals of the United States by the secretary of the board of trustees. Parties interested can obtain copies of the constitution and by-laws by addressing Dr. Murray Galt Motter, 1841 Summit Ave., Washington, D. C.

The board of trustees recommends to the convention that a revised edition of the Pharmacopeia be prepared five years after the publication of the U. S. P. IX, if in the judgment of the committee of revision and the board of trustees such a revision is desirable.

Dr. C. S. N. Hallberg, of Chicago, submitted a communication in regard to prescription statistics and was authorized to complete the work.

The committee on arrangements was authorized to engage the services of a competent stenographer to report the 1910 convention. Provision was made for an assistant to the secretary of the board of trustees.

The provisions for badges and buttons and the publication of a list of delegates to the convention was referred to the committee on arrangements, with power to act.

The local committee of arrangements was instructed to invite the dean of the ministerial corps, Senor Calvo, to address the 1910 convention.

The additional two thousand copies of the Spanish edition of the Pharmacopeia have been printed and satisfactory sales are reported.

The board adjourned to meet at the New Willard Hotel, Washington, D. C., May 9, at 10 a. m.

H. M. WHELPLEY, Secretary U. S. P. Convention.

Exposures of the False Claims of Nostrum Makers are getting before the public more and more. Every time a druggist reads one of these exposures he would do well to pause long enough to formulate a reply to the question, What must the intelligent portion of the public think of a man who endorses these fakes for a profit?—*Druggists Circular*.

Correspondence

Physicians, Proprietary Preparations and the Detail Man

To the Editor:—We are indebted to some of the big drug manufacturing firms for many excellent products, and in this country, where private capital, unaided by government subsidy, must find proper returns, no fair-minded person denies these firms the right of bringing their products to the notice of the medical profession.

This they seek to do through the advertising columns of reputable medical journals and by every form of printed circular, extract, reprint or written communication.

The individual practitioner can consider at his leisure such new preparations as interest him and seem to bear the stamp of genuine merit. If the product has been reliably made, has been tested pharmacologically, and has received the endorsement of men whose opinions carry weight, the clinician feels justified in using it in his practice. But even then, if he is wise, he will follow the poet's advice and "be not the first by whom the new is tried, nor yet the last to lay the old aside."

But the race is too swift, the dividends must be larger, and so the country is literally flooded with all sorts and descriptions of drugs and combinations of drugs which must be consumed and the detail man is evolved. If the plausible detail man succeeds in getting the physician to use his firm's goods on his representations alone, it would seem that the physician merely becomes an agent for the drug house, and not an intelligent, conscientious counsellor of the sick.

The other phase of this question, the effect on the laity of the endorsement by the physician of proprietary preparations, needs only to be mentioned in this connection.

Briefly, the method now employed by drug manufacturers and distributors of having a representative call on members of the profession to present the claims of their preparations is objectionable for several reasons:

1. The presumption is that the doctor needs instruction in pharmacology and therapeutics.
2. Even though the preparation sought to be exploited has merit, the time and attention grudgingly given by the busy physician is not sufficient to enable him to obtain the precise information he should have before experimenting with the drugs.
3. The vast majority of concoctions left in physicians' offices by detail men are utterly worthless.

Now, because some of the members of the profession do need instruction in materia medica, and admitting their deficiency are willing to accept the kind that is offered by any sort of untrained youth who will give them a ready-made formula with each half hour's tutoring, must all the rest who are bold enough to prescribe simple pharmacopeial drugs and N. F. preparations, whose merits stand proved, submit to this gratuitous bottled information from which it is only necessary for the druggist to remove the original label and place thereon the doctor's (that is, of course, the detail man's) instructions!

The Council on Pharmacy and Chemistry undertakes to lighten our burdens by thoroughly investigating certain of the vast number of new preparations, but of necessity the process of elimination is slow, and the drug houses are taking every advantage of this fact.

The men representing many of these firms are polite, deserving individuals, and our complaint is not against them, but against their employers. At least one county society, the Jefferson County (Ala.) Medical Society, seems to believe that the limit of endurance has been reached, and that patience is no longer a virtue, and has sought to give its members relief by the passage of the following resolutions, which place it unequivocally on record:

Be it Resolved, That it is the sense of the Jefferson County Medical Society that the employment by its members of proprietary formulas in the administration of drugs be discountenanced, and that the members be urged to familiarize themselves with the drugs and preparations of the U. S. Pharmacopeia and National Formulary, which are in every way adequate to their needs. *Be it further*

Resolved, That the decisions of the Council on Pharmacy and Chemistry of the American Medical Association regarding non-

official preparations be considered as final and binding in our attitude toward them, and notice of the same is hereby given to all drug and pharmaceutical houses, in order that they may be saved the expense, and ourselves the annoyance, of unnecessary interviews with detail men. Further, be it

Resolved, That the members of the society are recommended to have copies of this resolution printed in convenient form to be displayed in their offices or on cards to be presented to detail men.

The effect of such a movement in the locality concerned will depend naturally on how general the endorsement of the spirit and the practical application of the plan suggested in the resolution.

However this may be, I believe that the time has come when the medical profession in justice to itself and the public at large must bring about a reform of the growing evil. The higher class firms, whose productions are most valuable, will readily assent to any reasonable plan adopted by the profession for correcting this condition, and the others will be compelled to follow suit.

CABOT LULL, M.D., Birmingham, Ala.

Improved Method of Applying Plaster Jacket

To the Editor:—In THE JOURNAL, January 8, is a letter by Dr. F. J. Cotton of Boston referring to an article of mine published in THE JOURNAL of December 25, on "An Improved Method of Applying the Plaster Jacket," and in which he says that the method described is precisely similar to a method described in Bradford and Lovett's work on orthopedics. I take exception to that. The methods are certainly similar in having the patient lie on a sling while the plaster is being applied, but the details have been worked out differently in the two cases. Dr. Cotton calls the old method an emergency method, so apparently it was not very satisfactory; but I think that in its new form the method will prove to be more than that. In the short experience I have had with it I prefer it to the methods of application in common use, with which I have had some experience and would like to have it given a trial by the profession generally. I may say that I never heard of a sling method of applying a plaster jacket before publishing my paper, although I searched all the literature at hand, as it seemed unlikely that such a simple method of application should have escaped the attention of the orthopedists. While Dr. Cotton is partly right in his statements, still my description shows differences which I regard as improvements on the old method and which decidedly modify it.

K. D. PANTON, M.D., Vancouver, B. C.

The Public Service

Medical Corps of the Navy

Changes for the two weeks ended Jan. 29, 1910:

Foster, T. G., P. A. surgeon, commissioned P. A. Surgeon from Jan. 16, 1909.

Flint, J., P. A. surgeon, commissioned P. A. Surgeon from February, 1909.

Haynes, J. P., P. A. surgeon, detached from temporary duty at the Naval Hospital, Norfolk, Va., and ordered to continue other duties.

Bell, W. H., surgeon, detached from the Bureau of Medicine and Surgery, Navy Department, and ordered home to wait orders.

Anderson, F., medical director, commissioned Medical Director from Dec. 13, 1909.

Medical Department of the Army

Changes for the week ended Jan. 29, 1910:

Boak, S. Davis, dental surgeon, reported for duty at Army General Hospital, San Francisco.

Kierulff, H. N., 1st lieut., M. R. C., leave of absence extended 10 days.

Cutcliffe, Wm. O., 1st lieut., M. R. C., ordered to accompany 2nd Battalion, 19th Infantry, from Fort McIntosh, Tex., to San Francisco, on the completion of this duty will return to his station.

Harris, Jesse R., capt., ordered to proceed to the Philippine Islands, for duty revoked, and instead Captain Harris is relieved from duty at Fort George Wright, Wash., and will proceed to Fort Gibbon, Alaska, for duty.

Grissinger, Jay W., capt., relieved from duty at Fort Gibbon, Alaska, and will proceed to Seattle, Wash., and report to The Adjutant General of the Army, for further orders.

Allen, John H., capt., relieved from duty at Fort Monroe, Va., and ordered to Fort Myer, Va., for duty.

Lamson, Theodore, capt., granted 30 days' leave of absence.

Snow, Corydon G., lieut., granted 10 days' leave of absence.

La Garde, Louis A., and Bannister, John M., lieut. cols., promoted to be Colonel, with rank from Jan. 1, 1910.
 Kendall, William P.; Bannister, William B.; Woodruff, Charles E.; Mason, Charles P.; Glennan, James D., majors, promoted to be Lieutenant Colonels, with rank from Jan. 1, 1910.
 Shook, Jay R.; Vase, William E.; Woodbury, Frank T.; Rutherford, Henry H.; Ruffner, Ernest L.; Brooks, William H.; Barney, Charles N.; Whitmore, Eugene R.; McAndrew, Patrick H.; Brownlee, Charles Y.; Murtugh, John A.; Ekwurkel, George M.; Van Poole, Gideon McD.; Reno, William W.; Buck, Carroll D.; Gosman, George H. R.; Koerber, Conrad E.; Allen, John H.; Patterson, Robert U.; O'Connor, Roderic P.; Noble, Robert E., and Van Dusen, James W., capt., promoted to be Majors, with rank from Jan. 1, 1910.
 Vedder, Edward B., capt., relieved from duty at Fort Stevens, Ore., and ordered to the Philippine Islands for duty.
 Miller, Albert L., 1st lieut., M. R. C., ordered to proceed from Fort Meade, So. Dakota, to Fort Robinson, Neb., for temporary duty.
 Rhoades, R. H., dental surgeon, left Columbus Barracks, Ohio, en route to the Philippine Islands for duty.
 Roberts, Ernest E., 1st lieut., M. R. C., will proceed to Omaha, Neb., for observation and treatment by Lieutenant Colonel John M. Bannister, Medical Corps.
 Brown, Orville G., capt., leave of absence extended 30 days.
 Bryan, Ray W., lieut., relieved from duty as Surgeon of the transport *Thomas*, and ordered to Jefferson Barracks, Mo., for duty.
 Glennan, James D., lieut. col., ordered to proceed to San Francisco, Cal., for assignment to duty in command of the Army General Hospital, San Francisco.
 Kennedy, James N., major, relieved from duty in command of the Army General Hospital, San Francisco, and ordered to Fort Shafter, Honolulu, H. T., for duty.
 Wadhams, Sanford H., major, relieved from duty at Fort Shafter, Honolulu, H. T., and directed to proceed to San Francisco, and report to The Adjutant General of the Army, for further orders.
 Webber, Henry A., major, leave of absence extended 15 days.

Public Health and Marine-Hospital Service

Changes for the week ended Jan. 26, 1910:
 Wasdin, Eugene, Surgeon, granted 1 month's leave of absence from Jan. 22, 1910, on account of sickness.
 Oakley, J. H., surgeon, granted 1 day's leave of absence, Jan. 21, 1910.
 Von Ezdorf, R. H., P. A. surgeon, granted 2 months' leave of absence from Jan. 15, 1910.
 Vogel, C. W., P. A. surgeon, detailed to represent the service at the meeting of the American Society of Inspectors of Plumbing and Sanitary Engineers, Trenton, N. J., Jan. 20-22, 1910.
 Amesse, J. W., P. A. surgeon, leave of absence for 2 months from Nov. 1, 1909, amended to read 1 month and 9 days from Nov. 1, 1909, and 21 days from Jan. 14, 1910.
 Foster, Albert D., P. A. surgeon, directed to proceed from Amoy to Hongkong, China, for duty.
 Manning, Herbert M., P. A. surgeon, relieved from duty at Washington, D. C., and directed to proceed to Ellis Island, N. Y., and report to the Chief Medical Officer for duty.
 Pettyjohn, Joseph, P. A. surgeon, granted 7 days' extension of leave of absence en route to station.
 Wollenberg, R. A. C., asst.-surgeon, granted 25 days' leave of absence from Jan. 22, 1910.
 Hamilton, J. H., acting asst.-surgeon, granted 3 days' leave of absence from Jan. 12, 1910.
 Mason, Wm. C., acting asst.-surgeon, granted 3 days' leave of absence from January 26, 1910.
 Ransom, S. A., acting asst.-surgeon, granted 2 days' leave of absence from Dec. 11, 1909, without pay.
 Stewart, W. J. S., acting asst.-surgeon, granted 30 days' leave of absence from Jan. 18, 1910.
 Tuttle, Jay, acting asst.-surgeon, granted 30 days' leave of absence from Feb. 14, 1910, with pay, and a further period of 22 days, without pay.
 Walkley, W. S., acting asst.-surgeon, granted 11 days' extension of annual leave from Dec. 31, 1909, on account of sickness.

RESIGNATION

Assistant Surgeon Charles E. Wood, resignation accepted by the President, to take effect Jan. 31, 1910.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

THE MERCURY COLPEURYNTER

To the Editor:—Recently I saw an article in THE JOURNAL advocating the use of the mercury colpeurynter. How is it used, and how does it act?

C. W. R.

ANSWER: This method of treating gynecologic disorders was originated by Pincus in 1905, and was described in THE JOURNAL, Feb. 27, 1909, p. 719.

APPARATUS FOR ENTEROCYCLYSIS

To the Editor:—I have devised a method for enteroclysis. What have you published on the method recently?

S. K.

ANSWER.—The following articles on this subject have appeared recently:

Murphy, J. B.: "Proctoclysis in Treatment of Peritonitis," THE JOURNAL, April 17, 1909, p. 1248.

Newman, S. E.: "Continuous Enteroclysis," THE JOURNAL, April 17, 1909, p. 1250.

Iverson, M.: "Proctoclysis," THE JOURNAL, June 12, 1909, p. 1926.

Kemp, R. C.: "New Container for the Preservation of a Constant Temperature of Saline Solution for Rectal Irrigation or Infusions," *New York Medical Journal*, Aug. 14, 1909; abstr. in THE JOURNAL, Aug. 28, 1909, p. 740.

Paterson, H. J.: "Continuous Proctoclysis," *British Medical Journal*, Aug. 28, 1909; abstr. in THE JOURNAL, Sept. 25, 1909, p. 1063.

Harbin, R. M.: "Apparatus for Proctoclysis at an Even Temperature," THE JOURNAL, Dec. 25, 1909, p. 2160.

Garratt, J. M.: "An Improved Saline Transfusion Apparatus," THE JOURNAL, Dec. 25, 1909, p. 2161.

"The Vacuum Bottle in Proctoclysis," THE JOURNAL, Jan. 22, 1910, p. 306.

TRANSPLANTATION OF ORGANS AND LIMBS

To the Editor:—Please give references to the work done in grafting parts of animals, and also information concerning the men engaged in these experiments.

J. A. WATSON, Halifax, Nova Scotia.

ANSWER.—The following are the principal American articles treating of the transplantation of organs and limbs:

Carrel, A.: Transplantation of Organs, THE JOURNAL, Nov. 25, 1905, p. 1645.

Carrel, A., and Guthrie, C. C.: Complete Amputation of Thigh with Replantation, *Am. Jour. Med. Sc.*, February, 1906; abstr. in THE JOURNAL, March 17, 1906, p. 834.

Carrel, A.: Results of the Transplantation of Blood Vessels, Organs and Limbs, THE JOURNAL, Nov. 14, 1908, p. 1662. Pictures were omitted from THE JOURNAL but were published in reprints.

Guthrie, C. C.: Physiologic Aspects of Blood-Vessel Surgery, THE JOURNAL, Nov. 14, 1908, p. 1658.

Carrel, A.: Transplantation of Members, *Revue de Chirurgie*, Dec. 10, 1908.

The work has been done mainly by Dr. A. Carrel, who is a member of the Rockefeller Institute for Medical Research, and by Dr. C. C. Guthrie, professor of physiology in the medical department of Washington University, St. Louis.

JOHNNESCO AND STOVAIN

To the Editor:—Some stir locally has been created by reports regarding stovain, which has had considerable prominence in our local paper. By reason of our surgical instrument section we are subscribers to THE JOURNAL and the writer, though a layman, is much interested in the articles it contains bearing on new remedies. Your journal is to us, as it should be to every dispenser of drugs, a real assistance and aid. Taking up the matter of stovain, we would like to ask whether there is any available way whereby we may arrive at a correct estimate of its value. Yesterday, Associated Press despatches contain an item from a Chicago physician who pronounces Dr. Jonnesco a "medical gold brick." The writer would like to get some literature bearing on the actual value of this drug. We failed to find any reference to it in the columns of THE JOURNAL.

— & Co.

ANSWER.—Several issues of THE JOURNAL have contained information on the recent revival of spinal anesthesia by the modified method which Jonnesco uses, that is, the combination with strychnin. When Dr. Jonnesco first came to this country, THE JOURNAL took a conservative position in the issues of Nov. 27, 1909, page 1831, and Dec. 18, 1909, page 2117. A more definite pronouncement was made Jan. 22, 1910, page 293. In the last-mentioned issue, page 281, is an article on the subject. The above references also name various articles which have appeared in the world's literature, both on the general subject of spinal anesthesia, and on the special method of Jonnesco; these should provide anyone interested with the means of looking the subject up pretty thoroughly. Incidentally, it may be remarked that in the editorial of January 22, in speaking of drugs having a depressing effect on the heart and respiration, stovain was included. The manufacturers, however, claim that stovain exerts a tonic action on the heart.

QUININ TREATMENT OF PNEUMONIA

To the Editor:—Are large doses of quinin (60 grains) given in bronchopneumonia or in lobar pneumonia? How are such large doses given?

W. CUMMINGS, Ryan, Iowa.

ANSWER.—The large doses of quinin have been given in the lobar form of pneumonia. As stated editorially in THE JOURNAL, March 17, 1906, the large doses are old, having been used by Juergensen and others over 30 years ago. The treatment was revived in recent years, chiefly by Dr. W. J. Galbraith of Cananea, Sonora, Mexico. The method of administration was described in detail in an article by Dr. Galbraith in THE JOURNAL, July 9, 1904, as follows:

"When the temperature has reached 105 F. or over, 60 grains of quinin sulphate are administered as the initial dose, followed in one hour by one-half this amount, or 30 grains, and the following hour by one-half the latter dose, or 15 grains, at which time I begin the administration of tincture of iron in doses ranging from 7 to 15 minims, depending on the date of the disease and the condition of the heart. If I see the patient on the first or second day of his attack, I usually begin with about 10 minims of the tincture of iron, increasing it one or two drops, or even more, each day up to the sixth or seventh day, unless the pulse remains full and strong."

"When the temperature is 104 F. or over, I give 50 grains of sulphate of quinin and follow the same course as above stated. When the temperature is 103 F., I give from 30 to 40 grains, following the course above stated."

The other side of the question is shown by Dr. W. C. Alvarez, also of Cananea, Sonora, Mexico, in a letter published in *THE JOURNAL*, June 13, 1908, in which he states that physicians there "who have seen the treatment used most now never use it in their private practice, and most emphatically condemn it." He states that during a three months' stay in Cananea in 1904 he had an opportunity to study this treatment and was impressed with its harmfulness. He says:

"As in most company hospitals, only the simplest case records were kept, and these by an untrained Mexican who occasionally puts down the temperature, pulse, food, bowel movements and the medicine given. I noticed that the dosage, which at first was 75 grains, was reduced to 40 and often to 20. The patients often vomited the quinin shortly afterward, and they sometimes could not stand the iron. Dr. Galbraith's statement that there is no crisis is correct, because a sthenic case is soon transformed into what resembles a bad case of typhoid, and recovery is very slow, with delayed resolution, empyema, femoral phlebitis and other sequelae. . . . I have never seen the pulse benefited—though it often stands the treatment wonderfully—but I have seen the patient become nearly pulseless. I have also seen a big, strong young man take about three weeks for resolution after this treatment, and three days after his discharge from the hospital he dropped dead in his chair. A few months ago I saw a powerful young Mexican, who had every prospect of recovery, die after taking what I computed to be 40 grains of quinin. He had been doing well until the fourth day, when he took the 'specific,' which was followed by terrible tinnitus and a bursting feeling in the head. He became almost completely blind, was delirious all night and next day died after a few hours of stupor."

Society Proceedings

HOOKWORM CONFERENCE

First Southern Health Conference, held in Atlanta, Ga., Jan. 18-19, 1910

(Continued from page 395)

Symptoms of Uncinariasis

DR. GEORGE DOCK, New Orleans: Many writers on hookworm in America emphasize the large proportion of cases in which there are few or no symptoms. This was true of practically all the 60 recruits found to harbor hookworm out of 100 examined by Chamberlain. Recently, at my suggestion, Dr. Bass and Dr. Gage have examined the stools of medical students from various parts of the South, and they found as many as 30 per cent. in one class affected. Among these men, as among the recruits examined by Chamberlain, good digestion and full feeding doubtless have much to do with the relatively good condition of the hosts. It is interesting to note the number of worms in some of these cases. The average number in Chamberlain's cases was 16, ranging from one to ninety-nine. Dr. Bass in one case found 200. Even the smaller figure, 16, shows that the carrier could be a danger to those running the risk of infection, if he followed the habits of the country in any place where the soil and climate favor the life of the carrier, that is, in most inhabited regions of the Southern states. It may be assumed that among healthy looking people, from one-quarter to one-half have hookworm, and the only symptom is the presence of the eggs in the stools. The chief factors that tend to cause uncinariasis, or disease phenomena due to hookworm, other than absence of immunity, are early age and poor diet. The disease is most destructive in the young, the greatest amount of sickness and death occurring between ten and thirty years of age. Mild cases pass imperceptibly out from the latent cases,

but when recognizable show a sallow skin and variations in appetite, digestion, and action of the bowels. There is sometimes pain in the abdomen. The muscles are soft and flabby; fatigue is easily brought on, so that laziness is often present, and mental indulgence is likely to be associated with it. In more distinct cases there is pallor, with hemoglobin sometimes lower than would be suspected from the color of the skin, *i. e.*, about 60 per cent. Palpitation of the heart, dyspnea on exertion, dizziness and tinnitus, are often associated. The cachectic appearance is likely to be attributed to dyspepsia, or to the quality of food eaten, or sometimes to malaria, which may even be associated, or amebic dysentery; but the diagnosis can readily be made by examining the feces for ova.

In the moderate cases pallor and dyspeptic symptoms are more distinct, and often dominate the picture. Perversions of appetite occur, but are often concealed by the patient, so that the symptoms may not at once be striking. Nausea is frequent. Vomiting may occur. Tenderness in the epigastrium, or lower down in the abdomen, with a feeling of weight, is common. Dyspnea and palpitation of the heart are frequently present. There is often slight dilatation of the heart. Accentuated murmurs over the base and the great vessels and a frequent and weak pulse, with more or less dropsy, are present. Muscular weakness is sometimes pronounced. Dizziness, tinnitus, headache, and physical and mental torpor are frequently marked. Paresthesia, pains in the joints, and absent knee-jerks often occur in such cases.

In the severe cases the anemia, weakness and dyspepsia are more severe. Dropsy occurs in the subcutaneous tissue and abdomen, and other serous cavities. The appetite may be completely lost, or may be voracious, with pica, leading to the eating of earth, dirt of all kinds, rags, hair, etc. The dyspnea and cardiovascular symptoms are intense, as are the loss of strength and apathy. Impotence in men, and amenorrhea in women are almost invariable, yet the women may bear children, who are either rachitic or show marked cachexia, and in turn become subjects of severe uncinariasis. In some cases the severe symptoms develop suddenly, either from complete health, or from a milder form and quickly lead to death.

Bodily development is a point of importance. Severe uncinariasis in childhood causes a remarkable lack of development, so that a person of from 20 to 25 may resemble in height, lack of body hair, and of genital growth, and also in bony development, a child of 12 or 14. In these cases the face sometimes has a much older look, and often a characteristic tired and anxious expression, absent from some other trophic diseases, with retarded development, like myxedema. Puberty is delayed, and menstruation may not begin until 18 or 20, or not at all. Too little attention is paid to the dermatitis that in many, if not most cases, plays a part in the infection. While most patients give a history of ground-itch, dew-itch, or the like, few such cases are seen by physicians. But all should be seen by physicians, who should have in mind the possibility of hookworm, and search for ova up to ten weeks from the beginning. The color of the skin may vary from a slight pallor to a dead white, or a deep sallow, or marked lemon color, as in pernicious anemia. Pallor of the ears, nail beds and mucous membranes varies in the different degrees. The sclerae are usually white or bluish-white, and do not show the fine granular yellow, subconjunctival fat, so characteristic of pernicious anemia of idiopathic form. Emaciation is not always present, or it may be masked by edema. Mental and nervous symptoms are numerous and varied.

The abnormalities of the blood are striking and suggestive. The color of the skin and the general appearance of the patient suggest pernicious anemia, but the hemoglobin is always relatively low, and the eosinophils almost always high, in strong contrast to the former disease. Retinal hemorrhages occur in both diseases. Night blindness is comparatively frequent in hookworm anemia. As in some other diseases aneurism may be suspected, or valvular disease readily cured by proper treatment. The hookworm is the cause of the symptom directly or indirectly. It must be sought for by searching for its ova, which, even in mild infections, can be found by a brief search. All other possible causes of disease, such as malarial parasites, amebas, other intestinal parasites, and organic diseases, must be searched for by proper methods.

Treatment of Hookworm Disease

DR. H. F. HARRIS, Atlanta, Ga.: Fortunately the treatment of hookworm disease is exceedingly simple, and if persisted in is always satisfactory. In most diseases the physician has to content himself with attempting to combat the symptoms of the malady from which his patient is suffering, there being in the vast majority of instances no specific treatment. It is unfortunately true that the same poisons that kill the living, disease-producing agencies in nearly all instances have the same effect on the human organism. In those cases, however, in which the more highly organized animal parasites occur in the human intestine we have several drugs that kill the infective agent without seriously disturbing the general health of the patient, and most happily the hookworm is one of the organisms that is most easily killed and removed in this way. The diagnosis having been established by microscopic examination of the feces, on the day before the treatment is to be begun the patient is advised to eat little dinner and no supper at all. Late in the afternoon he is given a full dose of calomel, the amount varying from 2 to 10 grains, depending on the age and strength of the patient. Castor oil could perhaps be administered with safety, but inasmuch as all oily substances dissolve and make more readily absorbable the thymol which is to be given on the following day, and as the absorption of any considerable amount of this substance will produce poisonous effects, it is generally advisable to leave this drug out of the treatment altogether. If the calomel acts freely during the night no other purgative need be administered on the following morning, but if it should not do so a full dose of Epsom salts in hot water should be administered as soon as the patient wakes up. After the bowels have thoroughly acted finely powdered thymol in capsule is then given, the quantity depending on the age and strength of the patient. It is perhaps a good rule to be guided by the apparent age of the individual who is to be treated rather than that stated, as many of these unfortunates appear as much as 6, 8 or 10 years younger than they are in reality. The dose of thymol should be divided into two equal parts, the first half being given at once and the second at the expiration of an hour. Following the administration of the medicine the patient should be instructed to remain in bed, and lying on the right side may perhaps more or less assist in permitting the drug to pass quickly into the intestine from the stomach. The amount that should be given is as follows: Up to 5 years of age, from 7 to 10 grains; from 5 to 10 years, from 10 to 20 grains; from 10 to 15 years, from 20 to 40 grains; 15 years and over, 40 to 60 grains. In advanced age the quantity should be somewhat less than during middle life. It is much to be preferred that the physician should always take into consideration the exact age and strength of his patient in administering this drug, it being a rather bad practice to prescribe arbitrarily different quantities of the drug between certain ages.

The patient should be allowed no breakfast and no dinner on the day of treatment. I permit a cup of coffee one or more times during the day, but nothing in the nature of food should be allowed. If the patient experiences no ill effects from the thymol, it is well to put off the administration of a laxative until 4 or 5 o'clock in the afternoon, at which time some saline should be administered in hot water. It is well at this point again to caution against castor oil. After the bowels have acted well the patient may be allowed to have food. When the treatment is carried out faithfully in the way just described I have rarely found it necessary to repeat it. It is, however, well after a couple of weeks to make another thorough examination of the feces, and should the microscope reveal the presence of eggs the treatment should be repeated, and this should be done over and over again until exhaustive examinations of the feces show by absence of the eggs of the parasite that all the worms have been expelled.

There are still other drugs that are more or less employed for the purpose of killing this parasite, betanaphthol especially being employed by many physicians. I have never used it, but it is said that it acts quite as well as thymol when administered in the same quantity. Dr. A. G. Fort, of

Lumpkin, Ga., states that after considerable experience he prefers it to thymol as he considers it less dangerous. When I first began the treatment of this disease I made it a rule to give iron and tonics following the administration of the thymol, but I was soon convinced that these adjuvants were of no particular value, the patient recovering just as quickly without as with them. This being the case, it appears inadvisable to give drugs of this class to which the patient would be apt incorrectly to ascribe his cure.

The Educational Campaign Against Hookworm in Texas

DR. W. M. BRUMBY, Austin, Tex.: The discovery of uncinariasis in Texas dates back to 1895 when Dr. Allen J. Smith, then professor of pathology in the University of Texas, isolated the ova in a male patient in Galveston. Later, in 1902, the same species of ova were demonstrated in an Australian sailor hailing from Mexico. The announcement by Dr. Charles Wardell Stiles of the *Necatur americanus*, and his paper before the Texas State Medical Association in 1903 marked the beginning of interest among physicians in the state. This, however, does not represent the introduction of hookworm disease in Texas, for an examination of the entire student body of the Texas State University in 1902 revealed the parasite in 10 per cent. of the students, who represented every part of Texas. Recent investigation revealed the infection of 31 per cent. of the male students examined in one of the state normal institutes. The students there are preparing to become teachers, are necessarily advanced scholars, and usually represent the most intelligent class of students. Little or no outward manifestations of the disease was present in any of those infected.

The high, dry, arid regions of the northwestern and western sections of Texas contraindicate a widespread infection; the parasite has been demonstrated as far north and west as Hunt county near the northern boundary of the state, and that, too, in the black land belt. The state bacteriologist has found repeated specimens in 22 counties in the southern and eastern part of Texas and those intervening counties being of similar soil, temperature, and climatic conditions the assertion is warranted that every county in Texas east of the ninety-seventh degree of longitude and south of thirty-fourth degree of latitude is more or less infected with hookworm. This section represents fully one-half the population of the state, and portrays the urgent necessity of persistent and widespread measures for the eradication of this disease in Texas.

As an evidence of the lack of attempt of prevention of soil pollution in the rural districts, the state bacteriologist, in a recent trip through the eastern part of Texas counted from the car window one hundred cabins and huts along the railway, and only five of that number had even an open back closet. Our people, as is no doubt the case throughout the South, do not appreciate the importance or seriousness of this disease. This lack of information is not confined to the masses, for we have reason to believe that many of the resultant anemias and sequelae of uncinariasis are being treated by physicians at the present time as chronic malaria, tuberculosis, and other chronic maladies.

The only systematic endeavor to establish the approximate degree of infection in any given locality was with the aid of the teachers in the public schools in Anderson county. This is a county in the center of the hookworm area and is of mean soil and climatic conditions, and, therefore, may be regarded as an index of the real situation. Of the pupils examined 25 per cent. were found infected although quite a number of pupils were from a city with a fairly good sewer system. The method of procedure was to provide each teacher with a pamphlet on symptomatology, and instructions for collecting specimens, and request her to furnish specimens of stools from a uniform percentage of children under her care showing the most marked symptoms of the disease. The method proved very successful with those teachers who appreciated the possible benefits of science and humanity sufficiently to give us the desired cooperation, for their diagnosis was good as the resulting figures will show. Even in this work we have been hampered for lack of sufficient funds to gain accurate information as to the prevalence of the disease in the hookworm zone.

The State Board of Health has had a reprint of two of Dr. Stiles' articles published, as well as pamphlets prepared by the board, and these have been distributed by the thousands. In addition a list has been compiled of every microscope in the state and the services of its owner enlisted. These individuals have promised aid and have already done much good in their individual investigations, but we have been unable to take advantage of such opportunities and the effort from this source has been limited to the report of but a few localities. Efforts have been limited to educational work, for we recognize the importance of widespread instruction to every locality before we can hope to adopt compulsory measures for the prevention and cure of this disease. We have given lectures and addresses to many of the medical societies, the state teachers' convention, to various schools and mothers' clubs, presenting display cards something on the order of the tuberculosis exhibit, with interesting pictures and mottoes illustrating the ova and larva magnified, the subjects themselves, representing the methods of infection, practical fly-protected outdoor closets and instructions on symptomatology, prophylaxis and treatment. The efforts at educational work as with the investigations has been limited because of the lack of proper appropriations. It is to be hoped that the stimulus of Mr. Rockefeller's munificence and the educational work of the commission will result tenfold in the next three years in augmenting public health appropriations in all southern states.

(To be continued)

MEDICAL SOCIETY OF THE STATE OF NEW YORK

One Hundred and Fourth Annual Meeting, held at Albany, Jan. 25-26, 1910

The President, DR. CHARLES G. STOCKTON, Buffalo, in the Chair

PROCEEDINGS OF THE HOUSE OF DELEGATES

The House of Delegates met January 24, with DR. STOCKTON presiding.

President's Address: Betterment of the Society

DR. CHARLES G. STOCKTON, Buffalo: Some systematic plan should be adopted to increase the membership and thus widen the influence of the society. A committee might be appointed to devise means of increasing the interest in county societies, and cooperation with the committee on scientific work would prove advantageous. Accordingly I recommend that a committee be appointed, with a man from each county, to consider and report on this matter. I also recommend that the society begin a propaganda of education to take steps to introduce a pure food law which shall be complementary to the national law.

Report of the Committee on Public Health

DR. JOHN L. HEFFRON, the Chairman, read this report:

The committee has interrogated the 57 county medical societies in the state concerning local conditions pertaining to the public health. Replies have been received from only 21. Eight of these, viz.: Albany, Greene, New York, Otsego, Schoharie, Suffolk, Tioga, and Westchester, report conditions that are satisfactory. From the remaining 13 there are evidences of interest in the pollution of water courses by sewage, in the securing of pure food supplies, including milk, and in adequate provision for the care of the tuberculous poor.

These are all vital questions and must remain the subjects of serious discussion until the public is secured from their evils.

POLLUTION OF WATER

The question of the pollution of streams and lakes that are the sources of water supply to communities is a state and national one. Individual communities have been in the habit of disposing of the sewage in accordance with the mechanical law of least resistance, and have used for sewage disposal natural water courses that have flowed from them with perfect impunity, thinking nothing and apparently caring nothing about other communities further down the streams. Manufacturers have pursued the same course, until

now it is safe to say that no water sheds in the state are free from pollution, except only those few over which the state has granted especial guardianship to individual cities. By such usage for a long period of time communities and manufacturers have claimed to have acquired certain legal rights to continue such a course, and the present law of the state is inadequate to compel them to stop this practice, however clearly proven it may be that it damages the health and prosperity of other towns and individuals.

By the act of 1903 the inauguration of new sewage disposal systems, by the use of natural water courses and the establishment of new manufacturing plants along water courses that would pollute the streams is put within the jurisdiction of the commissioner of public health and can be controlled. But as the law now stands the commissioner of public health has no jurisdiction over those who were polluting water courses prior to 1903 and who continue so to do. This is a grave defect in the law and is the cause of the persistence of many cases of the communicable diseases capable of transmission through water, and, indirectly, through milk and other food supplies like the green vegetables and fresh fruits that are rinsed in running tap water. In the recent conference of sanitary officers of the State, Professor Sedgwick, of the Massachusetts Institute of Technology, spoke of the sewage pollution of Niagara River and of the tremendous death rate from typhoid fever in Niagara Falls, and properly classified such pollution as a matter of interstate and international importance.

During the last session of the state legislature an amendment to the health law was introduced in both houses which gave the commissioner of health, with the approval of the attorney-general and the governor, power to order out of water courses pollutions that are a menace to health or which constitute a public nuisance, howsoever long such pollutions may have been carried on with impunity.

The committee recommends:

That the Medical Society of the State of New York declares its opinion that the public health is endangered by the pollution of water courses, and that the legislature should at once so amend the health laws as to make such pollution amenable to the control of the commissioner of public health under proper safeguards.

PURITY OF FOODS

The question of the purity of foods has received much needed attention in recent years and has again come prominently before the public during the past year.

The earnest presentation by the medical profession of the subject of the adulteration, the sophistication and the preservation of food stuffs by the use of harmful drugs, supported by the press and by the people, secured the enactment of a law popularly known as the Pure Food Law. In the nation and in the states the provisions of this law have been carried out with reasonable efficiency, though with a constant fight with some manufacturers and packers because of their criminal greed. In the packing of meats and the manufacture of meat products, fraud had become so general that the reputation of the nation was at stake, and it became necessary to secure legislation by which the inspection by a government official of the material used and of the methods employed was instituted. Such inspection has produced salutary changes and little complaint is longer heard of the quality and purity of these products. The increasing cost of food supplies and the increasing difficulty in securing domestic service, from both of which evils there is no apparent relief, make it more and more important that we should be able to depend with confidence on the commercial food kitchens of the country. Almost no day passes but accounts appear in the newspapers of wholesale poisoning from the use of canned foods. Such illnesses and deaths are wholly preventable. Their occurrence is a crime, and they disgrace our country. They menace the canning industry. Only recently the health officer of a city is reported in the papers to have said that no canned goods are safe. Such a sweeping condemnation is not warranted. But the converse of this proposition ought to be true. It is the duty of a government that has undertaken to protect the people to make universally true the statement that all canned foods are safe. To accomplish this there is demanded the same searching inves-

tigation of materials used and methods employed in the canning industry as became necessary to save foreign and domestic markets for American meat products.

There is not, at present, knowledge concerning the physiologic action of any of the antiseptic drugs used as food preservatives which is sufficiently full and convincing to warrant authoritative statements. On the other hand, the conclusions published by the special commission authorized to investigate the effect of benzoate of soda on the human economy are at variance with the hitherto recorded experience of the medical profession. That statement alone indicates the necessity of the withholding of the seal of government approval of the unlimited use of this or any other antiseptic drug until this important question is settled so definitely that the medical profession shall accept the conclusions without any hesitation whatsoever. The medical profession has always stood as a bulwark to defend the people against that which is inimical to health. It has no quarrel except with those who practice fraud and deceit for their own gain and with those who are criminally ignorant or careless.

The committee recommends:

1. That this society respectfully requests the President of the United States and the Secretary of Agriculture to secure an amendment to the national Food and Drugs Act by which the use of antiseptic drugs in canned fruits and vegetables and in all preparations from fruits and vegetables designed for human consumption shall be prohibited, and,

2. That the inspection of the commercial food kitchens of the United States by government officials, for the purpose of insuring the use of sound materials, cleanliness of methods, and compliance with the law concerning adulterants and the use of drug preservatives, be made obligatory.

3. That Congress be and is hereby urgently requested to institute an investigation with reference to determining in what additional particulars the Food and Drugs Act, as now construed and enforced, fails to afford adequate protection to the American people.

4. That this society respectfully urges on Congress and the Senate of the United States the organization, under a single bureau to be known as "The Bureau of Public Health," of all the offices and agencies now having duties in any way connected with the preservation of the public health except only those offices having to do with the protection of the health of the army and navy.

With such a bureau established it will be more easily possible to properly correlate the public health departments of the nation, the states and individual communities in the states. Such a correlation is desirable and necessary, for many of the problems confronting many local boards of health have a scope which is interstate and national in extent.

STATE CONTROL OVER LOCAL BOARDS OF HEALTH

Without waiting for the consummation of such a plan in its entirety, it seems desirable to secure in our own state a closer relation between the local health authorities and the state commissioner of health. Local boards of health and health officers are at times influenced to neglect of duty by personal considerations. Charges of favoritism and of persecution are not uncommon, and the smaller the community the greater becomes the influence of personal consideration. At present the public health law gives little control to the state department over local boards. In cases of inefficiency and neglect of duty on the part of local boards the state department should have the power to act for the benefit of the people, as provided for in the enforcement of the laws in other departments. Last year a bill was introduced into the assembly and senate to establish a school of sanitary science at Cornell University. It passed the assembly but did not reach the senate. Your committee favors a general bill, if one is needed, which would encourage every university having a college of medicine to inaugurate a course leading to the degree of doctor of public health. It recommends that this society disapproves of the appropriation of state moneys for the establishment of any course in the university which is not solely under state control.

There never was a time when interest in preventive medicine was greater than now. It is the subject of frequent articles in magazines and of public addresses. The contributions for the scientific investigation of many diseases that affect the public were never so munificent nor so numerous. A true spirit of research is being fostered in many students of medicine in this country, and the conscience of the people is getting awakened. Despite our carelessness in the handling of infectious diseases, the problems of which are already com-

pletely solved, like smallpox, typhoid, diphtheria and tuberculosis, there is a substantial gain. How much greater that gain might be to the state is known only to those who recognize the present difficulty in carrying into effect the beneficent provisions of the public health laws.

Report of the Secretary

DR. WISNER R. TOWNSEND, New York: The council at its May meeting passed a resolution permitting members who joined their county societies after Oct. 1, 1909, to have their state assessments credited to 1910, if they so desired: 144 took advantage of this provision, so that the membership of 6,370 will be increased on Jan. 1, 1910, to 6,514, a gain of 348 over the membership on Jan. 1, 1909. Deducting the 209 reinstated members of 1908 from 374 dropped Dec. 31, 1908, the loss is only 165 for that year.

The increase in society membership for the years 1908 and 1909 should encourage the county societies to make still greater efforts in the future. The 250 or more who each year drop out for various reasons cannot be avoided, as death alone claims nearly one-third. The percentage of resignations and dropped members is very small compared with the large membership, and shows clearly the excellent work done by the county officers, especially the secretaries and treasurers.

Report of the Counsel

JAMES TAYLOR LEWIS, counsel for the society: No year in the history of organized malpractice defense has been so fruitful of results in the stamping out of blackmailing cases as the present one. During no year has my work met with such enthusiastic support by the medical fraternity as during the one just past. More cases have been tried than in any other year, and while it is true that the number of cases brought has slightly increased, yet that is easily accounted for by the fact that malpractice defense has during the past year become generally known in the profession, and I have been called on for that reason to assist more members whose cases in other years may have gone to other attorneys, or may have been settled. The fighting spirit and determination not to be blackmailed by unscrupulous patients has manifested itself on many occasions, all of which is most satisfactory. Eighteen cases have been actually tried by me, but I have had the misfortune to lose one case so far as a verdict is concerned, and in this litigation a new trial has been asked for on errors committed by the trial justice, and which has been held in abeyance for several months. I have absolute confidence in the ultimate success of this case also. I began the defense of malpractice actions on Sept. 1, 1900. Since that time over 250 cases have come before me, and of that number 138 have been actually tried, none finally lost, and one now on appeal. Not one dollar of damages has ever been paid. This is a result not even hoped for, and the success of organized malpractice defense in the hands of state societies has been demonstrated. It is interesting to note that during the past year a majority of the cases begun are by women plaintiffs. It is difficult to determine just what this means, unless it is that the attorneys bringing them hope to enlist the sympathies of a jury, irrespective of whether or not there is merit in the patient's claim.

Report of the Committee on Experimental Medicine

This committee, in cooperation with the committee on legislation and with public-spirited men throughout the state, labored successfully to prevent the passage by the legislature of 1909 of two bills intended to regulate experiments on living animals. Each bill sought to impose restrictions which were against the public welfare on the performance of scientific observations. The hearing on both bills was held before the judiciary committee of the assembly on March 23, 1909, and before the judiciary committee of the senate on March 24, 1909. At both of these hearings arguments were presented in favor of the bills by their friends, and in opposition to the bills by members of the committee on experimental medicine and others. Subsequent to the hearings the assembly committee decided not to report either bill, while the senate committee took no action. This result represents a greater victory than that of the previous year, when the assembly

committee took no action whatever *pro* or *con*, while the committee of the senate reported one of the two bills to that body. As an aid in carrying on the above work the committee has caused to be prepared and published twenty brief articles in the form of leaflets, dealing with the subject of scientific experiments on living animals. These present the main facts regarding animal experimentation, its methods, its value in the investigation of specific diseases and of physiologic facts, its ethics, its legal aspect in the state of New York, and the opinions of eminent authority regarding it. These leaflets have undoubtedly played an important part in the work of the committee. They have received wide notice in the press and have been in demand in other states and in European countries, and the authors and editors who have given their services in preparing them have made effective contributions to the successful defense of medical research and teaching.

The following resolutions were adopted:

Resolved: That the delegates of the Medical Society of the State of New York to the American Medical Association be instructed to extend an invitation to the American Medical Association to hold its annual session in 1911 in Buffalo.

Resolved: That the Committee on Experimental Medicine be continued for the ensuing year and that each member of the house of delegates hereby pledges his best efforts in opposing any encroachment on animal experimentation for scientific medical purposes that may be presented to the next session of the Legislature.

Report of Committee on President's Address

This committee presented the following report, which was adopted:

1. On the recommendation that a plan be adopted to increase the interest in the state society, the committee recommends that the matter be referred to a special committee to be appointed by the president.

2. The committee advises the adoption of the recommendations of the president that a committee be appointed to consider the advisability of rearranging the counties of the state into districts, and suggests that the secretary of the state society be a member of that committee.

3. The committee recommends that the matter of pure food legislation be referred to the committee on legislation.

A committee was appointed to consider in a fitting manner the celebration of the eightieth birthday of Dr. Abraham Jacobi.

(To be continued)

Marriages

ARTHUR J. HOOD, M.D., to Miss Irene Hunter, both of Elko, Nev., January 13.

MERRITT BRICE, M.D., Baltimore, to Miss E. Louise Strong, at Baltimore, January 12.

HUGH M. COX, M.D., to Miss Margaret Adelaide Kulm, both of New York City, January 24.

GEORGE GIBLEN RAMBAUD, M.D., New York City, to Miss Gerville-Reache, Nov. 24, 1909.

JOHN BAPTIST HELES, M.D., to Miss Clara C. Tschudi, both of Dubuque, Iowa, January 11.

RICHARD SAUNDERS MARTIN, M.D., to Miss Jean Perkins, both of Stuart, Va., January 12.

OFFA LUNSFORD SHIVERS, M.D., to Miss Virginia Allen Hurt, both of Marion, Ala., February 2.

CHARLES A. ROBERTS, M.D., Rochelle, Ill., to Miss Marie Teterle, of Lowell, Mich., January 6.

MICHAEL C. COSTELLO, M.D., Calgary, Alta., to Miss Pearl Corrigan, at Kingston, Ont., recently.

ELMER PHILIP STIEHL, M.D., Floraville, Ill., to Miss Otilie C. Gauter, at Floraville, Nov. 23, 1909.

WILLIAM W. BEVERIDGE, M.D., to Miss Emma L. Johnson, both of Asbury Park, N. J., January 20.

HENRY JANNEY WALTON, M.D., Baltimore, to Miss Helen Alford Smith, at Baltimore, January 18.

DANIEL RALPH LUCAS, M.D., New York City, to Miss Lois Ford, of Richmond Hill, Long Island, N. Y., January 14.

ROBERT EDWARD HOLBROOK, M.D., Ninga, Man., to Miss Margaret Pithie, of Stratheona, Alta., at Winnipeg, Man., Dec. 31, 1909.

THOMAS KENNEDY CONRAD, M.D., Chevy Chase, Md., to Miss Julia B. Smith, of Gordonsville, Va., at Washington, D. C., November 25.

Deaths

John Read Bailey, M.D. University of Michigan, Ann Arbor, 1854; a member of the American Medical Association; first president of the Chippewa County (Mich.) Medical Society; attending surgeon at Fort Mackinac, Mich.; formerly acting assistant surgeon U. S. Army; surgeon of the Eighth Missouri Volunteer Infantry, and brevet lieutenant-colonel, U. S. V., surgeon-in-chief and chief of operating corps, Second Division, Fifteenth Army Corps, and special medical purveyor of the Army of the Tennessee in the field during the Civil War; physician for the Ottawa and Chippewa Indians at the Michilimackinac agency; state park commissioner of Michigan; to whose work many of the beauties of Mackinac Island owe their existence; for fifty-four years a resident of Mackinaw; died at the home of his brother in Fort Smith, Ark., January 18, aged 76.

Alvin Herbert Eccleston, M.D. Albany (N. Y.) Medical College, 1880; formerly local pension examiner, and a member of the Rhode Island Board of Health; examining surgeon at Providence for the New York, New Haven and Hartford Railroad; consulting surgeon of the Providence, Fall River and Newport Steamship Company; surgeon to the Providence Police Association; a member of the Rhode Island Medical Society, and New York and New England Railway Surgeons' Association; formerly a member of the town council and chairman of the school committee of Richmond, R. I.; for two terms a member of the legislature; major and surgeon of the United Train of Artillery and retired with the rank of colonel; died at his home, January 23, from shock and cerebral hemorrhage, following an automobile accident, January 22, aged 51.

James Henry Richardson, M.R.C.S., England, 1847; M.B., University of Toronto, 1848; M.D., 1850; professor of anatomy in his alma mater, the Toronto School of Medicine and the Toronto University until 1898, when he became emeritus professor; for many years a member of the senate of the University; and of the council of Upper Canada College; for many years surgeon of the Field Artillery, The Merchants Company, and Tenth Royal Regiment, retiring with the rank of surgeon-major, with service in the Fenian raid and the long service medal; formerly president of the Ontario Medical Council died at his home in Toronto, January 15, from senile debility, aged 86.

John Powell Wilson, M.D. College of Physicians and Surgeons, New York City, 1870; a member of the Medical Society of the State of New York; for twenty-one years a surgeon in the state service; at first assistant surgeon of the Twenty-first Infantry, N. G., N. Y., and in 1883 made captain and assistant surgeon, and assigned to the Nineteenth Separate Company; once health officer of the city of Poughkeepsie, and for many years township health officer; died at his home, January 17, from cerebral thrombosis, aged 64.

William Balser, M.D. New York Medical College, New York City, 1862; of New York City; a member of the Medical Society of the State of New York and New York Academy of Medicine; a surgeon of volunteers during the Civil War; for twenty years on the staff of the German Hospital as consulting physician; and for thirty-one years actively connected with the German Dispensary; died at his home in Richmond Hill, Queens, January 24, aged 72.

John Young Shindel, M.D. Pennsylvania Medical College, Gettysburg, 1855; of Middleburg, Pa.; assistant surgeon of the Forty-seventh Pennsylvania Veteran Volunteer Infantry during the Civil War; for several years pension examiner; afterward a member of the board of school directors; secretary of the city council and chief burgess of Middleburg; died at his home in that city, January 5, from cerebral hemorrhage, aged 75.

Robert H. Crowder, M.D. Rush Medical College, Chicago, 1866; who, after one year of medical work in 1860 and 1861, entered the federal service as captain of the line in the Eleventh Indiana Volunteer Cavalry; was later transferred to the medical corps as surgeon with rank of major, and afterward practiced for many years in Sullivan, Ind.; died at his home in that city, January 20, from cerebral hemorrhage, aged 69.

James Chalmers Walker, M.D. New York University, 1894; a member of the Medical Society of the State of Pennsylvania, and formerly president and secretary of the McKean County Medical Society; visiting physician to the Bradford Hospital and president of the municipal board of health;

local surgeon of the Buffalo, Rochester and Pittsburg Railroad; died at his home January 16, from heart disease, aged 37.

James Pears Reed (license, Mich., 1900); from 1864-1866 a student in the University of Michigan, Ann Arbor; a member of the Michigan State Medical Society; and for forty years a practitioner of Rockwood; a surgeon of volunteers during the Civil War; died at his home, January 18, from cerebral hemorrhage, aged 70.

Joseph Matthias Holden, M.D. University of Southern California, Los Angeles, 1899; of Long Beach; a member of the Medical Society of the State of California, and formerly a member of the American Medical Association; died in the Clara Barton Hospital, Los Angeles, January 17, from nephritis, aged 35.

James Francis Conneffe, M.D. Medico-Chirurgical College of Philadelphia, 1908; a member of the Ohio State Medical Association; a member of the staff of the State Hospital, Columbus; died in a cottage on the hospital grounds, January 20, from typhus fever contracted during a recent visit to Mexico, aged 33.

Adolphus Theodore Cotten, M.D. College of Physicians and Surgeons, Baltimore, 1879; a member of the Medical Society of the State of North Carolina, and the Raleigh Academy of Medicine; died in that city, Nov. 10, 1909, from intestinal obstruction, following an operation for cholelithiasis, aged 53.

William J. Furze, M.D. McGill University, Montreal, 1907; medical attendant for the employees of the Western Canadian Power Company at Ruskin, B. C.; died at Stave Falls, near that place, Dec. 14, 1909, from the effects of a fracture of the skull due to an accidental fall from a bridge, aged 42.

Joseph Shotwell Smith, M.D. University of Maryland, Baltimore, 1891; of Wheeling; a member of the West Virginia State Medical Association; for eight years a member of the staff of Glendale Hospital; died in Haskins Hospital, Wheeling, January 19, from cirrhosis of the liver, aged 42.

Charles B. Gatchell, M.D. Pulte Medical College, Cincinnati, 1874; formerly of Chicago; for many years secretary of the American Institute of Homeopathy; editor of the *Medical Era*; died in Los Angeles, Cal., January 27, after an operation for the removal of a vesical calculus, aged 63.

Rufus Woods Gillette, M.D. Dartmouth Medical School, Hanover, New Hampshire, 1872; local surgeon at Danville, Ill., for the Chicago and Eastern Illinois Railroad for more than twenty years; died at St. Elizabeth's Hospital in that city, January 20, from locomotor ataxia, aged 60.

John W. Hyatt (registration, Texas, act of 1907); was found dead in his room in the Bellevue Hotel, Bellevue, Texas, January 19, from an incised wound of the throat, supposed to have been self-inflicted with suicidal intent while despondent on account of ill health.

John Emerson Prather, M.D. St. Louis College of Physicians and Surgeons, 1896; a member of the American Medical Association; of Winchester, Ill.; who was taken ill January 4, while making a professional call in the country, died January 16, from pneumonia, aged 43.

Sidney Crooks McClure, M.D. Hospital College of Medicine, Louisville, 1878; of Jeffersonville, Ind.; formerly clerk of the Indiana State Prison, South, and an official of the Jeffersonville Board of Health; died in Mercy Hospital in that city, January 17, aged 58.

Robert S. Beazley, M.D. Jefferson Medical College, 1842; twice a member of the Virginia senate; and a member of the Underwood Constitutional Convention; died at his home in Roundabout, near Stanardsville, Va., January 18, from pneumonia, aged 88.

David W. Magee (license, Ill., 1879); for thirty-five years a practitioner; brevet brigadier general during the Civil War; for two terms postmaster of Peoria; died at the home of his daughter in that city, January 18, from senile debility, aged 84.

Hiram Thomas Clary, M.D. Bennett Medical College, Chicago, 1884; of Winfield, Kan.; a member of the local pension examining board; died at the home of his son in Kansas City, Mo., January 17, from acute dilatation of the heart, aged 71.

Frank A. Stovering, M.D. Western Reserve University, Cleveland, 1889; one of the founders and chief of staff of St. John's Hospital, Cleveland; died in that institution, January 11, from septicemia, due to an operation wound, aged 41.

David B. Kilpatrick, M.D. Detroit Medical College, 1875; formerly a member of the Michigan State Medical Society and a veteran of the Civil War; died at his home in Woodland, January 20, from cerebral hemorrhage, aged 72.

John C. Coleman, M.D. Eclectic Medical Institute, Cincinnati, 1874; a member of the Ohio State Medical Association; a veteran of the Civil War; died at his home in New Marshfield, January 21, from heart disease, aged 65.

C. R. Norman, M.D. Memphis Medical College, 1852; a member of the Mississippi State Medical Association; formerly a member of the American Medical Association; died at his home in Dlo, Miss., January 7, aged 83.

Medical Education and State Boards of Registration

COMING EXAMINATIONS

KANSAS: State House, Topeka, February 8. Sec., Dr. F. P. Hatfield, Olathe.

NEBRASKA: State House, Lincoln, February 9. Sec., Dr. E. Arthur Carr, 141 S. 12th Street.

WYOMING: State Capitol, Cheyenne, February 16-18. Sec., Dr. S. B. Miller, Laramie.

Iowa September Report

Dr. Louis A. Thomas, secretary of the Iowa State Board of Medical Examiners, reports the written examination held at Des Moines, Sept. 21-23, 1909. The number of subjects examined in was 8; total number of questions asked, 100; percentage required to pass, 75. The total number of candidates examined was 12, of whom 3 passed and 9 failed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
University of Iowa, College of Medicine.....	(1909)		82.6
Woman's Medical College of Baltimore.....	(1909)		87.6
University of Pittsburg, Medical Department.....	(1909)		84.2

FAILED

Chicago College of Medicine and Surgery.....	(1909)	68,*	71.2
Keokuk Medical College, College of Physicians and Surgeons.....	(1900)	68.2,*	
	(1904)	63.4;†	
	(1906)	69.5;‡	
Drake University, College of Med.	(1908)	65.5;†	70.6
St. Louis College of Physicians and Surgeons..	(1909)	63.5,*	71.7

* Second failure.

† Third failure.

‡ Fifth failure.

Texas November Report

Dr. M. E. Daniel, secretary of the Texas State Board of Medical Examiners, reports the written examination held at Greenville, Nov. 9-11, 1909. The number of subjects examined in was 12; percentage required to pass, 75. The total number of candidates examined was 32, of whom 31 passed and 1 failed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
University of Arkansas.....	(1899)		75
Howard University, Washington, D. C.....	(1909)		76.3
Northwestern University Woman's Medical School..	(1890)		80
Rush Medical College.....	(1876)		75.5
Indiana University.....	(1909)		79
Louisville Medical College.....	(1906)		77.7
Hospital College of Medicine, Louisville.....	(1877)		75
University of Louisville..	(1876) 75.1; (1882) 76.7; (1908) 84.3; (1909) 75, 76.3		
Kentucky School of Medicine..	(1886) 75.6; (1891) 75.5; (1908) 85.7		
Tulane University of Louisiana.....	(1901)		82.2
University of Maryland.....	(1906) 83.9; (1909)		82.9
Tufts College Medical School.....	(1894)		81.1
Homeopathic Medical College of Missouri.....	(1881)		75.9
American Medical College, St. Louis.....	(1906)		76.7
Columbia University, College of Phys. and Surg..	(1909)		80.8
Memphis Hospital Medical College.....	(1904)		79.4, 81.3
Meharry Medical College.....	(1908)		75.1, 76.5
University of Tennessee.....	(1890)		75
University of the South.....	(1909)		82.9, 92.8
Fort Worth University.....	(1909)		75.1
Southwestern University Medical College, Dallas..	(1909)		82.5

FAILED

St. Louis College of Physicians and Surgeons.....	(1908)		50.5
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Utah January Report

Dr. G. F. Harding, secretary of the Utah State Board of Medical Examiners, reports the written examination held at Salt Lake City, Jan. 3-4, 1910. The number of subjects examined in was 17, total number of questions asked, 100; percentage required to pass, 75. The total number of candidates examined was 6, all of whom passed. Four reciprocal licenses were granted at this examination. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Hahnemann Medical College and Hospital, Chicago.	(1907)		75
Harvard Medical School, Boston.....	(1907)		86.7
St. Louis University	(1909)		83.4
Jefferson Medical College.....	(1908)		79.6
Medical College of Ohio.....	(1907)		84.4
University of Pennsylvania.....	(1908)		82.5
Tokio Medical College, Japan.....	(1906)		76

LICENSED THROUGH RECIPROCITY

College	Year Grad.	Reciprocity with
Northwestern University Medical School.....	(1890)	Iowa
Central College of Physicians and Surgeons.....	(1904)	Indiana
University of Kansas.....	(1907)	Kansas
Cornell University Medical College.....	(1899)	New York

Medical Economics

THIS DEPARTMENT EMBODIES THE SUBJECTS OF ORGANIZATION, POSTGRADUATE WORK, CONTRACT PRACTICE, INSURANCE FEES, LEGISLATION, ETC.

Vital Statistic Legislation a Necessity for Suppression of the Midwife Evil

Considerable interest is being manifested at present in Europe regarding the care of parturient women by midwives. Birth records show a high percentage of puerperal mortality and morbidity in women under their care. A prominent gynecologist of Berlin, thinking that midwives were comparatively unknown in the United States, has recently written us asking for the percentage of deaths in obstetric cases in the United States in order to institute a comparison between puerperal mortality in this country and Europe. We have been forced to write him that statistics of any value on this subject are not available, owing to a lack of proper state vital statistic legislation. Midwives conduct labor cases in every state in the Union and an investigation a few years ago showed that not more than a dozen states had any law whatever regulating or restricting them and that even in the states where such laws existed, they were inadequately enforced. Midwifery is not so well regulated in this country as in Europe and yet the harm done is probably less, since midwives are not so numerous, it being more common here, except among the recent immigrants, to employ physicians to attend labor cases. The evils resulting from ignorant midwives are well known to physicians, but more education of the public and of the state legislatures will be required before midwifery is properly restricted. Its abolishment under present conditions is probably impossible.

An investigation made in Chicago in 1908 (THE JOURNAL, April 25, 1908, p. 1346), showed that there were at least 500 midwives in the city and that 40 per cent of all labor cases were conducted by them. In one immigrant colony, all of one nationality, 86 per cent. of births were attended by midwives. Many of these women are also engaged in criminal practices. In New York City among 500 midwives, only 40 per cent. had had any adequate training, while, on account of lack of supervision as well as personal carelessness, not over 10 per cent. were actually capable and reliable.

The mortality figures of the Census Bureau show that in 1908, the deaths from childbirth in the registration area (comprising 51.8 per cent. of the population) comprises 7,344 women, or 16.3 per 100,000 of population, and that from 1901 to 1905, the average death rate from this cause in the same area was 14.3 per 100,000. Under this head are included accidents of pregnancy, puerperal hemorrhage, and other accidents of labor, puerperal septicemia, puerperal phlegmasia alba dolens, and other puerperal accidents and diseases. As no figures are available as to the number of midwives and the number of cases attended by them, or as to how many deaths among their patients were preventable, it is impossible to estimate the percentage of deaths attributable to improper management in the hands of midwives. The total mortality due to ignorance and actual criminal practices is beyond conjecture. It is probably very large.

The present condition of our national vital statistics is a national disgrace. The Committee on Medical Legislation of the American Medical Association is carrying on a campaign for an adequate and uniform state law on vital statistics. Efforts are being made to extend the registration area by adopting this model bill in a few states at a time. With more complete vital statistics, it will be possible to show the damage wrought by ignorant attendants on parturient women and with these figures at hand, the campaign of education may then be extended and agitation for the proper training of midwives may be undertaken. The result of such regulation will unquestionably be an enormous improvement in the mortality and morbidity of obstetric cases.

POSTGRADUATE COURSE FOR COUNTY SOCIETIES

DR. JOHN H. BLACKBURN, DIRECTOR
BOWLING GREEN, KENTUCKY

[The Director will be glad to furnish further information and literature to any county society desiring to take up the course.]

Sixth Month—Third Weekly Meeting

DISEASES OF THE GALL-BLADDER AND DUCTS

SIMPLE CHOLELITHIASIS: Diagnosis, pain, colic, gastric symptoms, jaundice, fever, tumors. Differential diagnosis.

COMPLICATIONS OF CHOLELITHIASIS: (a) Obstruction of cystic duct. (b) Obstruction of common duct. (c) Remote effects, (1) acute perforation, (2) fistulae, (3) strictures of ducts, (4) adhesions and bands, (5) involvement of pancreas. Symptoms and diagnosis of each.

NON-CALCULOUS CHOLECYSTITIS: (a) Acute phlegmonous, (b) subacute, (c) chronic. Diagnosis and surgical treatment of each.

CARCINOMA OF GALL-BLADDER AND DUCTS: Frequency, relation to gall-stones. Symptoms and diagnosis in (a) gall-bladder, (b) common duct.

Medicolegal

Examinations Should be by Impartial Physicians Appointed by the Court

The Court of Appeals of Kentucky says, in *Keller & Brady Co. vs. Berry* (121 S. W. R. 1009), a personal injury case brought by the latter party, that when the plaintiff was on the witness stand the defendant company proposed to have him examined then by two physicians whom it had present as witnesses. The plaintiff declined to submit to the examination unless required to do so by the court. The court offered to have him examined by an impartial physician to be named by the court. The defendant company thereupon withdrew its motion for an examination. There was no substantial error on the part of the court in this matter. The court has a discretion in such matters, and it did not abuse a sound discretion in refusing to require the plaintiff to submit to a personal examination by physicians of the defendant's company's own choosing. Such examinations should always be made by some impartial physician appointed by the court.

City Empowered to Create Office of Bacteriologist

The Supreme Court of Alabama says that State, on the relation of *Sholl and others, vs. Duncan* (50 So. R. 265) was a proceeding challenging the right of the said Duncan to exercise the functions of city bacteriologist, created by an ordinance of the city of Birmingham. The controversy related to the right of the municipality to create an office with the powers and functions conferred by the ordinance; the argument being that the ordinance was in contravention of the laws of the state, which was to say that Duncan, acting under the color of the ordinance, was wrongfully exercising the functions which, under the general law of the state, pertain to the health officer of the city of Birmingham.

It was conceded that Section 142 of the Alabama act of Aug. 13, 1907, confers on municipalities the power to adopt

ordinances to prevent the introduction of contagious, infectious or pestilential diseases, to establish and regulate a sufficient quarantine not inconsistent with the laws of the state, to adopt ordinances and regulations to insure good sanitary conditions in public and private places, and to prescribe the duties and fix the salaries and compensation for such health officials as they may deem necessary. This section is an amplification in one direction of the general power conferred by Section 80, by which municipal corporations are given power to adopt ordinances, not inconsistent with the laws of the state, to carry into effect or discharge the powers and duties conferred, and to provide for the safety, health, prosperity, morals, order, comfort and convenience of the inhabitants of the municipality.

Bacteriology is the science which investigates bacteria and other microbes, especially their life history and agency in the production of disease. Ordinances providing for bacteriologic investigation and research have a just and reasonable, not to say necessary, relation to the health and safety of communities. It will not be denied, therefore, that the general and special powers conferred by the two sections of the act last referred to are amply broad to justify the ordinance of the city of Birmingham creating the office of city bacteriologist.

Nor does the court consider that the act amendatory of the health and quarantine laws of the state, postdating the act of Aug. 13, 1907, known as the "Municipal Code Law," by two days, dealing with the subject of health and quarantine, must be held to repeal the power to appoint a bacteriologist, with such duties as are enumerated in the ordinance, which power is fairly implied in the municipal charter act.

The health and quarantine law and the municipal code law cover in part the same field so far as cities and towns are concerned. The fact that they were passed by the same legislature, and so nearly together, creates a strong presumption that no conflict was supposed to exist. The court finds no conflict in the letter of the two statutes. Nor does it think the duties imposed by the ordinance on the bacteriologist are of such a nature as to give rise to conflict between that official and the health officer provided for in the health and quarantine law. The former is nothing more than an agent for gathering information, as the ordinance shows. Such information will be valuable to the officers and people of the municipality in the conduct of its government within the limits of its unquestioned powers. It can in no wise curtail the powers of the health officer, nor interfere with their complete beneficial exercise, that one or a dozen bacteriologists appointed or elected by the city may cover the same ground for the purpose of getting information. The court discovers in the health and quarantine laws of the state no expressed or implied purpose to deny to a municipal corporation the authority to procure for the use of its officers and people, in the administration of their affairs, expert knowledge of things which may affect the safety, health and comfort of the community.

Wherefore a decree in favor of Mr. Duncan is affirmed.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

New York Medical Journal

January 22

- 1 *Subjective Fremitus as a Diagnostic Means: New Adjuvant in Determining the Localization and Magnitude of the Objective Fremitus in Chest Examinations. S. A. Knopf, New York.
- 2 St. Luke the Physician. J. J. Walsh, New York.
- 3 The Fungus, *Diplodia*, as a Possible Factor in the Etiology of Pellagra. H. S. Reed, Blacksburg, Va.
- 4 *New Method of Treatment of Phagedenic Chancroid and Chancre by Hot-Air. E. W. Ruggles, Rochester, N. Y.
- 5 Appendicitis from Viewpoint of the Clinician. M. H. Fussell, Philadelphia.
- 6 Obstetrics, Gynecology, and Abdominal Surgery. A. H. Wright, Toronto.
- 7 Use of the Killian Tubes in Dealing with Foreign Bodies in the Trachea and Esophagus. H. L. Swain, New Haven, Conn.
- 8 Psychogenesis of Some Reflex Neuroses. T. A. Williams, Washington, D. C.

- 9 Balanic Hypospadias Complicated with Simultaneous Intra-urethral Chancre and Gonorrhea, and Idiopathic Low Specific Gravity of the Urine. H. F. L. Ziegl, New York.

1. **Subjective Fremitus as a Diagnostic Means.**—The patient is requested to make a humming sound with the mouth closed, and then he is asked whether he feels his voice vibrating either on the left or right side or where he feels the vibration most intensely. If there is a sufficient degree of consolidation on either side, the patient will feel the vibrations caused by his voice and indicate where he feels them. That is what Knopf terms subjective fremitus. The objective fremitus is brought out by asking the patient to pronounce the words twenty-two, ninety-nine or similar sounds in a bass voice, or letting him hum as for determining the subjective fremitus. The difference in objective fremitus in early tuberculosis is often so slight that Knopf has found the following method most helpful as an adjuvant: In placing the hand over the chest in any locality where differentiation is difficult, which is particularly frequent in incipient pulmonary tuberculosis most often located posteriorly in the apices, Knopf presses his forehead on the dorsal surface of his hand. The vibrations transmitted are thus more delicately perceived by the direct communication with the brain through the frontal bone.

4. **Hot Air in Chancre and Chancroid.**—Ruggles claims that his method of treatment of phagedenic chancroid is the first attempt to utilize the thermal death point of the bacteria as a means of combating this disease, and reports three cases in which this treatment proved very effective. He is convinced that much of the benefit obtained is due to the active hyperemia produced by the long-continued heat. That the effect of artificial hyperemia on bacteria is not merely inhibitory, but, through raising the local opsonic index, bactericidal also, has been thoroughly established by Bier and other investigators. This must be the explanation of the good effects in these cases, since the secondary pus cocci which predominated in both are not directly killed by the temperature employed, though their resistance may be weakened. This being the case, Ruggles thinks it probable that the hot air treatment will prove of the greatest value in all phagedenic processes of whatever nature or origin. The oven used by Ruggles is described fully.

Boston Medical and Surgical Journal

January 20

- 10 *Strength of the Uterine Scar After Cesarean Section. Experimental and Clinical Study. N. B. Mason and J. T. Williams, Boston.
- 11 Symptomatology Diagnosis and Treatment of Primary Apogenous Angiocholitis. C. G. Cumston, Boston.
- 12 *Postoperative Pneumonia. E. H. Risley, Boston.
- 13 Use of Formalized Cultures of Typhoid Bacilli for the Agglutination Test. M. E. Morse, Boston.

10. **Uterine Scar After Cesarean Section.**—As the result of experimental work and study of the literature, Mason and Williams feel justified in drawing the following conclusions regarding the uterine scar after Cesarean section:

1. A carefully sutured and well-united scar will withstand any strain which can be endured by the uterine muscle.
2. Rupture of a Cesarean scar is always secondary to unusual weakness of the scar, dependent on imperfect consolidation.
3. The most frequent cause of imperfect consolidation is placing the deep stitches too far apart, or not including the entire thickness of the uterine muscle.
4. Location of the incision and suture of the placental site probably do not affect the strength of the scar.
5. Infection, in certain instances, plays a very important part in causing weakness of the cicatrix.
6. Catgut as a suture material is open to the objection that there is at least a possibility of the stitches becoming untied, and that certainly more cases of rupture have occurred after its use than after the use of silk.
7. As a corollary to the foregoing conclusions, it seems evident that given a uterus which has been sutured with care to include the entire thickness of the muscular portion of the wall in each stitch, and to place the deep stitches close together throughout the entire length of the incision, using silk or linen, and in which there has been no evidence of sepsis during the convalescence, such a uterus may be subjected with safety to distention by a full-term pregnancy, or even, in the absence of mechanical indications for Cesarean section, to the strain of labor itself.

12. **Postoperative Pneumonia.**—Risley's paper is an analysis of the pulmonary complications of 1,000 consecutive laparotomies, including radical cure of hernia. The mortality in this series of laparotomies was 13 per cent. Risley found that postoperative pulmonary complications are most liable to develop in cases in which sepsis is present, and in which some

trauma has been done, not to the air passages, but to the peritoneum. Lung involvement was present in 3 per cent. of all of these cases before operation. Clean cases are nearly as liable to pulmonary complications as septic, but the mortality is practically nil, and the cases themselves are of atypical form and much less severe. Previous pneumonic processes do not light up again after ether. Lung complications are more common during the winter months. Flare-ups in tuberculous cases are fairly common. The exact percentage was not determined. Prophylaxis may be best carried out by: (a) a much more thorough preparation of the mouth before all operation—a ten-minute scrubbing of the teeth 3 times during the 25 hours previous to operation, followed by a thorough washing of the mouth and nasal passages and throat with such a solution as Dobell's is suggested; (b) the use of the Trendelenburg position in all prolonged operations when practical and when gravitation of septic material toward the diaphragm can be prevented by walling off; (c) the use of atropin and morphin subcutaneously one-half hour before etherization; (d) the use of the Crile method of anesthesia when practical, and in all mouth cases.

Medical Record, New York

January 22

- 14 Recognition and Treatment of Extrauterine Pregnancy. C. W. Barrett, Chicago.
- 15 *Simple and Inexpensive Portable Polygraph. W. N. Berkeley, New York.
- 16 *Care and Commitment of Insane Persons by Health Officers. W. L. Russell, New York.
- 17 *Adult Syphilis of the Lung. H. H. Pelton, New York.
- 18 Etiology and Underlying Causes of Pulmonary Tuberculosis. W. S. Mills, New York.
- 19 *Situs Viscerum Inversus Totalis. L. J. Pollock and E. B. Jewell, Dunning, Ill.

15. **Inexpensive Portable Polygraph.**—Berkeley's apparatus will record the apex beat, carotid or jugular pulse, or respiration. There are two receiving funnels, the ends covered with thin rubber dams; across one diaphragm is cemented a small block of wood which is laid against the vessel to be recorded. Two recording funnels are clamped with a bench-vise to a table, and connected with the receiving funnels by tight rubber tubes. These funnels are also covered with rubber dam, on one radius of which is cemented a small socket into which the recording lever fits. A clock laid on its face furnishes the drum mechanism, with a wooden cylinder, having three pins placed vertically along one line of its convex surface; to these pins the smoked paper is fixed. A wooden and a pasteboard box hold the whole apparatus which may be easily carried about.

16. **Commitment of Insane.**—Russell shows the advantages that would arise from the commitment and care of insane persons by the health officers of cities and country districts, instead of by policemen and constables, before their commitment to hospitals. The influence of the methods of handling and transportation of these patients by police officials is often deleterious to the welfare of the patients. They should be handled by nurses and physicians who better appreciate the mental conditions of such patients.

17. **Adult Syphilis of the Lung.**—Pelton's case was an instance of acquired syphilis of the lung in which was grafted on the luetic process an infection with tuberculosis. The positive reaction to the tuberculin injection pointed toward that possibility.

19. **Situs Viscerum Inversus Totalis.**—Pollock and Jewell give autopsy findings in a case of dementia paralytica, in which there was complete reversal of all abdominal and thoracic organs, not diagnosed before death.

Lancet-Clinic, Cincinnati

January 15

- 20 *The Problem of the Insane and the Defective. L. M. Crafts, Minneapolis.
 - 21 *Elements of Success in Surgery. A. H. Cordier, Kansas City, Mo.
 - 22 Diagnosis of Incipient Gastric Carcinoma. F. L. Rattermann, Cincinnati.
 - 23 Widespread Peritoneal Infection Treated Successfully by the Fowler-Murphy Method. H. H. Hines, Cincinnati.
20. Abstracted in THE JOURNAL, Nov. 20, 1909, p. 1770.
21. Abstracted in THE JOURNAL, Oct. 30, 1909, p. 1505.

Northwestern Lancet, Minneapolis

January 1

- 24 *Poliomyelitis—Previous Epidemics. H. Sneve, St. Paul.
- 25 *Epidemic Poliomyelitis in Minnesota in 1908. A. S. Hamilton, Minneapolis.
- 26 Poliomyelitis; Report of Eighteen Cases. W. R. Ramsey, St. Paul.

24, 25. Abstracted in THE JOURNAL, Nov. 20, 1909, p. 1766.

American Journal of Medical Sciences, Philadelphia

January

- 27 *Pellagra and Some of Its Problems. J. N. Hyde, Chicago.
- 28 High Caloric Diet in Typhoid. H. A. Houghton, Bayside, L. I.
- 29 *Therapeutic Use of Bacterial Vaccines. E. R. Hoobler, New York.
- 30 *Present Status of Tuberculin Therapy. W. C. Voorsanger, San Francisco.
- 31 Adams-Stokes Disease with Complete Heart Block; A Conspicuous Lesion in the Path of the Auriculoventricular Bundle. L. F. Bishop, New York.
- 32 *Technic of Operations on Lower Portion of Ureter. C. L. Gibson, New York.
- 33 Suprapubic Prostatectomies. C. H. Chetwood, New York.
- 34 *Principles and Technic of Wassermann and Noguchi Reactions; Their Comparative Value to the Clinician. D. M. Kaplan, New York.
- 35 Study of the Alleged Presence of Tubercle Bacilli in the Circulating Blood. E. Burvill-Holmes, Philadelphia.
- 36 *Is Thromboangitis Obliterans Related to Raynaud's Disease and Erythromelalgia? L. Bnerger, New York.
- 37 Four Cases of Cervical Rib, Two of Them Flail-like. A. P. Francine, Philadelphia.

27. **Pellagra and Some of Its Problems.**—Hyde discusses the phenomena of the disease as they have been recognized in this country, and some of the problems with which the students of pellagra in the United States apparently are confronted. The paper contains so much information that it cannot be abstracted. It is well illustrated and appended to it is a most complete bibliography of the literature on pellagra.

29. **Therapeutic Use of Bacterial Vaccines.**—Hoobler's cases may be briefly cited as follows:

Case 1.—Puerperal septicemia of forty days' duration; streptococci isolated from the blood; vaccine inoculations given; the temperature came to normal in two days; no further chills.

Case 2.—Bacteremia following mastoid disease; streptococci isolated from the blood; treatment by autogenous vaccine and operation; recovery.

Case 3.—Ulcerative endocarditis, pericarditis, and pleurisy with effusion; staphylococci isolated from the blood; vaccine inoculations resulted in these processes clearing up; for one month marked improvement took place, when the patient contracted lobar pneumonia and died.

Case 4.—Pyemia following appendicitis; liver abscess; blood cultures negative; *Bacillus mucosus capsulatus* isolated from the pus on the fortieth day after operation; the use of vaccines made from this organism followed by gradual fall of the temperature to normal and perfect recovery.

Case 5.—Postappendicular pyemia; abscess in the shoulder joint; vaccine made from pus; improvement after second inoculation; perfect recovery.

Case 6.—Puerperal fever developing on the sixth day of the puerperium; blood culture negative; intruterine culture showed streptococci; stock streptococcal vaccine from a streptococcal septicemia was given, and the temperature came to normal, but rose on the second day; autogenous vaccine was then given, and the pulse, temperature, and respirations came to normal.

Case 7.—Pelvic abscess; *Bacillus coli communis* isolated from the pus; after many antogenous inoculations the temperature came to normal.

Case 8.—Infected foot, followed by cellulitis of the leg and later erysipelas; streptococci found in the pus from the foot; a stock vaccine used; after two inoculations temperature came to normal.

30. **Present Status of Tuberculin Therapy.**—Voorsanger does not regard tuberculin as a specific in tuberculosis, but only a valuable adjunct to the hygienic and dietetic therapy of the disease.

32. **Operation on Lower Portion of Ureter.**—In Gibson's opinion, the ideal method of performing operations on the lower ureter should fulfil the following conditions: The incision of the abdominal wall should be of such size and situation as to give an ample exposure for the easy recognition of the ureter, the necessary manipulations, and security from injury to the other pelvic structures, particularly the iliac vessels. The incision should be extraperitoneal. It should be possible to make the ureter so freely accessible that any incision in it can be as easily and accurately repaired as a lesion of the intestine. There should be no unnecessary trauma or malhandling of the tissues, so that the completion of the operation should leave a perfectly dry field, doing away (when the continuity of the ureter has been restored) with

the necessity of drainage—a prophylactic measure against subsequent hernia. The incision of the abdominal wall should be so planned as to produce the least damage, allowing when it is closed without drainage a firm union without risk of hernia. Finally, the whole operation should be so simple, so free from annoying hemorrhage or other pitfalls, that it can be performed without undue waste of time—half an hour or less. These ideals, Gibson believes, can be realized by a suitable exposure of the ureter and the lower pelvis by an incision which he has used in probably a hundred laparotomies. The skin incision runs from the mid-line about a finger's breadth above the pubes, horizontally outward nearly parallel to Poupart's ligament at first and curves rather sharply upward at its mid-point to end about opposite the anterior superior spine of the ilium. This incision is deepened in the same line through the aponeurosis of the external oblique and the internal oblique muscle—the latter is the only structure which suffers any real damage, and only to a slight degree, for the lower part of the incision runs about parallel to its fibers, only the ascending leg cuts across a small part of these fibers. The incision stops short of the transversalis, which is not disturbed at all. With efficient retraction of the upper flap the external border of the rectus muscle is identified and the fascia of the transversalis is then divided by a vertical incision close to and parallel to the rectus—that is, at right angles to the original incision. Two retractors are then inserted, the outer one retracts the cut edge of the transversalis outward, the other pulls the rectus muscle well toward the mid-line.

So ample is the space and view, that the whole hand can be introduced under the control of the eye. The ureter is released from its surroundings and easily brought to the external level of the wound. In this way it can be handled readily and freely. The wound is closed without drainage. The transversalis fascia is sutured separately with catgut. Continuous sutures of medium-sized catgut (preferably moderately chromicized) are used for the combined internal and external oblique layer. A few interrupted fine catgut sutures are used for the superficial fatty layer. Very fine continuous silk sutures are used for the skin.

34. Wassermann and Noguchi Reactions.—Kaplan found that the Wassermann reaction gives negative results in about 7 per cent. of positive serums, treatment periods excluded. The Noguchi method gives 8 per cent. of positive results in clinically well-established non-syphilitic individuals. The positive reactions in these cases are ordinary reactions and cannot be said to be remarkably strong.

36. Thromboangiitis Obliterans.—Thromboangiitis obliterans is a clinical and pathologic entity characterized by thrombotic occlusion of arteries alone or of arteries and veins, giving subjective manifestations, chief among which are pain and the peculiar symptoms of intermittent claudication, and presenting objective phenomena, the most important of which are redness in the dependent position of the limb, marked blanching in the elevated position, evidences of arterial occlusion in the form of pulseless vessels, trophic disturbances of moderate extent and of even grave consequences often terminating in gangrene of one or both lower extremities. Buerger says that we possess no data which tend to show that either erythromelalgia or Raynaud's disease is dependent on organic obliteration of arteries or veins. Clinically, thromboangiitis obliterans may show many variations from a set form, and this accounts for the fact that the true condition is so frequently overlooked. Associated migrating phlebitis and symptoms of intermittent claudication are but two of a number of phases that may stand out as striking features. Individual characteristic symptoms of thromboangiitis obliterans do not justify us in establishing a relationship between this disease and others in which somewhat similar phenomena may be found.

Wisconsin Medical Journal, Milwaukee

December

38 *Transactions of the Sixty-third Annual Meeting of the State Medical Society of Wisconsin.

38. This issue is devoted entirely to the transactions of the state society for 1909.

Atlanta Journal-Record of Medicine

December

- 39 Cure of Traumatic Neurosis. T. A. Williams, Washington, D. C.
- 40 Pellagra In Metcalf, Ga. W. W. Jarrell, Thomasville, Ga.
- 41 Prognosis and Treatment of Pellagra. C. H. Lavinder, U. S. P. H. and M.-H. S.
- 42 Laceration of the Scrotum. S. B. Little, Colbert, Ga.

Journal of the Oklahoma State Medical Association, Muskogee

January

- 43 Differentiation of Fractures of the Neck of the Femur. S. R. Cunningham, Oklahoma City.
- 44 Changes of Metabolism in Diabetes Mellitus. R. H. Harper, Afton.
- 45 *Supernumerary Ovary. F. W. Noble, Guthrie.
- 46 Three Ectopic Pregnancies and Three Operations in the Same Patient in Four Years. J. H. White, Muskogee.
- 47 Value of Bismuth-Vaseline-Paste Treatment in Tuberculous Sinuses and Abscess Cavities. A. A. West, Guthrie.
- 48 Etiology, Pathology and Theories of Glaucoma. E. F. Davis, Oklahoma City.
- 49 *Case of Emboli. T. H. Flesher, Edmond.
- 50 Treatment of Fracture of the Clavicle. L. F. Watson, Oklahoma City.

45. Supernumerary Ovary.—In Noble's case a well-developed ovary about the size of a wren's egg was situated about an inch posterior and inward from the left ovary which microscopically consisted of normal ovarian tissue.

49. Air Embolism.—In an attempt to produce an abortion, quinin was insufflated into the uterine cavity, through a soft rubber catheter passed for that purpose. The woman immediately became unconscious and died about fifteen hours later. The diagnosis made of the cause of death was air embolism, gaining entrance by way of the uterine sinus and carried to the right side of heart, producing a thrombus or going still farther by way of the pulmonary artery to the lungs and producing edema of the lungs.

Texas State Journal of Medicine, Fort Worth

January

- 51 Ovarian Fibroid. E. G. Mathis, Manor.
- 52 *Myasthenia Gravis in Lymphatic Leucemia. M. L. Graves, Galveston.
- 53 Toxemia of Pregnancy, with Special Reference to the Pre-eclamptic Stage. W. L. Crosthwaite, Holland.
- 54 *Tuberculosis of the Uterus, Ovaries and Fallopian Tubes. K. H. Aynesworth, Waco.
- 55 Diagnosis of Obscure Forms of Nephritis. A. E. Austin, Galveston.
- 56 Belladonna Atropin. I. L. Van Zandt, Fort Worth.
- 57 Why So Many Puerperal Convulsions? S. P. Vinyard, Amarillo.
- 58 Teethling. W. Shropshire, Yoakum.
- 59 To Lengthen Human Life. C. E. Cantrell, Greenville.
- 60 *Fragilitas Ossium. J. B. Thomas, Midland.

52. Myasthenia Gravis in Lymphatic Leucemia.—Graves reports a case presenting the symptom-complex of myasthenia gravis dependent on, or associated with, the toxemia of lymphatic leucemia, in a man aged 41.

54. Tuberculosis of Uterus and Adnexa.—Aynesworth reports a case of tuberculosis of the Fallopian tubes, with extension to the peritoneum; simple fungous endometritis; intraglandular papillary cystic endocervicitis with inflammation and erosion of the cervix; cystic degeneration of the ovaries, occurring in a woman 34 years old. A radical operation was done. Recovery was rapid; health was restored, and to date, ten months later, there is no evidence of a return of the trouble.

60. Fragilitas Ossium.—At the age of 67, in December, 1908, on arising from his chair at the dinner table, the patient, a man, was seized with sudden pain in the leg between the knee and hip; he was assisted to his bed and the family physician summoned, who diagnosed fracture at about the junction of the middle and upper third of the left femur. After consultation and careful investigation it was decided that the fracture occurred probably as a result of a gunshot injury sustained about forty-five years before; the usual treatment for such cases was instituted, including extension, etc., but without obtaining any apparent bony consolidation; two months later, while lying quietly on his back in bed, the man was again seized with violent pain accompanying fracture of the opposite limb at about the same location; in this instance, however, it was clearly evident that the fracture was due to muscular contraction exerting its influence on bone unduly brittle; this

fracture, also, was treated in splints with extension, but without the slightest union whatever. It was not until the second fracture had occurred that it was possible to diagnose the condition definitely as fragilitas ossium.

Iowa Medical Journal, Des Moines

December

- 61 Prevention of Adhesions in Abdominal Surgery. J. C. Webster, Chicago.
- 62 Progress in Obstetrics and Gynecology. W. R. Whiteis, Iowa City.
- 63 Extrauterine Pregnancy. L. C. Kern, Waverly.
- 64 Cystoscopic Diagnosis of Conditions Peculiar to the Female Bladder. B. S. Barringer, New York.
- 65 *Dysmenorrhea. C. W. Wahrer, Fort Madison.
- 66 Protracted Labor. H. E. Pfeiffer, Cedar Rapids.
- 67 Notes from Obstetric Practice. J. E. Luckey, Vinton.
- 68 Infections in the Puerperium. J. Donohue, Burlington.
- 69 Pellagra. F. P. Schultze, Marengo.
- 70 Insufflation and Aspiration in Middle-Ear Diseases. P. R. Wood, Marshalltown.

65. Abstracted in THE JOURNAL, July 10, 1909, p. 139.

Journal Arkansas Medical Society, Little Rock

December

- 71 *Appendicostomy in Treatment of Epilepsy. J. P. Runyan, Little Rock.
- 72 Neuroparalytic, or Trophic Ulcer Treated Surgically. R. C. Dorr, Batesville.
- 73 Pneumococcus Endocarditis. C. H. Hoffman, Little Rock.
- 74 Too Much Operative Gynecology. J. W. Meek, Camden.
- 75 Therapeutic Value of Some of the Eclectic Modalities. W. T. Lowe, Pine Bluff.

71. **Treatment of Epilepsy.**—Clinical study of all idiopathic cases of epilepsy show two conditions constantly present, one constipation, favoring stagnation of intestinal contents and hence putrefaction and production of toxins. Second, over-eating or gluttony. Hence Runyan is convinced that appendicostomy in well-selected cases followed by thorough irrigation of the intestines, the irrigation being continued for a sufficient length of time, one or two years in average cases, will be the means of curing a large number of patients and of improving the condition and diminishing the frequency of seizures in those not entirely relieved.

Memphis Medical Monthly

December

- 76 Some of Our Relations. W. H. Deaderick, Marianna, Ark.
- 77 *Impress of English Thought on Medicine. F. A. Jones, Memphis.
- 78 Experience in Treatment of Pernicious Malaria. S. W. Glass, Dublin, Miss.
- 79 Modern View of Fractures. W. S. Lawrence, Memphis.
- 80 Acute Glaucoma from the Viewpoint of Those Other than Ophthalmologists. E. C. Ellett, Memphis.

77. Published in the *Southern Medical Journal*, November, 1909.

American Journal of Physiology, Boston

January

- 81 *Experimental Glycosuria.—Distribution of Glycogenolytic Ferment in the Animal Body. Especially of the Dog. J. J. R. MacLeod and R. G. Pearce, Cleveland.
- 82 *Study of the Concentration of Antibodies in the Body Fluids of Normal and Immune Animals. J. R. Greer and F. C. Becht, Chicago.
- 83 *Acapnia and Shock.—Fatal Apnea After Excessive Respiration. Y. Anderson, New Haven, Conn.
- 84 Effect of Severing the Vagi or the Splanchnics or Both on Gastric Motility in Rabbits. J. Auer, Boston.

81. **Experimental Glycosuria.**—MacLeod and Pearce directed their experimental investigation to the determination of the question whether the enzyme in the liver which destroys glycogen is contained in the blood and serum or is fixed in the liver cells. They found that the washed liver does not yield the maximum of diastatic activity until the cells are broken up so as to set free the ferment contained in them. The blood and lymph contained more ferment than the liver tissue, but whether the ferment in the liver tissue is manufactured by the cells or taken by them from the blood is left unsettled. Prolonged perfusion (15 minutes) of the liver with isotonic saline solution does not cause any diminution in the glycogenolytic power of an extract of the organ. This is taken as evidence against the view that the glycogenolytic activity of blood-free liver is due to lymph. The amount of glycogenase in blood, serum, and in liver extracts was found to decrease in the dog, pig, rabbit and lamb in the order named, although the relative activity of serum and liver

extracts did not always run parallel. In the various organs the greatest amount of glycogenase is found in the pancreas, then the serum, and the liver next.

82. **Concentration of Antibodies.**—Greer and Becht studied the concentration of various antibodies in the different body fluids on cats and dogs with the following results: In the normal dog hemolysins and agglutinins for rabbit corpuscles are found in the serum, neck lymph, and thoracic lymph; they are not found in the cerebrospinal fluid nor aqueous humor, but agglutinins may be present in the pericardial fluid. In most cases the concentration diminishes in the following order: Serum, thoracic lymph, neck lymph, pericardial fluid, but in some cases thoracic lymph precedes serum. In dogs immunized to a heterologous blood, hemolysins and agglutinins are found in the same fluids as in the normal animal, but hemolysins are usually found in the pericardial fluid and agglutinins may be found in the cerebrospinal fluid and aqueous humor. The concentrations vary in the various fluids as in the normal animal.

The addition of guinea-pig serum as complement in non-hemolytic doses increases greatly the hemolytic power of the serum, neck lymph, thoracic lymph, and pericardial fluid; therefore in the course of immunization the amboceptors are developed in all the body fluids in which they are normally found more rapidly than is the complement. Cerebrospinal fluid and aqueous humor do not become hemolytic even on the addition of complement, therefore they do not contain amboceptors.

Dogs do not readily develop precipitins for rabbit serum. Agglutinins for *Bacillus typhosus* are present in normal cats in the same fluids as the hemoagglutinins and generally the same is true of normal dogs. In immunized dogs and cats the concentration is increased but not more than traces are found in the cerebrospinal fluid and aqueous humor. In the passively immunized animal the agglutinins pass readily from the blood stream into the lymphs. They do not pass into the pericardial fluid, cerebrospinal fluid, or aqueous humor. The time required for this passage is relatively short, being as complete in four and one-half hours as in twenty-four hours. Bacterial opsonins and hemopsonins are found in the body fluids of normal animals. The concentration varies substantially as for agglutinins but they are rarely found except in traces in the pericardial or cerebrospinal fluid or in the aqueous humor. Immunization by repeated subcutaneous injections does not increase the opsonins to any very marked extent but the concentrations of hemopsonins in the body fluids can be thus increased.

83. **Acapnia and Shock.**—Henderson reaches the following conclusions: Voluntarily forced breathing in man, so far as the experiment can be safely carried, induces symptoms similar to those of shock. Death from failure of respiration would probably result from vigorous voluntary hyperpnea for fifteen or twenty minutes. Pain, ether-excitement, sorrow, fear and other conditions inducing shock, involve excessive respiration. Excessive artificial respiration, applied to dogs for from twenty-five to thirty minutes, is followed by apnea so prolonged that the heart fails, after seven or eight minutes, for lack of oxygen. The inactivity of the respiration center is solely due to the depletion of the body's store of carbon dioxid. During the anoxymia after the second minute of apnea the products of incomplete tissue combustion accumulate in the blood. If the acapnia is not too intense, this acidosis furnishes a potent aid in restoring spontaneous breathing. The alternate accumulation and oxidation of acidosis substances in the blood induce Cheyne-Stokes breathing. Administration of carbon dioxid gas during apnea induces immediate return of natural breathing. Administration of oxygen by the Volhard method affords ideal conditions for recovery from acapnia, and prevention of asphyxial acidosis. Deep anesthesia diminishes the sensitiveness of the respiratory center to the influence of carbon dioxid, so that a subject which has previously developed acapnia inevitably ceases to breathe as soon as the third stage of anesthesia is induced. In any less quantity, however, ether tends to prevent apnea, unless its influence as a "respiratory stimulant" is neutralized by morphin.

Vermont Medical Monthly, Burlington

December

- 85 A Defence of Sanity. F. S. Lee, Burlington.
86 Laboratory Diagnosis. E. A. Colton, Burlington.
87 Hydrophobia and the Pasteur Method of Immunization. W. H. Lane, Burlington.

Cleveland Medical Journal

January

- 88 Coagulation of Blood. W. H. Howell, Baltimore.
89 *Tests of Insanity in the Criminal Court. W. A. Carey, Cleveland.
90 *Idem. A. B. Howard, Cleveland.
91 Essentials in Treatment of Non-Ambulatory Cripples Deformed by Infantile Paralysis. H. O. Feiss, Cleveland.
92 Smith Cataract Extraction of the Capsule. A. R. Baker, Cleveland.
93 Hemorrhagic Varicella. R. W. Elliott, Cleveland.

89. **Tests of Insanity.**—It is Carey's opinion that much of the controversy between the medical and legal professions as to the proper test of responsibility in cases of insanity has been brought about by the fact that the members of the medical profession are the product of schools which, the world over, in general follow certain rules for their guidance and which rules can, with no lack of propriety, be applied in different localities; whereas the administrators of the law must adjust themselves to the needs of the different communities in the same degree as different communities vary in their law.

90. **Id.**—Howard emphasizes the fact that the physician in making his examination has only the medical points in the case to consider. That is to say, he has nothing whatever to do with the outside circumstances surrounding the act, he has to determine only the condition of the brain cells, so that it matters not what the case may be or whether it is due to influences of heredity. In the case of traumatism, syphilis, alcoholism, epilepsy, dissipation, excesses, tumors or any other known cause the question is: Are the brain cells properly performing their functions? If the brain cells are wholly diseased and abnormal the individual is irresponsible.

Archives of Pediatrics, New York

December

- 94 Etiology of Scarlet Fever. A. Hand, Philadelphia.
95 Municipal Control of Scarlet Fever. M. Ostheimer, Philadelphia.
96 Complications of Scarlet Fever. S. S. Woody, Philadelphia.
97 Difficulties in Diagnosis of Scarlet Fever. J. F. Schamberg, Philadelphia.
98 Treatment of Scarlet Fever. D. J. M. Miller, Atlantic City, N. J.
99 Casein Curds in Infants' Stools. F. B. Talbot, Boston.

American Journal of Obstetrics and Diseases of Women and Children, York, Pa.

January

- 100 *Terminal Events in Gall-Stone Disease. C. N. Smith, Toledo, O.
101 Three Years of Gynecology and Obstetrics in the United States. J. W. Bovée, Washington, D. C.
102 *Climacteric Hemorrhages. J. R. Goodall, Montreal.
103 Unicornate and Bicornate Uterus. A. Brothers, New York.
104 *Fibroids as a Cause of Preclimacteric Uterine Hemorrhage. M. Rabinovitz, New York.
105 Is the Routine Administration of the Preoperative Purge Defensible? E. Walker, Evansville, Ind.
106 Intrapartum Vaginal Myomectomy for Intrapertoneal Fibroids Obstructing Labor. K. I. Sanes, Pittsburg.
107 Cesarean Section, Abdominal and Vaginal, Compared and Contrasted. M. F. Porter, Fort Wayne, Ind.
108 Methods of Drainage in Pelvic and Abdominal Surgery. J. F. Baldwin, Columbus, O.
109 *Postpartum Hemorrhage. D. H. Stewart, New York.
110 Hematoma of Abdominal Wall Simulating a Desmoid Tumor. S. Wiener, New York.
111 Caries of the Hyoid Bone. J. E. Cannaday, Charleston, W. Va.
112 *Thrush. H. P. de Forest, New York.

100. **Terminal Events in Gall-Stones.**—Smith says that because of the erroneous statement, based on conclusions drawn without warrant from the post-mortem examinations, and so frequently repeated in the literature of cholelithiasis, to the effect that in the great majority of instances, gall-stones are unproductive of either symptoms or serious complications, the impression that, as a rule, gall-stones are void of a serious danger has obtained widespread credence. This, together with the fact that the diagnosis of gall-stones seldom has been made prior to the onset of complications has resulted in gall-stone surgery becoming largely the surgery of terminal events. Occlusion of the cystic duct from inflamma-

tion excited by the irritation of gall-stones as well as the direct blockage of the duct by stone, so frequently rendered permanent by contraction of the inflamed duct about the offending concretion, must be looked on as a terminal event in the progress of cholecystitis, itself a complicating and comparatively late event in gall-stone disease. The still later sequential phenomena of hydrops, empyema, gangrene ulceration, perforation and rupture of the gall-bladder, as well as sclerosis, contraction and obliteration, and malignant disease, are terminal events of a higher degree. From observation and from a study of the literature of the subject, Smith is convinced that the frequency with which rupture of the gall-bladder occurs as a terminal event in gall-stone disease is scarcely appreciated. In his opinion, these cases are commonly diagnosed as peritoneal infection from appendicitis, operated on as such and so recorded, unless gall-stones, correcting the diagnosis, are found in the peritoneal cavity.

102. **Climacteric Hemorrhages.**—The treatment of climacteric hemorrhages according to Goodall resolves itself into the prophylactic, palliative and operative. The prophylactic treatment is directed toward the prevention or removal of all the conditions which leave the uterus in a state of subinvolution. That is, a more careful routine examination of the placenta and membranes to see that everything has come away; careful asepsis, and later a careful examination into the causes of a prolonged lochial discharge; and finally, a careful examination of patients some weeks after labor to ascertain that conditions are normal. A persistent retroversion after labor Goodall looks on as a very frequent cause of subinvolution and later of chronic metritis. Palliative treatment consists in rest, physiologic as well as physical, and the use of the various ecboles and hemostatics. Goodall says that he has seen little or no effect except that which rest alone will bring about. Massage and tonics are indicated and not infrequently return of general strength is associated with a diminution of the loss of blood. Operative treatment may be divided into minor operative measures and the radical cure. In cases in which the endometrium is markedly hypertrophic, doubtless the results from curettage are very great. The course to be adopted will differ with the class of patients. Among the leisure classes the patient may be advised to undergo a curettage and repair of the cervix in the hope of an improvement of the symptoms. If the curettage yields but a little or no endometrium the chances of improvement are very slight and hysterectomy under those conditions is imperatively demanded. The results from hysterectomy are sure and satisfactory. Whether the procedure will be abdominal or vaginal will depend entirely on the nature of the case and the ability of the surgeon.

104. **Preclimacteric Uterine Hemorrhage.**—Rabinovitz is of the opinion that preclimacteric uterine hemorrhage is due to an hyperdevelopment of fibrous connective tissue in the uterine walls, which takes the place of the exhausted and finally atrophied muscle fibers. With the diminution of muscle tissue and elastic fibers there ensues a loss of contractility, and this loss becomes greater after each succeeding pregnancy, until uterine compensation is entirely broken. The menorrhagia and metrorrhagia in this class of cases is not due to friability or atheromatous condition of the blood-vessels, but to an insufficiency and inability of the uterine muscles to contract and close the gaping arteries and sinuses. The blood-vessel changes are secondary to those taking place in the muscularis, as proven by the invasion of fibrous changes from without into the adventitia, by the compensatory hypertrophy of the media, and by the normal state of the intima. The condition of fibrosis uteri is not the sequel of inflammatory reactions, but the result of biologic changes.

109. **Postpartum Hemorrhage.**—Stewart urges that the term postpartum hemorrhage should be applied solely to a flow of blood after delivery, 1,000 c.c. or more in amount, which blanches the lips, produces air hunger, and which gives rise to the pulse symptoms of severe hemorrhage. Other bleedings occurring under similar circumstances are properly named "excess bleeding," "threatened postpartum" or "traumatic hemorrhage" as the case may be. A good precaution

is to allow the mother forty-five minutes rest after delivery of the child. A hemorrhage occurring some hours after delivery may be checked by the administration of an ounce of vinegar by the mouth. If this fails a hypodermic injection of vinegar into the uterine wall is an efficient means of meeting the emergency. A Rose bandage will hold the patient safe, after bleeding has been checked. Threatening or actual hemorrhage at the immediate completion of labor may be forestalled or checked by the application of chloroform to the interior of the uterus, without the sticky black gum consequent on the use of Monsel's solution or other iron preparations for the same purpose.

112. **Thrush.**—DeForest reports five cases of this now rare affection. The first case was one of thrush of mouth, stomach, and small intestines, with multiple ulcers of the small intestine, multiple punctate intestinal perforations, and intestinal and intra-abdominal hemorrhage. When the child was two weeks old, the mother noticed white spots in the mouth, but was told by the nurse that this was curdled milk and that they were unimportant. The care of the mouth and prophylactic measures had been entirely abandoned. The baby had been given a so-called "comfort" to hold in the mouth most of the time, in spite of the fact that thrush is a disease of the mouth that results from the use of a dirty nipple or bottle, or a much treasured but filthy comforter. The child died after six weeks. In the second case only the mouth was involved. The patient recovered. The third case, thrush of the mouth, terminated in thrush septicemia and death. The fourth case, thrush of the vulva and vagina, occurred in a woman 23 years old. The fifth case, thrush of the nipple, occurred in a woman 37 years old.

Montreal Medical Journal

December

- 113 Tonsils and Adenoids. C. M. Stewart, Toronto.
- 114 Action of Arseno-Phenyl-Glycin on Trypanosoma Brucei. R. P. Campbell and J. L. Todd, Quebec.
- 115 Management of Normal Labor. D. J. Evans, Montreal.
- 116 Transtrochanteric Osteotomy. A. M. Forbes, Montreal.
- 117 Coecyodynia. A. L. Smith, Montreal.
- 118 Myasthenia Gravis. C. K. Russel, Montreal.
- 119 Insanity in Immigrants. P. H. Bryce, Ottawa, Canada.
- 120 Sacroiliac Strain. J. A. Nutter, Montreal.
- 121 Cholesteatoma of the Middle Ear. Radical Mastoid Operation Without Removal of the Cholesteatoma Matrix. (Siebenmann's Method.) E. H. White, Montreal.
- 122 Acute Anterior Poliomyelitis with Autopsy. C. K. Russel, Montreal.

Mississippi Medical Monthly, Vicksburg

January

- 123 Work of the Tri-County Medical Society. J. H. Johnson, Brookhaven.
- 124 Phases of Ectopic Gestation. B. Maloue, Memphis, Tenn.
- 125 Nausea and Vomiting. J. S. Brooks, Robinsonville.
- 126 Diagnosis of Chronic Gonorrhea. B. H. Durley, Aberdeen.

Journal of the Kansas Medical Society, Kansas City

December

- 127 Present Status of Scrotherapy. S. A. Johnson, Topeka.
- 128 Rupture of Uterus, Parovarian Cyst; Direct Inguinal Hernia, and Uruptured Tubal Pregnancy. R. C. Lowman, Kansas City.

Interstate Medical Journal, St. Louis

January

- 129 Current Conceptions of Hysteria. W. A. White, Washington, D. C.
- 130 *Practical Points in Office Treatment of Retrodisplacement of the Uterus. H. S. Crossen, St. Louis.
- 131 Tumors of the Parotid Gland. F. Reder, St. Louis.
- 132 *Two Rare Ophthalmic Cases. J. M. Ball, St. Louis.
- 133 Habitual or Recurrent Dislocation of the Patella. A. E. Horwitz, St. Louis.

130. **Retrodisplacement of Uterus.**—It is clearly shown by Crossen that operative treatment is required in the majority of cases. Of the patients sent to him for retrodisplacement in by far the larger proportion operation is indicated without question. In a considerable proportion of the remaining cases a trial of non-operative measures shows that they are inadequate, and then operation is employed. Hence, it is only in a small proportion of cases of retrodisplacement that office treatment is found to be wholly satisfactory. But in that small proportion of cases it is the preferable treatment, either because it gives complete relief and thus obviates operation, or because it gives partial relief where operation is impossible for the reason that the patient refuses operation, or is not in physical condition for it.

132. **Rare Ophthalmic Cases.**—The cases reported by Ball are as follows: 1. Hydrophthalmus, trauma, dislocation of the eyeball. 2. Flat sarcoma of the choroid. The interesting feature of this case is the shape of the new growth. The specimen shows a flat, whitish, jelly-like elastic mass, situated between the retina and sclera. The retina is detached from the optic nerve to the ora serrata.

Long Island Medical Journal, Brooklyn

December

- 134 Mastoiditis in Scarlet Fever and Measles. H. A. Alderton, Brooklyn.
- 135 Acute Gastric Dilatation as a Postoperative Complication. J. C. MacEvitt, Brooklyn.
- 136 Visceral Manifestations of the Neuroses. A. C. Brush, Brooklyn.
- 137 Preventive and Constructive Medicine. A. E. Shipley, Brooklyn.

New Mexico Medical Journal, East Las Vegas

December

- 138 Improved Methods for the Examination of Sputum and Blood in Relation to Tuberculosis. F. T. B. Fest, Las Vegas.
- 139 The Practicing Physician and His Care of the Consumptive. J. W. Laws, Lincoln.
- 140 Eyestrain: Its Diagnosis and Treatment. F. E. Tull, Albuquerque.

New Orleans Medical and Surgical Journal

January

- 141 Malaria. J. J. Robert, Baton Rouge.
- 142 Random Medical Notes in Europe. G. Dock, New Orleans.
- 143 The Pure Food Laws of Louisiana, Particularly in Reference to Physicians and Druggists. H. P. Jones, New Orleans.
- 144 Esophageal Stricture Treated by Sling-Shot of Various Sizes with Excellent Results. C. W. Allen, New Orleans.
- 145 Plastic Surgery of the Face. C. W. Allen, New Orleans.
- 146 Technic of Suprapubic Prostatectomy. S. P. Delaup, New Orleans.
- 147 Value of the x-Ray in the Diagnosis of Urinary Calculus. L. B. Crawford, New Orleans.
- 148 *Substitution of Muscle for Tendon Achilles. A. C. King, New Orleans.
- 149 *Postoperative Insanity. T. P. Lloyd, Shreveport, La.
- 150 Chronic Pancreatitis: Three Cases Surgically Treated. E. M. Williams, Patterson, La.
- 151 Diagnosis and Treatment of Adult Pott's Disease. E. S. Hatch, New Orleans.

148. Abstracted in THE JOURNAL, May 29, 1909, p. 1783.

149. **Postoperative Insanity.**—Lloyd believes that the great majority of cases of postoperative insanity are due to inherent congenital mental instability. Aside from a predisposition, there is a complex condition due to the action of several variable etiologic factors, including: anxiety before operation, the anesthesia, the shock, the loss of blood, the pain, the injury to nerve trunks, the toxic action of antiseptics, postoperative infections, the loss of certain organs which influence metabolism, etc. It is well known that after operations for cataract in old people hallucinatory confusion is not uncommon. Of course, old age predisposes, especially when there is a senile arteriosclerosis, and it is possible that the stay in the dark room after such operation sometimes plays a part. Surgeons should learn to look carefully for degenerative stigmata, and other signs of a neuropathic constitution. And when such a condition is suspected they would not act wisely by deferring an operation when possible until the patient's state of nutrition can be put in first-class condition and any disorder of the nervous system overcome.

Buffalo Medical Journal

January

- 152 *Treatment of Prolapsus Uteri, with Special Reference to the Author's Operation for Ruptured Perineum. H. E. Hayd, Buffalo.
- 153 Surgical Treatment of Gall-Stones and Inflammations of the Biliary Tract. M. B. Tinker, Ithaca, N. Y.
- 154 Postoperative Tetanus: M. M. Lucid, Cortland, N. Y.
- 155 The Antituberculosis War and the Red Cross Christmas Stamp—An Appeal. B. A. Knopf, New York.

152. **Treatment of Prolapsus Uteri.**—Hayd's operation for rectocele and ruptured perineum consists of a free posterior colporrhaphy and perineorrhaphy and the taking up of the pelvic fascia and levator ani muscle where they are torn, and the sewing up of the various structures from above downward in the direction that these tears take during parturition. This sewing process is commenced high up in the vagina and is continued downward until the whole fascia and levator ani muscles are perfectly approximated. The bulging rectum is turned in on itself and its lumen is lessened by taking up the

excess with a few stitches of catgut. Then the vaginal mucous membrane is brought together by interrupted sutures to the introitus and the perineal edges of the wound with silk-worm gut; the most anterior suture also takes in, not only the skin, but the lowest part of the opposed vaginal sides, which may be called the crown stitch. It will now be seen that the vagina is lengthened, and its horizontal course changed to an oblique one, making a strong full perineal body, which any effort at coughing or straining will not displace.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

Lancet, London

January 8

- 1 The Medical Student and his Curriculum, from a Teacher's Point of View. J. B. Heller.
- 2 Tumors of the Brain and their Surgical Treatment. H. Cushing.
- 3 Congenital Intestinal Obstruction. N. I. Spriggs.
- 4 Nature and Treatment of Angina Pectoris. A. Morison.
- 5 Mosquitoes with Reference to Immigration and Horse Sickness. A. Balfour.
- 6 *Recent Researches on the Anatomy of the Heart. A. Keith, and I. MacKenzie.
- 7 Simultaneous Suppurative Appendicitis and Perforated Gastric Ulcer. C. A. Moore.
- 8 Poisoning by Massive Doses of Trional; Recovery. J. S. Mackintosh.
- 9 Simple Apparatus for Producing Rhythmic Variations in Electric Currents. N. E. Aldridge.
- 10 The Circulatory System. H. Campbell.

6. **Anatomy of the Heart.**—The authors' investigations have made certain that the single strand of muscular communication now known as the auriculoventricular bundle is peculiar to the mammalian heart. One of the chief results of their investigation has been to impress on them the necessity of studying the special musculature of the heart in its relation to the extraordinary abundant nerve-supply of that organ. They are also of the opinion that an entirely fresh description of the nerves to the heart is necessary, and that the fundamental differentiation must be into those nerves which supply the venous base or commencement of the heart (derived from the lower cervical sympathetics) and those which supply the terminal end or arterial base of the heart. It is those nerves which end in the venous base, which appear to exercise the inhibitory and accelerating effects on the heart through the specialized nodal system.

British Medical Journal, London

January 8

- 11 *Diagnosis and Treatment of Acute Inflammations of Upper Abdomen. A. W. M. Robson.
- 12 Rarer Associations of Gall-Stones and Biliary Obstruction. T. Carwardine.
- 13 *Frequency of Adenocarcinoma of the Body in Fibroid Tumors of the Uterus. J. M. M. Kerr.
- 14 Treatment of Chronic Oöphoritis and Associated Conditions. T. Cameron.
- 15 Ectopic Fœtation: Laparotomy: Diffuse Peritonitis: Recovery. J. Gardiner, and H. W. Webber.
- 16 Retained Menses Relieved by Operation. J. T. Hartill.
- 17 Excessive Liability of European Women in Africa to Trypanosomiasis. P. Manson.
- 18 *One Hundred Operations for Carcinoma of the Breast. P. Leech.
- 19 *Treatment of Chronic Duodenal Ulcer. E. C. Hort.
- 20 The Poor Law and the Medical Profession. J. M. Rhodes.

11. **Acute Inflammations of Upper Abdomen.**—Acute peritonitis of the upper abdomen may be dependent on disease starting in the stomach, duodenum, jejunum, colon, gall-bladder, bile ducts, pancreas, liver, spleen, upward displaced appendix, kidneys, or inflamed lymph glands, and may be due to ulcer perforation, abscess, concretions, hydatids, cancer, internal hernia, or other pathologic conditions. The acute seizure may occur after well-marked symptoms of disease extending over long periods, or may come on suddenly without premonitory symptoms to indicate the cause; in the former, the diagnosis is, as a rule, more simple, but in the latter it may be most difficult, and sometimes may be impossible without exploration. In nearly every case pain is the prominent symptom, and it is usually associated with rigidity of one or both abdominal recti and with local and general tenderness. In other cases, profound collapse may be the first sign, and the site of the trouble may only be indicated by

rigidity of the muscles, by tenderness, and at times, in case of perforation of a hollow viscus, by absence of liver dullness and a thrill obtained on delicate palpation. In the earlier stages the temperature is no guide, though later it may afford valuable information. Pinched features, an anxious expression of countenance, and general distress, are usually seen in acute cases, but are less marked in conditions coming on gradually. Shallow breathing, immobility of the lower ribs and of the abdominal muscles are characteristic of peritonitis in the upper abdomen from whatever cause.

13. **Adenocarcinoma and Fibroids.**—In 200 fibroid tumors of the uterus removed by abdominal hysterectomy by Kerr, malignant degeneration or invasion was present in nearly 5 per cent.

18. **Mammary Cancer.**—Leech has removed the breast and cleared out the axilla in 118 cases. Of these cases 97 were carcinomata; 1 case was a duct papilloma; 11 proved to be cases of chronic mastitis, in 3 of which the microscopic report showed that it was wiser to remove the whole breast, although there were no definite signs of malignancy; 4 proved on microscopic examination to be cystic adenomata, and in 1 of these, the report said it would be wiser to remove the whole breast; 4 proved to be abscess, and 1 was thought to be tuberculosis; 1 (in a very stout woman) was found to be tuberculous mastitis on microscopic examination. Out of these 118 cases, 8 patients died in hospital. Two of these deaths (those due to emphysematous gangrene and femoral thrombosis) were due to sepsis, and ought to have been avoided. The only death which Leech ascribes to the operation itself was the one due to shock. The death-rate for such an extensive operation is, therefore, low, and should not be more than 2 per cent. The operation performed by Leech includes a very extensive dissection from axilla to sternum and from clavicle to epigastrium, no regard being paid to the amount of skin removed.

19. **Treatment of Chronic Duodenal Ulcer.**—Every duodenal case treated by Hort was a derelict of some other method of treatment, and some cases were of 10, 15 and even 20 years' standing. Of these 24—this number not including surgical cases—there have been 2 that showed a very temporary tendency to relapse, and 1 failure, the patient being unable, for domestic reasons, to persevere with the treatment. The relief of pain, hemorrhage, hyperchlorhydria, and dyspepsia has in all cases been most striking. The rationale of Hort's treatment is, briefly, as follows:

The absorption of adequate protein in suitable form cannot but increase the resistant powers of the body as a whole to the unknown determining cause of the disease. Moreover, local repair must certainly be assisted thereby. If protein food is presented to a patient with ulcer in which the digestive fluids exhibit a high degree of peptic and tryptic avidity, a certain proportion of these peptic and tryptic molecules will be saturated by the protein. If now, at the height of digestion, be added a serum with a high antipepsin and anti-trypsin content, some of the unsatisfied residue of peptic and tryptic bodies will combine therewith, and the ulcer itself thus be indirectly shielded by diversion of these bodies. If an ulcer is constantly being bathed in secretions laden with trypsin and other proteolytic ferments set free from disintegrated leucocytes, other tissue cells, and from bacteria, the administration of a serum charged with antipeptic, anti-trypsin, and other inhibitory bodies, cannot but have great value. That is to say, the eroding activity of ferments from these sources must to a great extent be kept in check by such serum. The treatment advocated by Hort is: For acute cases, with hemorrhage, subcutaneous injections of sterile normal horse serum and feeding by the mouth at the very earliest opportunity with small dry meals, mainly of meat. For chronic cases, full meat diet in an appropriate form from the start, with repeated oral doses—never on an empty stomach—of an antilytic serum specially prepared.

Clinical Journal, London

December 29

- 21 *A Vermiform Appendix which Looking Healthy may be Diseased. C. B. Lockwood.
- 22 Eclampsia in its Physiologic Aspect. H. O. Nicholson.
- 23 Significant Urinary Reactions. W. L. Brown.

21. **The Appendix.**—If after examining a case of supposed appendicitis the surgeon comes to the conclusion that the sum of the clinical symptoms justifies the operation for removal of the appendix, Lockwood thinks he should not be deterred from the removal of that appendix because its exterior looks normal, for its interior may be seriously diseased.

Practitioner, London

January

- 24 *Caries Sicca of the Shoulder Joint. Sir W. W. Cheyne.
- 25 Mortality Returns: Tuberculosis. Sir H. Beever.
- 26 Preservation of Health in the Tropics. Sir R. H. Charles.
- 27 *Value of the Undescended Testicle. J. Bland-Sutton.
- 28 Anomalies of Internal Secretion—Aeromegaly. D. Ferrier.
- 29 Pathology of Extrauterine Pregnancy. S. Savage.
- 30 *A Little-Recognized Consequence of Adenoid Growths. E. Smith.
- 31 Treatment of Cancer of the Cervix Uteri. C. Lockyer.
- 32 Clinical Study of the Glycogenic Reaction in Blood. W. H. Brown.
- 33 Pyorrhea Alveolaris, Primary External Periodontal Infection and Oral Sepsis. J. G. Turner.
- 34 Streptococcal Disease of Middle Ear with Normal Drum and Perfect Hearing. S. Scott.

24. **Caries Sicca of the Shoulder Joint.**—Caries sicca is not accompanied by swelling. It is seldom followed by suppuration and is not accompanied by any thickening of the synovial membrane. The changes which occur are essentially in the bone, which becomes atrophied and thin and eroded, while the cartilage is destroyed over it. The condition may persist for a long time, the patient having constant pain in the joint, especially on movement and pressure, and the joint may be stiff. In the case of the shoulder the deltoid may atrophy, but there is no swelling at all corresponding to that of ordinary tuberculous disease. Further, the patient has constant pain if he lies on the joint and also if he moves it at all, whereas while it is absolutely at rest he has no pain. He has almost complete stiffness of the joint in nearly every direction, and more especially he has suppuration round the joint and an abscess in connection with it.

27. **Value of Undescended Testicle.**—Bland-Sutton points out that the imperfections of an undescended testicle are the cause, not the consequence of its failure to reach its goal in the scrotum. An undescended testicle is more liable to malignant disease than one which is normally lodged in the scrotum. Surgical efforts to preserve a retained, or a partially descended organ, he says, may be described as a supererogation.

30. **Consequence of Adenoid Growths.**—The consequence Smith refers to is the liberal secretion of thick and acrid mucus which is always present when the post-nasal catarrh is of long standing. If in such a case the throat be examined in a good light the mucous membrane at the back of the pharynx will often be seen to be flabby or even velvety-looking, evidently very much thickened and congested. If secretion be copious, thick yellowish mucus may, perhaps, be seen flowing downward at the back of the pharynx, and this causes the patient to make frequent swallowing efforts when the secretion reaches the muscles of deglutition. Two consequences arise from this state of things. The continual passage into the stomach of a quantity of acrid mucus is a cause of gastric derangement, setting up a disturbance which resists treatment with extreme obstinacy until its cause is discovered and the inflow of mucus restrained. Again, the nasopharyngeal irritation is apt to excite a troublesome cough, which may continue for weeks or months, and be accompanied by copious expectoration. These two consequences may occur separately or together. The digestive difficulty may be present without the signs of laryngeal irritation, but it is rare for the cough to be troublesome and secretion free without some evidence being seen of gastric disturbance.

Indian Medical Gazette, Calcutta

December

- 35 Prostatectomy. E. H. Brown.
- 36 Typhoid Fever in Infancy. A. F. Hamilton.
- 37 Delusions in Young People with Special Reference to Those Due to Dementia Paranoids. G. F. W. Ewens.
- 38 Sporadic Kala-Azar in Behar. F. Mills.
- 39 Experiences of Micrococcus Catarrhalis Infection. J. R. Roberts.
- 40 An Outbreak of Cholera. F. W. Sumner.

Bulletin de l'Académie de Médecine, Paris

December 21, LXXIII, No. 42, pp. 483-598

- 41 Prophylaxis of Typhoid. E. Delorme.
- 42 *Period of Physical and Mental Depression in Men during the Forties. (Sur le retour d'âge de l'homme.) M. de Fleury.
- 43 Latest Discoveries of Fossil Skeletons. (Les dernières découvertes d'hommes fossiles.)
- 44 *Characteristic Displacement of the Larynx by Aortic Aneurism. (Du signe de l'abaissement du larynx avec déviation à gauche et en arrière dans l'anévrisme de la crosse de l'aorte.) E. Boinet.

December 28, No. 43, pp. 599-634

- 45 Inflammatory Tuberculous Processes Responsible for Much Disease of the Thyroid and Defective Functioning. A. Poncet.

42. **"Change of Life" in Man.**—DeFleury has encountered in 201 cases a form of neurasthenia in men approaching fifty in which the nervous and mental symptoms had been preceded for a time by signs of sluggish nutrition, autointoxication and lowered vitality. Among these 201 patients 72, before applying to him, had taken a course of treatment at a sanatorium for their neurasthenia but without avail as treatment had been addressed solely to the mind, and the physical basis for the disturbances had been disregarded. In these cases the psychologic features are subordinate to the physical, this phase of nervous depression during the forties being amenable to medical measures, the mental condition being only the reflection on the mind of a primary physical condition easily demonstrated by the concentration of the urine, the tendency to ptoses, to varices, hemorrhoids, etc., an unusually high blood pressure in the candidates for arteriosclerosis, unusually low in others, with often rebellious eczema, obesity, joints that crack, or a trace of pulmonary emphysema. Psychotherapy is comparatively useless in these cases; treatment should be directed against the autointoxication, and hygiene in all things should be enforced. He is inclined to attribute the whole trouble to insufficiency of the thyroid, and has derived great benefit from thyroid treatment in small and very slowly progressive doses, always under scrupulous supervision. When this is not possible he prefers ordinary tonics, especially subcutaneous injections of salt solution, which act on the blood pressure, stimulating directly the central nervous system, the great regulator of nutrition, and rousing from its torpor the thyroid apparatus which under their influence soon begins to manifest its action.

44. **Displacement of the Larynx with Aneurism of the Aorta.**—Boinet gives an illustrated description of six cases, showing the way in which an aneurism of the aorta is liable to push the trachea backward, downward and toward the left, and thus pull the larynx out of place. This dragging down of the larynx and its deviation to the left and back may, he asserts, be regarded as a reliable sign of aneurism of the aorta.

Lyon Médical, Lyons

December 19, CXIII, No. 51, pp. 1065-1118

- 46 *Treatment of Uterine Hemorrhage by Clamping the Os. (Nouveau mode de traitement des métrorrhagies.) M. Pollosson.

46. **Treatment of Uterine Hemorrhage by Clamping the Os.**—Pollosson has devised some special clamps for this purpose, the aim being to compress the cervix for some distance above the vagina, thus closing the passage. A small clot forms which effectively arrests the hemorrhage. A forceps with curved fork-like teeth seizes the cervix high up, while exerting pressure below from the parallel blades. The first case in which he applied the forceps occurred in 1886, and he has since used it in 11 other cases. Unless specially informed of the presence of the forceps, the patients are unaware of it and accept it as an ordinary tampon. The method is for emergencies only, although it may prove curative in some instances. His cases were all non-puerperal; he has never ventured to apply the method for puerperal hemorrhage.

Presse Médicale, Paris

December 25, XVII, No. 103, pp. 929-936

- 47 *High Amputation of the Rectum through the Perineum. H. Hartmann.

December 29, No. 104, pp. 937-944

- 48 Seroreaction in Syphilis. Noguchi Modification of Wassermann Reaction. (Séro-réaction dans la syphilis. Méthode de Wassermann modifiée par Noguchi.) L. Deval.

49 *Superheated Air in Acute Postoperative Peritonitis. (L'aérothermothérapie dans le traitement de la septicémie péritonéale aigue post-opératoire.) F. Jayle and H. Dansset.

47. **Amputation of the Rectum.**—Hartmann states that he has had two cases of gangrene of the stump of the rectum after high perineal amputation with ideal healing, and he has also observed cases of recurrence in the pelvic cellular tissue with the rectal mucosa still intact. He has since learned how to avoid these complications, due in part to the fact that the superior hemorrhoidal arteries are practically terminal, without anastomoses; in order to avoid gangrene a ligature should be applied high up on the common trunk, and both ends must be ligated. This requires an abdominal incision. He has applied this combined abdominal perineal technic in six cases, all the patients recovering except one, who succumbed to hemorrhage from neglect to ligate the second branch of the artery as above indicated.

49. **Superheated Air in Acute Peritoneal Septicemia.**—Jayle remarks that if the bowels do not functionate after a laparotomy the outlook is grave, and that the key to success in treatment of postoperative peritoneal septicemia is to ensure that the bladder and intestines resume normal action. Nothing has proved so effectual for this in his experience as application of superheated air at 70 or 100 C. (158 or 212 F.). He repeats the application for about 30 minutes 2 or 3 times during the 24 hours, the abdomen being uncovered except for a compress over the wound. After each application the abdomen is packed with hot cotton or compresses dipped in hot serum. He has found that the superheated air has a soothing action while it stimulates the intestines and bladder to normal functioning and the pain subsides. It is possible that the dilatation of the abdominal capillaries promoting diapedesis and the movements of the leucocytes and phagocytosis may all aid in increasing the natural defensive processes. In one case described in detail the temperature kept very high, and the pulse at 145 after removal of a suppurating cyst in the adnexa and the abdomen was becoming more and more distended, without benefit from the knee-chest position for 20 minutes, lavage of the stomach, etc. Conditions began to improve at once after the application of the superheated air. He gives an illustration of the way in which the box is applied to the abdomen.

Revue de Gynécologie, Paris

December, XIII, No. 6, pp. 955-1160

- 50 The Hymen after Delivery. (L'hymen après l'accouchement.) F. Jayle.
51 *Plastic Utilization of Uterus in Treatment of Genital Prolapse. (Utilisation plastique de l'utérus par inclusion inter-vésicovaginale dans la cure des prolapsus génitaux.) H. Violet.
52 Bone Formation in Laparotomy Scar. (Développement d'une ossification véritable dans une cicatrice de laparotomie.) P. Lecène.
53 *Abnormal Renal Blood Vessels and their Connection with Hydronephrosis. (Vaisseaux anormaux du rein et l'hydronephrose.) E. Papin and F. Iglesias.

51. **Plastic Utilization of Uterus in Treatment of Genital Prolapse.**—Violet has recently reexamined 3 patients on whom he performed this operation from 2 to 4 years ago. He found the ultimate results good and describes the technic, in which he followed Wertheim's directions. He also discusses the outcome in 289 other cases on record, the indications, etc., regarding the method as the best yet proposed.

53. **Abnormal Renal Blood Vessels and Their Connection with Hydronephrosis.**—Papin presents a second memoir on this subject, both issuing from Albarran's service. He here discusses the correcting measures and special indications, and gives an illustrated summary of 47 cases, including some personally observed.

Revue de Médecine, Paris

December, XXIX, No. 12, pp. 841-938

- 54 *Aortic Aneurism. (Le syndrome de Hodgson.) J. Vires and Anglada. Commenced in No. 11.
55 *Pneumonia Attended with Splenization of the Lung. (Spléno-pneumonies. III.) Mosny and Mallozel.
56 *More Urine Voided than during Digestion: Opsuria. (L'opsurie.) L. A. Amblard.

54. **Aortic Aneurism.**—In treatment, Vires repeats, the aim is to modify the structure of the vessel walls and to combat the injurious influence of their morbid conditions on the heart. Potassium iodid is the main reliance for the first indication unless the cardiac insufficiency is too pronounced,

in which case its depressing action on the blood pressure may add an element of danger. Trimecek's serum is theoretically preferable if its efficacy were a little better established. Diuretic measures may also prove useful, and arsenic. If compensation is well maintained the hypertrophy of the heart should be respected, but with failing compensation or signs of mitral and tricuspid insufficiency with pulmonary hypertension, treatment should be that for cardiovascular weakness in general. Mercurial treatment is required for the frequent underlying cause; syphilis is more likely to induce aneurism than regular dilatation of the aorta.

55. **Splenopneumonia.**—This condition seems to be very frequent in acute articular rheumatism but commonly escapes recognition. Mosny remarks that it is really a cortico-pleuritis, and the process is not always painful, resembling in many respects the pleurisy sometimes accompanying typhoid or the second stage of syphilis, but there is more engorgement and condensation and the effusion is more profuse. There is always some rise in temperature, and this should always suggest a complication on the part of the pleura when there is nothing else to explain the fever in acute rheumatism. Auscultation should never be neglected, and if there is egophony, that is, a bleating quality of the voice, there is danger of the development of an extensive effusion, as this seems to be always a sign of pleural edema. Three typical cases are reported in detail, including two with pleuro-pericarditis. Any infection involving the lungs may induce the syndrome of splenopneumonia. The tubercle bacillus is incriminated in about half the cases. The tuberculous cases are distinguished by slight transient albuminuria and a tendency to mild fever. It is important to bear in mind that tuberculous is not always a chronic malady, but may manifest itself as a succession of acute or subacute episodes, suggesting mere colds or influenza. These episodes seem to pass over completely with spontaneous recovery, autopsy records showing what a large proportion of persons recover from their tuberculous lesions, unaware of their very existence. Besides the bronchitic pleuropneumonia with splenization and the pleuro-cortical type with effusion, we may encounter the type with tuberculous bacilleemia. Each may occur alone or with established tuberculous lesions elsewhere.

56. **Opsuria as Sign of Liver or Kidney Disease.**—Amblard has noticed that in liver or kidney disease more urine is voided during fasting than during digestion. This is particularly striking when the amount of urine voided within four hours after drinking 600 gm. of water is taken as a test. In health an equivalent amount is voided within this period, but in case of liver or kidney disease less than half this proportion is excreted by the end of the fourth hour. At the same time he has found that even under these conditions a much larger proportion is voided when the patients remain in bed. He practices at a watering place (Vittel), where the diuretic action of the waters is the main curative factor, and in his study of 210 such cases he has learned that it is foolish to attempt to give diuretics to promote the elimination of urine when it is retarded solely or mainly by obstructions in the liver. At the same time, diuretics are able to display much greater effectiveness, even in these conditions, if the patient stays in bed. In case of doubt, he makes a practice of the above test, comparing the elimination of urine afterward when the patient is up and about with that on a day when he stays in bed. By ordering the patients to stay in bed while taking the course of waters, he was able to ward off all disturbances from retention of fluid, especially in arteriosclerosis, without fear of vertigo or other accidents. The bed test reveals incipient liver and kidney disease, while it relieves the healthy of any restrictions in regard to drinking the waters. In some cases of gout the bed test revealed hitherto unsuspected incipient impermeability of the kidneys.

Semaine Médicale, Paris

December 29, XXIX, No. 52, pp. 613-624

- 57 *Phlegmons in the Iliac Region. (Les phlegmons iliaques.) M. Lejars.

57. **Abscess in Left Iliac Region.**—Lejars reports several cases of diffuse gangrenous phlegmons or low perisigmoiditis or phlegmons below the fascia or an adenophlegmon isolated

in the iliac fossa without glandular lesions below. The latter variety follows some local infection of the leg with lymphangitis, but the groin seems to be skipped by the process, the infectious lesions developing in the external iliac chain. In some of the other cases the causal infection evidently proceeded from the sigmoid flexure. In some of these cases the abscess may not develop until months after the primary lesion, which sometimes was too insignificant to be even remembered—eleven months in one of Desprès' cases. Lejars quotes Dupuytren as the first to describe the appendicitic perforation abscess in 1839, followed by Velpeau's description in 1840 of suppuration in the iliac fossa on either side.

Archiv für Gynaekologie, Berlin

LXXXIX, No. 3, pp. 445-624. Last indexed Jan. 22, p. 326

- 58 Attempts to Immunize Parturients against Puerperal Infection. (Immunisationsversuche der Kreissenden gegen Puerperalinfection.) A. Czyzewicz.
- 59 Fourth Case on Record of Frontal Craniopagus. O. Warschauer.
- 60 *Importance of the Proteolytic Leucocyte Ferment in Lochia and Colostrum, and of Antitrypsin in the Serum of Parturients. G. Jochmann.
- 61 The Blood Pressure between the Menses. (Verhalten des Blutdruckes zwischen der menstruellen und nicht menstruellen Zeit.) T. Tsuji.
- 62 Frequency of Obstetric Operations. (Häufigkeit der Geburtshilflichen Operationen.) Id.
- 63 Anatomy and Origin of Placenta Marginata, with Unusual Margin. R. Meyer.
- 64 Metabolism of Uterus. (Ueber den Stoffwechsel des Uterus in den verschiedenen Zeiten der sexuellen Thätigkeit.) E. Kehrler.
- 65 Glands Connected with Clitoris and Prepuce. (Ueber Clitoris- und Präputialdrüsen, besonders beim Menschen und bei einigen Thieren.) T. Boyd.
- 66 Endothelial Ovarian Tumors. W. Carl.
- 67 Histogenesis and Growth of Uterine Carcinoma. (Histogenese und Wachsthum des Uteruscarcinoms.) K. Pronai.

60. **Proteolytic Leucocyte Ferment in Lochia and Colostrum.**—Jochmann states that the vaginal discharge after childbirth and the colostrum both contain large amounts of the leucocyte ferment which digests albumin, the proteolytic ferment, as shown by the rapid formation of a groove or dimple in a plate of Loeffler serum where it has been inoculated with the fluid in question. His research has confirmed the fact that the leucocytes contain a bactericidal substance which kills the bacteria incorporated by phagocytosis, and also this proteolytic ferment which digests the dead bodies of the bacteria. He suggests that the digestive action of this ferment may have something to do with the spontaneous separation of the placenta and that it is possible that this accumulation of the ferment in the puerperal uterus and resulting digestion of albumin and its absorption may be responsible for the slight febrile states sometimes observed even in aseptic childbirths. It is also possible that the presence of this albumin-digesting ferment in the colostrum may aid digestion in the infant's stomach. The ferment in the colostrum is probably responsible also for the so-called milk fever, observed when the largest amounts of colostrum are being produced and considerable amounts of the ferment are probably being reabsorbed. The production of the ferment on a comparatively large scale is followed by production of an antiferment, and he presents arguments to sustain the assumption that the antiferment thus produced is practically identical with the pancreas antitrypsin, so that the proportion of antitrypsin in the human blood serum is dependent on the leucocyte ferment as well as on conditions in the pancreas. This may explain the large amounts of antitrypsin he has demonstrated in the serum of parturients. The exceptional amounts of the leucocyte ferment accumulated in the lochia and colostrum are responsible for the production of the antitrypsin or antiproteolytic ferment in such abnormally large proportions during the puerperium.

Beiträge zur klinischen Chirurgie, Tübingen

December, LXV, No. 2, pp. 267-576

- 68 Obstruction of the Intestines with Valve Formation by a Meckel's Diverticulum. (Ein Meckel'sches Divertikel mit Darmstenose und Ventilverschluss.) H. Coenen.
- 69 Experimental Peritoneal Adhesions Broken up by Massage. (Schicksal der peritonealen Adhäsionen und ihre Beeinflussung durch mechanische Massnahmen im Tierexperiment.) Uyeno.
- 70 Osteofibroma of the Upper Jaw. (Osteofibrom des Oberkiefers, eine typische Geschwulst.) Id.
- 71 Surgery of the Esophagus. M. Tiegel.
- 72 Perforation of Gastric Uleer. (Uleus ventriculi perforatum und seine operative Behandlung.) Steinthal.

- 73 Fate of Bacteria Entering Lymph Glands by Inhalation or through Cutaneous Lesions. (Verhalten der durch Bakterienresorption inficirten Lymphdrüsen.) W. Noetzel.
- 74 Experiences with Incarcerated Hernia. (Erfahrungen an 100 eingeklemmten Brüchen.) J. van Assen.
- 75 Operative Treatment of Tuberculous Spondylitis. W. Neumann.
- 76 Congenital Ankylosis of Jaws and Elbow. (Zwei seltene Formen von angeborener Gelenkankylose.) G. Ahreiner.
- 77 Tendon and Fascia Transplantation. (Ueber freie Sehnen- und Fascientransplantation.) M. Kirschner.
- 78 *Ligation of Hepatic Artery. (Unterbindung der Arteria hepatica.) A. Narath.
- 79 *Exclusion of Colon by Anastomosis between Ileum and Sigmoid Flexure. (Ausschaltung des Colons durch Vereinigung von Ileum mit Flexura sigmoidea.) G. Hirschel.
- 80 Operative Treatment of Exstrophy of the Bladder. (Chirurgische Behandlung der Blasenektomie.) P. Daneel.

78. **Ligation of Hepatic Artery.**—Narath reports the details of a case in which he was compelled to ligate the hepatic artery during the removal of a gastric cancer. The ligature was applied to the left branch of the artery and at autopsy a week later the left lobe of the liver was found in extensive necrosis. This is the sixth case on record, he states, in which the hepatic artery has been ligated, and he compares the outcome with experimental research in this line, discussing the anatomy of the liver arteries and the results after ligation of the hepatic artery at different points. His conclusions are that ligation of the common hepatic artery is justified at need if at least one of the collateral routes is uninjured, but that the danger of resulting necrosis should deter the surgeon from ligating the hepatic artery proper or a branch except in case of aneurism. If ligation is necessary on account of operative injury, it should be done as close to the point of injury as possible to avoid shutting off more of the collateral routes than is absolutely necessary. In some cases, however, collateral routes may be so exceptionally well developed that the ligature may be applied without fear of necrosis.

79. **Operative Exclusion of the Colon.**—Hirschel regards this operation as the very last resort, but reports a case in which it gave excellent results, freeing the patient, a woman of 28, from intestinal disturbances of several years' standing, probably due to sagging of the colon and chronic colitis. The fistula in the cecum still persists but causes no annoyance and the patient has gained 20 pounds in the two years since.

Berliner klinische Wochenschrift

December 27, XLVI, No. 52, pp. 2337-2368

- 81 *Occurrence of Acute Edema of the Lung with Paroxysmal Increase in Blood Pressure. (Vorkommen von akutem Lungenödem zusammen mit paroxysmaler Blutdrucksteigerung.) K. Petren and G. Bergmark.
- 82 Destructive Effect on Complement of Shaking. (Komplement-schädigung durch Schütteln.) J. Zeissler.
- 83 *Hermaphrodite Children. (Fall von Hermaphroditismus.) P. Marcuse.

81. **Occurrence of Edema of the Lungs with Paroxysmal Increase in the Blood Pressure.**—Petren has observed two cases of anemism of the aorta in which cardiac asthma seemed to be preceded by an abrupt rise in blood pressure, and this was followed by acute edema of the lungs. He observed the same thing in a case of interstitial nephritis in a man of 58, the blood pressure of 240 mm. during an attack of asthma dropping to 180 mm. afterward, but no edema of the lungs developed. These cases, he declares, confirm his assumption that the acute rise in blood pressure is the cause of the cardiac asthma, the distention of the insufficient left ventricle being of subordinate importance. It seems evident that the primal disturbance is some influence on the nervous system interfering with the normal regulation of the correlated vessel tension, heart action and respiration, with an already diseased heart.

83. **Hermaphroditic Children.**—Marcuse, in reference to a case demonstrated, protests against the German legislation which compels the registration of infants as either boys or girls. This may work a hardship later if the first estimation of the sex proves incorrect, as sexual characteristics develop at puberty. He advised the parents in the case in question to bring up the child as a girl, as the transition later is less disturbing if such becomes necessary. The consent of the authorities can then be obtained for the change to boy's clothing and the child can be sent away from home to a boy's school where he is not known. He urges legislation to permit registration of a neutral sex.

Deutsche medizinische Wochenschrift, Berlin

December 30, XXIV, No. 52, pp. 2305-2336

- 84 *Treatment of Injuries of the Ears. (Behandlung der Ohrverletzungen.) P. Manasse.
- 85 Tests for Estimation of Functioning of the Intestines. (Zur funktionellen Darmdiagnostik.) T. Brugsch. (Zur Bewertung der Ad. Schmidt'schen Kernprobe. Sind die Gewebkerne im Magensaft löslich?) F. W. Strauch.
- 86 Successful Removal of Spinal Cord Tumor. (Extramedullärer Rückenmarkstumor.) F. Herzog.
- 87 Autopsy Findings after Firearm Wound of Heart. (Zur Lehre der Herzverletzungen.) K. Halbey.
- 88 Sterilization of Novocain-Suprarenin Solution. H. Brann.
- 89 Roentgen-Ray Cure in Two Cases of Vascular Nevus. H. E. Schmidt.
- 90 *Causes for Failure of Silver Nitrate in Prophylaxis of Ophthalmia Neonatorum. (Zur Beurteilung von Misserfolgen des Credé'schen Verfahrens bei Neugeborenen.) W. Feilchenfeld.
- 91 Explanation of "Buttermilk Fever" in Infants. (Zur Frage des Buttermilchfiebers.) G. Tugendreich.
- 92 Tschernogubow's Second Modification of the Wassermann Seroreaction. H. Guth.
- 93 Complements in Milk. (Zur Frage der Milchkomplemente.) M. Pfandler and C. T. Noeggerath.
- 94 Improved India Ink Technique for Demonstrating Tube Casts. (Darstellung von Hinzylindern mittels des Tuscheverfahrens.) K. Stoevesandt.

84. **Injury of the Ear.** Manasse discusses mainly the accidents to the ear which the general practitioner is liable to encounter. In case of a bloody or serous collection in the antricle, conservative measures may induce reabsorption, but he prefers to aspirate the fluid with a Pravaz syringe and then push a ball of gauze into the hollow left and apply a compressing bandage. If there is already infection the granulations and necrotic cartilage must be scraped out to check the spread of the perichondritis, as otherwise severe disfigurement may result. He reviews the various injuries that may result from accidents, firearm wounds, etc., but insists that treatment is practically the same for all, namely, absolute abstention from local measures, from rinsing, syringing, probing, etc. The head should be kept at rest and the ear bandaged with dry gauze. Nothing else is necessary unless a bullet needs removal or otitis media develops, in which case the ear may be drained with strips of sterile gauze or 20 per cent. borated glycerin may be instilled. If there is a large perforation of the tympanic membrane, boric acid in substance may be used, and cold water compresses are serviceable in case of violent inflammation. As a rule, however, ordinary perforation of the membrane heals without reaction under strict abstention. It is extremely important to refrain from attempts to syringe out clots of blood after a fracture of the bones of the ear or base of the skull, as otherwise infection may easily be carried into the depths, with otogenous meningitis as the result. He has witnessed recovery under measures solely to promote reabsorption, even when the fracture of the base had induced facial paralysis and severe disturbances in hearing and balance. To hasten absorption he generally injects pilocarpin subcutaneously, commencing with 0.01 gm. (1-6 grain) and increasing by 1 mg. a day to 0.02, and then gradually going back to 0.01 gm. with small doses of potassium iodid. Good results can be anticipated, he says, only when such measures are instituted early, before the extravasation has become organized. In case of injury of the ear the wisest are those whose abstention is most complete.

90. **Prophylaxis of Ophthalmia Neonatorum.** Feilchenfeld warns that inflammation developing after instillation of silver nitrate should not be ascribed to irritation from the drug, but should compel immediate microscopic examination of the secretions so as not to overlook already existing gonococcus infection. A single instillation of the nitrate is unable of course to abort this; it should be suspected the more readily if delivery has been unusually protracted.

Medizinische Klinik, Berlin

December 26, V, No. 52, pp. 1959-1982

- 95 *Epidemic Poliomyelitis. (Spinale Kinderlähmung.) F. Kramer.
- 96 Infection of the Blood in Febrile Pulmonary Tuberculosis with Cavities. (Infektion der Blutbahn bei fieberhafter kavernöser Lungentuberkulose.) F. Relche.
- 97 *Disturbances after Appendectomy and their Treatment under Suction Hyperemia. (Beschwerden nach Appendektomie und deren Behandlung.) M. Jerusalem.
- 98 Operative Treatment of Recurring Phlyctenular Conjunctivitis. (Zur operativen Behandlung der rezidivierenden phlyktären Bindehautentzündung.) Schultze-Zehden.
- 99 Equivalents in Disease. (Ueber Äquivalente.) H. Stadelmann.

95. **Acute Poliomyelitis.**—Kramer remarks in the course of this review of recent epidemics that the prognosis in the last few years has changed considerably as the mortality of the disease is proving higher than previously supposed, and also the number of cases of complete recovery. He advocates during the acute phase merely complete rest and mild measures to induce sweating. As the disease develops in two separate phases it is wisest to keep the patients still in bed for a week or two after defervescence. During the phase of paralysis, massage and electric procedures provide the most favorable conditions for recuperation. In the Breslau clinic, where he is assistant, the age in 196 cases ranged from early infancy to 30, each decade being represented, but only 24 of the patients were over 5. The summer months showed the largest number of cases.

97. **Treatment of Disturbances After Appendectomy.**—Jerusalem has found extremely effectual the application of a large suction bell, as for Bier's hyperemia, covering the entire iliac fossa region. The nervous and vasomotor disturbances have always yielded at once when this suction was applied for from 10 to 30 minutes. As soon as the skin reddened under the influence of the suction, subjective benefit was soon apparent and the local conditions were evidently much improved. He gives an illustrated report of a few cases, urging that the method should be given a trial instead of the usual treatment commonly accorded these postoperative complaints.

Münchener medizinische Wochenschrift

December 28, LVI, No. 52, pp. 2701-2716

- 100 *Causes of Uterine Hemorrhage. (Ursachen der Uterusblutungen.) O. Pankow.
- 101 Hypothesis for Explanation of Exanthem in Measles. (Zur Erklärung des Masernexanthems.) P. Sittler.
- 102 Family Tendency to Strabismus. (Weiterer Beitrag zur Vererbung des Schielens.) O. v. Stecher.

100. **Causes of Uterine Hemorrhage.**—Pankow states that the anatomic changes found in the uterus in so-called chronic metritis and endometritis do not always indicate preceding inflammation. The condition is rather an idiopathic metropathy. Unless inflammation can be demonstrated it is better to drop the term metritis. His findings justify the conclusion that the source of uterine hemorrhage must be sought outside the uterus in many cases. Histologic examination of the ovaries removed in eight cases of uterine hemorrhage showed no difference between them and the ovaries of women free from hemorrhage, of a similar age. This confirmed his assumption that the cause of the hemorrhage is not anatomic changes but a disturbance in the secretory activity of the ovaries, and there is much to sustain the assumption that the true source of the trouble is some disturbance in the physiologic balance of the various glands with internal secretion raising or lowering the blood pressure. Loss of the physiologic balance between the functioning of these various glands would readily explain the tendency to uterine hemorrhage, especially during periods in which the physiologic balance throughout is most unstable, as at puberty and the menopause. This readily explains why hemorrhage may occur in one and not in the other case, with similar anatomic findings in the uterus in both; also why chlorotic girls at puberty may present severe hemorrhage or amenorrhea or normal menses—all these varying manifestations being merely different symptoms of the same underlying affection, a disturbance in the balance between the glands with an internal secretion.

Wiener klinische Wochenschrift, Vienna

December 30, XXII, No. 52, pp. 1813-1844

- 103 *Cure of Trachomatous Pannus in Six Cases by Inoculation of Gonorrheal Secretion. (Heilung des Pannus trachomatosis durch Einimpfung gonorrhöischer Sekrete.) W. Goldzieher.
- 104 Suture of Wounds in the Heart. (Erfahrungen und Ansichten über die Naht der Herzwunden.) K. Ewald.
- 105 Toxic Action of Hematoporphyrin on Warm Blooded Animals Exposed to the Light. (Giffige Wirkung des Hematoporphyrins auf Warmblütler bei Belichtung.) W. Hansmann.
- 106 Lack of Pancreatic Ferment in the Stools in Two Cases. (Zwei verschiedenartige Fälle von fehlendem Pankreasferment in den Fäzes.) K. A. Heiberg.

103. **Treatment of Trachomatous Pannus by Inoculation of Gonorrheal Secretions.**—Goldzieher has revived this old method of treatment and has applied it in 6 cases during the last 5

years out of his extensive material at Budapest. The results were good in all cases, the cornea clearing up as the acute gonorrheal process followed the inoculation in 3 days. The improvement has persisted to date in 3 cases described at length, and probably has in the 3 others, although the patients have been lost sight of. The gonorrheal secretion was taken from a new-born infant with ophthalmia neonatorum as less virulent than in the secretions of adults. In future he intends to try attenuated cultures of gonococci for the purpose. He describes his method of transferring the secretion on a glass rod from the infant's eye to that of the patient. The purulent secretion is first wiped away with moist gauze so that only the tear fluid is used. All the patients were already blind from the pannus, and he applied this method only as the last resort after failure of persevering application of all other measures. He is convinced that it is a certain cure, and he emphasizes the fact that the cornea with pannus does not respond to the gonococcus infection in the same way as a normal cornea. The network of vessels brings quantities of protecting substances to the spot so that the process runs a stormy but brief course and heals completely without leaving cicatricial changes. The fact that the granulations vanish without leaving a scar shows that there are means by which the trachomatous granulations can be made to regress without leaving the usual scar tissue. This fact suggests the necessity for therapeutic research in this line. To the objection whether it is wise to inoculate a person intentionally with gonorrhea, he asks which the reader would prefer himself, to be totally blind or, with comparatively normal vision to suffer from an eventual gonorrheal arthritis?

Gazzetta degli Ospedali e delle Cliniche, Milan

December 23, XXX, No. 153, pp. 1617-1624

- 107 *Connection between Mental and Gastric Derangement. (Psicopatie e gastropatie.) S. Vittorangeli.

December 26, No. 154, pp. 1625-1640

- 108 Eosinophilia Not Constant in Cachectic Aphthae. (Contributo allo studio della produzione sottolinguale con speciale riguardo all' eosinofilia.) S. De Villa.

December 28, No. 155, pp. 1641-1648

- 109 Etiology of Sclerema and Anasarca in New-Born Infants. (Etiologia dello sclerema ed anasarca dei neonati.) G. Pisano.

107. **Gastric Functions in the Insane.**—Vittorangeli reports two cases of hyperchlorhydria developing in the course of melancholia or a manic depressive psychosis. He thinks it probable that the peculiar hyperexcitability of the secretory apparatus of the stomach was the result of cortical influences. In one case the hyperchlorhydria progressed to continuous gastrosuccorrea.

Policlinico, Rome

December, XVI, Medical Section, No. 12, pp. 525-568

- 110 *Improved Therapeutic Hemostasis. (L'azione di alcuni emostatici sulla coagulazione del sangue.) P. Ciuffini.
111 Wassermann Reaction in Leprosy. (La sierodiagnosi di Wassermann nella lepra.) A. Serra.
112 The Conjunctival Tuberculin Test for Diagnosis and Prognosis. (La fisiopatologia della reazione congiuntivale alle tubercolina.) N. Pende.

110. **Research on Therapeutic Hemostasis.**—Ciuffini has been testing on an extensive scale gelatin, calcium chlorid and ferric chlorid as means to hasten coagulation of the blood, in research at Baccelli's medical clinic at Rome. He found that gelatin promotes coagulation but loses this property if heated to 130 or 135 C. (266 or 275 F.) for half an hour. Sterilization of the gelatin thus renders it inefficient in this respect. By the mouth or rectum, after heating to 100 C. (212 F.), no effect on the coagulation was perceptible. Calcium chlorid had only a slight effect in this line. Ferric chlorid by the mouth has nearly as marked an effect as gelatin subcutaneously, but other iron preparations were inefficient. A combination of gelatin and ferric chlorid proved exceptionally effectual, the result inferior only to that induced by non-sterilized gelatin injected subcutaneously. Coagulation is notably hastened and increased and this effect persists for more than twenty-four hours, while with the gelatin alone the effect is much less lasting. He uses a concentrated solution of acacia, mixing it with ferric chlorid, both previously sterilized separately, and injected subcutaneously. There was no local disturbance or reaction of any kind. The

compound resulting from their combination being apparently harmless, he prophesies a future for this mixture in operative and other hemostasis.

Norsk Magazin for Lægevidenskaben, Christiania

January, LXXI, No. 1, pp. 1-208

- 113 *Case of Fatal Paratyphoid Jaundice. (Et tilfælde af infektiøs ikterus.) O. Scheel.
114 Development of Surgery in Norway. (Fra gamle dage.) I. Reichborn-Kjennerud.
115 *Bone Formation in Penis and its Successful Removal. (Et tilfælde af bendannelse i penis.) H. L. C. Huitfeldt.
116 Two Cases of Volvulus of Entire Small Intestine. (Volvulus af hele tyndtarmen og dens mesenterium.) H. Wille.
117 *Wassermann Reaction in the Cadaver. (Ligsera og den Wassermann'ske syfilisreaktion.) R. Krefling.

113. **Case of Fatal Paratyphoid Jaundice.**—Scheel's patient was a man of 46, who died after 3 weeks of an infectious jaundice; a paratyphoid bacillus could be cultivated from the blood during life and from the liver, spleen, etc., post-mortem. He thinks it probable that many cases of so-called catarrhal icterus are in reality a general infection with secondary localization in the biliary apparatus. Histologic examination of the liver capillaries in his case showed minute foci of necrosis, and these were probably responsible for the stagnation of bile and consequent resorption.

115. **Patch of Ossification in the Penis.**—Huitfeldt reports a case in which a hard lump in the penis near the root was removed. It proved to be a fibrous and bony formation, the lump measuring 4 by 18 by 26 mm. It was in the outer envelop of the corpora cavernosa and shelled out easily under local anesthesia. It had been noticed first about six months before. Complete cure from all disturbances followed and has persisted during the two years and more to date. Huitfeldt has found only 6 cases on record of this formation of a patch of bone tissue in the penis, removed by an operation, although over 50 cases have been reported of fibrous induration for which no traumatic or other cause could be discovered. Attempts to induce resolution of such indurations have not proved very encouraging, and operative treatment has not always proved successful. The operative injury to the corpora cavernosa has frequently caused severe functional disturbance, and recurrence of the induration has been observed in some cases.

117. **Seroreaction in the Cadaver.**—Krefling obtained conflicting findings in 100 cadavers examined, as also Bruck, in a large number, demonstrating anew that the specific seroreaction in syphilis is a strictly biologic phenomenon.

Books Received

All books received are acknowledged in this column and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender. A selection will be made for review in the interests of our readers and as space permits.

OPHTHALMIC SURGERY. A Treatise on Surgical Operations Pertaining to the Eye and its Appendages, with Chapters on Para-Operative Technic and Management of Instruments. By Charles H. Beard, M.D., Surgeon to the Illinois Charitable Eye and Ear Infirmary. Cloth. Pp. 674, with 9 plates and 300 other illustrations. Price, \$5. Philadelphia: P. Blakiston's Son & Co., 1910.

DIGEST OF COMMENTS ON THE PHARMACOPEIA OF THE UNITED STATES OF AMERICA (EIGHTH DECENNIAL REVISION), AND THE NATIONAL FORMULARY (THIRD EDITION), for Year ending Dec. 31, 1906. By Murray Galt Motter and Martin I. Wilbert. Paper. Pp. 523. Hygienic Laboratory Bulletin No. 58. Washington: Government Printing Office, 1909.

NATURAL SALVATION (SALVATION BY SCIENCE): Immortal Life on the Earth from the Growth of Knowledge and the Development of the Human Brain. By Charles Asbury Stephens, M.D. Cloth. Pp. 157, with illustrations. Sixth edition. Price, \$1.75. Norway Lake, Me.: The Laboratory. 1910.

MILK AND ITS RELATION TO THE PUBLIC HEALTH. By Various Authors. Hygienic Laboratory Bulletin No. 56. (Revised and enlarged edition of Bulletin No. 41.) Paper. Pp. 829, with 66 illustrations. Washington: Government Printing Office, 1909.

QUACKS, FALSE REMEDIES AND THE PUBLIC HEALTH. By David Walsh, M.D., Senior Physician, Western Skin Hospital, London. W. Cloth. Pp. 60. Price, 1 shilling 6 pence net. London: Baillière, Tindall and Cox, 1909.

PROCEEDINGS OF THE NORTH DAKOTA PHARMACEUTICAL ASSOCIATION. Twenty-fourth Annual Meeting, held at Grand Forks Aug. 3-5, 1909. Paper. Pp. 181. Price, 50 cents. W. S. Parker, Secretary, Lisbon, N. Dak.

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Original Articles

THE TREATMENT OF AMEBIC DYSENTERY, ESPECIALLY BY APPENDICOSTOMY *

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PHILADELPHIA

The subject of the treatment of amebic dysentery, particularly in its bearings on surgical procedures, is one of lively interest and great practical significance to the medical profession. It assumes importance in view of the utter hopelessness of a certain proportion of cases which have been allowed to drag on until they no longer yield to medical treatment, and also because accessible statistics indicate clearly the widespread prevalence of the disease, principally in tropical, but also to a considerable extent in subtropical and temperate regions.

Passed Assistant Surgeon Heiser is doubtless correct in asserting that "amebic dysentery still easily retains first place, as that disease is the white man's worst enemy in the tropics." In the Philippine Islands, more than one-half of all deaths and disabilities among the whites are ascribable to this disease, while in Manila its death-rate has been averaging about 300 per annum.

The disease may also be acquired in the temperate zones. For example, J. P. Tuttle has shown that cases have occurred among persons who have never been outside of New York, and in 1903 T. B. Fletcher¹ reported, from the records of Johns Hopkins Hospital, 95 cases of amebic dysentery acquired in Maryland and 17 in eight other states. More recently, Boggs² has collected 63 additional cases from the same records, making a total of 182 cases. It is regrettable that in the large general hospitals throughout the southern section of the United States in which amebic dysentery is more or less prevalent, it is not recognized as a distinct disease. The pathologic and clinical records of these institutions down to a recent date classify amebic infection under the generic term of "chronic dysentery."

The simple truth regarding the geographic distribution in America is that patients in constantly increasing numbers are emigrating from the endemic localities to more temperate or northerly latitudes. The present dis-

cussion will not include a full consideration of prophylaxis, which embraces many points, but the fact that an unsterilized water-supply both directly and indirectly is the principal source of infection deserves especial mention. Musgrave has shown experimentally that sterilization or thorough filtration are essentials wherever the infection is endemic. The danger of eating green vegetables and fruits which have either been fertilized by the oriental method, i. e., with human excrement, or cleansed with unsterilized water, must be recollected.

The actual sources of infection, however, are numerous, so that prophylaxis is a complicated problem, and its scope beyond the prescribed limits of this article. Too much stress cannot be laid on the statement that both constipation and simple diarrhea constitute local predisposing conditions, and they should be, therefore, obviated to the fullest extent in localities in which amebic dysentery is endemic.

MEDICINAL AND OTHER TREATMENT

One of the most important indications to be fulfilled is rest; this applies with greater force to the acute than to the chronic form of the disease, and, to procure it, an opiate may rarely be required.

We shall describe in the next place the medicinal treatment of the attack. So long as scybalous masses are being passed, we prefer to employ magnesium sulphate in diam doses every third hour. If the general strength be good, a brief course of calomel should precede the use of the saline remedy. The magnesium sulphate lessens the pain and tenesmus by removing the hardened fecal masses and inhibiting rather than exciting undue peristalsis, and it also depletes the portal circulation, thus relieving the hyperemia.

In our view, purgatives, when employed in the advanced stages of amebic dysentery, commonly assume the rôle of aggravating causes. Neither have they a place in the treatment of cases manifesting highly acute invasion symptoms. Saline laxatives may, therefore, be required for longer or shorter periods, according to the character of the intestinal features and progress of the individual case, but should not be long continued after the dysenteric have been converted into diarrheal dejecta.

In the symptomatic treatment, the general condition of the patient brought about by disturbances of the circulatory and excretory organs (cutaneous, renal) must be accorded constant and most careful consideration. Measures intended to support the blood circulation should not be overlooked as occasion demands.

Chronic amebic dysentery is a specific disease in which the causal treatment is the essential and ultimate one on which professional efforts are to be focused. Experience and a critical examination of the expressions of authoritative opinion have shown that, in the majority of cases at least, the vital resistance of the body is incapable of destroying the invading organism after implantation of

* Read before the Section on Hygiene and Tropical Medicine of the Sixteenth International Medical Congress, Budapest, Aug. 29-Sept. 4, 1909.

1. Fletcher, Thomas B.: A Study of the Cases of Amebic Dysentery Occurring at the Johns Hopkins Hospital, *THE JOURNAL A. M. A.*, Aug. 22, 1903, xli, 480.

2. Boggs: Amebic Dysentery in the Southern States, *Virginia Med. Semi-Monthly*, April 10, 1908.

the *ameba coli* has occurred. Granting the correctness of this view, the question pertinently arises: Is there a specific remedy for this disease?

Following its discovery, ipecac at once gained popular favor, only to fall from its enviable position with the passing of time. It was reintroduced by Sir Patrick Manson, who has expressed the belief, founded on long experience, that in ipecacuanha we have a remedy possessing specific powers against the germ cause of at least certain of the more common forms of dysentery.

Says Manson:

I regard this drug as belonging to the same category of remedies as quinin or mercury or salicylic acid. I know that in America and in many other parts of the world, ipecacuanha has lost its reputation as an antidysenteric. . . . I would urge American physicians to give it one more trial, at all events in such cases of dysentery as have been acquired in the tropics.³

Recently certain American clinicians, among them George Dock, E. A. R. Newman and others, have warmly and enthusiastically advocated the use of this drug, claiming for it specific virtues. We have also been profoundly impressed with the therapeutic value of ipecac in the treatment of amebic dysentery during the earlier stages of the disease, but have met with failure in a few much-protracted or chronic relapsing cases. In one instance the drug caused the amebas to disappear from the dejecta, but they subsequently reappeared. In general, then, but not invariably, ipecac exerts a markedly beneficial effect, causing the amebas to disappear rapidly from the dejecta.

The success of the ipecac treatment depends largely on the method of and degree of care exercised in administration. The introduction of capsules of animal membrane, as suggested by Sandwith, and salol-coated pills, which carry the remedy into the intestines before it is absorbed, marked a decided advance in that the liability to nausea and vomiting was thereby minimized. In this manner massive doses which, according to its partisans, are essential to the utmost efficiency of the drug, can be easily administered.

Without stopping to give full details, it may be stated that not less than 30 grains at a single dose (after the method of Sir Patrick Manson in chronic amebic dysentery) are to be given on the first day. Subsequently the amount is to be diminished by five grains *per diem* so that by the sixth day only five grains of the drug are administered. During the next week or ten days a nightly dose of five grains must be allowed. The various precautions against vomiting, which have been properly emphasized by Manson and his adherents, need not be so rigidly enforced when the salol-coated pills of ipecac are employed. These, it will be recollected, are dissolved in and absorbed from the intestinal tract. It is, however, advisable to have the patient fast in all cases for about four hours before administering the remedy, and to enjoin absolute quiet for a similar period after.

This improved mode of administration has also had the effect of overcoming, to an extent at least, the prejudice formerly existing against ipecac as a therapeutic resource in this disease; not, however, before the introduction of colonic irrigation, which was founded on the results of laboratory investigations following the discovery of the specific element of the disease, and believed to offer an opportunity to combat the ameba at its seat of activity in the intestine. It may be questioned whether the irrigation treatment *per se*, i. e., without

surgical intervention, has in its last analysis given more encouraging results than the ipecac treatment properly carried out. On the other hand, Boggs² and others declare unhesitatingly that the local treatment is the only effective medication in the light of an extensive professional experience. For this purpose, solutions of quinin are most widely approved, commencing at 1:5000 of a blood-warm solution and progressively increasing in strength to 1:1000 in a few days.

Sandwith, in 1898, first suggested that amebic infections might be properly treated with large enemas before they had become chronic, and in this position he was ably supported by William Osler. More recently this treatment has been widely adopted in countries in which amebic infection is endemic. Most authorities believe it to be the part of wisdom to begin these irrigations after the early acute symptoms have, in a measure at least, subsided. Again, there are cases that have reached the stage of chronicity in which the local irritability is too great to permit of thorough lavage. The irrigation solutions which have found widest favor in intestinal amebiasis are those of quinin and silver nitrate, particularly the former. Among numerous other enemas may be mentioned those containing mercuric chlorid, argyrol, creosote and copper sulphate, but they are manifestly less efficacious than the two given above.

As with the ipecac treatment, so with irrigations, certain details in carrying out the method, not all of which can be described here, are necessary to insure the success of the treatment. Especial mention should be, however, made of the following points: marked elevation of the hips, the insertion of a soft rectal tube three to four feet into the colon and the retention of the irrigation fluid for fifteen to twenty minutes.

The object of this method is to wash thoroughly every portion of the colon; and the irrigations should be kept up until repeated examinations have failed to reveal amebas in the stools.

In protracted cases in which the ulcers first appear in the rectum and travel upward, colonic irrigation by the rectal route sometimes fails. The same is probably true of those cases in which the lesions begin in the caput coli and descend, not to speak of the cases in which the small intestine has been invaded for a short distance above the ileocecal valve. While the lesions of amebic dysentery are almost invariably confined to the colon, their distribution is by no means identical in every instance. For example, in 116 cases examined post-mortem, Fitcher⁴ rarely, if ever, found the lesion in the rectum and sigmoid.

On the other hand, Tuttle, in 74 cases of amebic dysentery among living subjects, observed typical ulcers of the rectum and sigmoid in 70 instances. Tuttle described numerous cases in which the ulcers appeared to decrease in size and number from the rectum upward, disappearing entirely in the upper part of the sigmoid flexure. Patients of this class obviously recover under local treatment. Wooley and Musgrave,⁵ in 200 cases of amebiasis, found the entire large intestine involved in 159; cecum and ascending colon in 23; transverse colon only in 2; descending colon, sigmoid flexure and rectum in 9 cases. The appendix was implicated in 14 cases, and the ileum in 7.

APPENDICOSTOMY

Whether it be on account of the peculiar distribution of the lesions or whether in consequence of the advanced

3. The Lane Lectures, delivered at the Cooper Medical College, August, 1905.

4. Fitcher, quoted by Tuttle: Amebic Dysentery, THE JOURNAL A. M. A., Oct. 8, 1904, xliii, 1022.

5. Wooley and Musgrave: Bull. Bureau of Gov. Lab., Manila, No. 32, June, 1905.

character of the local pathologic changes, the simple fact is that not all cases of chronic amebic dysentery yield to rectal lavage, even though carried out with great thoroughness. It is in these instances that appendicostomy offers a real sphere of usefulness by utilizing the caliber of the appendix, thus rendering possible the successful local medication of the large bowel. The following cases in point may be briefly cited:

CASE 1.—History.—The patient, F. J. B., aged 31, was a soldier in the Spanish-American War from 1898 until 1904, when he returned from the Philippines to Philadelphia. The disease developed during the first year he was in the service; it yielded to massive doses of ipecac with rest in the Philippine Hospital, but recovery was only apparent, and during the six years which he spent in the tropics he received similar treatment at irregular intervals for exacerbations, with marked temporary improvement, but the amebas were constantly present on examination of the feces. After his return to the United States, in 1904, he was treated first at the Army Hospital at Columbus, Ohio, rectal enemas being used without result; in November, 1905, acute symptoms manifested themselves and the patient sought admission to the Army and Navy Hospital in Hot Springs, Arkansas; rectal lavage with quinin and silver nitrate solutions was employed for about three months. On leaving, the patient found that he had gained eighteen pounds, and bowel movements were reduced to one or two daily. He felt himself well until November, 1906, when the intestinal features became active. In 1907 he developed a recurrent exacerbation, for which he was treated in three different Philadelphia hospitals, and in March, 1908, he was admitted to the Medico-Chirurgical Hospital, where he remained for three months. During his stay, the diarrhea, which was a prominent feature immediately after admission, markedly improved. The amebas, however, continued to be present in the dejecta and the general nutrition of the patient remained much impaired. On May 14 it was decided to perform an appendicostomy.

Operation.—This was done in two stages, the appendix not being opened until May 16, at which time a No. 10 rubber catheter was introduced into the cecum and the bowels well irrigated with a solution of quinin (1:4000). This was repeated daily with the most satisfactory results. At the time of the operation the patient was having from ten to twenty stools a day. After a week's treatment the number was reduced to less than a dozen in twenty-four hours, and at the end of four weeks he was having usually one, sometimes two, healthy actions a day.

Postoperative History.—The patient, being unusually intelligent, was able to carry out the lavage of the colon himself. Therefore he was allowed to leave the hospital and continue the treatment at his home. He gained flesh very rapidly, and when he reported to us the following September his appearance was strikingly changed for the better. He had gained about forty pounds in weight and reported himself as feeling perfectly well. We advised him, however, not to discontinue the irrigation, or to allow the fistula to close. There was never at any time leakage from the fistula. The catheter was allowed to remain only during the irrigation.

CASE 2.—One of us, in November, 1908, operated on a colored man from the island of Jamaica who had suffered with chronic diarrhea for several years. Having been treated without relief in the medical wards of the Presbyterian Hospital, he was transferred to the surgical ward, as appendicostomy had been advised by us. The result of the operation was as satisfactory as in the preceding case and the stools, which were upwards of thirty a day, were reduced within a fortnight to two or three in twenty-four hours. We have never seen a patient improve more satisfactorily in every way. He gained flesh very rapidly and within six weeks after the operation had put on thirty-seven pounds. Physiologic salt solution only was used. The patient was allowed to leave the hospital at the end of three weeks, but continued to practice daily irrigations until the time when he was last seen, in February, 1909, when he was exhibited at our clinic at the Medico-Chirurgical Hospital. He was then having one action a day and seemed to be entirely relieved of all gastric and intes-

tinal symptoms. He was, however, advised to keep open the fistula, which manifested quite a disposition to close, and to employ occasional irrigation. There was never at any time leakage from the fistula.

We have also resorted to appendicostomy in other cases of chronic dysentery and chronic diarrhea with entirely satisfactory results—so satisfactory, indeed, that we do not hesitate to advise the operation in cases proving rebellious to medical treatment. The mortality following such operations is practically negligible, and the relief, in our judgment, almost certain. It would not be germane to consider appendicostomy, valuable as it is, in other conditions, such as intestinal obstruction, syphilitic ulceration of the colon, chronic constipation, or for the purpose of introducing nourishment in typhoid or other debilitating diseases.

TECHNIC OF THE OPERATION

We think, however, that a few words as to the technic will not be amiss. We have always reached the appendix through the gridiron or McBurney incision. We favor, as a rule, doing the operation in two stages, believing that it is best not to open the appendix until firm adhesions have taken place between the cecum and parietal peritoneum. That it can safely be done, if necessary, in one sitting, is not to be questioned; but the mortality must be somewhat greater, and primary union of the wound to a certain extent jeopardized.

The technic as usually described in the text-books is faulty in one respect at least, and has caused more or less dissatisfaction with the operation. If the mesoappendix, as ordinarily advised, is ligated, the blood-supply to the appendix is cut off and gangrene of the organ is almost certain to follow. At least this has been our experience and that of other surgeons with whom we have discussed the subject. Our early operations were far from satisfactory on account of having employed the technic above mentioned.

It is much better to bring the base of the appendix well up against the abdominal wall, stitching the mesoappendix to the parietal peritoneum. Not only is the vitality of the appendix thereby insured, but intestinal obstruction, which is a possibility when the cecum is suspended by the appendix, as in the original technic, is eliminated. As the operation was formerly done, the dangers were much the same as in ventral suspension of the uterus, as it would be an easy matter for the small intestines to slip around and be interfered with by the appendix thus suspended. The best description of the operation is to be found in Moynihan's "Abdominal Surgery."

Since following the technic above referred to, we have always found the appendix of normal color at the end of forty-eight hours, whereas, as we have already said, it was invariably gangrenous if the mesoappendix was ligated.

The appendix is snipped off with a pair of scissors after brushing it over with a solution of cocain. Little or no pain is felt, and cocain even is unnecessary.

A No. 10 rubber catheter is at once introduced into the cecum and irrigation of the bowel practiced. While we have hitherto employed solutions at about the body temperature, Tuttle, of New York, strenuously insists on colder solutions, at a temperature of 65 degrees, believing that they are more efficient.

Some surgeons insist that the appendix should be opened at once and the operation completed in one stage. This position is largely taken to insure patency of the appendix. While this is undoubtedly a matter of impor-

tance, we believe an experienced surgeon will usually be able to satisfy himself that the appendix is patent by rolling it between his fingers.

Others have doubted the dilatability of the appendix and have, therefore, wished to eliminate this uncertainty by opening the organ primarily. It is surprising to what extent even an abnormally small appendix can be dilated, if patience and prudence are exercised. Even in small appendices, the result of appendicitis obliterans, the caliber is sufficient to admit a fairly large catheter.

Another question of importance to decide will be the relative merits of appendicostomy and cecostomy. We unhesitatingly pronounce in favor of the former operation. Cecostomy has always been more or less unsatisfactory on account of the difficulty, almost impossibility, of preventing leakage, resulting in exoriation of the skin, which is most disagreeable and painful. If, however, it is to be given the preference, it should invariably be practiced by the method introduced by Gibson, which is practically the Stamm-Kader operation, which all of us prefer in gastroenterostomies and cholecystostomies.

We are frank to say that we have been surprised to find no leakage whatsoever from the appendix when the catheter is withdrawn.

Another point of considerable importance is whether or not the fistula should be closed when the disease seems to be at an end. Much, of course, will depend on the nature of the affection. If the operation is performed for the relief of amebic dysentery, it is our belief that the fistula should, as a rule, be maintained indefinitely. Certainly such is the case should the patient contemplate residence or travel in a tropical country. When desirable to close the fistula it is most easily accomplished by the use of a Paquelin cautery or nitric acid. Truth to say, we have had more trouble in keeping open the fistula than in closing it, and have been compelled from time to time to practice judicious dilatation in order to prevent too early closure.

CONCLUSIONS

In concluding this paper, a few points brought out in the foregoing discussion deserve to be reiterated:

1. Certain cases of old-standing amebic dysentery do not yield to either the ipecacuanha treatment or rectal lavage.

2. In these instances, fortunately rare, failure is most probably due to the advanced character and high position of the local lesions of the disease.

3. This small class of cases may be successfully treated by the combined method herein advocated, to wit: appendicostomy and systematic thorough irrigations through the appendix.

1605 Walnut Street—1904 Chestnut Street.

ELECTRIC BURNS

JOHN A. KAPPELMAN, B.S., M.D.

EVANSTON, ILL.

In this day and age, we recognize in electricity man's greatest ally. Guarded and under control, it has become the greatest factor in the progress of industries. On the other hand, it is capable of being most destructive to human life.

Electricity is seen in two great forms: static and dynamic. The static is that seen in common lightning, while the dynamic form or current electricity is the controlled and useful form.

FACTORS DETERMINING RESULTS OF INJURIES

Current electricity is injurious and destructive or harmless, depending on the following factors: (1) kind of current; (2) its intensity; (3) length of time of contact; (4) the part traversed; (5) the vital resistance of the body through which the current is passing.

1. It is generally admitted that the alternating or indirect current is more dangerous to life than the direct. Edison says: "Contrary to what one would expect, the higher the voltage the less the danger to life when the voltage gets up in the thousands." De Tarnowsky¹ makes the statement that injuries from the direct and indirect current of the same voltage are alike, though with the direct the liability to injury is greater because all the current passes on one wire instead of two.

2. The intensity depends on the resistance offered by the body through which the current is passing.

3. The result is in direct proportion to the length of time of contact.

4. Exposure about the heart, or current passing through or near the heart, is the most dangerous. In general the further from the heart, the less is the danger of cardiac paralysis.

5. Vital resistance, if not the greatest, is one of the greatest factors in determining the effect of a contact with a live wire. A person with a weak heart, or an alcoholic, is much more easily and surely killed than one in robust health. The same current may be harmless or harmful to the same individual at different times, depending on the condition of the body.

Horses and cows are more easily killed by electricity than man, perhaps because, in part, they have four points of contact with the earth. Dry, hard skin offers the best natural resistance; Lucas says it will take 100,000 ohms; delicate skin takes less. The mucous membrane takes about 1,000 ohms. Edison says that bone is a poor conductor, while blood is a good conductor.

De Tarnowsky, surgeon in chief of the Northwestern Elevated, has been able to draw the following conclusions from a series of experiments carried out on the structure of that railroad where pressure of 500 volts is used:

1. In dry weather it is safe to place one foot on the live rail with the other foot on the track. A lineman may even sit on the live rail with his feet on the track, provided his clothes are dry and whole.

2. A disagreeable though not painful shock is experienced while sitting on the live rail when the track is touched with bare, dry hands. Should the lineman be handling a tool, however, a flash burn would inevitably result.

3. The majority of accidents result from carelessness while handling tools.

4. Wet weather is especially conducive to accidents.

INTENTIONAL AND ACCIDENTAL ELECTRICAL INJURIES

Electrical injuries are brought about in two ways: intentionally and accidentally.

Intentional Electric Injuries.—In electrocution the state has found a quick and safe means of disposing of many of its criminals. The State of New York since 1890 has electrocuted over 100. Ohio adopted the same means in 1896, Massachusetts in 1898, New Jersey in 1897 and Virginia in 1908.

Spitzka² of Philadelphia says that he has made post-mortem examination of twenty-four of thirty-six electro-

1. De Tarnowsky, George: Illinois Med. Jour., 1906, x, 502.

2. Spitzka, E. A.: New Jersey Jour. Med. and Surg., April, 1909.

ented criminals he saw in New Jersey. The process, which he describes as follows, is similar in all instances:

The condemned, with head unshaved, is allowed to walk into the chair room unaccompanied, dressed so that contact may be made with calves and arms and dependent parts. His chest, arms and legs are fixed with broad straps. Electrodes wet with salt solution are fixed to head, calves and arms. At first the contact is made with 1,800 volts alternating current for five to seven seconds; then the current is reduced to 200 or 350 volts for half a minute; it is raised again to very high voltage for two to five seconds; then reduced for one minute; raised again, then broken. A second and third brief contact are made sometimes partly as precautions and partly to abolish completely the reflexes in the dead body. The time usually necessary for the walk to the chair and the first contact is one minute. With the first contact consciousness is lost. Spitzka summarized the post-mortem findings, which may be taken as identical with those by accidental injury, as follows:

1. The temperature in twenty minutes rises to 120; in one case it rose to 129.5 F.

2. After removal of the brains the temperature in the cord is often over 120 F. (said to be due to active metabolism of tissues in the dead body where all vital mechanisms are abolished and no circulation persists).

3. The heart is at first flaccid, then when exposed becomes tetanized, especially the left ventricle.

4. The lungs are usually anemic.

5. The blood is brownish and very dark; it rarely coagulates, because either the fibrinogen or fibrin ferment or both are destroyed.

6. The maximum damage is in the nervous system, but it is not always manifest, there being no gross brain changes.

7. Frequently small petechial hemorrhages form in the nervous system and elsewhere, at times, larger hemorrhages.

Oddright³ did a post-mortem on one who received 22,000 volts, and found both lungs engorged; the right heart contained fluid blood; there were no external marks or lesions on skin.

Accidental Electric Injuries.—In most industrial plants injuries are inflicted by contact with the alternating current when a voltage of from 50 to 550 is carried. The street arc lights of Evanston are grouped in circuits of fifty lamps, each carrying a voltage of 80. A short circuit would give a shock of from 50 times 80 or 4,000 volts. The Northwestern Elevated and the local surface lines operate with 500 to 550 volts. Jellinek⁴ says that 100 volts demand precaution, 200 volts may be dangerous and 500 fatal, depending on the resistance offered. Paine⁵ mentions a case in which a man was electrocuted in his office while using his telephone. Inquiry revealed the fact that a primary or feed wire of the arc light system and the telephone wire with about 24 volts were crossed outside the building. The *Boston Medical and Surgical Journal*⁶ mentions another case of a woman electrocuted at home in a similar manner by a short circuit formed when she touched the telephone with the cuff-button on one wrist, while turning on an electric lamp with the other hand. Lucas mentions a case in which a man in Prague was killed with 95 volts. He was barefooted in a mixture of sugar and potash, thus making his body a good conductor with small resistance.

Lucas reports another case in which a boy was almost electrocuted by a live wire; on the ninth day he died of septic exhaustion from gangrene of all extremities following the plugging of arteries. Lucas reports a third case in which a man fell on a cable carrying 10,000 volts. A fellow workman, hearing the roar and seeing the flash of escaping current, ran to aid him. After throwing off the switch and relieving the wire of its current, he pulled the man away and began artificial respiration on the apparently lifeless body. The patient was revived in three minutes. Another man was thrown fifteen feet across a room after coming in contact with 2,500 volts. Another touched a 2,500-volt wire and was thrown against a 10,000-volt wire and fixed there. A helper tried to pull him off and he, too, was electrocuted. Another man in London, a heavy drinker, was killed with 90 volts.

Haman⁷ reported a case of a 13-year-old boy who came into contact with a 5,500-volt wire on a grand stand. Dry gangrene of left arm set in from burning off of axillary artery close to body. Recovery is reported.

The worst case with recovery I have found in the literature is that reported by Dr. W. R. Edson⁸ of Seattle, and only approaches in severity the one I have to report this evening. In Dr. Edson's case the patient's forehead touched a live wire and charred the outer table of his skull about 2 cm. in diameter. Recovery in five months is reported.

MANNER IN WHICH ELECTRICITY PRODUCES DEATH

How does electricity kill? In 1894 D'Arsonval said that a patient was in a state of suspended animation and could be revived by active respiration. He even went so far as to state that patient was killed by post-mortem knife. But Dr. P. H. Cunningham⁹ of New York State and Prevost and Batelli of Geneva, Switzerland, did most to settle the question and to prove that it is heart paralysis that kills. By experiment they have shown that, when the current is turned on, all the muscles in the heart become in tetanic contraction, when the current is broken the heart becomes dilated with blood and enters into a condition of fibrillary contractions, the individual muscle fibers contracting irregularly, owing to disturbance in the intracardiac nervous mechanism. Death is due in most cases to cardiac paralysis. The cessation of respiration is a secondary phenomenon, though usually simultaneous with cardiac paralysis.

Spitzka says—though he gives no experiments to prove his statement—that it is a curious fact that with good contact and high-tension current cardiac paralysis does not follow, but rather only respiratory paralysis. On the other hand, poor contact and low-current cardiac paralysis does occur.

SYMPTOMATOLOGY

The symptomatology is divided into the immediate, local and general, and the late.

Under the immediate local symptoms we find burns of skin and hair, puncture and rupture of tissue, superficial necrosis, metallic impregnations of surface tissues, hemorrhages, edema, erythemas and "lightning figures." Under immediate general effects we find loss of consciousness and nerve function generally, paralysis or muscular spasms, disturbances of respiration and cardiac action and high temperature.

3. Oddright: *Dominion Med. Month.*, 1905, xxv, 81.

4. Jellinek: *Tr. Clin. Soc.*, London, 1905, xxxviii, p. 92.

5. Paine: *Boston Med. and Surg. Jour.*, 1906, clv, p. 741.

6. *Boston Med. and Surg. Jour.*, April 18, 1907, p. 518.

7. Haman: *Hahnemann Month.*, 1907, xlii, 211.

8. Edson, W. R.: *Northwest. Med.*, 1905, iii, 229.

9. Cunningham, R. H.: *New York Med. Jour.*, 1899, lxx, 581.

The later affections include lessened bowel activity, meteorism, albuminuria, icterus, incontinence and retention of urine, bloody urine, arterial rigor or spasm of arterioles, acute edema of joints; various eye symptoms, as blindness (from excess of ultraviolet rays), conjunctivitis, iritis, cataract, dislocation of lens; ear symptoms, as rupture of tympanic membrane, deafness, bleeding; thermal changes—rise of temperature to 38 or 39 C. (100.5-102.4 F.), amnesia, neuritis, epistaxis, etc. The most characteristic appearance of an electric burn is an ashy-gray spot or lesion, without an area of inflammation, an area of edema, and the slough which follows considerably beyond the limits of the burn, due probably to the coagulation of cells by heat not sufficiently intense to cook them.

TREATMENT

The treatment is divided into the immediate or first aid, subsequent, and the later. The immediate treatment demands that the victim be taken out of the circuit. This is accomplished by the use of a dry wooden pole or rope, even one made of twisted clothing, this being used to drag him forcibly away from the live wire. Properly insulated pliers may be used to cut the wire. The *Scientific American*¹⁰ makes the statement that chemical fire extinguishers were found to be dangerous in the hands of rescuers when the stream is played on a live wire. Instances are numerous in which one workman or a spectator has also been electrocuted while attempting to rescue one still in contact with the wire. The immediate shock may vary from a disagreeable sensation to loss of consciousness and death. There may be sufficient shock to cause a violent contraction or expelling with loss of consciousness which may last from a few minutes to a few hours, often with convulsions and death, or it may only cause faintness for a few minutes, vomiting, the subject being all right after a few hours.

When there is any disturbance of respiration, artificial respiration, about eighteen times a minute, is employed, the patient's head being raised and tongue out, care being taken not to make pressure on the region of the stomach, lest its contents be forced into the larynx. Crile says:

After seven or ten minutes chances for recovery are poor. Circulation and respiration may be reestablished, but consciousness is not regained because after that length of time of cerebral anemia, brain recovery is poor.

Wounds should be dressed temporarily to keep clean and the patient removed to a hospital. If wounds have been infected, wet dressings are indicated; if not, dry dressings. Shock is treated as usual. De Tarnowsky considers electric wounds sterile, McGowan of the Edison Commonwealth Company does not. De Tarnowsky uses dry dressings in all cases which he knows are clean; McGowan uses wet on all.

Both obtain good results. Edson says that it takes one and a half to three times longer to heal electric wounds than common burns.

REPORT OF CASES

CASE 1.—On Oct. 26, 1908, the patient, W. L., aged 34, received 2,200 volts alternating current while working on the ground, on his knees, without gloves. The resistance there was practically nil. Just how long he remained in contact is not known; when fellow workmen reached him he was in contact with the live wire and seemed lifeless. The line men, remembering their instructions, withdrew him from the current as quickly as possible, in this instance knocking him loose with a wooden box. After a few minutes of coma, a condition

of wild delirium supervened in which condition I found him. The following injuries were found: 1. At hair line over right eye, deep wound 1½ inches long by 1 inch wide, down to and including the skull, leaving a black streak on periosteum ¾ by ¼ inch wide. 2. Right hand: palmar surface and middle phalanges of fourth finger received deep burns. Thenar eminence burned deeply, to but not including the tendon of the flexor longus pollicis. 3. Left hand: superficial burns on ulnar and thenar eminences. Tip of left thumb, outer side: half of nail and bone burned. 4. Median line over lower portion of sternum: superficial circular burn 3 inches in diameter. 5. Tip of right ear broken. 6. A small burn ½ inch in diameter on occipital portion of scalp. The burns on the forehead presented an ashy gray appearance without an area of inflammation, but with considerable edema. This area extended downward from the skull, though more superficially, to the line of the eyebrow. The patient was anesthetized and the wounds cleansed with 1 to 5,000 bichlorid, dried, touched with tincture of iodine and dry dressed. The following day wet boric dressings were applied. Sloughs were removed as fast as they became detached in the next two weeks. On all sides, all wounds sloughed so that their greatest diameter was two and three times the original size.

On Nov. 16, 1908, at the Evanston Hospital, with the assistance of Dr. Parks and Dr. East, skin was transplanted from the thigh onto all the wounds. The skull-wound, with its periosteum gone, showed little inclination to cover over by itself, so it was left uncovered.

On April 7, 1909, Dr. Danforth, Dr. East and I operated again at Evanston Hospital, this time doing a plastic operation on the skull, cutting away the V-shaped scar tissue above and below the wound. At this juncture we found that the outer table of the skull was practically loose. It was chiselled free and its bed curetted. Then, by deep mattress sutures, all was covered. Recovery was uneventful except for a small stitch abscess. The result was satisfactory. The patient has, since June 1, been back to work after seven months' absence. Slight deafness and slight deformity of right hand are the only permanent sequelæ.

CASE 2.—G. K., aged 22, while standing on a ladder painting a pole, received 10,000 volts alternating current, Feb. 6, 1909. The current ran up his left arm, inflicting six superficial wounds, from his elbow to his thumb. When he was shocked, he jumped or fell from the ladder, breaking contact and saving his life. Uneventful recovery in three months.

CASE 3.—A workman (Aug. 27, 1909) fell fifteen feet from a pole after he had ascended it, "to see if he could see anything to do for the burning transformer." The shock of electricity caused a small burn on the right arm. The interesting point in this case is that the patient simultaneously had hemorrhages into the scleræ, stomach and intestines. Recovery was uneventful and complete except for a weakness in the back from the fall.

520 Davis Street.

ORAL PROPHYLAXIS *

ALPHONSO IRWIN, D.D.S.

CAMDEN, N. J.

AIM OF PROPHYLAXIS

The aim of the prophylactist is to obtain an immune condition of the mouth. The purpose of operating, the object of manipulation, the end of treatment is to produce immunity from disease. Surgeons and dentists are a unit on this point. It is a universal ideal for which we are striving.

But we differ in regard to the selection of instruments, the art of operating, and the methods of surgical treatment. Let each man choose for himself the means by which he can accomplish the best results. The sub-

* Read in the Section on Stomatology of the American Medical Association, at the Sixtieth Annual Session, at Atlantic City, June, 1909.

ject has been presented in the ablest manner possible, in all of its phases, before the societies and in the journals. I leave the consideration of prophylaxis in relation to surgery to the oral surgeon.

"The prevention of disease by operations performed with instruments on the mouth" is the clinical definition of oral prophylaxis. It is not my purpose to detail the processes by which an immune condition of the mouth is established; that would take me outside of the art and bring us into the science treating of bacteria, germicides, asepsis, hygiene and sanitation. But, in passing, I would observe that, inasmuch as oral asepsis is transient (for bacteria are back again multiplying, half an hour after we sterilize the mouth), surgical cleanliness, supplemented by personal cleanliness, is all the more imperative. Cleanliness by personal effort is attainable, and this state of oral cleanliness is urgently needed by the public. Our clientele are well cared for, but it is doubtful if 75 per cent. of the population of the United States practice the simplest precaution in oral prophylaxis, i. e., use a tooth-brush. My object, therefore, is to make a practical application of oral prophylaxis to the needs of the public. This calls for some consideration of the subject as a humanitarian principle.

PROPHYLAXIS AS A HUMANITARIAN PRINCIPLE

Oral prophylaxis, considered as a humanitarian principle, is the practical application of knowledge and skill for the benefit of mankind. No man should live for himself alone. He owes something to his neighbor. Oral prophylaxis is one branch of dentistry that can be universally applied for the benefit of the public. The intelligent dissemination of the practice of oral prophylaxis among the public is incumbent on the practitioner. When we consider that in the United States alone there are 30,000,000 persons of teachable age, we have a task that must tax the abilities of the most ambitious portion of the 40,000 dentists who should grapple with the problem, in this country. If we should venture to enlarge the crusade and take in the 1,600,000,000 people who inhabit the earth, we could estimate that at least 500,000,000 people of teachable age should be taught to take care of the mouth. I challenge anyone to prove that even 10 per cent. of this number take any care of their mouth. I leave the solution of this vast problem to dentists imbued with the spirit of Livingston, the endurance of Stanley, the energy of Roosevelt. It is exceedingly doubtful if one-third of the 20,000,000 children in our schools take any care of the mouth whatever. It is through the public schools that we must hope to inculcate the principles of oral prophylaxis. The minds of the pupils between 5 and 17 years old are receptive and appreciative of the truth. The physical destiny of the child is determined by the seventeenth year, so that the habit of prophylaxis should be indelibly instilled in its mind during this period. It is through the children that we must enlighten the public and establish a habit of preserving the mouth and teeth. Attempts are being made to impress on the minds of children the value of oral prophylaxis, but a concerted, united, universal movement is needed in order to achieve results. The strategic value to the professions alone, gained by securing the confidence and cooperation of the children, is reward well worth striving for, even if there is no monetary compensation. The boy of to-day is the man of the morrow; the girl of to-day is the mother of the future. Therefore give us the public school children of America and we will enforce sanitation; avert epidemics; starve pestilence; produce a nation of thinkers

and workers, possessing sound minds in robust bodies, instead of a race of toothless drones, dyspeptics, hypochondriacs, prospective lunatics and degenerates. Give us the school children and we will solve the most intricate problem in oral economics, establish the cause of practical oral prophylaxis in the minds of the American public forever; popularize dentistry so that it will reach a degree of usefulness hitherto undreamed of, and elevate surgery to the highest pinnacle of fame in the estimation of the public.

Prof. Charles W. Eliot, of Harvard University, has well said: "The subject of the care of the children's teeth in the public school is only a part of the general forward movement which should enlist every force of society, private and public, for behind it lies the movement of the whole people for improved government, preventive medicine and improved facilities and conditions of labor."

Believing this statement to be correct, I conclude that the basic proposition is that oral prophylaxis is an economic problem in the school room demanding immediate solution.

PROPHYLAXIS AS AN ECONOMIC PROBLEM IN THE SCHOOL ROOM

The mouth may become the "gateway of evil." Through this "gateway" myriads of germs may pass back and forth into the alimentary canal whence they can infect the human body; while by the reversal of the process the mouth may be infected by germs from distant diseased organs. From 1,500 to 11,000 pathogenic bacteria are inspired every hour by healthy persons.

Dr. S. E. Tracey has recently called attention to the importance of oral prophylaxis to the abdominal surgeon in preventing pneumonia after anesthesia, and septic infection, after operation on the abdomen. Medical and dental journals contain frequent references to these points, and the testimony is both ample and conclusive from the practitioner, from the press and from the bacteriologist.

Therefore the statement that every time a diseased person breathes, coughs, hawks, sneezes, or spits, he sets in motion ever-widening vibrations of bacteria-infected air, is of peculiarly sinister import in reference to the school room. The school may become a menace to the health of the commonwealth. Epidemics may originate from oral infection. The commonwealth faces an economic problem in prophylaxis. It is cheaper to prevent disease than it is to treat it. It is easier to preserve children from suffering than it is to cure them. You would rather save your own children from suffering than have a chance to display your skill as a surgeon. Why not save them from loss of time, loss of education, loss of service, loss of health, possibly death?

If we attempt to solve this economic problem as a world-wide proposition, we are appalled by the magnitude of the task, but if each dentist will handle the problem as it lies at his door, namely, in the nearest public school, the solution is easy. The avenue through which we must get into touch with the public is the introduction of oral prophylaxis into our schools. Accustom the children to the sight and skilful use of surgical and dental instruments so that confidence and desire for oral care will supplant terror and aversion to mouth surgery. Enlist the public school children of this country in the crusade for oral prophylaxis; by advocating it assist in the work, and you have solved the problem.

ORAL PROPHYLAXIS IN RELATION TO SCHOOL DENTISTRY

Oral prophylaxis is being urged in the public schools throughout New Jersey, New York, Massachusetts, Michigan, Pennsylvania, and other states. Its introduction is advocated wherever an opportunity occurs. In some cities the movement is meeting with success. I will summarize some of the recent work accomplished in the East.

Dr. J. Wagner states that in Elizabeth, N. J., among the 1,000 pupils examined, 76 per cent. had defective teeth. "If there were some means of inducing every child to use a tooth-brush and powder, at least in the morning, fully 50 per cent. of the carious teeth would not exist."

The mouths of 1,525 school children in Ann Arbor, Mich., have been examined by Dr. Russel W. Bunting. He finds in pupils from 5 to 17 years of age 2,068 carious teeth, 142 cases of malocclusion, 3 cases of Hutchinson teeth, and 7 high V-shaped arches.

In Butler, Pa., out of 1,015 children examined, 994 had teeth needing immediate attention and 325 had never visited a dentist. In Erie, Pa., 1,271 children needed attention out of 1,411 examined. Dr. W. F. Harrer examined 247 pupils in the public schools. About 3 per cent. used the tooth-brush daily; 1,699 teeth were defective; 29 had putrescent roots. Sordes and congested gums were marked.

In New York City, with its 800,000 children of school age, and an enrolment of 630,000 pupils, there is but one school dental clinic established, and that in connection with an industrial school. Dr. H. L. Wheeler, head of the clinic, states less than 10 per cent. of the children of the city receive dental care; about 75 per cent. of the New York school children have never been inside of a dentist's office. Rochester led the movement in this country in 1905 by establishing free dental school clinics.

In Brookline, Mass., out of 1,284 children examined, 63 (12.5 per cent.) were rated as good, 428 (33½ per cent.) as fair or bad. Boston has a population of over 100,000 school children. It is estimated that 75 per cent. (75,000) need dental treatment. Dr. David S. Scannell, a member of the Boston School Board, declares that the college clinics, hospitals and dispensaries are unable to provide dental treatment for these children. He admits the need, deplores the condition, and excuses the school board on account of lack of funds. Boston and hundreds of other cities are put to shame by the little city of Strasburg, with its \$60,000 building devoted to the prevention of human suffering by free dental treatment of public school children. It is not lack of dollars, but lack of sense; it is not lack of interest by the practitioner, but it is lack of consent and cooperation bestowed by the authorities, that retards the introduction of oral prophylaxis by dentists for the benefit of the public school children. If these were freely accorded, ways and means of defraying the cost would soon be found in this country.

Mexico has established free dental school clinics.

The effort to introduce oral prophylaxis is more advanced abroad than at home. "The treatment of children's teeth in public schools is a subject of live interest in Europe and engaging the attention of the chief cities." The Second International Congress on School Hygiene, held in London, at which 2,000 delegates from all parts of the world took part, with the treatment of children's teeth in public schools as the chief topic, is proof of this interest.

School dentistry has been considered of such vast importance that it has already been adopted by thirty-

three of the chief cities of Germany and fifteen cities of other countries. Oral prophylaxis has reached a high state of development and usefulness in Germany. Mülhausen, Darmstadt, and Strasburg possess model school clinics.

In 1902 a dental clinic was established in Strasburg which is now maintained by the state and operated for the benefit of children of school age. "This establishment has for its object the sanitation of the mouth in the young, accustoming the children and parents to a rational care of the teeth, thereby elevating the general health of the people at a modest expense." The results have proved that, although dental treatment is one of the most important factors in maintaining good health, no other institution can be worked so successfully at such a small expense. In five years' work in Strasburg and suburbs, 90,017 children, altogether, from the elementary and intermediate schools, received free treatment. The feasibility of this scheme should appeal to municipal and state authorities when the amazing results are shown that the average cost of examinations and extractions was but seven cents each, and the average cost of treatment and fillings less than twenty-five cents each. In Strasburg the municipal government has authorized the erection of a building for the dental treatment of school children, at a cost of \$60,000 (Report of Professor Jessen).

In Great Britain, Dr. William Fisk, Secretary of the School Dentists' Society of England (founded in 1898), informs me that the dentists appointed at a fixed salary per annum to take charge of the pupils' teeth can do their work to the best advantage to themselves and their charges in the poor law schools of Great Britain. The poor law and destitute children are well looked after with the sanction and approval of the local government board. The vast elementary school population, representing the working classes, numbering about six millions, have nothing done for them. In many instances, dentists do the necessary work in benevolent institutions supported by the public schools of England.

In 1900, at the Third International Dental Congress in Paris, Dr. Elof Forberg, of Stockholm, announced the results of the examinations of 16,000 public school children in Sweden. Professor Limberg, of St. Petersburg, Russia, found that 95 per cent. of children's teeth decayed between 5 and 16 years of age.

The importance of oral prophylaxis was discussed at St. Louis by the Fourth International Dental Congress, and it has been kept before the profession by the many national organizations since, notably in Austria, Belgium, Denmark, France, Germany, Great Britain, Italy, Japan, Mexico, Russia, Sweden, Switzerland, United States. The boards of dental examiners in the United States now ask from three to five questions on oral prophylaxis in examining candidates for a license to practice dentistry, in accordance with the agreement reached with the National Association of Dental Examiners in 1907. The efforts of these organized representatives of the general practitioner of dentistry, as well as the educational institutions of the civilized world, are causing the movement to take more definite shape and enlist the active cooperation of the most intelligent members of all professions. Will the American Medical Association endorse the introduction of oral prophylaxis among the children of our public schools by dentists?

I would submit five propositions for consideration:

1. Oral prophylaxis is the art of preventing disease, deformity and injury to the mouth by means of manipulation, instrumentation and skilful surgical treatment.

2. Practical application of oral prophylaxis (prevention by surgical instrumentation) should be made in behalf of public school children.

3. The consent and active cooperation of the school authorities is the most essential consideration now to secure the introduction of oral prophylaxis into the public schools by dentists.

4. The practical application of oral prophylaxis is a problem in economics, because it is the most effective means of combating the spread of contagious disease from oral infection among the public.

5. The solution of the problem lies in the establishment of free dental school clinics for the introduction of oral prophylaxis by dentists.

425 Cooper Street.

ABSTRACT OF DISCUSSION.

DR. A. ZENTLER, New York: The essayist makes the statement that in New York there is only one clinic in connection with the Children's Aid Society Industrial Schools. I presume that it is since the essayist got his information that the second clinic was established, as it had been in existence only a short time. The Strasburg clinic is not supported by the state but by the city. Its establishment is mostly due to the efforts of Dr. Jessen. The city authorities of Strasburg would have done nothing had it not been for Dr. Jessen's efforts. He has proved to the city the need of school clinics, and the city has given its aid. In this connection I think perhaps it would be a step in the right direction in this country, in order to prompt the authorities to do something to this effect, if the dentists in a body were to take some action through which they will prove the necessity of the clinic. In a paper which I read before the First District Dental Society of the State of New York about a year and a half ago, I emphasized this. I have tried to show to the members of that society that the success of the school dental clinics abroad and free dental clinics in general was due only to the profession proving the necessity for these clinics by first doing free work, and then showing that it cannot be continued unless the city or state gives support. I do not mean to say that I feel it is the duty of the profession to go ahead and do this work from a charity standpoint, because that would not be right; but I mean to say that members of the profession must prove first that it is needed, and in this way force the city and state into keeping up what they have begun. This has been done in Germany, Switzerland and France. It has also been done in England, although I cannot state with certainty that in England the city or state gives support to it.

Another point which Dr. Jessen has proved is that in order to do what is necessary for the children in schools, and for that matter in any free dental clinic, the dentists in charge should be paid by the city or state and paid so liberally that they can afford to refrain from private practice. Dr. Jessen believes that no man can take care of a clinic and have time for private practice. In New York there are 300,000 children who need dental care, and unless a man can give his entire time this cannot be accomplished. Of course it is hard to do it in this country, because I do not believe that there is here a system of pensioning after a certain number of years, similar to the one existing in Germany, where a dentist giving his service to a free dental clinic becomes an employee of the city or state—what we call here the civil service—and as such is entitled to an increase in his pay from year to year, and after a certain number of years of service to be retired on a pension. With such prospects, one may refrain from private practice. All the efforts that are made in this direction seem to me to be rather futile until some measure is taken by the profession at large, and perhaps this section, in representing dentists in the American Medical Association, is the proper channel through which the necessity of such a movement be put before both the profession and the authorities.

DR. E. A. BOGUE, New York: It is evident that Dr. Zentler does not realize the necessity for plowing up the field and harrowing and sowing seed before gathering the crop. Many years ago Dr. Atkinson worked for years in New York and

Brooklyn to establish clinics. Seven or eight years ago a man at the head of the Hamburg clinic wrote me to be very careful not to try to establish a dental clinic where the operators were not paid, for it would be sure to fail. This was apropos of an effort made to utilize a gift which had been made in New York and was to become valid as soon as the testator died, and which would devote a certain portion of the income to the care of the teeth of the poor. I wish to emphasize the necessity for all these preliminary efforts which are being made. I also second Dr. Zentler's statement that possibly this body may be of great importance in urging prophylactic measures of all kinds which shall be exerted in behalf of the indigent children and paid for by the state or city as the case may be.

DR. A. IRWIN, Camden, N. J.: The dentist has been accused of practicing dentistry from selfish motives, and to a certain extent he is guilty; but it is also a fact that the dentist has done his duty on many occasions by pursuing his profession for the benefit of mankind. I believe it is the duty of every practitioner to give a certain amount of his time and work without compensation. The physicians in the public schools have been so generous as to monopolize entirely the examinations for discovering the physical condition of the pupils, to the exclusion of the dentist. As a practitioner I am tired of that state of affairs. I think it is about time the dentist was admitted as a member of the corps of examiners to examine the teeth and mouth of the school child. I have been engaged in this work since 1896 in New Jersey, and have met with such determined opposition that the movement was necessarily abandoned for a time. In 1900 while abroad I picked up some information which compelled me to conclude that the United States was far behind other countries in this respect and that we were really guilty of neglect in not attending to the teeth of the children of the public schools. We do not want to pauperize the children of the public schools. If the movement is put on the basis of a dispensary or a free clinic, then the children are pauperized; whereas, if a clinic is established for public school children alone, they take a certain amount of pride in it and they will seek services there and will spread the information broadcast. I am glad that the fact has been brought out that Dr. Ernst Jessen was the father of this movement in Germany. My information comes directly from Professor Jessen and also from Dr. William J. Pike, who is not only a dentist but is now the American consul at Kahl Baden. I think that this Section on Stomatology of the American Medical Association is the proper body to indorse this movement, and this paper was written with the object of soliciting the interest of the members and securing their endorsement of the movement for establishing free dental clinics for public school children.

THE NATIONAL FORMULARY

ITS GENESIS, CHARACTER AND UTILITY *

HENRY P. HYNSON, PHARM. D.

BALTIMORE

Coming from those who had most to do with the conception and inauguration of the National Formulary and from those who have maintained it and are largely responsible for its present character, I confess all things, own all things demanded by truth, and from those who would unkindly criticize and condemn I ask the same tribute to truth, as it lays bare, in proper sequence, contemporary conditions that are exactly responsible for what the formulary has been and is to-day. In this generous, open frame of mind, we shall be able to reason harmoniously together.

"Eye of newt and toe of frog,
Wool of bat and tongue of dog,
Adder's fork and blind worm's sting,
Lizard's leg and owlet's wing."

* Read in the Section on Pharmacology and Therapeutics of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

While entirely fanciful and not a formula for the relief of trouble, this quotation illustrates the principle underlying the original compound prescription, its superstitious origin and haphazard ensemble little less pointedly than do several formulas now holding place in the Pharmacopeia than does compound mixture of glycyrrhiza, containing opium, with all its alkaloids, camphor, benzoic acid, antimony and potassium tartrate, nitrous ether, alcohol, as potent agents, combined with extract of glycyrrhiza, after which the mixture is misbranded (according to Kebler), wine, sugar and acacia; and such as the formula for compound cathartic pills, containing extract of colocynth, aloes, resin of scammony, gamboge, resin of jalap, mercurous chlorid, soap and cardamon.

It may be wondered if, in the ages of anesthetized gravity that are to come, the witches of our day will be made to sing:

Lymph of goat and gland of sheep,
Scum of oil from well, bored deep.
Juice of bugs and pig's ovum,
Horse's blood and milk that's bum.

Why not acknowledge, without contest, the depth of ignorance from which we are slowly, very slowly, but surely emerging; ignorance—better to say want of knowledge—peculiar to no century of the world's history and characteristic of all peoples. If we are not now blessed with the exact and complete knowledge necessary to lead us out of or away from the error and abuse of the compound prescription, we are happy and blessed in knowing the kind of knowledge necessary to finally make our way clear. "What is the exact condition?" "How does it compare with normal conditions?" "What is the effect of the agents I may command on the first and on the second condition?" "How may one condition be changed to the other with the agents I can command?" When these questions are accurately answered, the compound prescription will disappear, though the modified agent may not. And then will physiology, pathology, pharmacology and therapeutics have set the lamp of truth before pharmacy. It is both illogical and unfair to charge pharmacy with insufficiency and fault, when it must, of most natural and reasonable necessity, follow these other branches of medical science.

Let the pharmaceutic enthusiast be pardoned for claiming that it is because pharmacy has outrun these collaborative sciences (largely owing to the fact that pharmacy has been greatly assisted by the wonderful and more exact developments in chemistry and physics) that it has so often made missteps. The child, while still a child, is subject to the control of the parent and the question of responsibility, in such cases, is well established.

It was the want of knowledge, coupled with too much knowledge, about the middle of the last century, strange as this may seem, that forced an avalanche of specialties on the medical world. The newly found ability to produce concentrated forms of medicines and to separate active principles, together with a better knowledge of solvents and preservatives, made it possible for pharmacists, at that time, to produce many new and attractive forms of remedies, so-called, "elegant" forms, which were greatly encouraged by the regular practitioner of medicine, largely because of threatening activity of the disciples, true and otherwise, of the medical magician, Hahnemann, now so entirely eclipsed by the mystic metaphysics of the prophetess Eddy.

Let it be remembered that there was no Council on Pharmacy and Chemistry in those days—no restraining

hand of any kind—and the awakening came only when the physician was confused and the pharmacist was overburdened. Local formularies were thought to be the remedy and were, undoubtedly, the necessary starting-points for the reform. These were not conceived and brought forth entirely by pharmacists, but were often the suggestions of physicians, especially of physicians connected with hospitals. A number of these local formularies were published; almost every large city had one and the preparations of each were largely used by local physicians. In the preface to one of the earlier publications bearing date of March, 1867, we read: "The main object . . . in publishing these formulas is to produce a greater degree of uniformity in prescribing and compounding a number of pharmaceutical preparations of an unofficial character." In a note "To the Medical Profession," published in connection with another local formula (1884), we read: "The favor which some of the preparations of the so-called 'elegant pharmacy' have found with the medical profession during the past ten or fifteen years has induced many manufacturers of elixirs, syrups, emulsions, etc., to vie with each other in the introduction of new combinations or to imitate each other's products as soon as any of the latter appear to have acquired ready sale." Please notice when this imitating began, by whom it was first practiced and that it (the imitation of one manufacturer by another) was one of the causes that led, finally, to the advent of the National Formulary.

From this distant date there is no difficulty in discerning the difficulties and inconveniences arising from a multitude of local formularies, especially where there was much traveling. Physicians of wide reputations and their clients, at many different points, suffered most; and it was to consolidate the local formulas into one volume that the publication of the National Formulary was undertaken by the American Pharmaceutical Association. It was to insure uniformity, as far as possible, and to circulate information regarding local formulas that the work was first contemplated; and, while it was hoped that the formulas published would become standards, so far as character of contents and pharmaceutical structure were concerned, it was never intended that the book should be considered an ethical, therapeutic or pharmacologic standard for the medical profession. It has never been thought, by sensible pharmacists, that it is within their province to set such standards for medical men, or that it is the pharmacist's privilege to discriminate in supplying the demands of physicians who are recognized and reputable members of the profession. The American Pharmaceutical Association made an effort to furnish uniform and efficient formulas for preparations which were being largely prescribed by physicians in the different parts of the country in which the membership of the American Pharmaceutical Association resided. The requirements were that local formulas, to remain useful, must not be greatly changed and that the compilation must be sufficiently comprehensive to make it national in character. In other words, the National Formulary was a book of the times and for the times and intended to serve practical purposes, in all of which it demonstrated its utility.

The Formulary, undoubtedly, has served a good purpose and has developed and improved in all regards as rapidly as might be expected. Certainly its progress toward perfection has been much more rapid than was that made by the Pharmacopeia in its earlier days. The American Pharmaceutical Association would be rashly unjust to itself did it assume entire responsibility for

the therapy and nomenclature; the Association must share whatever is creditable as well as blameworthy with the medical profession in these particulars. For the pharmacy, including pharmaceutical chemistry, the Association should and must assume all responsibility.

The adoption of an unfortunate plan or policy for the earlier editions may be held to blame for most of the bad pharmacy. Nearly all the formulas were constructed in a manner which, it was thought, would enable the pharmacist to prepare, extemporaneously, sufficient of the preparations to meet immediate demands. This has been found to be impracticable and undesirable; when the formulas are constructed to provide for permanent products, the poor pharmacy complained of will disappear.

The recognition of the Formulary by the government has unexpectedly and greatly enhanced its importance and has led the American Pharmaceutical Association to order a complete and rigid revision. The next edition, therefore, will be as nearly ethical and scientific as the exigencies of actual, present-day medical practices will permit. The Formulary must still strive to meet the demands of the physician-pharmacist, the busy practitioner, the prescriber who is seeking variety of acceptable vehicles and the psychologist who needs placebos. It must meet the demands of the medical man who claims that he knows what he wants and insists on having it.

Touching these questions of elimination and additions, the last report¹ of the Committee on Revision of the Formulary quite pointedly and justly, I think, offers the following:

Touching the shortcomings, we recommend that conservative action is necessary in connection with the introduction of changes, that the needs of all classes of pharmacists may be met and that the question of what is or may be a medicinal preparation, or what may be obsolete or polypharmaceutical, calls for liberal interpretation for the purposes of the Formulary.

Regarding eliminations, the committee agrees with the chairman that the therapeutics or therapeutic incompatibilities of N. F. preparations are not within the province of the National Formulary Committee. The physician may reasonably be expected to know what he wants and if he chooses to prescribe preparations which are therapeutically incompatible, it is the duty of the pharmacist to supply what is ordered. The committee, therefore, feels that it is not justified in dismissing or rejecting any preparation simply because it is stated to be therapeutically absurd, but feels it to be its duty to supply formulas for medicaments which may be prescribed by physicians if the demand for these is sufficient to justify our attention and if an acceptable formula can be devised or obtained. We think that some such statement should be placed in the preface of the next edition of the N. F. Individual pharmacists may point out the absurdity of some of the combinations and aim to discourage their use and demand, but the physician must decide what he wants and if his therapeutics are at fault, it is not within the province of the National Formulary officially to criticize or correct them. Regarding detailed consideration of eliminations from the Formulary, the committee wishes to act conservatively and the matter has been referred to a subcommittee, which will report on any doubtful article on the basis of actual demand as shown by statistics or other information.

Your committee agrees with the chairman that the acceptance of formulas for any new preparation should be based on considerations of merit in the article, of demand for the same and on the reliability of any formula which may be offered. On the other hand, we must be equally careful to omit no meritorious preparations that conform to these requirements. The Formulary may also include and give suitable definitions for all articles that serve as ingredients

for preparations described therein and for which no standard of quality and identification is given in the U. S. P., or for which an authoritative standard may fail to be adequate for a correct recognition, either as to kind or quality.

It is only fair that special attention should be called to the misdirected attacks made by the hypercritical on a number of the formulas contained in the book and on those physicians who prescribe the resulting products. If it were known that many of these physicians are entirely unmindful of the inactive medicinal contents of the preparations and use them, just as the compound syrup of sarsaparilla and the compound mixture of glycyrrhiza of the Pharmacopeia are most used, as vehicles with regard for their taste, color and odor only, then this criticism would appear little less than ridiculous. It should, however, serve a good purpose in stimulating the Committee on Revision to offer a larger and more varied number of vehicles than have heretofore found place in the Formulary.

The American Pharmaceutical Association is deeply sensible of the honor done it and its publication by the patronage it has had from the medical profession, especially as represented in this great American Medical Association, its various organizations and subdivisions. The American Pharmaceutical Association also acknowledges, with much happiness, the honor done it and the assistance afforded by the recognition the general government has given the Formulary. Just and helpful criticism from all concerned is sincerely requested, and if praise and encouragement may be worthily bestowed such will be most gratefully received.

423 North Charles Street.

ABSTRACT OF DISCUSSION

DR. A. JACOBI, New York City: I am very sorry to be compelled to withdraw my confidence in the National Formulary. I have used the National Formulary because I felt sure that here I had the collective wisdom of a number of superior men. I felt sure when I prescribed one of the numbers in the National Formulary that I was on pretty safe ground, that the Association of Pharmacists should not expect any doctor to know all about incompatibles. Most physicians are very poor chemists, as Professor Hynson knows very well, and I have not the slightest doubt that a large number of prescriptions go into the drug store which provoke a smile—now and then a sneer. So far as I am concerned, I prescribe exactly according to the Pharmacopeia and National Formulary, and I have just been told that I am on very slippery ground. Now, if there is to be a new edition of the National Formulary I should say that the American Pharmaceutical Association is in honor bound to consult its own chemical knowledge and not the chemical ignorance of physicians. There are too many prescriptions in the Pharmacopeia, too many prescriptions in the National Formulary. In both of them we have been disappointed. The Pharmacopeia of the United States has degenerated; the so-called edition of 1900 is by far the inferior of the edition of 1890, a number of quack preparations have been included, and it is by no means to-day the correct and safe guide that it was considered formerly. If acetanilid is taken up bodily into the Pharmacopeia, as it has been, it is a sin and a shame and a scandal, for if there is any dangerous drug anywhere it is acetanilid. You may tell physicians five hundred times that they are dealing with gross poison in prescribing acetanilid, and to-morrow they have forgotten it. Whatever is printed they take for Gospel. We are a credulous people, and the pharmacists should know it. I do not know to what extent the Pharmacopeia is fortified by law, but there is one way out—that is, the American Medical Association should make its own Pharmacopeia and make a Pharmacopeia to suit itself. If physicians want the aid of the chemist or druggist, let them secure it, but there should be no mixed commission in which there may be influences. Among the better part of the medical

1. Proc. Am. Pharm. Assn., 1908, pp. 489-491.

profession there is a sufficient number of men to select from. There is a feeling that the commission is often misguided by those who have vast pecuniary interests. I say that here because I owe it to the profession of which I have been a member for more than fifty years. I love my profession the more I have any dealings with it. Now, I want that profession to be clean, but I want it to be made clean by having clean things to deal with. The Pharmacopeia as it stands to-day is not clean. If it is possible I shall look the matter up personally. I am in favor of the American Medical Association making for its own use its own Pharmacopeia and being guided by that. I have been talking Pharmacopeia to classes of medical students, at least once a year, since 1860. I have been warning them against prescriptions not their own. Medical students have always been poorly informed about prescription writing. This very day they are not taught prescription writing. That is why they fall into the hands of manufacturers' agents. The agents not only teach them how to use their products, but make sure of it. Never have I spoken of the Pharmacopeia without eliciting roars of applause. These very boys who furnished the applause have then been guided by the agents of the manufacturers and they don't know what to do with the Pharmacopeia and don't keep one on their shelves. It is the same old story again, and if the American Medical Association wants to do a very good thing it is to be a little more independent of outside powers.

PROF. H. P. HYNSON, Baltimore: I want to try to put the American Pharmaceutical Association in its proper position of a loyal servant to the medical profession. There are generals and other officers—we do not claim to be generals, we are good soldiers and obey orders given us by the medical profession. The very moment the members of the medical profession tell us what they wish to go into the National Formulary and what they wish us to leave out, both will be done. We want the assistance of the American Medical Association as represented by this body and, with that, we then will be able to act as good and faithful soldiers.

DR. A. JACOBI: I am glad to hear that. There are chemists in the American Pharmaceutical Association and in its council for the Pharmacopeia, and they should not tolerate prescriptions which contain incompatibles. If they find a prescription with incompatibles they should throw it out.

DR. C. S. N. HALLBERG, Chicago: I would like to correct the impression that has been given out concerning the National Formulary. There is not a single incompatible preparation in the National Formulary or the Pharmacopeia. There were a few which we have endeavored to correct, and it is possible through our work for the physician to prescribe pepsin and bismuth in the form of an elixir without being pharmaceutically incompatible. There may be some preparations that are therapeutically incompatible. We do not stand sponsors for such preparations. At the very last moment the chairman of the subsection on therapeutics said we must put in cataplasma kaolini because it was such a valuable therapeutic adjuvant in the treatment of pneumonia. How can pharmacists be blamed if the members of the medical profession do not prescribe chloral or bromid of potassium combined? Is that any reason why we should throw out the mixture, which is used vastly more than any preparation of the single articles? It is up to the physicians.

DR. A. JACOBI, New York City: I was led by Prof. Hynson to believe that there were incompatibilities of pharmacists' own making in the National Formulary, and that is what I spoke against. So we all, I hope, agree and there will be no fault to find in the next edition. The Formulary must not immortalize or realize the mistakes of the prescribing doctors, and if the Formulary will be one-third as long as it is now I think it will be good for all parties, for the druggist as well as the physicians.

PROF. J. P. REMINGTON, Philadelphia: The various articles in the Pharmacopeia are there because they were voted on by physicians. What goes into the Pharmacopeia, or what is taken out of it, is altogether in the hands of the physicians of the committee, the general committee ratifying their work. Besides that, I think that all the physicians are members of the American Medical Association, so that so far as the general

committee is concerned, while they vote on all the questions which are brought forward, the whole matter of the introduction was left in the hands of the medical members, and, besides that, I don't think there was a single member of the Committee on Revision who voted against the introduction of acetanilid, and I don't think that the medical profession would have been satisfied with the Pharmacopeia if it had omitted acetanilid.

DR. HENRY BEATES, Philadelphia: It seems to me that the general use of formulas is exponent of the degree of ignorance of the materia medica on the part of the general medical profession. I cannot understand how any physician can treat two children of the same age, suffering with, for illustration, acute laryngitis, with the one formula, and administer to those children, respectively, the same dose, and consider himself, in a broad sense, to be a qualified practitioner. I am one of those who believe in discarding all formulas that are peddled as therapeutic agents. The only formulas I use are those which are for rendering medicines palatable, and in no sense as medicines. The fundamental principles underlying the consideration of this entire subject belong to the science and art of pedagogy. As an examiner for medical licensure for fifteen years, the statement is warranted that, of the annual crop in Pennsylvania of about 500 "doctors," less than 4 per cent. are capable of correctly writing a prescription. When it is remembered that materia medica is commonly taught during the first year of the medical curriculum, at a time when the student knows practically nothing of anatomy, physiology and chemistry; having learned nothing whatever of disease, is it not absurd to expect from these undeveloped minds, memorizing and the comprehension of materia medica? Associate with this fact the common practice of examining such a class in materia medica at the end of the first year, and that for the remaining years of the curriculum practically nothing is taught of materia medica! If, in the medical curriculum, materia medica occupied a place by which only those students who are properly prepared to study it, would be taught, that is, during the third and fourth years, much of the evil we are discussing to-day would, undoubtedly, be eradicated. Thus it is that graduates and licentiates, incapable of writing a prescription correctly, are the easy victims of the commercial arguments of the wily agents of commercial, in a bad sense, medicine. Thus it is that "formulas" of claimed therapeutic value are administered to any and every one, in the same dose, and for the same disease, no matter what the conditions may be, and the art of applying means to an end, utterly lost, and "medicine" relatively valueless.

DR. F. E. STEWART, Philadelphia: The so-called proprietary medicine houses assume that the commercial introducers of new materia medica products, or of mechanical mixtures of old, well-known drugs under fanciful names, possess the natural right to the exclusive sale of these articles on account of being the first introducers, and, therefore, any person offering the same article for sale is guilty of fraudulent substitution. The following story told me by the late Mr. Thompson, a well-known pharmacist of Washington, D. C., explains the point: A representative of a "patent-medicine" concern called at his store and asked him to sign a paper promising never to substitute any other brand of sarsaparilla for that manufactured by his firm. Mr. Thompson replied: "The proprietary medicine houses claim that the original introducers are the sole proprietors of the products introduced by them. Is your house the first one to make sarsaparilla?" The representative answered, "No." "Well," said Mr. Thompson, "according to your own definition, you are guilty of fraudulent substitution yourselves because you are not the original introducers. Therefore you get out of my store, and never come here again asking me to sign a paper that you as representative of your house would not sign."

This suggests the question, "What is meant by 'natural right'?" Has an inventor or discoverer a natural right to prevent others copying his invention or discovery? Has the author of a book a natural right to prevent others copying his book? The question of natural right to writings and discoveries has been settled negatively by the courts, both in Great Britain and this country. When it exists at all, the right to prevent others copying inventions and writings is a creature of

statute and of grant, subject to the provisions included in the statutes and grants. Such grants are known as copyrights and patents, and the statutes are known as copyright laws and patent laws.

Closely related to this subject is the assumption of the proprietary medicine manufacturers that the names of their products are private property, because they are invented or coined words. Coined or invented names are not proprietary by natural right, nor can they be copyrighted by law, as may readily be ascertained by referring to the Librarian of Congress, who has issued an official circular stating that coined words cannot be copyrighted. Coined names may be registered in the Patent Office as trade-marks, but no grant to their exclusive use is obtained thereby. Any person has a perfect right so to mark his goods that the origin of a brand may be readily known to purchasers. This is a natural right and he is protected by common law. A manufacturer may use as his commercial signature or trade-mark any distinctive mark, device or word, but in so doing he does not acquire the right to prevent others using the same symbols for marking other classes of goods. But it is perfectly apparent that a name cannot at the same time perform the functions of both title and trade-mark; for the function of the title is to point out the class of goods, while the function of the trade-mark is to point out the manufacturer. Every article must have a name and identity of its own before it becomes possible to use any word as the name of a particular brand.

LACHRYMAL GLAND TUMORS

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EVANSVILLE, IND.

A knowledge of the anatomy of the lachrymal gland is of prime importance to one who undertakes an operation for its removal, and therefore I offer a brief description of it.

ANATOMY OF THE LACHRYMAL GLAND

In character it belongs to the acinous gland and occupies a place in the upper outer and anterior portion of the orbital cavity, being lodged in what is termed the lachrymal fossa on the under surface of the orbital plate of the frontal bone. While in close apposition with the overlying periosteal covering at this point, it is, nevertheless, but loosely connected therewith. Through the expanded insertion of the elevator muscle of the upper lid the gland is divided into a superior, more compact portion of grayish-red color, and an inferior or accessory portion of looser texture and in close relation with the superior conjunctival fornix. Investing the gland is a fibrous capsule, which has numerous connections with the lateral anchoring fibrous orbital supports, extending between the superior rectus muscle and the outer orbital wall, and with the supraorbital periosteum through the suspensory glandular ligament. The inferior surface of the gland is concave and inclined downward and inward, being so placed as to give a transverse measurement, according to Schwalbe,¹ of from 20 to 25 mm., while the antero-posterior measurement is but 12 to 14 mm.

REPORT OF CASE

The following case is not only interesting but serves to bring out the symptomatology, diagnosis and treatment of tumor formations involving this gland:

History.—M. J. K., a well-developed, robust, married man, aged 45, a river pilot by occupation, consulted me Oct. 23, 1907, because of a growing hardness over the right eyeball. He first became aware of it three to four years before the consultation, since which time it had slowly increased in size,

causing forward displacement of the eyeball with drooping of the upper lid. It had never been painful, but the eye when exposed to the inclement weather reddened and secreted tears.

Examination.—The cutaneous blood vessels were not unduly prominent, but at a glance marked ptosis was seen with forward, downward and inward displacement of the eye. Double vision did not exist and the patient denied specific infection. The left gland was not involved, neither had the patient glandular enlargement elsewhere in the body. On palpation a non-painful enlargement of the right lachrymal gland was detected through the drooping lid; it was of firm texture, smooth of surface and in size that of a small English walnut. The growth was semi-movable, without intimate connection with the overlying bony wall, and when strongly pressed on, partially receded within the orbit, with corresponding increase in the forward and downward displacement of the eye. The patient did not complain of loss of vision. With the left eye he saw 15/xv and with the right eye 15/lx improved to 15/xx with — 1.00 ey., ax. 60. The fundus was without detectable lesion.

A diagnosis of probable adenoma of the lachrymal gland was made, and the patient was given iodid of potash three times daily, with the suggestion that he make arrangements to lay off from work and enter a hospital to undergo an operation for removal of the growth.

Operation.—On Feb. 14, 1908, the patient was operated on at the U. S. Marine Hospital under ether anesthesia, Dr. J. B. Stoner, surgeon in charge at this port, kindly assisting. After the eyebrow had been shaved and the field of operation sterilized with sublimate solution, an incision was begun over the external angular process and carried along the bony orbital rim inward to about one-third of the length of the upper lid. The convexity of the cut was directed upward and included the skin, subcutaneous tissue and orbicularis palpebrarum muscle. With retractors the lips of the wound were held apart, and next the tarso-orbital fascia carefully divided on a line corresponding with the skin incision and reflected downward. The growth appeared in the wound after this incision and was firmly grasped, with fixation forceps and dissected out with blunt, curved scissors. The adhesions were most extensive along the mesial and posterior inner part of the gland. After the hemorrhage had been controlled by gauze packing the wound was closed by four interrupted sutures and a sterile dressing applied.

Postoperative History.—Double vision was not encountered after the operation, but there followed some suppuration which after a time subsided with permanent closure of the wound, and up to the date of writing there has been no recurrence of the growth. The result of the operation has been marked recession of the eyeball and the ptosis, with retention of vision as before the time of operation. The growth was hardened in a solution of formaldehyd and a portion sent to Dr. H. R. Alburger, pathologist in the Indiana University, to whose kindness I am indebted for the following microscopic finding:

Microscopic Examination.—Section consists of a glandular mass made up of a stroma of connective tissue which is largely hyaline in character. Held in the meshes of this are found a number of gland tubules lined with columnar epithelium. In the main these tubules are regular and lined with a single layer of epithelium, but in several areas there is a lack of regularity of the tubes and the epithelium is in several layers and even growing in irregular masses without any distinct limiting membrane and with cells which show mitosis. Some of the more typical tubes contain a mass of structureless material, resembling colloid. Others contain mucus.

Diagnosis.—Adenoma of lachrymal gland undergoing malignant change.

CLASSIFICATION OF TUMORS OF THE LACHRYMAL GLAND

Tumors of the lachrymal gland may be primary in nature or secondary. They may be benign or malignant, and either of solid or cystic character, and may involve one or both glands at the same time. Of the reported cases by far the greatest number have been benign in nature, or at least their removal has not been

1. Schwalbe: Lehrbuch der Anatomie des Auges.

followed by recurrence. Among the reported malignant growths we find the various sarcomas, chloroma and the different carcinomas. The pathologic histology of tumors involving these glands has led to considerable controversy and widely different conclusions. According to O. Becker and Rudolph Schirmer,² most of these tumors are properly classed as adenomas or adenoid formations, while Koester³ and others classify them as cylindromas. "Endothelioma" is a better designation, since if by "cylindroma" is not meant a tumor springing from the endothelial lining of the lymph spaces there must remain doubt as to just what writers do imply by the designation. I can see no reason for believing that new formations in this gland prove an exception to those found in other acinous glands, such as the pancreas and salivary glands, to which, according to Schenk,⁴ the lachrymal gland is histologically closely allied. I would in part reconcile the seeming contradictory views held by these investigators by the fact that tumors of the lachrymal gland, comparatively speaking, are of rare occurrence, and no one observer has met with a sufficient number of cases to establish therefrom a generally accepted basis of classification. A review of the histology of the benign tumors placed on record discloses that they have been of mixed character for the greater part, and this corresponds to what Weichselbaum⁵ states concerning those found in the salivary glands. It is my belief that as a rule all the tissues entering into the formation of the lachrymal gland are involved in the growths occurring therein, with the preponderance of overgrowth in those elements of mesoblastic origin, and hence I would designate them according to the prevailing type of tissue, fibroma, adenoma, adenofibroma, or adenoendotheliofibroma. The designation "endothelioma" may properly be combined as in the foregoing when columns of endothelial cells are seen forming a network and retaining in places a lumen. When this arrangement is lacking the tumor, if histologically of endotheliomatous cell formation, is to be classed as sarcoma. In both the benign and malignant growths one may find, in addition to the epithelial and inter-acinous connective tissue proliferation, cartilage, bone, hyaline and colloid degeneration.

ETIOLOGY

The present knowledge of the etiology of lachrymal gland tumors leaves much to be desired. Acute swelling of one or both glands may be the result of a general infection, such as mumps and erysipelas, or some local infection in some part of the eyeball, or result from traumatism. Chronic swelling of one or both glands may precede or accompany enlargement of the salivary glands and result from tuberculous or syphilitic infection.

Retention cysts, dacryops, arise after inflammatory occlusion of one or more of the excretory ducts, while cystic degeneration is met with in various morbid growths. Dermoid cysts spring from embryonic tissue incorporated in the gland, the same as in other parts of the body, while hydatid cysts are due to echinococci.

DIAGNOSIS AND PROGNOSIS

Save in the purely retention cyst, which is recognized by palpation as a soft fluctuating and perhaps lobulated

formation, disclosing on eversion of the upper lid a bluish translucent sac, diagnosis is largely conjectural. Resolution under specific treatment is presumptive evidence that we are dealing with gummatous tumor, this especially if both glands were affected. The boundary between simple glandular hypertrophy and adenoma is not a sharp one. Tumors of slow growth, smooth contour and firm consistence are apt to be benign in nature and hence offer a favorable prognosis.

OPERATION

In case of retention cyst, excision of part of the anterior wall through the fornix conjunctiva with gauze drain, should be done rather than an attempt at extirpation of the sac which, because of the thinness of its wall, may be difficult or impossible of accomplishment. For other tumors I prefer extirpation according to the method previously outlined in the relation of my patient, or the outer canthus may be divided and the growth removed through an opening in the fornix conjunctiva.

CONCLUSIONS

All kinds of tumor formations, both of malignant and benign nature, are encountered in the lachrymal gland. In the main the growths are benign in character and of mixed type due to involvement of all the gland tissue, and, according to the preponderance of tissue overgrowth, histologically we may designate them as fibroma, adenofibroma, fibroadenoma or adenoendotheliofibroma. After thorough operative removal we are justified in the majority of cases—this especially where the tumor has been of slow growth—in giving a favorable prognosis recurrences being the exception.

501 Upper First Street.

SCOPOLAMIN AND MORPHIN IN NARCOSIS AND IN CHILDBIRTH

A REPORT TO THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION

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(Concluded from page 451)

OBSTETRICAL USES

The discussion of the advantages and disadvantages of scopolamin and morphin in surgical practice indicates some of its uses and limitations in obstetrics, but the conditions are different in many essentials, and those relating to childbirth will be discussed independently. The physiologic actions of scopolamin and of morphin must be borne in mind here not less than in the surgical use of these agents, and there are certain points on which stress must be placed, with reference to this application of the two drugs, hence the pharmacology will be again considered briefly.

PHARMACOLOGY

Scopolamin passes across the placental circulation and appears in the first urine of the new-born child, and it is excreted into the colostrum for a variable period after its administration to the parturient woman, according to the experiments of Holzbach. Kehrer found that scopolamin caused excitation of the perfused uterus, but

2. Schirmer: Graefe-Samisch Handbuch der Gesamten Augenheilkunde, vii.

3. Koester: Virchow's Arch. f. Path. Anat., 1867, xl, 468.

4. Schenk: Grundriss der normalen Histologie des Menschen.

5. Weichselbaum: Grundriss der pathologischen Histologie.

it is improbable that this plays an important rôle in the dose in which scopolamin is used.

Steffens states that there is normally a lowered perception in labor, and simultaneously there is central motor irritability, which explains the increased susceptibility of the parturient woman for scopolamin. Steffens also states, as the result of experiments on himself, that the perception is not a reliable guide for the further need of scopolamin.

Scopolamin is said to be excreted fairly rapidly in the urine, but the prolonged sleep which occasionally follows its use would seem to indicate that at least a part may remain for some time in the central nervous system.

The extraordinary toxicity of morphin for the newborn child gives added importance to the questions of the behavior and of the fate of that alkaloid in the organism. Unfortunately, we are much in the dark regarding this behavior. Marquis thinks that a part of the morphin at least is destroyed by animal oxidases, and Cloetta believes that certain cells take part in its destruction, while Faust maintains that the normal animal excretes morphin unchanged. Only traces of morphin are found in the urine, the greater part being excreted into the gastrointestinal canal. It is probable that a portion of that which passes into the stomach is reabsorbed into the circulation until finally excreted by way of the intestine. Still more important, so far as the infant is concerned, is the fact that traces of morphin are excreted into the colostrum or milk, and these traces are sufficient to cause intoxication in the new-born.

Von Steinbüchel (1902) was the first to suggest the use of scopolamin and morphin in childbirth. He describes the method in his second paper, in which he gives the details of 20 cases of labor in which he used initial doses of 0.3 milligram (1/200 gr.) scopolamin and 1 centigram (1/6 gr.) of morphin, occasionally 0.4 milligram (1/150 gr.) scopolamin. In 3 cases there was copious hemorrhage after the child was delivered. In the earlier cases von Steinbüchel gave a second dose of scopolamin if required, not less than two hours after the first, and only one-half as large; in some of the later cases he gave the same amount in the second dose as in the first. His caution in the use of scopolamin in childbirth contrasts favorably with the boldness with which it was used in surgery at the same period. It is by no means certain that others have succeeded in improving on von Steinbüchel's results, and his paper should be read by those who employ scopolamin and morphin in childbirth. He calls attention to the fact that the study of the problems concerned in its use cannot be pursued satisfactorily in general practice.

Gauss is given the credit usually for developing the technic of the "*Dämmerschlaf*," or "twilight sleep," a condition which has been described as that in which perception is retained to a greater or less degree, while the memory is impaired or lost.

It is not easy to determine just what is meant by the term, however, for, after having spent six weeks in Krönig's clinic in the effort to acquire the technic, Mansfeld calls attention to the prevalent erroneous impression that the method is intended to abolish the suffering of labor, whereas it is intended only to prevent memory of the event. But six months later we find the statement made by Krönig himself that the "twilight sleep" renders childbirth almost, or entirely, painless. The title of Krönig's paper is "*Schmerzlose Entbindungen in Dämmerschlaf*" ("Painless Labor in Twilight Sleep"). The question seems to involve the problem whether forgotten pain and painlessness are synonymous.

Gauss' technic is described in *THE JOURNAL*, Oct. 12, 1907, p. 1299, but Mansfeld stated that despite the four publications of Gauss' which had appeared (1908), there were many points which had not been made clear in the literature. Gauss maintains that success depends on a close adherence to the technic, but several observers who had studied this technic under Gauss report that they were unable to obtain such favorable results as he reports. This question must be left to obstetricians, but the dose and its effects require consideration.

Gauss states that rarely (1 in 1,000 cases) 0.3 milligram (1/200 gr.) of scopolamin and 1 centigram (1/6 gr.) of morphin will suffice for a case of childbirth, occasionally 1.2 milligrams (1/50 gr.) of scopolamin and 2 centigrams (1/3 gr.) of morphin will be required.

The latter dose may be borne by the woman in suitable cases without ill effects, but it is obvious from what has been said that it requires extreme care and discernment to select the cases in which such doses can be considered safe. Gauss' report appears to indicate that he has acquired the requisite skill and discernment to enable him to use the method with greater safety than other methods, but it must be remembered that we have no statistics with which to compare his records, since it is obvious that he must select the cases which are suitable. And, furthermore, as Krönig has said in answer to the complaint that the technic is too complex, that it is admittedly complex, but that it is the result of long years of study of the question.

There is practically a unanimity of opinion on this essential point, that the successful use of scopolamin and morphin in childbirth requires the utmost attention to details. It is confessedly an extremely difficult and tedious matter to secure the necessary action without overstepping the bounds of safety. The truth of this is obvious when one remembers what has been said repeatedly of the variable and uncertain action of scopolamin and the mixture with morphin. The successful use of these agents requires not only a great deal of experience and judgment in question of obstetrics, but also in the use of these particular agents in obstetrics.

Hocheisen (1906) reported on the use of scopolamin and morphin in 100 cases of labor in which the death of one child was attributed to these agents. This and numerous other disadvantages, including atonic hemorrhage and prolongation of labor, which Hocheisen urged against the method, called forth a reply from Gauss, who attributed the mishaps to a want of correct technic, but Hocheisen's paper created a profound impression, and unquestionably deterred many from using the method.

ADVANTAGES

Among the advantages claimed by the supporters of the use of scopolamin and morphin in childbirth are:

1. Memory of the event is lost.
2. Pain is lessened or abolished.
3. There is less hemorrhage.

1. *Memory Abolished.*—The testimony of the large majority of observers leaves little doubt that the woman rarely retains any memory of the labor or its suffering, and it is said that she often expresses surprise when she is told that it is over. Krönig maintains that the memory of labor is frequently the beginning of a psychosis that may be very persistent, the modern conditions of life being such that childbearing has ceased largely to be a physiologic process, and the loss of the memory of labor prevents such psychoses. If Krönig's contention is correct, the necessity for care in the use of scopolamin

and morphin is even greater than it would be if labor were a purely physiologic process, for it is the normal organism which is least susceptible to these narcotics and which show dangerous symptoms seldom or not at all after small doses, but it is the abnormal animal, the one with lowered resistance, which occasionally succumbs.

2. *Lessened Pain.*—Testimony is conflicting in regard to the immediate effect of scopolamin and morphin on pain, and this is not remarkable, in view of the fact that the woman is in a semiconscious state and has an almost complete loss of memory. It seems that there is often an entire absence of pain and that more frequently the pain is greatly lessened.

3. *Lessened Hemorrhage.*—The data concerning the effects of scopolamin and morphin on postpartum hemorrhage do not suffice for a positive opinion. While Gauss observed less hemorrhage with this method than the average without it, it is impossible to say how much of the diminution is due to the technic aside from the use of scopolamin and morphin, and how much to the selection of cases. It is possible that the action of scopolamin on the uterus which Kehrer observed, may favor contraction and thereby lessen hemorrhage, but, as previously stated, this action is probably negligible with therapeutic doses.

DISADVANTAGES

While the advantages of scopolamin and morphin in childbirth are too technical for extensive consideration in this place, the disadvantages are better suited for discussion. The disadvantages include nearly all of those discussed in connection with the surgical uses of these agents, and in addition, the following are peculiar to childbirth:

1. Danger to the child.

2. Miscellaneous minor disadvantages.

1. *Danger to Child.*—The dangers to the child are due to a variety of causes, and a full consideration of them would involve a discussion of the whole problem of the use of scopolamin and morphin, for it is obvious that anything that is injurious to the mother must prove hurtful ultimately to the child.

The most immediate source of danger to the child proceeds from the action of scopolamin and morphin on the respiration. Nearly every observer reports a greater or less number of children who are asphyxial when born. It is one of the cardinal principles of medicine to avoid the use of narcotics, and particularly morphin, with infants, and it is difficult to believe that its use is wholly devoid of injurious actions. Whether the harm outweighs the benefits to the mother is a problem which cannot be answered here. Steffens maintains that the temporary interference with the infant's vital functions is by no means so harmless as Gauss supposes. Krönig maintains that this point is too abstruse for decision. Nevertheless, it is a question which we must strive to answer in the light of experience gained with a knowledge of the physiologic actions of the mixture, as well as of the separate constituents, and of the fact that the infant does not escape these actions *in utero* and immediately after birth.

A number of infants' deaths have been attributed to scopolamin and morphin, but the question involves so many points of dispute that it is impossible to say how many deaths the mixture has caused. Veit admits that the method may have certain advantages in some cases, but despite Gauss' favorable reports, Veit refused to permit any extensive trial of the method in his obstetrical clinic on the ground that it is too dangerous.

The dangers to the mother cannot be discussed here with reference to the statistics of the mortality in childbirth, since these show wide variations. Harrar reports 114 maternal deaths in 32,000 cases of labor (1 in 280) in the outdoor obstetric service of the Lying-in Hospital in New York City, while Goldsborough reports 55 maternal deaths in 5,000 cases of labor (1 in 91) in the Johns Hopkins Hospital.

It is quite obvious that if we cannot foresee which women will manifest an idiosyncrasy toward scopolamin and morphin, the chance is still more remote that we should be able to tell which unborn child will exhibit this peculiarity. While childbirth is, or should be, a purely physiologic process, it does not follow that all parturient women are in a physiologic condition, or that all new-born children will be healthy.

2. *Minor Disadvantages.*—The drowsiness which scopolamin and morphin induce with the sleep between pains has been held to secure rest for the woman, and this rest is said to enable her to expel the child more easily because of the more effective contractions succeeding the rest (von Steinbüchel), but the testimony appears to show that at best labor is actually prolonged. This is admitted by many of even the warmest advocates of the use of scopolamin and morphin, but they maintain that the slight increase in the duration of labor is of little consequence. The prolongation of labor is attributed to lessened reflexes in the absence of pain. Whether this is in any way counteracted by the action of scopolamin on the uterus cannot be stated.

The technic of the use of scopolamin and morphin, which is universally admitted to be essential to success, depends on a variety of conditions which cannot be fulfilled in the home, hence it is stated by nearly all investigators that the method is absolutely unsuited for general practice. Krönig states, however, that it depends on whether the general practitioner is willing to take the necessary time, care and trouble to insure success.

A minor disadvantage mentioned by Hocheisen is the appearance of the woman, which is almost certain to alarm attendants who are not accustomed to the method, and their alarm tends to interfere with the very conditions necessary to the successful use of these agents.

Whatever the future of scopolamin and morphin in narcosis and in childbirth may be—and the last word has not been spoken—the true value can be determined only after experience in which the physiologic actions of the separate constituents and of the mixture acting as a unit, are kept in view.

A fixed dosage is irrational in this, as in every other form of medication. Scopolamin and morphin must not be used without reference to the physical condition of the patient, the nature of operation or probable course of labor, and due caution born of a full knowledge of the peculiar idiosyncrasies of individuals, and of the extraordinary synergistic actions that are sometimes encountered. Then, and only then, can we hope to come to any definite conclusions as to whether the advantages outweigh the disadvantages. But for the general practitioner to attempt to solve these problems in the home and under conditions, many of which alone suffice to prevent success, and many of which produce effects which cannot be estimated correctly, is to court almost certain failure.

CONCLUSIONS

1. The use of scopolamin and morphin alone, and unsupported by chloroform, ether or other anesthetic, is wholly unsuited for general anesthesia.

2. The use of scopolamin and morphin preliminary to that of chloroform or ether has certain advantages, but it renders the problem of anesthesia more complicated, requiring extreme care, judgment and discretion.

3. There are numerous contraindications to the use of scopolamin and morphin, both in surgery and in childbirth.

4. It seems probable that scopolamin and morphin may have a sphere of usefulness in childbirth, as well as in surgery, but there are many details which require perfecting before they can become generally useful even in institutions.

5. Scopolamin and morphin are wholly unsuited in the present state of our knowledge, for use in general obstetric practice.

6. The pharmacology of scopolamin and morphin, and of the interactions of the two, are of prime importance in the study of their uses in surgery and obstetrics.

7. There is no possible excuse for the employment of ready-made mixtures (pills or solutions) of scopolamin and morphin, since each substance must only be used with reference to its individual actions, bearing in mind that these actions may be greatly augmented or modified by the other alkaloid.

8. The danger to the child must be kept constantly in mind, even when the utmost care has been exercised in the selection of cases suitable for the use of scopolamin and morphin in childbirth, and when small doses are ineffective in inducing the "twilight sleep," large doses should not be used.

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CONDITIONS SIMULATING TUBAL
PREGNANCY *

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This subject is of interest to every one called to make a diagnosis in acute abdominal affections. My remarks shall be confined to conditions simulating *early* tubal pregnancy. The cardinal symptoms of early tubal pregnancy are (1) a missed menstruation, (2) sudden onset of pain (with or without shock), (3) bloody vaginal discharge, (4) a tender mass beside the uterus, (5) only slight fever, and (6) exacerbations of the pain and enlargement of the mass without corresponding elevation of temperature. In atypical cases, there may be decided fever or onset of pains without missed menstruation or other variations from the rule. Again, the internal hemorrhage may be very severe at first, requiring a diagnosis at once before the appearance of later confirmatory evidences. It may be impossible to feel a mass, for the liquid blood itself gives no well-marked resistance and yet causes so much tenderness that the enlarged tube can not be satisfactorily palpated. Freshly coagulated blood gives a boggy mass, but not a distinctly outlined mass. After a short time there develops a distinct mass, due to the fibrin and adhesions and infiltration associated with the blood-clot.

The difficulties of differentiation are due largely to the fact that many cases of extrauterine pregnancy are atypical in symptomatology—presenting some of the prominent symptoms, but lacking others. Now there are other affections that may present two or three of the prominent symptoms of tubal gestation, and if the distinguishing characteristics of the other affection happen to be absent or obscured a mistake in diagnosis is probable. Time will not permit consideration of all the conditions that may simulate tubal pregnancy; only a few of the more common ones may be discussed. These may be grouped into two classes—first, those conditions in which the principal feature is a tender pelvic mass, associated with some of the other symptoms of tubal pregnancy, and, second, those conditions in which the principal feature is sudden abdominal pain and collapse without apparent cause, i. e., without the disturbances that usually precede or accompany collapse from other diseases.

* Read in the Section on Obstetrics and Diseases of Women of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909. Owing to lack of space, the article is here abbreviated by condensation of the case reports. The complete article appears in the Transactions of the Section and in the author's reprints.

A TENDER PELVIC MASS WITH OTHER SYMPTOMS OF
TUBAL PREGNANCY

GONORRHEAL SALPINGITIS

With no other disease have I experienced so much difficulty in differentiation from early tubal pregnancy as with salpingitis of gonorrheal origin. Typical cases of salpingitis are, of course, easily distinguished from typical cases of tubal pregnancy. The difficulty lies in the fact that either may be atypical, and as they become atypical they may approach each other until their manifestations are practically alike—that is, gonorrheal salpingitis (atypical) may produce the symptoms and signs of tubal pregnancy (slightly atypical). Such cases are not very frequent, but they are encountered occasionally in the examination of a large number of cases of supposed extrauterine pregnancy, and when encountered they prove most deceptive and misleading. In each of the following cases (some of which were mentioned in a previous article¹) the deceptive combination of symptoms was sufficiently complete to cause a mistake in diagnosis.

CASE 1.—*Old Gonorrheal Infection*.—Patient, aged 32, referred to me by Dr. J. D. Beatty, of Troy, Mo. Last normal menstruation August 10. In September went over time ten days. Felt as well as usual and supposed herself pregnant. No stomach disturbance or breast pains. About September 20 had a scanty flow for two days. She felt well and there was no further bloody discharge for two weeks, when it started again. A day later she was seized with severe pains extending all through the lower abdomen. No shock, just pain, at times cramp-like. This pain continued off and on for a week. Patient was confined to bed and had to be given morphin. A physician was called and made a diagnosis of abortion. No membranes passed and there was only one small clot. Patient was then curetted but not much was obtained—apparently only some thickened endometrium. No fetus or membranes or shreds of tissue were seen at any time. Patient felt better after the curettement, but still continued sick, confined to bed with abdominal pain and tenderness. Temperature 99 to 100. Twelve days later, as there was no material improvement, the uterus was curetted again, but without result. The trouble continuing, Dr. Beatty was called in consultation. The abdominal pains and tenderness continued and the temperature then (after the second curettement) ranged from 100 to 101. Six days after the second curettement the patient was brought to St. Louis and placed under my care.

Examination.—This showed the uterus retrodisplaced and fixed, and blended with a tender mass of adnexal origin extending into both sides of the pelvis. The average temperature was 100; pulse, 98; respiration, 20. The lowest temperature was 99.2 and the highest 100.6.

Diagnosis.—There was evidently serious adnexal trouble of apparently recent origin, and any of the following diagnoses was possible: (1) salpingitis following miscarriage, (2) an acute exacerbation of a chronic salpingitis, and (3) tubal pregnancy with repeated slight hemorrhages. Against the first were the low temperature (much lower than consistent with an acute infection of sufficient severity to cause the symptoms) and the absence of evidences of miscarriage. Against the second, were the low temperature with acute symptoms, no history of preceding severe symptoms indicating old suppuration in the pelvis (though there had been mild pelvic distress for some years) and the association of the trouble with missed menstruation, followed by sudden onset of pain and the appearance of an irregular bloody vaginal discharge. If due to an old inflammatory trouble one would expect the menstrual flow to be increased instead of missed, and the pain and other symptoms to be of rather gradual onset and increasing in severity as fluctuation appeared in the mass. In favor of the third (tubal pregnancy) were missed menstruation followed by sudden onset of

pain, irregular bloody discharge, absence of positive evidence of a miscarriage, and the presence of fluctuation in the mass, associated with low temperature (much lower than was consistent with a pocket of pus). It seemed a fairly clear case of tubal pregnancy—one of the class frequently met, in which there is no great loss of blood at one time, but repeated slight hemorrhages with a gradually increasing mass. Accordingly that diagnosis was made.

Operation.—On opening the abdomen no tubal pregnancy was found. The trouble was chronic adnexal inflammation—there being a tubo-ovarian abscess on the left side, which gave the fluctuation, and chronic salpingitis on the right side, the remaining part of the mass being formed by adhesions and exudate. The damaged adnexa and the chronically inflamed appendix were removed and the uterus fastened forward.

The patient made a prompt recovery with complete relief.

Careful bacteriologic investigation of the removed adnexa showed no bacteria of any kind. This excluded recent infection. The case was evidently one in which there was a gonorrheal infection long ago (there were confirmatory facts in the history), the development of pyosalpinx with only slight symptoms of a mild character, the death of the bacteria (which commonly takes places in gonorrheal pyosalpinx), and the persistence of sterile pus in a sac which acted as an irritating foreign body in the pelvis. No evidence of pregnancy was found. Why the menstruation was missed I can not say. In some other cases of gonorrheal salpingitis I have encountered this misleading symptom.

[The author reports three instructive cases bearing on this subject (Cases 2, 4, 5) from the Gynecological Department of Washington University Hospital, and mentions a case reported by Butler² (Case 6) and refers to the fact that other similar cases of *chronic gonorrheal pyosalpinx* very closely simulating tubal pregnancy have been reported. Because of lack of space, it has been necessary to omit details of cases here and at several other places in the article, but the omitted details are given in full in the Transactions and also in the author's reprints.—Ed.]

CASE 3.—*Acute Double Salpingitis*.—Patient, aged 19, referred to me by Dr. George F. Chopin, of St. Louis. About two weeks after marriage she failed to come unwell properly. At the menstrual time there was a slight bloody discharge, but not a good menstrual flow. There was some soreness and pain in the pelvis. After this had continued a few days she was seized with sudden severe pain in the lower abdomen, accompanied by shock. With the weakness and faintness and pain she could hardly move, even to turn over in bed, for several hours. The severe pain gradually subsided but marked soreness remained, so much so that the patient was obliged to lie very quiet. A physician who was called examined the patient and said that she was having a miscarriage. A partial curettement was carried out, but only a small amount of blood was removed. No fetus, membranes or large clot was passed at any time. The patient and her husband then became uneasy at the apparent seriousness of the trouble and the day after the curettement called Dr. Chopin, who asked me to see the patient.

Examination.—The patient was confined to bed with pain in the lower abdomen and a bloody vaginal discharge. There was marked tenderness on abdominal and bimanual examination, and there was a boggy induration on each side of the uterus with marked tenderness. No membranes or shreds were found in the cervix or in the bloody discharge. The discharge was blood and mucus, without noticeable pus admixture. The trouble seemed to be around the uterus rather than in it. The temperature was low, fluctuating between 100 and 101. Here was a patient, apparently previously healthy, seized with a severe abdominal pain and decided shock, associated with imperfect menstruation, an irregular bloody discharge, a tender mass partially surrounding the uterus, and low temperature. I made a tentative diagnosis of tubal pregnancy with some internal hemorrhage, but not being entirely satisfied, I concluded to watch the case for a while.

Under mild sedatives and strict confinement to bed the patient became very comfortable. The temperature ran about

1. Crossen, H. S.: Ectopic Gestation Symptoms in Gonorrheal Salpingitis Cases, read before the Missouri State Medical Association, May 20, 1909.

2. Butler: Brooklyn Med. Jour., 1903, xvii, 140.

100. After a few days she felt so much better that, without my permission, she began to go to the washstand. On one of these trips across the room she was seized with pain and almost fainted before she could reach the bed. There was then more pain and pelvic soreness and an increase in the tender mass about the uterus. I then insisted on the patient's removal to the hospital, where she was kept under observation for five days longer. On admission the temperature was 101.2; pulse, 100; respiration, 24. There was considerable abdominal pain, requiring a sedative occasionally. The next day the temperature was 99 and for four days did not go above 99.6. In the meantime the patient felt comfortable, could sleep well, her appetite returned, and the pelvic soreness diminished. The bloody discharge continued. The fifth day, without apparent cause, the abdominal pain returned and became very severe. The pulse rose to 132; temperature, 100.6; respiration, 24. On examination the tender pelvic mass was found to be larger. The tentative diagnosis of tubal pregnancy seemed confirmed by the spontaneous recurrence of severe pain, the rapid pulse, and the continued enlargement of the pelvic mass with low temperature.

Operation.—When I opened the abdomen I found there was no extrauterine pregnancy, but instead an acute double salpingitis, with leakage of pus into the peritoneal cavity and the formation of extensive adhesions. The tubes were so badly damaged that I thought best to excise them. After establishing free drainage of the infected area, I explored the interior of the uterus, thinking that possibly there had been a miscarriage after all, with infection following it; but no evidence of pregnancy was found.

The patient recovered without particular incident.

Examination of the pus from the tubes showed gonococci in abundance and in pure cultures. The case was one of gonorrheal infection following marriage, the infection affecting the vagina but slightly and passing rapidly up into the uterus and tubes and out into the peritoneal cavity. A striking fact, and perhaps the most misleading one in this particular case, was the absence of the usual evidences of acute gonorrheal vaginitis (burning on urination, vaginal tenderness, and free purulent discharge). These were so slightly marked that there was no suggestion of the trouble being acute gonorrhea. The purulent character of the discharge was obscured by the blood in it. Had I examined the discharge microscopically, gonorrhea would at once have been evident.

MISCARRIAGE WITH OTHER ABNORMALITY

CASE 7.—*Miscarriage and Ovarian Tumor.*—Reported by Brown.³ A patient who had missed the menstruation for three weeks and had all the symptoms of pregnancy, was attacked with pains through the lower abdomen. A physician was called and found the patient confined to bed, with abdominal pain, partial suppression of urine, temperature of 102.5, and evidently severe inflammation from some cause.

Examination.—The uterus was found pushed back by a large mass in the right side of the pelvis. The physician watched the case for four or five days, and felt confident that the trouble was tubal pregnancy, with rupture, hemorrhage, and resulting inflammation. Dr. Brown, who was asked to see the case, made the same diagnosis.

Operation.—This revealed an ovarian cyst and general peritonitis. Exploration of the interior of the uterus showed that there had been a recent abortion. The miscarriage was evidently the cause of the peritonitis, which eventually proved fatal.

CASE 8.—*Miscarriage and Ovarian Tumor.*—Reported by Fortun.⁴ A patient who had missed the menses, had pains in the lower abdomen, followed by bloody discharge. The evidences of abortion were not sufficiently distinctive to justify a positive diagnosis of the same. In the presence of this suspicious history, examination revealed a tender mass in the pelvis beside the uterus, and a diagnosis of extrauterine pregnancy was made. Operation revealed that the trouble was an ovarian tumor associated with an early miscarriage.

CASE 9.—*Miscarriage and Broad-Ligament Tumor.*—Reported by Fortun.⁴ This case presented practically the same features as the preceding one, namely, missed menses, abdominal pain, bloody discharge and a tender mass beside the uterus. Diagnosis, extrauterine pregnancy. Operation demonstrated that the symptoms were due to a tumor (sarcoma) of the broad ligament, associated with an abortion.

PREGNANCY WITH ABNORMALITIES

There are various anomalous conditions that may cause an intrauterine pregnancy to simulate an extrauterine pregnancy.

CASE 10.—*Pregnancy with Hydatidiform Mole.*—Mrs. S., aged 21, came into my service at the St. Louis Mullanphy Hospital, with a diagnosis of extrauterine pregnancy. There had been no menstruation for two months, and there were the usual symptoms of early pregnancy. Recently the patient had been having attacks of pain in the lower abdomen, accompanied by a bloody discharge. These attacks of pain had been irregular—at times severe and confining her to bed, while at other times she was able to be about the house. Finally they became so disabling that she was brought to the hospital.

Examination.—When I saw her she was confined to bed, with a mass the size of an orange pushing forward the anterior abdominal wall just above the pubes. The mass was firm, painful on pressure, partially fixed, and it was here that the patient located the pain and distress. There was a bloody vaginal discharge. Temperature, pulse and respiration were practically normal. On bimanual examination the deeper portion of the mass could be made out, and it was found to be the size of a child's head. Indistinct fluctuation was obtained. The body of the uterus could not be made out, but the impression obtained was that the mass lay in front of the corpus uteri, which was pushed backward and could not be felt on account of the mass. The forward projection of the mass against the abdominal wall was very marked.

I was inclined to agree with the diagnosis of extrauterine pregnancy, but was not entirely satisfied, as I had not located certainly the body of the uterus. I concluded to watch the case for a while. The patient was kept absolutely quiet and sedatives were given as needed for the pain. The patient was better for a time but later the pain recurred. It troubled her every day, at times quite severely, but could not be identified as uterine contraction pains. No variation in the consistency of the mass was noticed. The bloody discharge continued. A few very small clots were noticed, but no membranes or shreds. I continued the observation for ten days, and the longer I observed the more confusing the conditions became. The process, whatever it was, was progressing rather rapidly. In the ten days the mass had enlarged decidedly and the pain had increased—so much so that at the end of the period it was evident that something must be done, as further prolongation of the trouble would seriously weaken the patient, who was not very strong at the beginning. The crucial point, which so far I had been unable to decide, was whether the mass was uterine or extrauterine.

Operation.—I decided to examine the patient under anesthesia, having everything ready to operate in case the mass proved to be extrauterine. Under the complete relaxation of anesthesia I was able to determine that the cervix expanded symmetrically into the mass, which was thus identified as the body of the uterus. It was found, however, to be twice as large as it should be at that period of pregnancy. This abnormal enlargement with the prolonged bloody discharge and the increasing pain made it evident that there was some serious pathologic condition within the uterus and not a normal pregnancy. I dilated the cervix slightly, and there escaped several small cysts. That made the diagnosis plain, and I then dilated the cervix widely and removed from the uterus a beautiful specimen of hydatidiform mole. The uterine cavity was literally packed with the grape-like bunches of minute cysts characteristic of this condition. No trace of a fetus was found. The patient recovered without further trouble, and has since

4. Fortun, E.: Three Mistaken Diagnoses of Extrauterine Pregnancy, *Rev. de med. y cirug. de la Habana*; abstr. in *THE JOURNAL A. M. A.*, 1905, xlv, 364.

3. Brown: *Am. Gynec. and Obst. Jour.*, 1897, x.

given birth to two children, the pregnancy, labor and puerperium in each case being normal.

CASE 11.—Pregnancy with Hysteria and Uterine Displacement.—While I was in charge of our city hospital for women (St. Louis Female Hospital), a patient was brought into that institution on a stretcher, suffering severe abdominal pain and apparently very sick. The suffering was so great that the history was obtained with difficulty. She had missed the menses about four months, and the usual symptoms of pregnancy had been succeeded by irregular attacks of pain which culminated in the severe attack which caused her to be hurried to the hospital.

Examination.—The abdomen was sensitive and the muscles rigid. In the right lower abdomen there was a distinct mass, very painful to touch. On bimanual examination it was found that this mass extended down into the right side of the pelvis, which it largely filled. It was about the size of a child's head, extremely tender, apparently fixed and presenting indistinct fluctuation. The cervix was somewhat softened. The body of the uterus could not be made out on account of the marked tenderness and the resulting muscular rigidity, which interfered with deep palpation. The pulse was rapid but of fair volume. There was no fever. I was quite certain that the trouble was extrauterine pregnancy. Examination under anesthesia, however, showed that it was an intrauterine pregnancy. The fixed and tender mass in the right side was the pregnant uterus, which was freely movable under anesthesia.

After the examination, the symptoms largely disappeared and the patient was able to leave the hospital in a short time. The misleading features were the severe abdominal pain and tenderness, associated with a lateral pelvic mass which was extremely tender (hysterical hyperesthesia) and fixed (by the rigid contraction of the abdominal muscles) and which could not be identified as the body of the uterus (because of the marked softening just above the cervix, and also because of the impossibility of deep palpation). Anesthesia removed the difficulties at once and permitted a correct diagnosis.

This case and the preceding one serve to emphasize the necessity of careful examination under anesthesia before operation in all such doubtful or uncertain cases. It must be kept in mind, however, that when tubal pregnancy is suspected the patient should be placed in a hospital and prepared for operation before the examination under anesthesia is made, for if the trouble is tubal pregnancy the manipulations of the examination may cause rupture and hemorrhage, requiring immediate operation.

CASE 12.—Pregnancy with Irregular Softening of Uterus.—A patient with supposed extrauterine pregnancy was brought to St. Louis by her physician and placed under my care. About five months previously she had missed her menses and presented the usual symptoms of pregnancy. Three months later she had abdominal pains accompanied by a bloody discharge from the uterus. The bleeding stopped but the pain recurred at irregular intervals and there was an enlarging mass, which could not be identified as part of the uterus. Her physician called several others in consultation and the consensus of opinion was that the pregnancy was extrauterine; hence she was brought to St. Louis for operation.

Examination.—I found a very puzzling condition. The body of the uterus was irregular in shape and irregularly softened, and gave at first the impression of a fairly firm mass not connected with the cervix, the portion immediately above the cervix being so softened as to be hardly palpable. After examining for some time, it was finally determined that the mass was the enlarged and pregnant corpus uteri. The rhythmical hardening of the uterine wall aided materially in the differentiation. By prolonging the examination, I was able to feel the previously softened portion harden under the finger, and could then make out that the upper part of the cervix expanded symmetrically into the mass in question. After working out the diagnosis, I was able to demonstrate it satisfactorily to the patient's physician, who examined her with me.

CASE 13.—Pregnancy with Retroflexed Uterus.—Reported by Royster.⁵ Patient, aged 22, married sixteen months, missed her menses three times in succession, had nausea and vomiting, and also tenderness of the breasts. Then she had an attack resembling cholera morbus and a slight bloody stain from the genitals, but no distinct hemorrhage. The signs of pregnancy then became less marked. She complained of pain in the lower abdomen, especially in the left side, and of frequent and painful urination.

Examination.—There was found a mass chiefly in the left side of the pelvis and pressing down the posterior vaginal fornix. It was boggy and tender to the touch. The uterus appeared to be pushed to the right side and was intimately associated with the mass. A sound was readily introduced into the uterus to the depth of three inches, indicating that the uterus was about normal in depth and was empty. A diagnosis of extrauterine pregnancy was made and the patient operated on accordingly.

Operation.—This revealed a retroverted pregnant uterus, twisted somewhat toward the left, and with the wall softened irregularly. There was no extrauterine pregnancy. The uterus was brought into correct position and a small cyst of the ovary removed. The patient recovered without incident and the pregnancy continued.

CASES 14-17.—Davis⁶ reported a case of *pregnancy with retroflexed uterus* (Case 14), Fieux⁷ *pregnancy with antero-lateral flexion of uterus* (Case 15), Leopold⁸ *pregnancy and salpingitis* (Case 16), and Morel⁹ *pregnancy with torsion of enlarged tube* (Case 17), all of which were mistaken for extrauterine pregnancy.

TUMOR WITH ANOMALOUS SYMPTOMS

When a pelvic tumor, previously unrecognized, happens to be accompanied with missed menstruation and sudden pain and decided tenderness, the resemblance to tubal pregnancy may be most misleading.

CASE 18.—Broad-ligament Cyst, with Intracystic Hemorrhage.—Mrs. D., aged 26, admitted to the Gynecologic Department of Washington University Hospital. Married five months. Previous menstrual history normal—menses regular in appearance, duration four days, no pain. One month after marriage menstruation was missed for seven days. Then a bloody flow appeared. It was profuse, accompanied by clots and lasted about nine days. About two weeks later the patient had a fall, which was followed by pain in the left side of the pelvis and lower abdomen, and this persisted. The succeeding months there was a menstrual flow, but it was less than the usual amount. The patient continued sick, had to give up work and was obliged to lie down at times. There was loss of appetite and for two months decided nausea when riding in a car, but this became less. There was also tenderness of the breast, which had diminished during the last month. There had been no fever. The patient complained of pain in the left lower abdomen. Temperature was 99, pulse 90, and respiration 20.

Examination.—The uterus was found forward, to the right and movable. The left side of the pelvis was occupied by a mass the size of a large orange, fluctuating and tender on palpation. The diagnosis was doubtful, with the probability in favor of tubal pregnancy.

Operation.—This revealed a parovarian tumor cyst into which hemorrhage had taken place. The cyst was easily enucleated from its bed in the broad ligament, and subsequent examination of it in the laboratory positively excluded extrauterine pregnancy. The patient recovered without particular incident.

CASE 19.—Parovarian Cyst with Twisted Pedicle and Salpingitis.—Patient, aged 22, admitted to Gynecologic Department of Washington University Hospital, very ill and complaining of pains through the lower abdomen.

Examination.—A large mass was found, filling the right side of the pelvis and extending up into the lower abdomen,

5. Royster: Charlotte Med. Jour., 1903, xxii, 1.

6. Davis: Am. Jour. Obst., 1902, xlii, 359.

7. Fieux: Med. Rev. of Rev., xi, 678.

8. Leopold: Monatschr. f. Geburtsh. u. Gynäk., 1905, xxi, 712.

9. Morel: Bull. et Mém. Soc. anat. de Paris, 1903, lxxviii, 863.

half way to the umbilicus. This was painful on palpation and indistinct fluctuation could be made out. The uterus was pushed to the left. All the pelvic structures were apparently bound together and fixed by adhesions. Patient was pale and complained of a constant pain in the abdomen, of a dull character. Temperature, 99; pulse, 80; respiration, 20. For ten weeks past the menstruation had been very irregular. For nearly a month there was a constant bloody discharge, then it stopped for a few days, then came on again for a few days, and then stopped entirely. For five days before entering the hospital there was no menstruation, not even a trace of blood. There was a free mucopurulent discharge. During the period mentioned there had been considerable pain throughout the abdomen, and two weeks before entering the hospital the patient had had a very severe attack of pain. She was confined to bed for a few days and had been lying down off and on ever since. The mass was too large and of too rapid development to be due to the inflammation, which was apparently of mild grade. There was no previous history of a tumor. There had been some pain, off and on, during the previous year, but nothing to suggest serious trouble.

The patient was kept under observation for seven days. The temperature ranged from 98 to 99.4, once going to 100, but never higher. The pulse ranged from 80 to 92. The mass continued to enlarge and the pain increased, requiring sedatives, in spite of the fact that the patient was kept absolutely quiet in bed and that the temperature continued low. There had been a tentative diagnosis of tubal pregnancy and this progress under observation and the continued absence of the menstruation tended to confirm it.

Operation.—The mass was found to be a parovarian cyst with twisted pedicle, universal adhesions and a complicating pyosalpinx of the same side. Free drainage was employed and the patient recovered.

CASE 20.—Ovarian Tumor with Symptoms of Pregnancy.—In a case reported by Fortun,⁴ the patient presented symptoms of early pregnancy with accompanying abdominal pain and disturbance. Examination revealed that there was no pregnancy within the uterus, but that beside the uterus there was a tender mass. Diagnosis, tubal pregnancy. At operation the mass proved to be a dermoid cyst of the ovary.

A number of such cases of tumor with anomalous symptoms simulating tubal pregnancy have been reported, but it is hardly necessary to take the time to detail them here; the three cases just mentioned are typical of this class.

ABDOMINAL PAIN AND COLLAPSE

When a married woman in the child-bearing period is seized with severe abdominal pains, without apparent cause, and passes into the condition of collapse associated with severe internal hemorrhage, we naturally think of ruptured tubal pregnancy as the most probable cause. If there happens to be missed menstruation or some of the other symptoms of tubal pregnancy, and the examination reveals nothing else to account for the pain and shock, a tentative diagnosis of tubal pregnancy and action accordingly is certainly justified. As prompt action may be necessary to save the patient's life, such action must sometimes be taken on evidence which would be considered insufficient were the indications less urgent. Under such conditions the diagnosis of ruptured tubal pregnancy is largely a matter of exclusion. For, as previously stated, the pelvic examination often gives no definite evidence beyond the tenderness. Hence the importance of carefully considering other conditions that may cause these symptoms. There are many such conditions, but I shall mention only certain ones which are especially liable to be confounded with ruptured tubal gestation.

CASES 21-26.—Royster⁵ reported *hemorrhage from the ovary* (Case 21) and Weinbrenner¹⁰ reported two similar cases

(Cases 22, 23) and Pryor¹¹ reported three such cases (Cases 24, 25, 26), the patients all having been subjected to operation on a mistaken diagnosis of tubal pregnancy.

In cases of ovarian hemorrhage, care must be taken to exclude ovarian pregnancy at the site of the hemorrhage before deciding that it is due to some other condition. Some of the so-called "blood-cysts" of the ovary are, no doubt, unrecognized instances of ovarian pregnancy.

CASE 27.—Unrecognized Ovarian Pregnancy.—Related by J. K. Kelly.¹² He operated on a woman, aged 33, for supposed extrauterine pregnancy and found only a blood cyst of the ovary about the size of a plum. The ovary was removed and the case set down as one of mistaken diagnosis. Some months later, and quite incidentally, a microscopic section was made through the wall of the little cyst, and examination of this showed chorionic villi. A careful and systematic examination was then made of the small cyst and its surroundings, and it proved to be a beautiful specimen of early ovarian pregnancy.

CASES 28-30.—Vineberg¹³ reported an *ovarian cyst with rupture* (Case 28) mistaken for extrauterine pregnancy, and Riesmeyer¹⁴ and Brettauer¹⁵ each reported a case of *hematosalpinx with internal hemorrhage* (Cases 29, 30), requiring operation for the hemorrhage, but in which the diagnosis of tubal pregnancy was absolutely disproved by most careful microscopic examination of the affected tubes.

The fact is sometimes overlooked that tubal swellings of hemorrhagic character are not necessarily due to pregnancy in that situation. Since Tait's famous dictum, that "hematosalpinx is always due to extrauterine pregnancy," there has been a tendency among operators to look on this as a rule without exceptions. That there are exceptions, however, there is abundant proof. A number of well-established cases have been reported. As a rule, such differentiation is not of great practical moment, for the reason that treatment of the two conditions is the same, namely, removal of the damaged tube. In some cases, however, it may be extremely important to determine certainly the character of the mass before expressing an opinion as to what it is. Such an instance came to my notice. I was not connected with the case, but was apprised of the facts afterward. Some years ago a pupil nurse in one of our hospitals was attacked with serious abdominal disturbance requiring operation. When the abdomen was opened there was found a hemorrhagic condition of one tube resembling tubal pregnancy. The operator at once pronounced it tubal pregnancy in the presence of several internes and nurses. The information spread through the hospital with a result to be easily imagined. The young woman recovered from the serious operation only to find herself in a situation almost unbearable, and she finally left. In the meantime, examination of the mass by a competent pathologist showed that it was not a tubal pregnancy and that a most serious mistake had been made in pronouncing it such.

CASE 31.—Tubo-ovarian Hemorrhage.—Bovee¹⁶ reported a case in which, at operation, there was found a tubo-ovarian hemorrhagic mass, supposed to be tubal pregnancy, but which proved to be only inflammatory. Both the tube and ovary were distended with blood, and there was a small opening through the fimbriated extremity connecting the two cavities. The hemorrhage apparently originated in the ovary, and the free intraperitoneal bleeding came through a small rupture in the wall of the ovarian blood-cyst. A thorough microscopic examination demonstrated that there was no pregnancy either in the tube or ovary.

11. Pryor: *Am. Jour. Obst.*, 1902, xvi, 360.

12. Kelly: *Jour. Obst. and Gynec. Brit. Emp.*, June, 1906.

13. Vineberg, Hiram N.: *The Differential Diagnosis of Ectopic Pregnancy*, *THE JOURNAL A. M. A.*, 1901, xxxvi, 1205.

14. Riesmeyer: *St. Louis Med. Rev.*, Aug. 4, 1908.

15. Brettauer: *Am. Gynec. and Obst. Jour.*, 1897, x, 622.

16. Bovee: *Am. Gynec. and Obst. Jour.*, 1898, xii, 593.

10. Weinbrenner: *Monatschr. f. Geburtsh. u. Gynäk.*, xxiv, No. 3.

Bovee mentioned cases of tubal and ovarian hemorrhage, not due to extrauterine pregnancy, reported by Price,¹⁷ Newman,¹⁸ Griffiths,¹⁹ Briggs,²⁰ Croom,²¹ Paul Ruge,²² Goodell,²³ Duncan,²⁴ Pilliet,²⁵ Maurange,²⁶ Peuch²⁷ and Doran.²⁸ He referred also to cases occurring in virgins at an early age, reported by Fordyce;²⁹ to fatal cases reported by Walter,³⁰ Lewis³¹ and Fowler;³² to cases successfully treated by abdominal section, reported by Boldt,³³ Alloway,³⁴ Knaggs,³⁵ and Johnson;³⁶ and to the celebrated cases of Scanzoni in which at an autopsy on the body of a young girl, dying suddenly during menstruation, three liters of blood were found in the peritoneal cavity. These hemorrhages from the non-pregnant ovary (ovarian apoplexy, blood-cysts, follicular hemorrhage, etc.) and from the non-pregnant tube (hematosalpinx) are usually due to inflammatory changes, causing degeneration of the tissues and of the contained blood vessels. Occasionally a tumor of the ovary or tube is the causative lesion.

CASES 32-34.—Manton³⁷ reported a case of hemorrhage from varicose vein of broad ligament (Case 32). Fairbairn³⁸ salpingitis with collapse (Case 33), Ford³⁹ perforative appendicitis with pelvic tumor (Case 34), all mistaken for extrauterine pregnancy.

CASE 35.—*Fulminating Pelvic Edema*.—Reported by Briggs.⁴⁰ A married woman, whose menstruation had been normal, came complaining of malaria and some pelvic pain. Pelvic examination showed nothing abnormal except a slight fulness about the left adnexa. Two days later the patient returned to the office, very sick. Her face was pale and pinched and anxious; pulse 120, small and weak; temperature, 100. The pelvis was then completely filled with a fluctuating mass. The rapid development of the mass with almost no fever, pointed to hemorrhage as the cause, and a diagnosis of tubal pregnancy was made. At the operation the pelvis was found filled with small cysts of various sizes, formed by collections of serum within the connective tissue. There was no tubal pregnancy. The pelvis was drained and the patient recovered.

CASES 36-38.—Briggs⁴⁰ reported another case of *fulminating pelvic edema* (Case 36) simulating tubal pregnancy, and cites in detail two other cases, one reported by Legueu (Case 37) and the other by Jocet (Case 38).

The cases of fulminating pelvic edema present a puzzling problem in etiology and in diagnosis. The following case, though not mistaken for tubal pregnancy, illustrates the startling suddenness of the development of the trouble and the obscurity of the cause.

CASE 39.—*Fulminating Pelvic Edema*.—Last year I was called in consultation by Dr. S. T. Bassett of St. Louis, to see a patient with pelvic disturbance. It was Sunday; the patient had attended church in the morning feeling fairly well, but while there became very sick and could scarcely get home.

She had a chill, followed by severe headache and general aching, but no localizing symptoms. There was no apparent local trouble in any part of the body to account for the fever, which rose to 105.5. By evening there was evidence that the pelvis was the seat of the disturbance and I was asked to see the patient.

Examination.—I saw her about 10 p. m. The temperature had been reduced to 104. The pulse was rapid but of fair volume. The pelvis was filled with a tender mass which surrounded the uterus and fixed it firmly. There seemed to be acute pelvic inflammation with extensive exudate. But there was no apparent cause, either recent or remote. The patient had always been rather nervous and this had been somewhat worse of late, but there had been no symptoms indicating pelvic disease of any kind. The next day the temperature was 104.2, pulse 120, respiration 28, and there was much peritoneal irritation. Operation at once was indicated, to check the rapidly progressing inflammation, if possible, and accordingly the patient was taken to the hospital.

Operation.—When the abdomen was opened the pelvis was found filled with small encysted collections of fluid involving the tubes, ovaries, broad ligament and uterus. The cysts or pseudocysts were of various sizes, were filled with clear serum and seemed to extend deeply into the substance of the organs involved. From the appearance, I suspected hydatid disease. I removed all the cysts that it was feasible to remove and then drained the pelvis through the abdominal incision.

The temperature dropped within a few hours to 98 and it did not again go high. During the first part of the period of convalescence it ranged from 99 to 100.2, and later dropped to normal, where it remained. The wound and drainage tract healed rapidly and the patient had a smooth convalescence. Laboratory examination of the tissues removed showed no bacteria of any kind, no evidence of hydatid disease, and no specific pathologic process that would adequately account for the alarming symptoms and the marked tissue change. It was evidently a case of fulminating pelvic edema.

REMARKS

From the thirty-six cases above mentioned which simulated tubal pregnancy the following practical conclusions may be drawn:

1. Gonorrheal pyosalpinx, after the acute symptoms subside, may lie dormant and unsuspected for a long period (four years in one case reported above). During this quiescent period the pus-tube (containing sterile pus usually) is tolerated the same as a small tumor or other non-irritating body—the patient being practically well and without decided pelvic disturbance.

Such a quiescent pus-tube may at any time give rise to an acute exacerbation, and the onset of the pain may be so sudden and apparently causeless as to suggest tubal pregnancy. This suggestion is strengthened by the continued enlargement of the mass (from irritative exudate) without decided fever (for the pus is sterile). Accompanying the exacerbation or preceding it there are sometimes other symptoms that we associate with tubal pregnancy, viz., missed menstruation, stomach disturbance, tenderness of the breasts, and softening of the cervix uteri. The last three are accounted for by the peritoneal and periuterine irritation and congestion, but why there should be delayed or missed menstruation at this inopportune time I do not know. One would suppose that the irritation and pelvic congestion would cause the menstrual flow to be excessive rather than absent. It is possible that the temporary suppression of menstruation (from some nervous disturbance or other obscure cause) stands in a causative relation to the acute exacerbation with its subsequent symptoms. I offer this simply as a suggestion toward a possible explanation of this strange and misleading sequence of events (the missed menstruation followed by the other symptoms detailed).

17. Price: Am. Jour. Obst., 1892, xxv, 338.
18. Newman: Am. Jour. Obst., 1893, xxvii, 271.
19. Griffiths: Brit. Med. Jour., 1896, ii, 1824.
20. Briggs: Liverpool Med. Chir. Jour., 1890, x, 504.
21. Croom: Med. Press and Circular, London, 1891, li, 189.
22. Ruge: Centralbl. f. Gynäk., No. 24.
23. Goodell: Am. Jour. Obst., 1890, xxi, 942.
24. Duncan: Tr. London Med. Soc., 1892 (Sajous's Ann. Univ. Med. Sc., 1893).
25. Pilliet: Ann. de gynéc. et obst., 1893, xi, 366.
26. Maurange: Ann. de gynéc. et obst., 1893, xi, 37.
27. Peuch: Gaz. hebdomadaire de méd., 1859, vi, 40.
28. Doran: Tr. Obst. Soc., London, 1891, xxxii, 119.
29. Fordyce: New York Med. Jour., 1889, xlix, 180.
30. Walter: Med. Bull., Philadelphia, 1881, iii, 181.
31. Lewis: St. Louis Med. and Surg. Jour., 1888, xlv, 158.
32. Fowler: Ann. Anat. and Surg. Soc., Brooklyn, 1880, ii, 67.
33. Boldt: Ann. Gynec. and Pediat., 1890-91, iv, 6.
34. Alloway: Montreal Med. Jour., 1893-4, xxii, 679.
35. Knaggs: Tr. Obst. Soc., London, 1893, xxxv, 213.
36. Johnson: Tr. Soc. Alumni, Bellevue Hosp., New York, 1896, p. 137.
37. Manton: Tr. South. Surg. and Gynec. Assn., 1900.
38. Fairbairn: Jour. Obst. and Gynec., Brit. Emp., 1907, xii, 451.
39. Ford: Am. Jour. Obst., 1902, xlvi, 361.
40. Briggs, Wallace A.: Fulminating Pelvic-Abdominal Edema Simulating Ruptured Tubal Pregnancy, THE JOURNAL A. M. A., Feb. 15, 1908, i, 528.

In cases of supposed tubal pregnancy of the type mentioned particular care should be taken to exclude chronic gonorrheal salpingitis, as follows: (a) by inquiring into the patient's history for evidences of specific vaginitis or urethritis and for subsequent pelvic symptoms (an inquiry into the husband's history also may bring out valuable information); (b) by a careful examination for evidences of a chronic urethritis, Bartholinitis, endometritis or salpingitis; and (c) by staining for the gonococcus any suspicious discharge that may be obtained from the urethra, vulvovaginal glands, uterus or vagina. In chronic cases negative findings do not exclude gonorrhea, for the gonococcus disappears from the discharge after a time.

2. In rare cases acute gonorrhea may extend rapidly through the uterus to the tubes and peritoneum, with so little disturbance of the vagina and vulva as to arouse no suspicion of its presence. In such a case the acute peritoneal symptoms will come on suddenly and without apparent cause. If there happens to be also delayed or scanty menstruation, tubal pregnancy may be suspected. And this suspicion is strengthened by the stomach disturbance, the softening of the cervix and the enlarging mass beside the uterus. In my case above mentioned the diagnosis was further obscured by the curettement, which modified the discharge, and by the continued low temperature, which seemed to exclude acute inflammation. In all such doubtful cases with acute discharge it is advisable to examine for gonococci, even though the discharge be scanty and bloody and apparently non-purulent.

3. An early miscarriage, if associated with a tumor or followed by mild salpingitis, may very closely simulate tubal pregnancy. Membranes may be passed in either condition. With a miscarriage there is an embryo, but it often passes unnoticed. If a shred of tissue is passed it may be examined for chorionic structures. In a case which can not be decided otherwise, curettement is advisable to obtain tissue for microscopic examination for chorionic villi. But in suspected tubal pregnancy such a curettement should not be carried out until the patient is in a hospital and prepared for abdominal section, for the manipulations may start internal hemorrhage, requiring operation at once.

4. A pregnant uterus may present very misleading conditions: e. g., irregular softening (so much so that the body seems to be a firm mass entirely separate from the cervix), displacement, backward or forward or laterally; hyperesthesia with displacement or irregular softening or an associated lateral mass (salpingitis, etc.). If there is in addition an anomalous history, a mistake is quite probable.

5. An unsuspected tumor in the pelvis may give rise suddenly to severe disturbance, and if there happen to be present also some of the symptoms of early pregnancy, a diagnosis of extrauterine pregnancy is very probable. The cases mentioned above show that the early symptoms of pregnancy (missed menstruation, stomach disturbance, breast tenderness and softened cervix uteri) often appear without satisfactory cause and at most inopportune times.

6. Ovarian hemorrhage or tubal hemorrhage, due to other conditions, may so closely simulate extrauterine pregnancy as to be indistinguishable before operation, and in some cases the matter is in doubt even after direct exposure and handling of the affected structures. In this connection there are three points to be kept in mind: (a) there may be slight hemorrhage from the tube or ovary, particularly at the period of menstrual

congestion, not due to extrauterine pregnancy and not requiring operation; (b) in cases of tubal hemorrhage requiring operation the hemorrhagic condition of the tube is not necessarily due to pregnancy, and in doubtful cases should not be pronounced such until after confirmation by microscopic examination; (c) in a hemorrhagic condition of the ovary requiring removal of the same; a careful examination should be made to determine exactly the pathologic condition. Such a supposed simple "blood-cyst" of the ovary may prove on careful microscopic examination to be an early ovarian pregnancy.

7. Salpingitis, appendicitis and perforations in the gastrointestinal tract may, in rare cases, come on so suddenly and progress so rapidly as to suggest internal hemorrhage from extrauterine pregnancy. Usually in these conditions there are preceding or accompanying symptoms which point to the true nature of the disease. If these distinctive features are absent and there happen to be some of the other symptoms of tubal pregnancy, a mistaken diagnosis is probable.

8. Fulminating pelvic edema with its sudden onset and the rapid development of alarming symptoms may closely resemble extrauterine pregnancy. In my own case, above cited, the temperature was so high that it was easily distinguished as an inflammatory trouble and not a hemorrhage, but in other reported cases this feature was lacking and mistaken diagnoses of extrauterine pregnancy were made. In this, as in other conditions of non-hemorrhagic shock or depression, there is not the persistently blanched condition of the skin so characteristic of profuse hemorrhage. The pulse, also, though rapid, is likely to have better volume than after a severe hemorrhage.

9. It is evident that the diagnosis of extrauterine pregnancy must rest on the combination of several symptoms. No one fact is sufficient, and it is hazardous to depend on two or three facts unless they are especially strong and well-marked. In most cases the diagnosis must be reached by a careful consideration of all the symptoms present and the definite exclusion, one by one, of other conditions which may produce similar symptoms.

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EXTRAUTERINE PREGNANCY WITH ESPECIAL REFERENCE TO THE PROPER OPERATIVE PERIOD AFTER TUBAL RUPTURE

WITH REPORT OF CASES *

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There are few conditions in the practice of medicine and surgery that commands greater care and skill in diagnosis than that of extrauterine pregnancy. A physician may practice months and even years without the occurrence of a case, but I dare say, ere long, he will meet the condition when he least expects it. The vital importance of diagnosis can not be too greatly impressed on our minds, because in many cases failure of diagnosis means a fatal result to the patient.

* Read in the Section on Obstetrics and Diseases of Women of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

The general practitioner usually sees these cases in their beginning. On him rests a grave responsibility and, indeed, he should not bear it alone. Surgical counsel may reassure the diagnosis and save the life of the patient by proper surgical intervention. This is not to reflect on the diagnostic ability of the general practitioner, as in such a tragic condition the surgeon acquires that alertness and acuteness in diagnosis which necessarily follow the greater frequency of contact with these cases.

A positive diagnosis of extrauterine pregnancy before rupture has been rare. It is one of those conditions in which a few positive diagnoses have been made, many probable ones have been made, and a great many never have been made until after the abdominal cavity is opened. I am convinced, however, that there are many instances in which strong presumptive diagnosis should have been made, and in which the patient is allowed to pass from observation to suffer the unfortunate results of the physician's carelessness. No pelvic examination should ever be made without keeping clearly in mind the clinical features of the salient conditions, in their incipency, which affect the genital tract.

Most cases of ectopic gestation do not come under the physician's observation before rupture. Some of the cases in which there is an opportunity to question before the tragic occurrence, however, give a typical history that should lead one to be very suspicious of abnormal pregnancy.

The majority of patients have had children, but usually a long time has elapsed since the birth of the last child. Interrogating the patient with reference to previous pelvic disease may determine the existence of salpingitis or some pelvic distress.

The subjective symptoms of ectopic are not infrequently like those of normal pregnancy. There is usually a cessation of menstruation for one or more periods, though in many cases there is no omission of this function, the last one frequently being more profuse and of longer duration, or less in amount and shorter in duration than normal. In case there is a cessation of menstrual flow, it is usually re-established, irregular as to time, of a tarry, smeary and sticky character, which, according to some observers, is pathognomonic. The pain is usually of a cramp-like character, occurring at intervals for several days or weeks, doubtless owing to an effort on the part of the tube to rid itself of a foreign body. There is, as a rule, following the colicky pain, a dark sanguineous discharge, in all probability due to a partial rupture of the gestation sac. If microscopic examination is made, decidua is found in the majority of cases.

While it is of extreme importance to obtain a careful history, the information is enhanced markedly in value by a careful and thorough examination. Indeed, I am almost convinced that thoroughness is the rule and carefulness the exception. Until the possible diagnosis of ectopic gestation can be eliminated in which where its presence is strongly suspected, the pelvic examination should be made with great gentleness to prevent rupture by the examining finger. I can not imagine a more frightful experience to occur in a physician's office, where such cases are frequently first examined, than to rupture an impregnated tube. Not infrequently such cases are reported.

There is usually a turgescence of the external genitalia noted, as in normal intrauterine pregnancy. The cervix is soft and the os patulous. The uterus is enlarged and may be displaced in accordance with the size

of the tumor. The tumor mass is variously located, usually to one side or maybe behind the uterus, or may even be anterior to this body. It is doughy in consistence and fixed to some degree, depending on the duration of gestation. Contrary to the statements of many observers, the exquisite tenderness in the majority of cases that I have examined has not been elicited, and in some cases little or no tenderness was complained of.

The whole aspect of the case changes following rupture. Here the history is of some value, which one may be able to obtain with difficulty. The symptoms of the attack in conjunction with the pelvic examination, however, will make the diagnosis a comparatively easy one. What is a more characteristic clinical picture than a sudden, sharp, agonizing, abdominal pain, severe enough to make the patient faint, provoked by a misstep or slight exertion, and accompanied by nausea, vomiting and collapse? The thirst, subnormal temperature and extreme restlessness of the patient will usually guide one to a correct diagnosis of internal hemorrhage. Slight abdominal rigidity and tenderness is noted subsequent to rupture, due to peritoneal irritation from the clot. Bimanual examination will reveal an ill-defined fulness behind the uterus.

With such an array of signs and symptoms as enumerated, a positive diagnosis of ectopic gestation should be made without hesitancy on the part of the examining physician.

In a large number of cases the sudden pain and collapse are the first signs of abnormal pregnancy. Then, again, there may be a soreness or a sense of distress in one or the other of the ovarian quadrants, only to be followed on the slightest physical provocation by the characteristic pain and signs of internal hemorrhage, which delivers the patient at the threshold of death in a very few hours if proper treatment is not administered. The history of pelvic disorder or a long interval of sterility may be wanting. If the examination for decidua is made, its absence may leave one in doubt, even though it is found in only a little more than half the cases. One is likely to be misled in diagnosis by the premonitory symptoms of ectopic pregnancy, following a very recent menstruation, which is frequently but of a few days' duration. Under all circumstances, however, the physician's suspicions should be aroused and the patient kept under close observation.

The condition from which one commonly has to differentiate extrauterine pregnancy are salpingitis, appendicitis and uterine abortion. I believe that the diagnosis of salpingitis should not leave one long in doubt in most cases. The early increased temperature, denoting infection, the usual bilateral involvement, the extreme tenderness and fixation, the absence of early signs of pregnancy and sanguineous discharge from uterus should calm one's anxiety so far as extrauterine pregnancy is concerned. In appendicitis local symptoms are usually confined to the iliac fossa; leucocytosis is present and the pain is usually first located in the region of the umbilicus, later general and finally localized at McBurney's point associated with tenderness and rigidity.

Uterine abortion, it must be admitted, leaves one frequently in doubt as to the real nature of the condition. The history may be of some value in some cases in which abortion has been induced. The attack is less sudden and the pain less severe than in ectopic gestation; the ovum may be noted in the discharge from the uterus; on pelvic examination there is usually dilatation of cervix especially if secundines remain in the uterus; a mass laterally placed or an ill-defined fulness behind the

uterus is absent; the symptom-complex of loss of blood is late, as compared to that of internal hemorrhage from rupture of tube; frequently, especially if there is sepsis, there is a high temperature. While it may seem expedient in exceptional cases to eurette the uterine for purpose of diagnosis, I believe that it is the consensus of opinion that this is bad practice.

The positive etiology of ectopic gestation is still a matter of speculation. Possibly no one condition operates in its production, but the combination of many conditions is the rule. One of the most frequent predisposing factors is probably salpingitis, which causes the destruction of the ciliated epithelium of the tube, increases the connective tissue and produces attachment of the tube by adhesion, thereby interfering with peristalsis, and distorts and completely obstructs its lumen. The impregnated ovum may lodge in a diverticulum of the tube in its passage to the uterus. Pressure from without may cause tubal obstruction as from uterine fibromas or tumors of the broad ligament. An attenuated tube of fetal type is regarded as a cause in some cases. Whatever may be the most constant predisposing or positive factors at work in the causation of extrauterine pregnancy, it is evident that prophylaxis has little to support it in an attempt at lessening its occurrence.

The passage of the ovum may be arrested at any point from the ovary to the uterus. The possibility of an ovarian pregnancy has led to a great deal of discussion, with the general opinion that it rarely occurs. Spiegelberg says that "the following conditions must be met before we can make a positive diagnosis of a given case of extrauterine pregnancy being ovarian: 1. The tube on the affected side must be intact. 2. The fetal sac must occupy the position of the ovary. 3. It must be connected with the uterus by the utero-ovarian ligament. 4. Definite ovarian tissue must be demonstrated in its wall."

The fact that, in certain cases of tubal and broad-ligament pregnancy, the ovary may be flattened out so as apparently to occupy a part of the wall led Williams to modify the fourth condition, stating that ovarian tissue should be found in a number of places in the sac wall at some distance apart. Tubal pregnancy is the most common variety of ectopic gestation; as the tube is divided into the ampullar, isthmie and interstitial portions, tubal pregnancy is accordingly defined as ampullar, isthmie and interstitial, frequency being in the order named.

It is the general belief that the existence of a primary abdominal pregnancy has yet to be demonstrated. In reality, abdominal is probably secondary to tubal pregnancy. According to the work of Martin and others, the ovum can become implanted on a thin strip of tubal tissue which extends from the fimbria to the ovary. It is obvious that such cases may be recognized as abdominal pregnancy when really they are of tubal origin.

It was formerly supposed that tubal abortion rarely occurred, but according to statistics it is the most common termination of tubal pregnancy. Martin asserts that tubal abortion is the rule, and that in only exceptional cases does the tube rupture into the peritoneal cavity, this occurring when the fimbria is closed, which prevents tubal abortion. In three of my cases reported in this paper the patients aborted in like manner.

In case of a small embryo being extruded into the peritoneal cavity, there is no doubt that in many cases absorption takes place. Not infrequently, too, absorption of embryo has taken place in the tube, evidences of

TABULAR REPORT OF CASES *

Patient, Age.	Diagnosis	Made.	Ectopic Site.	Rupture, if when? Yes, 10 days.	Previous History.	Symptoms.	Result.	Remarks.
1...Mrs. H...32	Before operation.		R tube.	Yes, 10 days.	Had not been pregnant for two years. No pelvic distress.	Intermittent pain; subnormal temperature; rapid pulse; missed one period; later fever; re-established menses.	Recovery	Family refused operation until infection developed.
2...Mrs. P...26	Before operation.		R tube.	Yes, 36 hours.	Last pregnancy five years before. Had pelvic distress.	Intermittent fever; subnormal temperature; missed periods; passed membranes; tumor in right side.	Recovery	Did not operate until patient recovered from shock.
3...Mrs. S...34	Before operation.		L tube.	Yes, about a week; small quantity blood.	Never pregnant. History of salpingitis.	Pain; missed period; continuous menstruation.	Recovery	Operated 12 hours after seeing her; small amount of blood in cavity.
4...Mrs. L...35	Before operation.		R tube.	No.	No children. Had had pelvic distress.	Slow period; mass in tube; continuous menstruation; pain at intervals.	Recovery	Widow.
5...Mrs. B...32	Before operation.		R tube.	Yes, 36 hours.	Never pregnant.	Intermittent pain; subnormal temp.; rapid pulse; missed period; fullness in cul-de-sac.	Recovery	Operated 12 hours after seeing her.
6...Mrs. R...28	After operation.		R tube.	Yes, probably 3 weeks before.	Pregnant three years before.	Distended; vomiting, high temperature indicating sepsis and obstruction.	Death	The blood was clotted and firmly adherent to intestine; died 12 hours after operation.
7...Mrs. B...38	After operation.		R tube.	Yes, 30 min. before operation.	Last pregnancy fifteen years before.	Tumor in right side the size of a child's head. Menstruation regular; temperature and pulse normal.	Recovery	Five months' fetus; tube ruptured and she collapsed on way to operating table.
8...Mrs. J...30	Before operation.		R tube.	Yes, 2 days before.	Last pregnancy two years ago. Pelvic distress.	Intermittent pain; missed period; tumor; menses re-established.	Recovery	The hemorrhage was small; the mass was aborting.
9...Mrs. H...40	After operation.		L tube.	Yes, probably 48 hours.	Last pregnancy four years ago. Pelvic distress.	Pain at McBurney's point, referred to the liver; periods normal.	Recovery	Mass adherent to anterior wall at "left McBurney point."
10...Mrs. B...30	Before operation.		L tube.	Yes, 8 hours.	Abortion about six months before.	Slow period, continuous flow; pain; tumor in distal end of tube.	Recovery	Tube was aborting. I think the hemorrhage was started by examination; small hemorrhage.
11...Mrs. C...40	Before operation.		R tube.	Yes, 72 hours.	Last pregnancy fourteen years ago.	Missed period; intermittent pain; shock; mass in cul-de-sac.	Recovery	
12...Mrs. N...23	Before operation.		R tube.	No.	Pelvic distress.	Usual symptoms of pregnancy except periods of pain during the first months.	Recovery	Eleven months' fetus; tumor extraperitoneal; mild sepsis; mass weighed 14 pounds.
13...Mrs. G...26	Before operation.		L tube.	Yes, 1 week before.	Never pregnant.	Intermittent pain; shock; missed period; later infection.	Recovery	Operation delayed; doctors could not agree on diagnosis.

* Owing to the incompleteness of my early records, I am reporting only the cases in which I have operated in the last three years.

which have been discovered at operation or postmortem examination. After the fetus has reached a larger size, absorption would be impossible; it then undergoes one of several changes; it may become mummified, the liquid contents of the embryo being absorbed and nothing remaining of the fetus except the bones covered with loose shriveled skin. If suppuration takes place the patient usually dies from sepsis unless the pus is evacuated by rupture or drainage. In some instances there is a deposition of lime salts within the fetus and membranes, converting them into a lithopedion. Very rarely the fetus is transformed into a greasy, yellow mass known as adipocere.

It is universally considered that the treatment lies entirely within the domain of surgery. The time of this procedure after rupture, however, has provoked heated discussion among eminent authorities of wide experience.

As to the proper treatment in a certain class of cases, there is little diversity of opinion. In those cases in which a positive or a strong presumptive diagnosis of ectopic gestation has been made before rupture, the advisability of immediate operation is corroborated by the experience of all observers. Then, too, we frequently have to do with patients who have suffered mildly from the symptoms of internal hemorrhage unquestionably following many cases of tubal abortion. Certainly there is no contraindication to prompt operative interference in these cases. Haste, however, should not lead us to omit any measure necessary for the proper performance of the operation.

The question of immediate operation after rupture of the tube while the patient is in shock, or of deferring this procedure until reaction is thoroughly established, is as yet far from being settled. Each of these procedures has many ardent supporters, the majority being in favor of performing abdominal section without delay. My experience with these cases leads me to join the ranks of the minority.

Death from primary hemorrhage *per se* following rupture of the tube is rare; otherwise there would be many more postmortems than operations performed on these cases. In what percentage of cases has active hemorrhage been positively found on exploring the peritoneal cavity? This point has not been sufficiently investigated to be dogmatic, but I am of the firm belief that active bleeding is rarely found at time of operation. Moreover, unless there is positive evidence that active bleeding is present, I am of the opinion that in most cases hemorrhage has ceased even before the patient is examined by a consultant.

Is it justifiable to perform an immediate major operation in such cases while the patient is *in extremis* when 95 per cent. (Robb) of all patients of several observers recover from the primary hemorrhage? It seems to me that there is everything to lose and little to gain by such a procedure in a large percentage of these cases. The additional shock brought about by moving the patient to the hospital is always evident; if hospital is not accessible, the active preparation at home and the unsurgical surroundings lessen the patient's chances of recovery. The inability to secure the prompt service of a skilful operator, the prolongation of operation by a surgeon with little experience and the additional anesthetic, will frequently decide the unfortunate fate of the patient. The removal of intra-abdominal pressure before reaction is established, I am convinced, frequently causes the patient to bleed to death into her abdominal vessels.

By deferring operation after the rupture of the tube the patient is allowed to react from the immediate effects of shock, when the operation can be performed with greater safety. During this period the patient should be kept under close observation and quiet, head low, given morphin if restless, little stimulation and ice-cap to abdomen and heat to the extremities. One is thus able also to take every precaution in preparation of a patient, minimizing the possibility of infection, which is the second most frequent cause of death. The administration of ether is not then a decided disadvantage. The equilibrium of blood-pressure between the abdominal and the peripheral circulation, so to speak, has been re-established; whereas the sudden relief of intra-abdominal pressure on section has but little deleterious effect on the patient after a reasonable delay. The prime purpose of surgical procedure is the assistance it lends to Nature in the saving of life. Consequently I believe that by following the plan suggested one does everything to aid Nature's own efforts and positively nothing to defeat her purpose.

The period of delay is a matter to be decided by the condition of the patient. Certainly no unnecessary delay should be allowed and usually forty-eight hours is sufficient time for a patient to revive from shock. We would certainly be at fault if we deferred the operation too long, thus inviting further complication.

In my opinion, vaginal puncture should not be made except in those cases in which infection has developed, requiring continuous drainage. The sudden relief of intra-abdominal pressure produced by vaginal puncture, while the patient is in shock, aggravates the condition. If vaginal puncture has been made instead of abdominal section, it is impossible to supply the loss of intra-abdominal pressure by the immediate introduction of normal salt solution into the peritoneal cavity.

Following abdominal section I invariably fill the peritoneal cavity with salt solution in cases in which the patients are suffering at all from shock of a recent ruptured tube. By such a measure the intra-abdominal pressure is supplied; it is gradually lessened by the process of endosmosis; besides, the salt solution has a physiologic value.

CONCLUSIONS

1. Early diagnosis is the greatest factor in the saving of life.
2. In cases of sudden pelvic distress during the child-bearing period, the physician should always keep in mind the possibility of ectopic gestation.
3. In case of suspicion of an abnormal pregnancy, counsel should be immediately sought to clear the diagnosis if possible.
4. Operation should be performed immediately in cases in which rupture has not occurred and in cases in which the hemorrhage has not produced much shock.
5. In cases in which there is severe shock, I believe it to be good practice to wait until the patient has revived from same.
6. I do not, as a rule, advise waiting more than forty-eight hours.
7. I believe vaginal puncture to be bad practice in these cases unless infection requires continuous drainage.
8. Physiologic salt solution is of value in cases of shock (1) to maintain intra-abdominal pressure so as to equalize the circulation; (2) for its well-known physiologic effect.

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ABSTRACT OF DISCUSSION

ON PAPERS BY DRS. CROSSEN AND BOWERS

DR. C. W. BARRETT, Chicago: I agree in the main with these papers and am strongly on the side of operative treatment at the time when the patient's life is in danger from hemorrhage. I am interested in the diagnosis of extrauterine pregnancy because in a large charity hospital with which I am connected the cases if diagnosed come to the surgical obstetrician, and if undiagnosed they go to the general surgeon and the surgeon gets most of them, for usually they are not diagnosed. Dr. Crossen lays down definite points in differential diagnosis which are to be followed in the main. The differential diagnosis may not be of the highest practical importance in the most doubtful cases, because almost any one of these conditions requires active operative interference. There is good reason for the difficulty of diagnosis between gonorrheal infection resulting in gonorrheal salpingitis and extrauterine pregnancy, because in about 75 per cent. of the cases the patient with extrauterine pregnancy has had gonorrheal infection and frequently a well-marked pus tube is found on the opposite side. In making a diagnosis of extrauterine pregnancy, we are often led to say that we should have a previous history of sterility. One of my internes said the other day: "This looks like extrauterine pregnancy, but it is not, because there is no history of previous sterility. That which is more important is history of previous pelvic disease." In most of the cases of extrauterine pregnancy the patients have a stormy pregnancy up to the time of rupture. Primary rupture may be only partial; first into the tube and later into the peritoneal cavity. This has an important bearing on treatment.

The second speaker laid stress on early diagnosis, even to the extent of sending for an expert to make the diagnosis, and he recommended operation in all patients who could possibly wait, and then insisted on delaying those cases in which the patient is actually dying because a blood vessel is leaking. It is said that the bleeding patients do not die; that hemorrhage ceases short of death. Robb operated on thirty-two dogs to show that women do not die from rupture of extrauterine pregnancy. Most of those dogs were not even pregnant dogs. Conditions were altogether different. He went on to show that the patients operated for extrauterine pregnancy did not usually have the amount of blood in the abdominal cavity that a dog can lose and still live. It matters little about the amount of blood in the abdominal cavity found post-mortem as proof against the fact that the woman is dead. Women die now and have died in previous years from the cause and that has emphasized the importance of early diagnosis of extrauterine pregnancy and early action in these cases. In the class of cases in which Robb and others urge that operation be deferred because the patient is in shock, it is of the utmost importance that the patient be operated on immediately. A certain percentage of these women will die if they are not operated on, and they must be operated on early. No one can say when hemorrhage has stopped in extrauterine pregnancy or if stopped when it will recur. Rupture is often only partial and the patient may have another hemorrhage causing death.

DR. EDWARD A. SCHUMANN, Philadelphia: With regard to this, to my mind, pernicious teaching of deferred operation, I wish to say that I had occasion to bring down for the scientific exhibit twenty specimens of ectopic pregnancy from the Gyneccean Hospital of Philadelphia. Of these twenty specimens, three are post-mortem; one because operation was refused; two because the patients lived in the country where the surgeon could not reach them quickly enough. The inference is obvious and need not be enlarged on.

DR. ROSS MCPHERSON, New York: I want to speak in favor of immediate operation. At the New York Lying-in Hospital there are many cases of ectopic gestation and the patients usually have been treated for a considerable period of time before they get to us; that is, they are in pretty severe shock and in bad condition when they come in. It has been our custom to operate in all cases as soon as the diagnosis is made, believing that shock is mostly due to hemorrhage, and that with a patient having hemorrhage,

shock is not going to lessen until hemorrhage has ceased. Our results are excellent. Most of the patients recover. I do not believe any man can say just when a hemorrhage has stopped and when it has not in these cases in which there is a marked amount of symptoms. I think it is important to get into the abdomen and to get out quickly. It is not an operation that requires a great deal of time if the operator is fairly rapid. The operation should be done in twelve or fourteen minutes, and thus it is possible to save patients who otherwise would have died. If we wait for forty-eight hours the woman may die, and after she is dead it does not make a bit of difference about treatment, so far as the patient is concerned. The theory of waiting may be all right, but I do not believe it pays, and the sooner we operate on these patients and stop the bleeding, the better for our patients. I think that is good surgery.

DR. JOHN OSBORN POLAK, Brooklyn: Twice in the last year I have seen hemorrhages which had ceased reproduced by examination of the patient while under anesthesia on the operating table. Examining a patient under an anesthetic in supposed ectopic gestation is always dangerous and unsatisfactory, as it tends to increase the rupture and the amount of hemorrhage. These patients supposed to have extrauterine pregnancy, should never under any circumstances be stimulated. Morphin in large doses relieves the restlessness and is the best stimulant that we have. It should be given in doses of from $\frac{1}{4}$ to $\frac{1}{2}$ grain, instead of the usual stimulants commonly employed by the general practitioner. The immediate operation in my hands has been followed by satisfactory results. In 81 cases in the Williamsburgh, Methodist and Jewish hospitals, I have lost but 2. These patients were septic at the time of admission. Patients are usually operated on immediately, however, if the pulse is below 100 and the patient's general condition is good, the operation is often deferred until the next regular clinic day, say twenty-four or forty-eight hours. When the operation is deferred, patients are put in the elevated foot posture, the blood-pressure taken every four hours, and morphin given by the rectum. If the blood-pressure shows a drop, they are operated on immediately. Regarding treatment by infusion, these women are suffering from a loss in the volume of the blood, as well as a lowered hemoglobin and the consequent air hunger. If we fill the blood vessels up with saline solution, the air hunger is more marked. They will die of pulmonary edema, because the heart is not capable of handling the suddenly increased volume of serum. If the saline solution is injected into the abdominal cavity, not only is the intra-abdominal pressure restored, but the heart and circulation accommodate themselves to the new condition of things and the circulation takes what solution is needed, as it can handle it; and the adjustment is better and the air hunger much less marked than in the patients in whom it was infused.

DR. C. A. STILLWAGEN, Pittsburg: Without entering into any of the arguments for or against deferred operation, I wish to state my experience so far as it has gone. I have deferred the operation now almost fifty times without mortality and without mortality from subsequent operation. In a number of these cases the hemoglobin has been as low as 20 per cent. and the red blood cells under 2,000,000. While I know it seems unsurgical to allow a patient to go on if she has a bleeding vessel, it is just as hard to diagnose that the vessel is bleeding as that it is not, and so far as experience justifies us in deferring operation. I think we are right in doing so. In the light of my experience I would not feel justified in operating on a patient *in extremis*.

DR. EMIL NOVAK, Baltimore: This seems to be developing into an experience meeting. I have not had so large an experience as some others, but I have had some. The last speaker mentioned 50 cases in which operation was deferred without any evil results. Although my series is not nearly so large, I have seen 2 cases in which the operation was unintentionally deferred because of delay on the part of the general practitioner who first saw the case, and in each instance the patient died. I was glad that Dr. Barrett emphasized so forcefully the dangers of delay in operating in these cases of ectopic pregnancy. It does seem a very unsurgical teaching.

and a very dangerous one, in view of the fact that many general practitioners would get the idea that ectopic pregnancy when ruptured need not be operated on immediately, and would therefore put off sending their patients to a hospital. The question of the treatment of ectopic pregnancy is in many ways analogous to the treatment of appendicitis. I have no doubt that many men could put off operating on appendicitis and still be able to present comparatively good statistics; but sooner or later, however, they are bound to meet with disaster. I was also glad that Dr. Barrett emphasized the importance of gonorrheal infection as a cause of ectopic pregnancy. Most of us believe that ectopic pregnancy can usually be traced to pre-existing pelvic inflammation. The difficulty of distinguishing between pelvic inflammation and ectopic pregnancy is a very important point, not only in the ordinary form of salpingitis, but also in the diagnosis between a gonorrheal abscess and hematocele. It is not an infrequent finding to open up a supposed pelvic abscess and to find a hematocele instead. For this reason I do not believe that a pelvic abscess should be opened unless facilities are at hand for performing abdominal section if necessary.

Within the past year I have had the difficulty of distinguishing between early miscarriage and ectopic pregnancy. A woman of 22 missed one menstrual period, and a few weeks later developed a persistent slight bleeding. The uterus was moderately enlarged and an elastic mass was felt in the left side of the pelvis. A presumptive diagnosis of ectopic pregnancy was made. At operation the mass was found to be nothing more than an ordinary ovarian cyst. This was removed, the uterus curetted and decidua found. The case was nothing more than an incomplete abortion of an intrauterine pregnancy associated with an ovarian cyst. In connection with the urgency of operation as emphasized by Dr. Barrett, I recall two cases. The first was of particular interest in that it was one of interstitial pregnancy. The patient was a colored woman about 28 years of age, who was attacked about the middle of the day with severe pains in the abdomen. She sent for her physician, who examined her and gave her some "colic" medicine. He did not examine her vaginally. She became much worse and again sent for the doctor, who did not respond until 6 o'clock in the evening, when she had become practically moribund. Then, realizing her precarious condition, he sent her to the hospital, where she died before any preparation could be made for operation. There was a tremendous ragged, gaping hole in the horn of the uterus. This case was reported to the American Gynecological Society in Washington, about two years ago, by Dr. Moseley. The second case was that of a woman who was sent to the hospital soon after the development of symptoms, but who died before reaching the hospital. The condition in this case was one of early rupture of a tubal pregnancy of the ordinary variety.

DR. A. E. BENJAMIN, Minneapolis: One important point is the necessity of educating the general practitioner to make a diagnosis. There would be practically no mortality if the surgeon could see these cases first. I think it is the duty of every member of this Section who is doing surgery to teach the general practitioner to make an early diagnosis. If he is uncertain about an abdominal condition he should call a surgeon. The only mortality I have had in any of these cases has been in those in which the general practitioner had put off making the diagnosis or had neglected calling the surgeon. Another class of cases requiring prompt attention is that in which there has been pelvic inflammation with many adhesions. If we operate on these patients with a considerable amount of hemorrhage with adhesions and endeavor to clean up the pelvis at that time, there is danger. It has been my practice in certain cases simply to ligate the blood-vessels and leave the rest for a future time. Many of my cases have been diagnosed by the general practitioner as appendicitis, 90 per cent. of the extrauterine cases having been on the right side.

DR. HENRY SCHWARZ, St. Louis: I want to add my testimony that patients with ruptured tubal pregnancy will die at times if they are not interfered with. I have now in my possession a specimen from a case in which the woman died as she was seeking relief in the physician's office. She had not been examined and the rupture was not due to any handling by the

physician. She dropped to the floor in the physician's office and was dead in a very few minutes. I have likewise seen within the last year a case in which the woman was evidently dying from internal hemorrhage, but the case was not diagnosed and the woman died while I was in the room. So women will die if the hemorrhage is allowed to go on, and I think there can be no difference of opinion that while the bleeding is going on we should operate at once if it is possible to get the patient to suitable surroundings. I likewise believe that it is wrong to give saline solutions or anything else to refill the system until the leak has been stopped. I sometimes defer operating on patients who have been allowed to go forty-eight hours or longer until they have recuperated. I feel that in these cases it may be wiser not to interfere. In many of these cases the rupture has been complete. The whole ovum has escaped and is found in the cul-de-sac of Douglas. After forty-eight hours the intestines have formed a roof over the hematocele and it does not seem good surgery to tear this open and clear out the hematocele which can be easily opened at a later season by vaginal incision and drainage.

DR. RALPH WALDO, New York: There are two important points to be considered in a discussion of extrauterine pregnancy; perhaps more than two. In the first place, it is well to bear in mind that not far from 10 per cent. of all laparotomies performed in women are for extrauterine pregnancy in one form or another. In the second place, the most important point is to make a diagnosis. At the Lebanon Hospital in New York we admit patients with incomplete abortions with sepsis. A large percentage of the extrauterine pregnancies which come into that hospital are brought in with the diagnosis of incomplete abortion with sepsis. Every one of those patients will have a little hemorrhage. Of course, the majority are abortions of the tube. The fetus dies or is gradually separated, as it would be in the uterus. A little bleeding occurs, but does not amount to much. The patient has a little colic and a sensation as though she were going to faint; becomes blanched. With an abortion there is a different type of pain. The patients do not faint. They become blanched until later in the condition when they have lost a large amount of blood. Several such attacks may occur. If the uterus has been curetted and the patient continues to bleed, ectopic pregnancy is usually present. They all have a little rise in temperature, to about 100 F. When there is sepsis the temperature is higher and there is usually a chill. Ideally, the time to operate in ectopic pregnancy is before it ruptures, but in a large percentage of cases the surgeon does not see the patient at this time. She is sent to him *in extremis*, in profound shock. In 1905, I published an article in which I claimed, and I still claim, that in that class of cases in which the patient is in an extreme condition, if she is kept perfectly quiet, the foot of the bed elevated, hypodermoclysis used, and hot salines given by the rectum, within a few hours reaction sets in; very seldom do patients so treated bleed to death. There is the type of case mentioned by the last speaker in which the whole top of the uterus is blown off, so to speak, and that patient usually dies before the surgeon gets to her. We have operated on something over 100 such patients and have lost but two. One it was thought would die when being transferred to the hospital. The other was operated on and everything seemed all right, when she died from pulmonary thrombus. A smaller percentage of patients will die if the operation is performed when the patient is not in profound shock; she may be bleeding and not in shock and operation can be done safely at once.

DR. F. F. SIMPSON, Pittsburg, Pa.: It seems to me that there are two or three factors to be considered. In the first place, concerning the one who is to operate and the conditions under which operation shall be done. We would hardly advise a man who gets a new automobile to go into a Vanderbilt race the first day that he owns a machine. I think it hardly wise to advise a man who has never opened the abdomen to attempt to do so when the patient is in the most desperate condition imaginable. I can hardly conceive of less favorable circumstances for operation than with a patient miles out in the country without proper facilities, and the physician who has never opened the abdomen. I think we should distinguish between the man who

has had extensive experience and the man who has never operated. I would not venture to suggest to the successful surgeon what he should do in a given case. I would, however, offer a protest against the teaching that immediate operation is absolutely necessary, basing that protest on a record of about 130 ectopic pregnancies, with but one death from hemorrhage. Of that number not more than two or three have been immediate operations; the mortality has been about 3 per cent. I believe that 2 or perhaps 3 per cent. of such patients will bleed to death under the best conditions if not immediately operated on. I believe that that number of deaths is smaller than will occur if the average person of varying fitness for such work opens the abdomen at once; then I would expect a mortality of approximately 10 or 15 per cent. A study from the literature of over 500 consecutive cases of ectopic pregnancy in which operation was done immediately, the cases being taken indiscriminately, showed a mortality of 19 per cent. Many of these patients were operated on by good men; many by those of limited experience. I believe that that mortality of 19 per cent. is not far from the mortality that will be obtained if the teaching is promulgated that immediate operation must be done. It seems to me that when a disease has a mortality of approximately 4 or 5 per cent., it is hardly wise to advocate an operation indiscriminately which will give a mortality of from 10 to 20 per cent.

DR. H. G. WETHERILL, Denver: I should like to speak of a practice which I have followed when difficulty has arisen, such as Dr. Waldo has referred to, in the differential diagnosis between ectopic pregnancy and an incomplete abortion. This differentiation is sometimes impossible in the early weeks of gestation. After exploring the uterus, I have snipped a small opening through the posterior vaginal fornix into Douglas pouch, solely for diagnostic purposes. It will then appear whether there is blood in the peritoneal cavity or not. If other pathologic conditions are found it may be possible to deal with them through this posterior vaginal incision. Dr. Simpson has expressed my views as to operation for ectopic pregnancy better than I could express them. The operation is one which may wait under many circumstances. The immediate mortality of the condition is not necessarily a high one, and I do not ordinarily favor operating on such patients when in profound collapse. With our present methods for combating hemorrhage, many of these women may be brought to a more favorable time for operation. It may be very unwise and inexpedient to do an emergency operation for ectopic pregnancy unless the conditions and the environment are favorable to the attainment of the best results.

DR. GEORGE ERETY SHOEMAKER, Philadelphia: The question whether a given group of patients should be immediately operated on depends on the observed facts, not on theory. The facts are that only a very small proportion of the patients with ectopic pregnancies that a surgeon sees are in a desperate condition at the time he sees them. Begin at once to get these few desperate patients under proper conditions; if possible to a good hospital; have the preparations for operation made while using subcutaneous or intravenous salt solution. In almost every instance by the time one is actually ready to operate the patient will not be in *extremis*, and it will be better to operate at once. Then, if we eliminate from that small number of desperate cases those patients in whom we can not make a very positive diagnosis, the group is further reduced, in which it is safe to wait. I have operated on many ectopic gestations, but few of the patients were in collapse when seen, and all who were operated on during collapse have recovered. None has been refused operation. No operation has been deferred because the patient was in bad condition. The question is: Will they bleed again if let alone? I have known of 4 cases, one of them my own, in which bleeding began while waiting. Hardly any case of extrauterine pregnancy has a history of just one pain, or just one hemorrhage. No one can tell whether there will be another attack as soon as there is reaction. It depends on a good many factors beyond our control, and I believe that competent men should operate at once. Do such patients die if let alone? One of Philadelphia's coroner's physicians kept a careful record in a series of recent years of all his post-mortem examinations. He tells

me that of all women dying of actual bleeding, 20 per cent. had ruptured extrauterine pregnancy.

DR. GEORGE M. BOYD, Philadelphia: I am in accord with the essayists and desire to emphasize what has been said by one or two in discussion, particularly the remarks of Dr. Polak, in regard to the history and the early diagnosis of this condition. When considering the subject of uterine cancer and the necessity of early diagnosis, stress was laid on history-taking, and I take it that here we should follow the same lines. It is essential to make the diagnosis early. Therefore, and this should be our teaching, every woman in early pregnancy suffering from pelvic symptoms should be looked on as possibly the victim of tubal or ectopic gestation. Let us, then, study our cases carefully. Our mistakes are often, I am afraid, due to a superficial study of the history of the case, depending too much on the pelvic lesion. Until I can satisfy myself that recurrent hemorrhage will not take place, I will continue to operate in those severe cases as soon as I can get the patients into proper condition for operation. That seems to me the better course to follow. It would be unfortunate if the impression were sent out from this Section that patients do not often die from this serious complication.

DR. H. S. CROSSEN, St. Louis: There are two points which I wish to emphasize. In the first place, many patients operated on for tubal pregnancy are found to have not tubal pregnancy, but some entirely different disease presenting somewhat similar symptoms. This has happened so frequently, as indicated by the illustrative cases cited, that I feel we ought to study these uncertain cases more carefully. This is a borderline field in which work is needed. If we as teachers will give more attention to the conditions simulating tubal pregnancy, our students will do likewise, and a decided advance will be made in the differential diagnosis of these conditions. The second point I wish to emphasize is that certain cases of gonorrheal salpingitis so closely simulate tubal pregnancy that the differential diagnosis is extremely difficult, even when the attention is especially directed to this condition. In these most troublesome cases, valuable differential diagnostic points may be accumulated by close observation and accurate reporting of the cases by the profession generally.

DR. L. G. BOWERS, Dayton, Ohio: In a large percentage of cases I believe diagnosis is the easiest factor to deal with in ectopic gestation. In the cases that I have seen there have been more or less definite symptoms, either a missed period or a delayed period, though menstruation may have been re-established; a little intermittent pain, probably a little increased temperature or perhaps subnormal temperature. If hemorrhage was recent, there may be passing of thready membrane, etc. Occasionally it is, of course, very hard to differentiate between this condition and acute salpingitis. Those cases, however, are rare. When we come to speak of operation we can definitely decide the best method of treatment to follow in two classes of cases: In those cases which are diagnosed before rupture, and those in which there has been a mild hemorrhage, operation should be done at once. The only cases in which delay is permissible are those in which the patients have had severe hemorrhage and are in extreme shock. We forget that most of these patients are not near expert surgeons; we forget how large the country is. Only a small percentage of those patients are taken to an expert, and when a certain method or procedure is advised, this fact must be considered. I do not know how many surgeons will operate in fourteen minutes; very few, I think. If all operated in that time the operation would be much less dangerous. Dr. McPherson did not tell us how many of his patients were bleeding nor how many were operated on after the primary shock was past; therefore, it cannot be estimated whether the operation saved life by stopping of the hemorrhage or his favorable results were secured when patients were operated on in extreme shock. I will venture to say that very few were operated on in profound shock. The patients in whom the pulse is fast and soft are those who die when operated on. If those patients are left alone for forty-eight hours they can be operated on safely. I do not believe that the patients on whom we do not operate until they revive from the shock

should be stimulated much. It is better to lower the head of the bed and give them morphin.

When the abdomen is full of blood, the bleeding to some degree has been stopped by the intra-abdominal pressure produced by the blood. Also, this intra-abdominal pressure mitigates the shock to a great degree and the sudden relief of the pressure during the shock increases it, and for this reason we fill the abdominal cavity with salt solution before closing it and not only fill it, but by introducing the salt solution with a glass tube before the last stitches are drawn tight, thereby reestablishing the intra-abdominal pressure. The pulse is also reestablished, and by gradual absorption the physiologic effect of the salt solution is obtained.

GENERALIZED HERPES

JAY FRANK SCHAMBERG, M.D.

PHILADELPHIA

Cases of generalized herpes zoster are of such rarity as to warrant their being recorded. But few dermatologic text-books mention generalized herpes. Within the past few years references to such cases have appeared in foreign literature. I have observed two cases in elderly men, the eruption in each instance being primarily suspected of being smallpox, although it bore greater resemblance to that of chickenpox. The notes of a recent case are appended:

Patient.—Mr. C., aged 66, began to suffer pain in the left scapular region on Thursday, Nov. 25, 1909. On November 28 an extensive eruption was observed covering the left scapu-

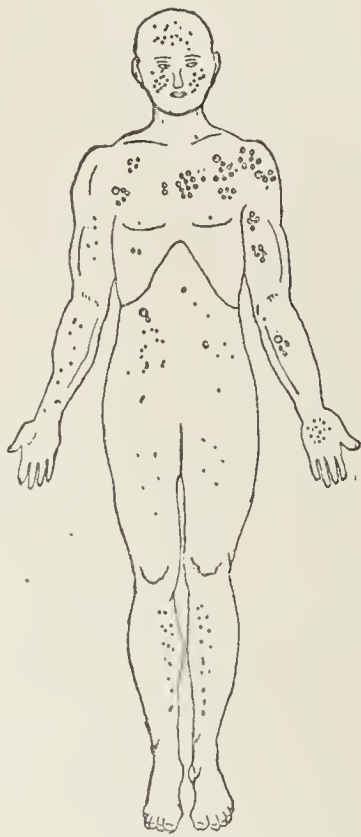


Fig. 1.—Diagram of eruption in case of generalized herpes, front view.

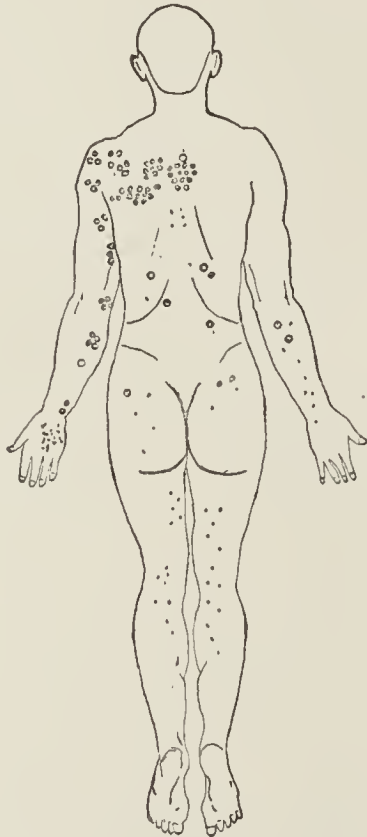


Fig. 2.—Generalized herpes, back view.

lar region, the left pectoral region, and the inside of the left arm. On the evening of November 29 a scattered eruption was observed by the patient on various parts of the body. The physician in attendance suspected that the case might be smallpox, and on the following day I saw the patient in consultation. The notes made at that time read as follows:

Examination.—The patient has a severe herpes zoster, the eruption of which involves the left posterior chest in the region of distribution of the third dorsal nerve, and anteriorly, the left pectoral region and the inside of the left arm and hand. The lesions are large vesicles, some of which have hemorrhagic contents, and look as if they might ultimately become necrotic.

In addition to these lesions there are scattered vesicles and small ill-defined papules on the right chest, both sides of the abdomen, the back, forearms and legs. The lesions number about 500 or more in all, and vary in size from a pin-point to a pea or larger. Most of the scattered eruptive elements are papular, but here and there distinct herpetic vesicles are seen with clear and occasionally hemorrhagic fluid. The vesicular lesions, when punctured, give exit, for the most part, to a transparent fluid. Some of the lesions are characteristically umbilicated. The palmar surface of the left hand exhibits some papules and a number of abortive vesicles. On the forehead and scalp and over the cheeks are small papular lesions. The eruption on the lower extremities is made up for the most part of scattered, barely elevated papules. The patient's temperature is practically normal; the pain has largely subsided, and there is but little itching.

The case is unquestionably one of generalized herpes. It would seem that the toxic irritant (?) responsible for the disease, instead of localizing itself as usual to one or several spinal ganglia, has exerted its effect on many nerve ganglia, thus producing a generalized eruption.

1922 Spruce Street.

A CASE OF DACRYOPS

FREDERICK A. KIEHLE, M.D.

PORTLAND, ORE.

Dacryops, or cystoid dilatation of a duct of the lacrimal gland, is said by all authors to be exceedingly rare. Rogman,¹ in an exhaustive paper, succeeded in collecting only 24 cases, 2 under his own observation and 1 from the clinic of the Lawsons.² Zur Nedden³ (1903) tabulated 33 reputed cases. It usually manifests itself to the temporal side of the median line in the vicinity of the lacrimal gland. The condition is either congenital or acquired. Removal of the entire cyst wall is indicated. Operation should preferably be from the conjunctival surface to avoid a scar, possible ptosis from injury to the levator muscle, and possible troublesome lacrimal fistula.

History.—D. D., aged 7, was brought by her parents, Nov. 13, 1909, for advice regarding a small tumor of the left upper lid. The mother stated that the growth first became noticeable about two years ago, that it varied often from day to day, but on the whole was increasing in size. Following a protracted use of the eyes and after crying it would become much larger, sometimes nearly closing the eye. During an attack of measles it caused complete ptosis.

Examination.—The outline of a small growth slightly to the inner side of the median line with slight ptosis is noticeable on observation. On palpation it proves freely movable and painless. Upon everting the lid a bluish cyst of the size and shape of a small pecan pops down into full view, closely attached the entire length of the tarsus and apparently arising from one of the ducts of the lacrimal gland.

Operation.—Nov. 23, 1909, under ether anesthesia the cyst was exposed to view, the adhesion to the cartilage was severed, the lacrimal duct giving origin to the cyst was tied off, and by careful blunt dissection the growth was separated from the surrounding tissue in the upper fornix. It was all but free, when the thin crypt wall being accidentally punctured, the sac collapsed and its clear, watery contents escaped. The dissection was completed and all the cyst wall removed. A single subconjunctival suture brought the tissues into proper relation and held the tarsus in position. Healing was unmarked save by a slight ecchymosis. No hyperlacrimation has appeared at any time.

814 Corbett Building.

1. Ann. d'Ophth., June, 1899.
2. Tr. Ophth. Soc. U. Kingdom, xvii, 233.
3. Quoted by Fox, 1910, p. 99.

THE PROPHYLACTIC USE OF TETANUS ANTITOXIN*

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The following case is reported in order to make a plea for the use of repeated prophylactic doses of antitetanic serum in certain classes of injuries.

A number of cases have been reported in France and Germany in which tetanus has developed, notwithstanding the prophylactic use of antitetanic serum, there having been published up to 1907 24 cases,¹ but I have been unable to find in the literature the report of any such case occurring in America. I am fully convinced that the serum, properly used, will always prevent tetanus, but wish to emphasize the fact that in cases of bad mixed infections, and especially with saprophytic organisms, the dose should be repeated at intervals as long as the infection lasts.

Patient.—T. N., aged 37, superintendent of boiler works, was admitted to my service in the Presbyterian Hospital at 11 a. m., Sept. 2, 1908, four hours after a street-car accident in which he received a compound comminuted fracture of both bones of the left leg. He stated that after the accident, before he was moved, he saw a broken end of bone protruding from his leg and in contact with the street dirt, and that when he was moved the bone returned to place.

Examination.—This showed a badly swollen leg and foot, with a lacerated wound over two inches in length, about three inches above the external malleolus. There was crepitus and false point of motion. Later an x-ray picture showed that the fibula was broken into four fragments of nearly equal length, and that the tibia was badly comminuted a little above the ankle joint.

Treatment and Clinical Course.—The patient was immediately anesthetized with ether and the leg and foot made as clean as possible; then the wound was cleansed, two loose fragments of bone removed, and the wound irrigated with a large quantity of normal salt solution, followed by a weak solution of iodine, and then hydrogen peroxid. A rubber tube drain was then inserted from the fibular side through to the tibia, and the edges of the skin wound, kept apart with iodoform gauze. The leg and foot were then placed in good position and immobilized by a molded posterior plaster-of-Paris splint, extending from the toes to the middle of the thigh, and 1,500 units of antitetanic serum, supplied by a standard firm, were administered subcutaneously five hours after the accident. Forty-eight hours later it was evident that the patient had a severe mixed pyogenic and saprophytic infection. His pulse ran up to 140, temperature to 103.6 F. He complained of headache and nausea and pain in the leg. The leg at that time was enormously swollen, tense, cool, and brownish in color from the knee down. A dirty thin, foul pus was discharging from the drainage tube. The patient was anesthetized with nitrous oxid. and an incision on each side of the leg was made from knee to ankle down to the deep fascia. No bleeding followed these incisions for several hours. This checked the spread of infection, as shown by the improved local conditions and lowered pulse-rate and temperature. In three days the patient's pulse was 96, temperature 100 F., the swelling of leg was reduced and the wounds looked clean, except that the drainage-tube leading down to the fractures continued to freely discharge a rather foul pus. On the tenth day the patient developed a serum urticaria which lasted thirty-six hours. Apart from the rather free discharge of pus the condition ran a fairly normal course, with temperature between 99 and 100 F., good pulse and appetite, etc., until the twenty-fifth day after the accident. On that day the patient complained of a dull aching pain in the injured leg, and although nothing wrong could be found on examination he was unable to sleep that night. The next morning

he said that he must have caught cold, as his neck was stiff, and at the same time the injured leg began to twitch occasionally and the pain in it became more severe. That afternoon it was noticed that the patient could not open his mouth widely and he complained that his tongue felt stiff. The next morning he had all the symptoms of a severe tetanus, including a tonic spasm of the muscles of mastication, the neck muscles and of both legs and feet, cyanosis, very free sweating, difficulty in deglutition, rapid pulse and increased temperature. The urine contained a small amount of albumin, a few granular casts and was sufficient in amount. The appearance of the wound remained the same. The symptoms increased in severity until any slight irritation produced a severe general clonic spasm; the pulse gradually increased in rapidity and became weaker and the temperature ascended to 107.8 before death, which occurred on the fourth day after the appearance of the symptoms of tetanus. The treatment after the onset of the tetanus consisted in free irrigation of the wound with hydrogen peroxid, liberal amount of liquid diet, normal salt solution continuously per rectum, morphine enough to make the patient comparatively comfortable, and antitetanic serum subcutaneously, of which he received 18,000 units in less than four days. An autopsy was not permitted.

The unusual points about this case are the following:

1. The development of tetanus in spite of the prophylactic use of the antitetanic serum, which was given five hours after the accident.

2. The occurrence of a most acute tetanus, without any symptoms until twenty-five days after inoculation.

Because I could find no report of a similar case occurring in America, a 1,500-unit package of antitetanic serum, from the same lot as the package which was used for prophylaxis in this case, was submitted to Dr. M. J. Rosenau of the Hygienic Laboratory, Washington, who kindly made a careful examination of it, and reported that it contained over 2,000 units, or 500 units above the amount claimed.

The conclusion I reach is that, while 1,500 units of antitetanic serum will prevent tetanus when used early in cases of wounds not followed by severe infection, it may fail when used only once when there is a mixed infection present which lasts longer than ten days or two weeks. It seems that in these cases, while the tetanus bacilli have been present and active from the beginning, the symptoms of the disease have not been present because the toxins produced have been neutralized by the serum, and that when the protective bodies in the antiserum have been exhausted in combining with the tetanus toxin, the toxin which is formed afterward produces the symptoms of the disease. It is probable that in a very severe tetanus infection this exhaustion may occur in four or five days. Even in the absence of tetanus it is known that the protective bodies disappear from the blood within two or three weeks after the serum has been injected. It is suggested that the many failures of the prophylactic use of antitetanic serum in France and Germany is due to the fact that in those countries it is customary to use a smaller amount of a less potent serum than is used in this country.

It would seem, therefore, that every patient with a wound which may cause tetanus should receive as soon as possible 1,500 units of antitetanic serum for prophylaxis, and that if the wound is infected this dose should be repeated once every week while the infection lasts, and this especially if there is a mixed infection of saprophytic bacteria, as these reduce the local resistance of the tissues to the tetanus bacilli so that the latter may continue to multiply until after the injected antitoxin has been eliminated or neutralized, and then give rise to acute tetanus, as occurred in the case reported above.

622 Douglas Boulevard.

* From the Department of Surgery, Rush Medical College, Chicago.
1. Editorial, THE JOURNAL A. M. A., Aug. 17, 1907, xlix, 602.

CAVITY PHOTO-PROJECTOSCOPE

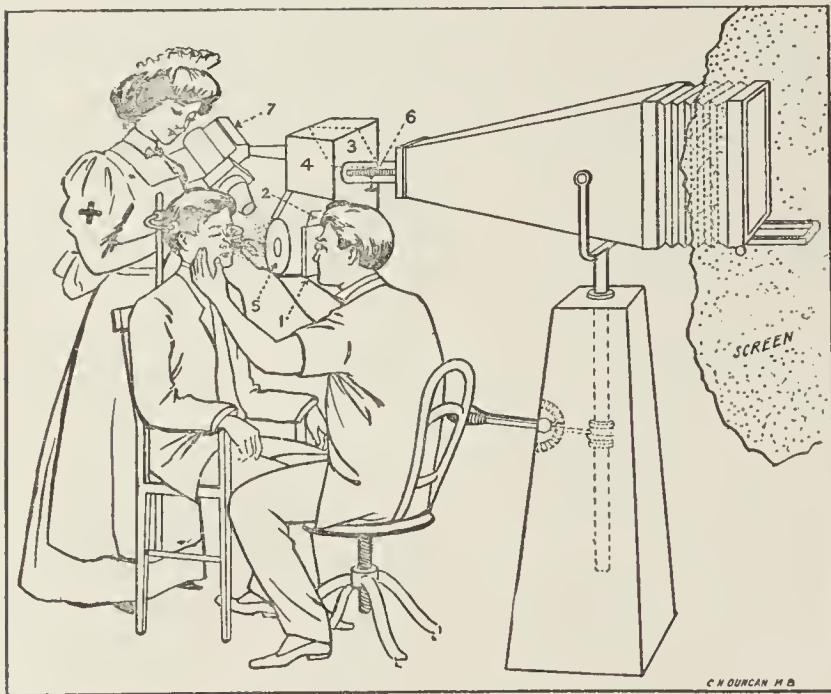
AN APPARATUS FOR PROVIDING A LARGE AUDIENCE WITH
A COMPLETE VIEW AND FOR SECURING PHOTO-
GRAPHS OF OPERATIONS IN BODY
CAVITIES

CHARLES H. DUNCAN, M.D.

Visiting Surgeon, Volunteers St. Gregory's Hospital
NEW YORK

Up to the present time provision for demonstrating operations in the cavities of the body has not been made. The student of medicine has been unable to witness an operation, for example, in the nose. Necessarily he has had to be content with a description of the conditions the surgeon finds present in the nose and of what he is doing.

There is practically but one line of vision entering small cavities of the body, and this necessarily must be occupied by the eye of the operator. It is proposed in the apparatus here described to give a reflected view or image of operations in the cavities of the body as seen from the position occupied by the eye of the surgeon,



Cavity photo-projectoscope; 1, surface mirror with opening $\frac{3}{8}$ of an inch in diameter, through which surgeon looks into cavity; 2, 3, 4, mirrors taking up image from first mirror; 5, concave reflector with two-inch hole in center, reflecting rays from arc-light into cavity; 6, lens of camera receiving image from fourth mirror; 7, arc-light sending rays on reflector (5), to be reflected into cavity.

and to provide that view to a large number of visitors so that each may see the minute details of the various steps of the operation as it progresses.

To accomplish this I employ a reflector, four plano mirrors, and a large camera. The reflector (marked 5 on the illustration) is concave and is so adjusted that it picks up the rays from an arc-light (7) and reflects them into the cavity on which operation is to be performed. Its function and shape are similar to those of the ordinary head-mirror. In the center of this reflector is an opening about two inches in diameter. Behind this is a system of plano mirrors rigidly secured in a receptacle or box; these reflect the seat of the operation into a large camera, the ground glass of which is in an opening in the wall separating the operating-room from the amphitheater and elevated before the eyes of the assembled students or visitors. The first mirror is placed vertically, behind the opening in the center of the reflector, and at an angle of 45 degrees with the line of vision. In this is an opening three-eighths of an inch in diameter, through which the surgeon looks into the cavity

The image from the seat of operation, coming through the two-inch opening in the reflector, is taken up by the first mirror and, in turn, reflected by the other mirrors into the lens of the camera and then projected on to the ground glass or translucent membrane. The mirrors are so arranged that the image or reflection of the seat of operation is not inverted or transposed on the ground glass or translucent membrane.

The reflection or image on the screen may be enlarged to any diameter the surgeon may desire. The mirrors, being surface mirrors, absorb little or no light or color, so that the various tissues encountered are seen as they appear to the surgeon. The minute details of the deeper tissues are clearly and distinctly seen on the screen, as crypts in the tonsils, blood-vessels of the uvula, etc.

The figure 6 on the illustration designates the lens of the camera. The rays from the operating-field are transmitted by the plano mirrors without refraction into the lens, where they are focused on the vertical ground glass. A universal focus lens keeps the field of operation always sharp and well defined.

The observers, in a darkened room, are separated from the operator and patient by a partition of dark curtains or screens. In this apartment a large number of visitors can secure a view of every step of the operation as it progresses. The apparatus does not interfere with the surgeon and but little practice is needed to operate with it as freely as with the ordinary head-mirror.

The intended uses and advantages of this apparatus may be summed up thus:

It provides a body of visitors with the same view of an operation in the cavities of the body as that of the surgeon, so that the visitors see directly in the line of vision with that of the surgeon.

It separates the visitors from the surgeon and his staff completely, thus eliminating the danger of contaminating the wound with dust from street clothing.

The apparatus eliminates distraction to the operator by the going and coming of visitors and distraction of the visitors' attention from the operation itself.

It separates the patient from the student body, thus obviating embarrassment that now often attends an operation or examination of the cavities of the body by the number of students who are in attendance to witness it. The patient need not know that a single student or visitor has the operation or examination under observation while it is progressing.

The apparatus is found to reflect accurately all objects on which it is focused, showing the minutest details as well as the color of the parts operated. Photographs may be taken of any and of all steps of the operation, or moving pictures of the operation may be secured by attaching a moving-picture machine to the apparatus. By this means an operation may be reproduced again and again for teaching purposes in medical colleges and in medical society meetings.

Arranged on the plan of a mutoscope, such a moving picture can be studied at leisure in a doctor's office, where, by means of it, he can have a particular surgeon perform a particular operation for him over and over, until he is thoroughly familiar with its details. Thus the technic of our master surgeons can be studied at every clinic and preserved for future generations.

The apparatus lends itself as well to operations on the rectum and vagina as to those on the nose, throat and ear.

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EPIDEMIC POLIOMYELITIS IN MONKEYS

A MODE OF SPONTANEOUS INFECTION *

SIMON FLEXNER, M.D., AND PAUL A. LEWIS, M.D.
NEW YORK

In our previous communications¹ on experimental poliomyelitis, we have left entirely undiscussed the manner in which the virus of epidemic poliomyelitis enters and leaves the human body, points which we propose to discuss in the present note. Our studies having supplied the basic fact of the nature of the virus,² it became possible to attack the question of the mode of transmission of the spontaneous disease. That epidemic poliomyelitis is an infectious disease has long been suspected, but that it is also a highly contagious one is far less generally admitted. And yet the studies on its epidemiology by Wickman³ lend considerable support to the latter view.

In the first place, we wish to draw attention to the frequently observed fact that in point of distribution epidemic poliomyelitis resembles epidemic cerebrospinal meningitis. The two diseases, indeed, present, in this respect, such close similarities that they have often been confounded with each other. The chief and striking difference between them relates to the seasonal prevalence, which for epidemic poliomyelitis is midsummer, and for epidemic cerebrospinal meningitis, late winter or early spring. Furthermore, the two diseases occur by preference in the same age groups, being most frequent in infants and young children, although not sparing older children and adults, and they present about the same ratio of attack. In the majority of instances a single case appears in a family or home, but often two cases and less often three and more cases appear. The relation between the grouped cases in a house or locality has, in respect to both diseases, been made out only recently by finding in the instance of cerebrospinal meningitis definite diplococcus-carriers, and in poliomyelitis by discovering abortive cases which would seem to act in the manner of microbe-carriers.³

It is held that *Diplococcus intracellularis* passes into the cerebrospinal membranes by way of the lymphatic connections existing between them and the nasopharyngeal mucous membrane. It is difficult, if not impossible, to establish, in human beings, that the diplococcus passes from the membranes, by a reverse lymph-current, into the nasopharynx. And yet such a migration is not only highly probable, but would most readily and satisfactorily explain the intracellularis infection of these mucous membranes, which occurs in epidemic cerebrospinal meningitis. In the monkey,⁴ infected with *Diplococcus intracellularis* by injection of cultures into the lumbar spinal canal, the migration into the nasopharynx of the diplococcus, contained in leucocytes and free also, has been followed with the microscope. So that the nasopharynx may be viewed both as the site of escape and of infection of *Diplococcus intracellularis* in man.

We have studied the mucous membrane of the nasopharynx with reference to the virus of poliomyelitis. The entire mucosa of these parts, in monkeys recently paralyzed, has been excised, rubbed up with quartz sand, pressed through a bacteria-tight Berkefeld filter, and injected in the usual manner into the brain of monkeys.

By employing this method, we have been able to produce paralysis and thus to prove that the mucous membrane contains the virus of poliomyelitis. We have also found that when the virus is injected into the spinal canal by lumbar puncture it sets up the disease and causes the characteristic paralysis. The cerebrospinal fluid removed from monkeys at the onset of paralysis is altered: it contains an excess of proteid and lymphocytes and coagulates spontaneously. Paralysis also follows the inoculation of this fluid into the brain.

The experimental results show that a path of elimination of the virus of poliomyelitis is by way of the nasopharyngeal mucosa and indicate that the same path may be traversed in the course of infection. Hence it would seem desirable, at the present stage of our knowledge, to deal prophylactically with epidemic poliomyelitis, as with epidemic cerebrospinal meningitis, by disinfecting and destroying the secretions of the nasal and buccal cavities.⁵ The action of disinfecting agents on the virus of poliomyelitis is being studied.

Therapeutics

A PLEA FOR CAREFUL THERAPEUTIC RECOMMENDATIONS

This is the age of careful medical journalism, in which, in the best medical journals, editorials are written by experts; original articles are carefully passed on before their acceptance; medical news reports are carefully compiled and authenticated; and true abstracts are made of the best articles appearing in other journals. Nevertheless, the departments devoted to therapeutics and prescriptions appear to be unedited, and often represent material that is medieval.

It seems absolutely inexcusable to perpetuate some useless and ancient prescription because it was advised by an eminent man. It seems a serious mistake for a first-class home journal to copy a prescription from a foreign journal without criticising the useless and worthless ingredients that it often contains, to say nothing of the impossibility of obtaining some of its ingredients in this country.

Some of the best physicians of Europe are prone to polypharmacy. America to-day is leading the world in the medicinal management and treatment of diseased conditions. The best clinicians use but few drugs, and these are carefully selected and given to accomplish the physiologic activities for which they are administered. There is no country that is taking more care to administer a drug in the most efficient, most pleasant, and most agreeable manner possible, than is America. Let other countries, then, copy our treatment of disease while we publish, discuss and consider a European management of a disease, but let us not accept their mixtures, the many ingredients of which cloud the activity and utility of the very drug which they intend to laud.

It makes no difference who writes the prescription, whether it is the greatest or the least man in the country. If the treatment is worth considering and copying from journal to journal, and the menstruum ordered for the drug consists of two or more syrups, one or more tinctures for taste, and one or more aromatic or pleasant tasted waters, such a prescription should be cut

* From the Laboratories of the Rockefeller Institute for Medical Research, New York.

1. Flexner and Lewis: THE JOURNAL A. M. A., 1909, III, 1639; 1909, III, 1913; 1909, III, 2095; 1910, IV, 45.

2. Landsteiner and Levaditi independently ascertained the filterability of the virus. Compt. rend. Soc. de biol., 1909, LXVIII, 592.

3. Wickman: Beiträge zur Kenntniss der Heine-Medinschen Krankheit, Berlin, 1907.

4. Flexner: Jour. Exper. Med., 1907, ix, 142.

5. Levaditi and Landsteiner (Compt. rend. de Soc. de biol., 1909, LXVII, 787) found the salivary glands to contain the virus.

down or modified by the copying journal to a sensible basis.

This is no parody on prescription writing. It is a condition easily discovered by any medical reader. Even text-books perpetuate a combination of simples in the administration of a single active drug, and some such prescriptions have been perpetuated for years. If one will carefully analyze proprietary mixtures for specific purposes, it will be found that there is one, perhaps there are two, active ingredients that can be guaranteed to do the work required. The rest of the combination is a mass of mystery to sell the particular proprietary preparation. The same results could be obtained by any prescriber, if he ordered the well-known active ingredient separately, without its mysterious combination.

It is time to call a stop to such therapeutic nonsense. In the first place, the administration of syrupy sweets rarely makes a disagreeable drug taste better. These sweets perpetuate the disagreeable taste a little longer, and a lot of medicated sugar is put into the stomach, when perhaps the same individual, especially a child, has been forbidden to have a piece of clean candy. If the medicine is to be taken frequently, as enough mixtures are generally ordered, the stomach is soon upset by such medication.

As illustrations of the necessity for carefully editing therapeutic recommendations the following are examples:

A German journal published an article recommending the administration of beechwood sawdust in bread for the treatment of chronic constipation. This was copied by a French journal and again copied by an American journal, and the end is certainly not yet. When such treatment is compared to the administration of agar-agar, the absurdity is not even worthy of discussion.

A French journal sagely advises (and this is copied into our own journals) for the rheumatic pains of influenza (no other kinds of muscle pains evidently) the following liniment:

Salicylic acid.
Methyl salicylate.
Oil of eucalyptus.
Oil of sage.
Oil of theobroma.
Camphorated oil.
Spirit of juniper.

The exact value of a fluidram of oil of eucalyptus and 14 minims of oil of sage (the quantities recommended) in something more than a five-ounce liniment is certainly not evident. Whether the cacao butter (oil of theobroma) would remain liquid in this mixture at ordinary temperatures is a question.

One of our journals copies from another journal an eminent man's prescription for the treatment of influenza. He recommends a capsule, which, with other ingredients, contains 1/60 of a grain of strychnin sulphate, which is to be administered every two hours. This carries with it no limit to the number of times such a dose should be given at this frequency. In ten hours six doses would have been taken, which would mean that 1/10 of a grain of strychnin would have been administered. The necessity for 1/10 of a grain of strychnin in ten hours is certainly rare in a simple affair like influenza. Probably the physician who recommended this prescription gave definite directions how soon this frequency of administration should be stopped.

A physician recently writing in one of our journals urges as a tonic in rose cold and hay fever a mixture of

alkaloids which are combined with extract of taraxacum and then administered in capsules. Does anyone for one moment believe that this taraxacum has anything whatsoever to do with any good that may come from the rest of the treatment? Taraxacum is nothing but a bitter, and when administered in capsules loses even that value; and yet this simple (quinin, iron, arsenic, strychnin) prescription has been copied into another American journal without the use of editorial scissors.

A French journal tells how fats and oils may be given to a diabetic subject by means of an emulsion of cod-liver oil with "cherry laurel water, orange flower water, Irish moss, oil of bitter almond, distilled water, and saccharin." Or even "freshly prepared castile soap may be added." This suggestion has been copied. It is not necessary to discuss the value or necessity or the ingredients in it.

Two French journals, one copying from the other, advise that gastric troubles of genital origin (especially in girls at puberty) may be treated in other ways, but the physician quoted prefers to give such patients a "decoction of white condurango bark," to which shall be added "syrup of gentian." Condurango, once used in cancer and syphilis, is probably rarely now used in the United States. The syrup of gentian is not official. This recommendation has appeared in one of our journals.

In a recent journal, and one of the best journals in this country, appeared an abstract from a lecture by Professor Robin, of France. The professor evidently claimed that there are some conditions in which a milk diet must be given, and in which the amount administered should be run up to a gallon of milk in twenty-four hours. He claimed that some patients imagined that they had an intolerance for milk, and others might have a real intolerance, and well they might. Such treatment is inexcusable from almost any standpoint. There are but few people who, if they are sufficiently diseased to require an absolute milk diet, could stand such an enormous amount of it.

To enable these poor patients to digest or acquire a tolerance for this milk, Professor Robin advised, if there was no vomiting, 3 drops of the following mixture, taken before each dose of milk (and the dose of milk should be gradually worked up from 10 to 26 ounces, administered every three hours, from 7 a. m. to 10 p. m.):

Solanin.
Dilute sulphuric acid.
Picrotoxin.
Hydrochlorid of morphin.
Hydrochlorid of cocain.
Sulphate of atropin.
Ergotin.
Cherry laurel water.

It would be rather difficult to figure out (and it is entirely unimportant, hence the amounts of the ingredients are not given) exactly how much of these strong alkaloids 3 drops would contain. If the dose was sufficient to cause any physiologic action whatsoever, it would seem to be inexcusable to administer such a combination of strong alkaloids to make a patient crave for a gallon of milk a day. On the other hand, if the dose is so minute as to have psychologic effect only, in other words, an autosuggestion that they will long for the milk, it seems too bad to waste such active drugs for such an insignificant object, when 1/50 of a grain tablet

of quinin sulphate, dissolved on the tongue, will have the same psychologic effect.

If vomiting is present, Professor Robin advises 3 drops of the following mixture before each administration of milk:

Pierotoxin.
Alcohol.
Hydrochlorid of morphin.
Sulphate of atropin.
Ergotin.
Cherry laurel water.

The same discussion holds true of this mixture as of the one above. It is unnecessary to discuss the advisability of administering pierotoxin and solanin internally.

After each dose of milk the patient must take a tablespoonful of elixir of pepsin, or 0.50 gram ($7\frac{1}{2}$ grains) of straight pepsin.

After the first, third, and fifth doses of milk the patient is to receive a powder consisting of:

Calcined magnesia.
Sodium bicarbonate.
Pulverized sugar.
Prepared chalk.

What would this combination of alkalies do to the activity of the pepsin which was administered, not only after the second, fourth, and sixth doses of milk, but also after the first, third, and fifth?

To progress; if there is flatulence and meteorism, the patient takes with the second, fourth, and sixth doses of milk a tablespoonful of the following:

Ammonium fluorid, 3 grains.
Distilled water, 10 ounces.
Mix and make a mixture.

This is primarily incorrect, as ammonium fluorid is very soluble in water, and therefore makes no "mixture," but makes a solution.

It would be hard to find in medicinal, pharmacologic, or therapeutic books this salt even mentioned. Of course it is not official. The United States Dispensatory and the National Dispensatory do not mention it. It is a chemical, "very unstable, forming colorless crystals, of a sharp, saline taste, readily soluble in water, and corroding glass like hydrofluoric acid" (Foster's Dictionary). Merck says it must be kept in gutta percha bottles, and is used mostly as a reagent, and in the arts as an etcher of glass. Merck also states that it has been used in hypertrophy of the spleen and in goiter, in from 5 to 20-minim doses of a 0.75 per cent. solution.

This is, then, a nice sort of a drug to advise for use in simple flatulence.

To proceed, Robin states: "In case of pain, cramp, a burning feeling, eructation, twitching, oppression, heart-burn, or any painful sensation whatever affecting the stomach, one of the following powders, mixed with water, is to be administered immediately:"

Calcined magnesia.
Sodium bicarbonate.
White sugar.
Codein.
Precipitated chalk.
Bismuth subnitrate.

Certainly codein sulphate is more soluble and more active than codein. In the next place the addition of sugar to the prescription, for burning in the stomach, would seem a mistake. If this preparation is to be added to the one above, *i. e.*, to be administered after the first, third, and fifth doses of milk, it would seem as though the amount of alkali in the stomach would be over-sufficient, although the dose advised is small.

The next advice is, if the patient has diarrhea, that he is to take, after each dose of milk, a cupful of infusion of 20 grains of wild strawberry roots. Of course, this is perfectly easy to obtain, especially during the late New England unpleasantness. If this is not enough, he must take a "bolus" of the following after each dose of milk:

Diascordium.
Bismuth subnitrate. } Each one dram.
Make 16 pills.

The Pharmacopeia and the United States Dispensatory do not recognize diascordium. Diascordium, according to Foster's Dictionary, is an electuary recognized in the French Pharmacopeia, and is "made by evaporating 130 parts of honey of roses to 100 parts, adding one part of extract of opium dissolved in 20 of Spanish white wine, and then little by little adding 6 parts of dried scordium leaves, 2 each of petals of red roses, root of polygonum bistorta, gentian, tormentilla and seeds of berberis vulgaris, 1 each of ginger and piper longum, 4 of Ceylon cinnamon, 2 each of origanum dictamnus, benzoin, galbanum, and gum arabic, and 8 of powdered Armenian bole. Each gram (15 grains) contains 0.006 gram ($1/10$ grain) of opium."

This is certainly returning to medieval multiple mixtures, such as the old "electuary of roses" of England, the weapon ointments, and the antidote of Mithridates.

Another recommendation of Professor Robin, also copied in this country, unedited, is a prescription for "bronchitis with violent cough," and is as follows:

Bromoform.
Tincture of bryony.
Tincture of grindelia robusta.
Tincture of nux vomica.
Tincture of hyoscyamus.
Alcohol.
Syrup of opium.
Syrup of bitter orange peel.

The syrup of opium is not official, and therefore the strength of this important preparation is indefinite. The value of this mixture of strong drugs and its behavior in the stomach is uncertain. Probably no one will attempt to use this combination.

Another specimen of this Professor's recommendations has been copied into this country, and is as follows:

Pyramidon.
Ammonium bromid.
Ammonium iodid.
Cocain hydrochlorid.
Sparteïn sulphate.
Caffeïn valerate.
Syrup of bitter orange peel.

The preparation is recommended as effective in all forms of neuralgia. Just what this particular mixture would do chemically when combined, and physiologically when administered, is certainly a question of doubt. The least that can be said is that cocaine, even in small doses, administered internally, in neuralgic conditions is without excuse. Neuralgic pain is very likely to be repeated, and the danger of forming a cocaine habit must never be forgotten.

Will the journal which published Professor Robin's lecture on milk diet please forgive this criticism? It is not believed for one moment that this article was supervised. It would seem that a journal had the right to believe that advice offered by a man of Professor Robin's standing would be above criticism. Unfortunately, such is not the case.

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PERNICIOUS VOMITING OF PREGNANCY

There is no little satisfaction in observing the amount of substantial investigation on the toxemias of pregnancy that has been accomplished by Americans. Probably this is, in part, due to the fact that the most useful methods of quantitative urinalysis, on which these investigations largely depend, have been devised in this country by Folin, for it is the usual history of research that new methods are the starting point of advances in knowledge. As is to be expected, the results of the various investigators, and particularly the conclusions drawn from their results, have not been entirely in agreement. In a critical review of the recorded work on the subject of pernicious vomiting of pregnancy, to which are added some new observations, F. P. Underhill¹ analyzes clearly the existing situation and reaches conclusions which may serve to put the entire matter on a more substantial basis than it has heretofore had.

The first application of the newer analytical methods to the study of the urine in this condition was made by Stone, who found evidence which suggested that the injury to the liver cells found in this disorder resulted in defective nitrogenous metabolism, so that higher nitrogenous compounds are eliminated in place of a part of the urea. Williams found that different types of pernicious vomiting may be recognized, namely, neurotic, reflex and toxemic; and that only in the last of these three types are marked urinary changes present. Here the proportion of the urinary nitrogen which is excreted in the form of ammonia is increased in proportion to the severity of the condition, and Williams considered that this ammonia ratio might be a proper guide to management of cases of pernicious vomiting. Ewing and Wolf obtained results agreeing in part with both Stone and Williams; that is, they found a high proportion of nitrogen in more complex forms than urea, usually excessive ammonia, and consequently a low proportion of urea. These changes they ascribed, as Stone had done, to the hepatic lesions.

Underhill is of the opinion that the urinary changes observed in this condition can all be accounted for by the starvation of the patients, and that they are not produced by the hepatic lesions and are not indicative of the pathogenesis of the disease. Starvation, as is well known,

leads to marked changes in the nitrogenous constituents of the urine, which are to be ascribed, in part, to the fact that the starving organism is obliged to utilize its own proteins and fats in place of the carbohydrates from which most of the energy is obtained under normal conditions. As a result of the excessive fat destruction, and perhaps also from the protein catabolism, excretion of organic acids with consequent high ammonia ratio in the urine occurs. So long as the supply of glycogen in the tissues is not exhausted, or is being made up by a reasonable amount of carbohydrate in the food, there are no marked changes in the urine, according to Underhill. Therefore, he contends, the pathologic condition which underlies the vomiting cannot be responsible for alterations in the urinary nitrogen, since these are not present in cases with severe vomiting, provided a reasonable quantity of food is retained. Extensive changes in the liver, at least in experimental animals, do not ordinarily cause observable deficiency in urea formation, so great a factor of safety has the liver.

On the basis of Underhill's views the logical treatment of pernicious vomiting should include the administration of carbohydrates, which can probably be done best by the employment of enemas of dextrose solution by the Murphy drop method; it being appreciated that feeding in these cases merely relieves the starvation and not the underlying cause of the vomiting. This suggestion is entirely in harmony with the newer ideas accepted by all close students of metabolism, that in emergencies the body usually has an abundant supply of protein to furnish the small amount of nitrogen that is absolutely necessary for cellular nutrition, but that to furnish heat and energy large supplies of carbohydrates are necessary, and these must come from outside after any considerable drain on the tissue glycogen; albuminous nutritive fluids are not so valuable in inanition as physicians have been taught to believe, while carbohydrate demands have been neglected.

It is unfortunate that Underhill and Rand have not a larger number of clinical observations to support the views advanced in their valuable paper, since these views seem well grounded and need only more abundant clinical evidence to establish them. This evidence will undoubtedly be brought forward soon, under the added stimulus of this new hypothesis, and whether it is confirmed or not progress will be made. The therapeutic suggestions are certainly well founded and should be given a thorough trial.

MEDICINE AND SOCIOLOGY

It is often said that physicians do not use adequately the opportunities for the discussion of the sociologic data that must necessarily pass under their eyes; and the objection has a certain amount of truth. Physicians are too busy as a rule to be able to study out the significance of sociologic details that come to them. Moreover, they are unfamiliar with the methods of sociology, and

1. Underhill, F. P., and Rand, R. F.: Arch. Int. Med., 1910, v, 61.

would find it too difficult to apply the principles of the sister science to the data they have. Dr. Lawrence F. Flick, director of the Phipps Institute for the Study and Prevention of Tuberculosis, however, has made in his annual report¹ a distinct contribution both to clinical medicine and to sociology. From this point of view there is probably no more satisfactory paper in recent medical literature.

Some of the features of the report are of general interest. Dr. Flick has, for instance, collated the statistics of the birth-places and length of residence in America of all foreign patients who came for treatment. The average period of residence in America of over three hundred of these was nearly twelve years and a half. About 20 per cent. of them had been less than five years in the country when they applied for treatment; over 70 per cent. had been here more than this length of time. Some of them brought the disease with them, but most of them acquired the disease in the infected houses into which they moved on arriving in this country. This is particularly true of the Russian immigrants, who are compelled to go into the most insanitary and undesirable houses. The Phipps Institute statistics on the change of residence of consumptives show that the houses occupied by consumptives frequently change tenants. Their sanitary condition is exceedingly bad. They not only spread contagion, but stimulate development of the disease in those who have it. Dr. Flick's suggestion for the sociologic prophylaxis of consumption in these cases is that a change of tenants should not be allowed in such houses until a clean bill of health is obtained for them.

The predominance of male over female mortality from tuberculosis has been noted at the Phipps Institute and is interestingly discussed. In all countries where there has been a reduction in the death-rate from tuberculosis, this reduction has been more marked among females than among males. Dr. Flick suggests that one reason for this is undoubtedly the greater mortality from tuberculosis recognized to exist everywhere among tobacco users and alcoholics, for smoking and drinking are largely male vices. The predisposing influence of hard labor both on the acquisition of the disease and its persistence tells against males. Another factor favorable to women is their greater cleanliness. They do not reinfect themselves; besides, women take more kindly to the modern ideas of prevention of tuberculosis. One reason, however, for the apparently greater mortality from tuberculosis among adult males than among adult females is the fact that under twenty-one, females are less capable of resisting the disease; at this age more of them succumb than of males. This fact vitiates the statistics of later life somewhat.

The relation of tuberculosis to age is of no less interest than its relation to sex. The mortality and mor-

bidity of tuberculosis are low under the age of ten years—that is, during the milk-drinking period of human life. Dr. Flick thinks that if milk were a strong causative factor, tuberculosis would be less frequent in the age after thirty, when milk is seldom used as food. We are not sure that this is a valid argument, since, as is well known, tuberculosis may remain latent for an indefinite period after a person is infected, to become active only when the organism is subjected to stress. The fact that the mortality and morbidity from tuberculosis are low in infancy—that is, during the sheltered and protected age—does not seem conclusive proof that infection is correspondingly infrequent during that period.

Occupations predispose very markedly to tuberculosis. Those who work inside for long hours and low wages that afford poor nourishment contract the disease easily. Insufficiently nourished persons who work hard outside, however, also have a high morbidity. The dusty occupations bring with them more cases than any others.

The statistics of many places seem to show that more married than single persons suffer from tuberculosis. Some believe that this is because life is as a rule more strenuous for married persons, their worries are more frequent, and their resistive vitality is less. Dr. Flick's discussion of the subject shows that there is a fallacy beneath this conclusion, since the great majority of the unmarried are under the age of twenty, while the married state is coincident with the age periods in which tuberculosis is most frequent and which carry the burden of the cumulative influence of the hardships, deprivations, and sorrows of advanced years.

Another interesting question is that of the resistive vitality of people of different complexions to the inroads of tuberculosis. Negroes show the highest mortality. Next to them, however, are not, as might be expected, the brunettes, but the blondes of our population. This would seem to argue that possibly the darker-complexioned have more resistive vitality and are not disturbed as much as are the blondes by exposure to light. It has been argued that the light-complexioned Teutonic and Celtic peoples will not stand our sunny climate well, for they are unused to it. New York, Naples and Chicago are nearly on the same meridian—well south of the latitudes from which the fair-skinned immigrants come. That portion of America which corresponds in latitude to Germany and Great Britain is far north in the Dominion of Canada. The brunette peoples, moreover, are considered by some destined to outlast the blondes; and these statistics with regard to tuberculosis have been quoted as an added proof of this contention. The negro complicates the question, however, seeming to show that race means much and that the difference between blondes and brunettes in mortality is but slight. Of course, in some instances, differences in the mortality and morbidity of various peoples may be due to different national habits of living, and not to differences in the racial constitutions. Statistics can prove

1. Flick, Lawrence F.: *The Clinical and Sociologic Aspects of the Year's Work, Fifth Annual Report of The Phipps Institute for The Study and Prevention of Tuberculosis* (Philadelphia), 1909.

little in regard to differences in racial constitution unless it be shown at the same time that the subjects of the statistics, race for race, live under approximately the same conditions.

This whole field is almost unbroken, and a paper which suggests fruitful subjects of study therein is valuable. To those who want to gain an idea of the present sociologic importance of our most fatal disease we commend this article of Dr. Flick.

AN ANTIVIVISECTION LEADER

Widely heralded as a "champion of mercy," Stephen Coleridge, the most notorious of England's antivivisectionists, arrives in New York this week. He comes to cheer his admirers and followers in their struggle to check the progress of medicine. To this end he is scheduled to address meetings in New York, Philadelphia, Baltimore and Washington. As a specimen of his class he is worth examining.

Son of the late Lord Chief Justice of England, fluent, well educated, plausible, Mr. Coleridge might be expected to display a judicial mind, scholarly qualities, and a scrupulous regard for justice and truth. He might naturally be expected to be acquainted with the procedures he so vigorously denounces; he might still more be expected to be above the cheap tricks used by persons less favored with opportunities to learn good manners and fair play. Unfortunately, performance no longer leaves room for expectation in Mr. Coleridge's case.

Mr. Coleridge has testified that he has never seen an experiment on an animal; that he never wishes to see one; that he has never seen an animal after it was experimented on—indeed, that he is "wholly unacquainted with the thing from personal knowledge." Thus fully equipped with an impenetrable ignorance of what he opposes, this champion enters the fray.

A lurid imagination, an unbounded credulity and a facile tongue constitute his weapons. The first notable display of his skill at arms occurred when he attacked the good name of Professor Bayliss. Two hysterical women had written a grotesque extravaganza, entitled "The Shambles of Science." Mr. Coleridge, seeing in these absurd stories only the purest truth, on a public platform named the physiologist as the perpetrator of the cruelties described. This little tilt cost Mr. Coleridge \$10,000 for slander and \$15,000 for the expenses of the trial.

His ready faith in the lady romancers he refuses to extend to his opponents. Indeed, instead of trusting truth-seekers to tell the truth, he ascribes to them his own fine disregard for veracity. "These experimenters," he has exclaimed, "have the greatest contempt for the act of Parliament. They would deny a breach of this act just as I should deny a breach of the motor car act. I drive a motor car, and when I go beyond the speed limit, and a policeman asks me, I say, 'No, I'm not going beyond the speed limit.'" This happy illustration

shows typically Mr. Coleridge's readiness in adapting means to ends.

"Baseless charges," "misrepresentation of evidence," "wrongly alleged," "deceptive and misleading," "contrary to fact," "untrue"—such are the characterizations of Mr. Coleridge's statements by the leaders of medicine in England in their testimony before the Royal Commission on Vivisection. Here is a sample of his methods: He asked the librarian of the British Museum to suggest a suitable translator for an instrument catalogue published in Germany. The translation appeared blazoned with the name of the translator, "Nominated at the request of the National Antivivisection Society by the Librarian of the British Museum." The librarian protested against this "unwarranted abuse of a mere act of courtesy," this underhanded means of giving "an air of respectability to a partisan pamphlet," and demanded the withdrawal of the objectionable title-page. The "champion of mercy" was unable to understand that there was a question of honorable conduct involved and refused to comply.

To complacent ignorance and malicious imagination must be added deliberate deceit. The translated catalogue, illustrating apparatus for holding animals, Mr. Coleridge sent broadcast to the ladies of England. In each catalogue a letter was enclosed, addressed "Dear Madam," and appealing in the following insinuating and suggestive manner: "I place it, therefore, in your hands, and leave it to exercise its influence on your heart. If it leads you to know, beyond the reach of gainsay, that pitifulness is a higher thing in the sight of God than knowledge thus obtained, you will send me your help, great or little, according to your means, that I may do what I can, as effectively as you make me able, to put an end to these unspeakable deeds, and I shall continue to be your and the poor animals' ever-faithful servant." In the catalogue not a word is found explaining that animals fastened in the apparatus are anesthetized. Indeed, "unspeakable deeds" can only suggest that animals sensitive to pain are bound down and dissected alive in horrible agony. And this evil and malignant implication has been accepted on all sides by impressionable and kind-hearted people as proof of the horrors of laboratories.

It is no wonder that the reckless untruth and the malevolent eagerness of Mr. Coleridge and his followers, who so grossly misrepresent the spirit of medical research, "have infected," as Mr. H. G. Wells has testified, "a whole fresh generation of London students with a bitter partisan contempt for the humanitarian effort that has so lamentably miscondacted itself."

SCOPOLAMIN-MORPHIN ANESTHESIA IN LABOR

The method of producing surgical anesthesia by the injection of scopolamin and morphin was introduced in 1900 by Schneiderlein, and in 1902 Steinbückel used this method to annul the pain of labor. On account of

its heavy death-roll—43 deaths in 6,000 cases (Avarffy), as well as for other reasons that cannot be discussed now, the method is yet on trial in surgery, and considerable difference of opinion obtains as to its value in obstetrics. An important contribution to the study of this form of anesthesia in surgery and in labor by Dr. Robert A. Hatcher, a member of the Council on Pharmacy and Chemistry, is published in this and the preceding issues of *THE JOURNAL*. His conclusions express what seems to be the present consensus of medical opinion on the use of these agents for the purposes named.

Scopolamin—or hyoscin—belongs in the atropin series and, to a certain extent, it resembles atropin in its peripheral action, but, unlike atropin, sometimes it causes drowsiness and eventually an overpowering desire to sleep. The sleep, which may last from five to eight hours, is followed by drowsiness. Morphin and scopolamin are strongly synergistic in producing narcosis, but the claims of Schneiderlein and other early advocates of the use of these drugs as to their antagonistic side actions do not seem to be borne out by a more careful observation of their physiologic action and by clinical experience. In obstetrics the usual initial dose is 0.0003 gram (about 1/100 grain) of the hydrobromid of scopolamin with 0.01 gram (about 1/6 grain) of morphin injected subcutaneously. In favorable cases this causes the patient to sleep between the pains, and, while the woman may be aroused by the pains and suffer more or less for the time being, yet there is no recollection of the pains afterward. If necessary to induce this state, the scopolamin may be repeated once or twice, but not the morphin, the indications being furnished by the mental condition of the patient, who should be maintained in such a state of amnesia that she does not remember what happened thirty or thirty-five minutes before.

Among the advocates may be mentioned Krönig, from whose clinic Gauss has reported 1,000 cases, and Beruti, 600 with good results, and Sir J. Holliday Croom,¹ who had a satisfactory experience in 62 cases of labor. Says Croom: "In the majority of patients labor was practically painless. Some suffered slight discomfort and others dozed during the intervals and complained of pain to a limited extent only when the uterine contractions were at their height. In the great majority of cases the patients fell into a profound slumber immediately on the completion of labor and awoke refreshed, with only hazy recollections of pains suffered." He regards scopolomorphinization as an efficient means of controlling the pain of labor and as practically safe. At the same time he acknowledges that the child often is sleepy, even deeply unconscious, and that one patient became violent; and that the method is unsuitable for a primipara with nervous temperament on account of the danger of the patient becoming violent.

Others emphasize more strongly these drawbacks of the method, notably Avarffy,² who condemns the prac-

tice without reserve, especially because of the dangers to the child from asphyxia and because of the occasional but non-predictable untoward effects in rendering the patient violent and unruly. He holds that the vannted "twilight sleep" is the result of intoxication with a powerful agent whose effects cannot be controlled adequately and under whose influence labor proceeds abnormally in too large a proportion of the cases to warrant its general use. In support of his conclusions, Avarffy cites a number of statistical observations on cases studied by himself and others to the effect that amnesia, for instance, was noted in only about two-thirds of the cases, that labor pains seemed weakened in about one-third, that abdominal straining was weakened in about one-fourth. With respect to the child he gives in 1,607 cases from five different clinics 8.89 per cent. of asphyxia, 17.6 per cent. of oligopnea, and 0.49 per cent. of deaths. This seems to bear out the oft-repeated warning that to give morphin to a parturient woman is to endanger the life of the child. The method consequently increases the dangers to the child, and in view of this fact, as well as on account of other shortcomings, it can hardly be regarded in its present form as a safe means of controlling the pain of labor.

Even the most enthusiastic of the German advocates have warned of the danger of the indiscriminate use of the combination of two such dangerous drugs, insisting that the method should be employed only in institutions where any untoward effect may be guarded against.

THE COMPENSATING ACUTENESS OF THE SENSES OF THE BLIND

It is a common belief, shared with the populace by some physicians, that the blind are compensated for their misfortune to some extent by a greater acuteness of the remaining senses. That this is probably not the case was shown by observations made by Kunz and Griesbach at the Mülhausen (Germany) Institution for the Blind. The results of these observations were given in substance by Dr. J. G. McKendrick, who has recently published¹ a communication from a blind man whose personal experience agrees with the results of the German observers. It may be admitted that the physical tests employed in modern experimental psychology fail to show any greater development of the remaining senses of the blind than of the same senses in normal individuals. Of course, these tests do not disprove the greater relative usefulness of the remaining senses of the blind, for, it should be remembered, such methods are limited in their scope to the physical senses. There may be just as much brain behind the four principal senses of a blind man as there is back of the five senses of a normal individual, and just as much capacity to use it, in many cases at least. What is lost by sight is made up, to a certain extent, by concentration on a narrower field. As Dr. McKendrick says in his first communication: "The effort of attention is superadded to the sensory impression. Impressions may reach the sensorium of

1. Jour. Obst. and Gyn. Brit. Empire, 1909, xvi, 16.

2. Gynäk. Rundschau, 1909, III, 338.

1. McKendrick, J. G.: Nature, March 11, 1909; Dec. 2, 1909.

which we are usually unconscious, but they may be detected by an effort of attention. This was strongly pointed out by Helmholtz. The senses of the blind are not more acute than those of normal people, but the necessities of the case oblige the blind to pay attention to them." Practically, this amounts to about the same thing as an enhanced acuteness of the remaining senses; and it is this neglect of the element of more concentrated attention that would seem to involve an element of error in the interpretation of the physical tests of modern experimental psychology of which so much is made at the present time. Aside from the sense of sight, the difference between the blind and the seeing is mainly in the greater drafts which the former make on their perceptive capacity. The possibility of acquiring an increase of functional sensory capacity by use also suggests itself; but this is not one of the ruling theories at the present time.

Medical News

ARKANSAS

Elections.—At the annual meeting of Boone County Medical Society, held in Harrison, January 5, Dr. Alfred M. Hathcock was elected president; Dr. James H. Fowler, vice-president; Dr. Franklin B. Kirby, secretary, all of Harrison, and Dr. Hugh L. Routh, Batavia, treasurer.—Drew County Medical Society, at its annual meeting, elected Dr. William A. Brown, Monticello, president; Dr. Sidney Harris, Wilmar, vice-president, and Dr. Albert S. J. Collins, Monticello, secretary-treasurer.—At its annual meeting in Gentry, Benton County Medical Society elected Dr. Edgar E. Pickens, Rogers, president; Dr. Joseph T. Clegg, Siloam Springs, vice-president; Dr. James Fergus, Rogers, secretary-treasurer; Dr. Clint A. Rice, Gentry, delegate to the state society, and Dr. Joseph T. Clegg, Siloam Springs, alternate.—Faulkner County Medical Society has elected Dr. James W. DeJarnett, Guy, president; Dr. Joseph H. Downs, Vilonia, vice-president, and Dr. Joseph S. Westerfield, Conway, secretary-treasurer.—Yell County Medical Society, at its annual meeting held in Dardanelle, elected Dr. Samuel E. Miller president; Dr. James R. Linzy vice-president, and Dr. A. H. McKenzie secretary-treasurer (reelected), all of Dardanelle.—Lonoke County Medical Society has elected the following officers: President, Dr. Samuel A. Southall, Lonoke; vice-president, Dr. Oran D. Ward, England; secretary-treasurer, Dr. Forrest A. Corn, Lonoke; assistant secretary-treasurer, Dr. Samuel S. Beatty, England; delegate to the state society, Dr. Henry Thibault, Scott; alternate, Dr. Eugene A. Callahan, Carlisle, and censor, Dr. John F. Brewer, Kerrs.

CALIFORNIA

New Health Board Appointees.—The mayor has appointed Drs. George L. Eaton and Thomas B. Roche, members of the board of health of San Francisco, and at a meeting of the board for organization Dr. Eaton was elected president.

License Law Upheld.—The town recorder of St. Helena has decided that the town license ordinance is valid and does not conflict with the statutes of the state, and that consequently Drs. Daniel E. Osborn, Frank C. Newton and J. H. O'Connor have been guilty of misdemeanor in practicing their profession without first having paid the local license tax.

Personal.—Dr. Robert D. Cohn, San Francisco, sued for \$10,000 damages by Max Moses, who alleged that the oculist had been negligent, and that on this account he had lost his eyesight, was vindicated by a jury January 19. The specialists called by the plaintiff failed to substantiate his allegations and the jury promptly returned a verdict in favor of Dr. Cohn.

Medical Society Meeting.—Merced County Medical Society, at its annual meeting, held in Merced, January 18, elected the following officers: President, Dr. Edward S. O'Brien, Merced; vice-president, Dr. Walter E. Lilley, Merced; secretary, Dr. Ludwig H. Wolfson, Merced; treasurer, Dr. Herbert DeLoss, Merced; delegate to the state society, Dr. Hjalmar Kylberg,

Mariposa; alternate, Dr. Herbert DeLoss, Merced; and censors, Drs. Edward S. O'Brien and Curtis H. Castle, Merced, and Charles F. Wade, Los Banos.

Hospital Notes.—A charity hospital is to be erected in San Diego.—The Peninsula Hospital, Palo Alto, was formally opened January 3.—A permit has been issued by the Board of Public Works for the erection of the Children's Hospital and Training School for Nurses on California street to cost about \$200,000. The central building and east wing are to be erected, leaving the west wing to be added when the financial condition of the hospital may warrant.—The work on the new hospital for Contra Costa county at Martinez, which is to cost \$22,000, is to begin in the spring. Plans have been submitted and the contract has been awarded.

COLORADO

Fremont Physicians Elect.—The Fremont County Medical Society, at its annual meeting, held in Florence, January 24, elected Dr. Raynor E. Holmes, Canon City, president; Dr. Leonidas E. Rupert, Florence, vice-president, and Dr. Royal C. Adkinson, Florence, secretary.

Personal.—Drs. George H. Stover and Edward Delehanty, Denver, who were operated on in St. Joseph's Hospital recently for appendicitis, are reported to be convalescent.—Dr. William H. Campbell, Pueblo, has been appointed county physician and state health officer for Pueblo county.—Dr. Mary E. Phelps, Canon City, sailed from San Francisco February 5 on a voyage around the world.

CONNECTICUT

Library Presented to Hospital.—A medical library of nearly a thousand volumes was presented to Danbury Hospital, January 25, by Dr. W. C. Wile, and was accepted for the hospital association by its president, Mr. D. E. Loewe. The collection is to be known as the Wile library, and the room in which it is kept is to be the consulting and reference room of the staff of the hospital. The library is intended by the giver for the benefit of the staff.

Alienists Meet.—The Connecticut Society of Alienists, which was organized two years ago, held its annual meeting in New Haven, January 14. The following officers were elected: President, Dr. David W. McFarland, Greens Farm; secretary, Dr. Alvin D. Wadsworth, South Norwalk; treasurer, Dr. Frederick B. Ruland, Westport; members of executive committee, Drs. Henry M. Pollock of the State Hospital, Norwich; Henry R. Noble, superintendent of the State Hospital, Middletown; Charles W. Jackson, Watertown; Amos J. Givens, Stamford, and John L. Buel, Litchfield; Drs. Graeme M. Hammond and George A. Lawrence, New York City; Jacob M. Nolan, Westport; Franklin H. Mayberry, East Hartford; Thomas D. Crothers, Hartford; Frederick Powers, Westport; and James M. Brown, Westport, and Hon. James F. Walsh, Greenwich, Hon. Costello Lippit and Hon. Nelson J. Ayling, Norwich; Hon. Howard M. Hickox, Watertown; Hon. Michael C. Down, Stamford; Hon. M. J. Holman, Saybrook, and Hon. Daniel B. Bradley, Jr., Westport, were admitted to honorary membership.

Medical Society Meetings.—At the annual meeting of the Hartford Medical Society, January 3, the following officers were elected: President, Dr. Edward K. Root; vice-president, Dr. Marcus M. Johnson; secretary, Dr. Albert R. Keith; assistant-secretary, Dr. Edward A. Hotchkiss; treasurer, Dr. George K. Welch; librarian, Dr. Walter R. Steiner, and censors, Drs. John H. Rose, Charles S. Stern, and Thomas F. Kane. A portrait of the late Dr. Gordon W. Russell was presented to the society by Mrs. Russell.—Bridgeport Medical Association, at its annual meeting, elected Dr. Frank W. Stevens, president; Dr. Edwards M. Smith, vice-president; Dr. George H. Warner, secretary; Dr. Daniel M. Driscoll, treasurer, and Dr. Eli B. Ives, curator.—Greenwich Medical Society, at its annual meeting, January 3, elected Dr. Frank T. Brooks, president; Dr. William Burke, vice-president, and Dr. T. J. Bergin, secretary-treasurer.—The Waterbury-Suffolk Medical Association, at its annual meeting, January 17, elected the following officers: President, Dr. Thomas J. Kilmartin, Waterbury; vice-president, Dr. John D. Freney, Waterbury; secretary, Dr. J. W. Fruin, and treasurer, Dr. Charles A. Monagan, Waterbury.

FLORIDA

Societies.—At the annual meeting of the DeSoto County Medical Society, held in Arcadia recently, the following officers were elected: President, Dr. Murdock L. Crum; vice-president, Dr. Daniel L. McSwain, Arcadia; secretary, Dr.

John A. Simmons, Arcadia; treasurer, Dr. R. L. Cline, Arcadia, and censors, Drs. Daniel L. McSwain, Arcadia, J. B. Carter, Fort Ogden, and Young E. Wright, Wauchula.—The physicians of Columbia county met at Lake City recently and organized the Columbia County Medical Association, with the following officers: Dr. Abner J. P. Julian, president; Dr. Leonidas M. Anderson, vice-president; Dr. Roy E. Chalker, secretary, all of Lake City; and Drs. J. E. Garner, Warren B. Rush of Lake City, and Dr. Henry E. Parnell, Fort White, censors.—At a meeting held in St. Petersburg, January 14, the Pinellas Medical Association was organized with an initial membership of nine. The following officers were elected: President, Dr. John D. Peabody; vice-president, Dr. Frederick W. Wilcox; and secretary-treasurer, Dr. Louis H. Jones, all of St. Petersburg.

GEORGIA

Elections.—Hall County Medical Society, at its annual meeting, held in Gainesville, elected the following officers: President, Dr. H. Latimer Rudolph, Gainesville; vice-president, Dr. Wylie C. Kennedy, Bellmont; secretary-treasurer, Dr. Edward T. Gibbs, Gainesville, and censors, Drs. John B. Rudolph, Gainesville, J. Charles Gower, Gainesville, and John D. Mauldin, New Holland.—Floyd County Medical Society, at its annual meeting, held in Rome, elected Dr. Levi P. Hammond, president; Dr. William P. Harbin, vice-president; Dr. William L. Funkhouser, secretary-treasurer; Drs. James C. Watts, Robert M. Harbin, and Robert H. Wicker, censors, and Dr. George B. Smith, delegate to the state association, all of Rome.—Muscogee County Medical Society at its annual meeting in Columbus, elected Dr. T. Neal Kitchens, president; Dr. Charles A. Dexter, vice-president; Dr. H. Stokes Monroe, secretary, and Dr. Benjamin W. Allen, treasurer.

ILLINOIS

Personal.—Dr. Edgar P. Cook, Mendota, started for Europe February 7.—Dr. John F. Page, Enreka, returned from Europe January 21.—At the annual meeting of the State Board of Health, January 18, Dr. George W. Webster, Chicago, was reelected president for the ninth time, and Dr. James A. Egan, Springfield, was reelected secretary for the fourteenth time and treasurer for the fifth time.—Drs. George F. Butler and Leslie E. Mee have associated themselves together and established a laboratory at Wilmette for examination of secretions, specimens, etc.

Chicago

Fined for Failing to Report Smallpox.—Dr. John D. Craig, charged with failing to report a case of smallpox to the health department, and sued for \$1,000, is said to have been found guilty and fined \$25 and costs, February 2.

Personal.—Dr. and Mrs. Ralph E. Starkweather sailed for Europe February 5.—Dr. Emery Hill, Philadelphia, has established himself in practice with Dr. Cassius D. Westcott.—Dr. Edwin W. Knowles, formerly of South Chicago, has located at Gladstone, Mich.

Resolutions Rescinded.—At the February meeting of the Council of the Chicago Medical Society, held February 8, the resolutions regarding the American Medical Association, adopted at the January meeting and published in *THE JOURNAL*, January 29, page 382, were rescinded.

Publicity to Aid Physicians.—At the joint meeting of the Physicians and Press clubs of Chicago, February 4, Dr. William T. Bellfield presided and Professor Shailer Matthews of the University of Chicago and Dr. Woods Hutchinson, New York City, made addresses. The latter appealed for cooperation in educating the public in sanitary and hygienic matters. Dr. W. A. Evans emphasized the value of the press and of the general practitioner's advice in aiding health boards. Dr. Frank Billings described the relations of the press to the endeavors of the State Board of Charities in the improvement of the charitable institutions of the state.

Tuberculosis Institute Meets.—The fourth annual meeting of the Chicago Tuberculosis Institute was held January 31. The announcement was made by Dr. Henry B. Favill that \$7,000 had recently been given the building fund by Mrs. Keith Spalding, \$1,400 to the Edwards Sanitarium by Mrs. Jesse Spalding, and \$600 for the maintenance of a children's bed in the sanitarium by Elizabeth McCormack. The directors appropriated \$600, the proceeds of the sale of Christmas stamps, to support a free bed for nurses afflicted with tuberculosis. The following directors were appointed: Drs. Henry B. Favill, Frank Billings, Ethan A. Gray, Nathan B. Sachs, Orville W. McMichael, John A. Robeson, and Edwin Robinson, Mr. David R. Forgan, Miss Laura Shedd and Mrs. Charles F. Spalding.

IOWA

Physicians' Building for Sioux City.—A building is proposed in Sioux City, eight stories in height, to be devoted entirely to offices for physicians.

State Hospital Needed.—A movement has been started among physicians of the state by Dr. John W. Kime, Fort Dodge, for the establishment of a state hospital for patients in advanced stages of tuberculosis. Dr. Harry E. Kirschner, of the State Tuberculosis Sanatorium, Oakdale, is said to be heartily in favor of this project.

Elections.—The Iowa Clinical Surgical Society, at its annual meeting in Clinton, elected the following officers: President, Dr. Gilbert G. Cottam, Rock Rapids; vice-president, Dr. Robert Evans, Fort Dodge; secretary, Dr. Alanson M. Pond, Dubuque; and councilors, Drs. Prince E. Sawyer, Sioux City, Charles S. James, Centerville, John C. Hancock, Dubuque, and Donald Macrae, Council Bluffs.—Scott County Medical Society, at its annual meeting, January 12, elected Dr. George F. Harkness, president; Dr. Edward S. Bowman, vice-president; Dr. John V. Littig, secretary-treasurer; Edward F. Strohbehn, delegate to the state society; and Dr. George M. Middleton, alternate, all of Davenport.—At the annual meeting of Dubuque County Medical Society, January 11, the following officers were elected: President, Dr. Albert H. Blocklinger, Dubuque; vice-presidents, Drs. Charles Palen, Dubuque, and Charles A. Kearney, Farley; secretary, Dr. Mathias J. Moes, Dubuque; treasurer, Dr. John M. Walker, Dubuque; delegate to the state society, Dr. Clarence W. Mehlichop, Dubuque; alternate, Dr. James Alderson, Dubuque; librarian, Dr. Henry G. Langworthy, Dubuque; and censors, Drs. Isaac S. Bigelow, Dubuque, Harvey B. Gratiot and Frank W. Wieland, Dubuque.—At the annual meeting of Polk County Medical Society, held January 5, in Des Moines, Dr. Wilbur S. Conkling was elected president; Dr. Edward R. Posner, vice-president; Dr. James W. Osborn, secretary (reelected); Dr. Eli Grimes, treasurer; Dr. Andrew R. Amos, censor; and Dr. J. W. Osborn, delegate to the state society, all of Des Moines.

KENTUCKY

Personal.—Dr. Haley P. Cartwright, Bowling Green, one of the oldest members of the Warren County Medical Society, in whose honor a meeting of the society was held January 17, was seized with an attack of angina pectoris, January 21. Dr. Cartwright and family left for Gatha, Fla., January 26, to spend the remainder of the winter.

Elections.—Jefferson County Medical Society, at its annual meeting in Louisville, elected the following officers: Dr. Ellis S. Allen, Louisville, president; Drs. Samuel D. Wetherby, Middletown, and Martin F. Coomes, Louisville, vice-presidents; Dr. Dunning S. Wilson, Louisville, secretary, and Dr. Curran Pope, Louisville, treasurer.—Fayette County Medical Society, at its annual meeting in Lexington, elected Dr. Julian T. McClymonds, president; Dr. James J. Gibson, vice-president; Dr. Robert J. Estill, secretary (reelected), and Dr. Benjamin L. Coleman, treasurer (reelected), all of Lexington.—Bourbon County Medical Society, at its annual meeting held in Paris, elected the following officers: President, Dr. Frank L. Lapsley; vice-presidents, Drs. John T. Brown and David B. Anderson; secretary-treasurer, Dr. Frank M. Faries; censors, Drs. Frank Fithian and William C. Ussery, all of Paris, and Dr. John A. Gilkey, North Middletown, and historian, Dr. Charles G. Daugherty, Paris.—Kenton-Campbell County Medical Association, at its annual meeting, held in Covington, elected Dr. C. W. McCollum, Erlanger, president; Dr. Wilford E. Senour, Bellevue, vice-president; Dr. Frederick A. Stine, Jr., Newport, secretary, and Dr. William W. Tarvin, Covington, treasurer.

MARYLAND

Appropriation Asked for Annapolis Hospital.—An appropriation of \$30,000 is asked for the completion and equipment of the Annapolis Emergency Hospital.

Reports on Care of the Insane.—The State Lunacy Commission, in its annual report, makes a strong plea for legislative appropriation for the amelioration of the condition of the insane. It declares that pauper insane are confined in "pest-houses, revolting and a disgrace to the state, and urges the abolition of darkness, foul-smelling air, idleness, solitary confinement, shackles, poor food, cruelty, and ignorance."—Dr. Edward N. Brush, superintendent of the Shepherd and Enoch Pratt Hospital for the Insane, reports that during last year there were under his care 133 men and 152 women. He regards as essential for the state care of the insane, the erection of a curative establishment, fully organized for the

treatment; that this establishment be connected with the state institution where incurable patients may find occupation and recreation, and that the State Lunacy Commission be entrusted with the execution of this measure.—The State Lunacy Commission and Boards of State Institutions for the Insane have decided to ask the legislature for an appropriation of \$600,000 for the state care of the insane. This amount will be apportioned between the present two state hospitals and the Maryland School for the Feeble-Minded, and will also leave a sufficient amount for the erection of an asylum for negroes in southern Maryland.

Baltimore

Personal.—Dr. J. Whitridge Williams has resigned the directorship of the Johns Hopkins Hospital Dispensary and has been succeeded by Dr. Thomas McCrae.—Dr. Harry M. Wegefarth has moved to California.

Adjunct Faculty Elect.—The Society of the Adjunct Faculty, Department of Medicine, University of Maryland, has elected the following officers: President, Dr. Irving J. Spear; vice-president, Dr. Compton Riely; and secretary-treasurer, Dr. J. Holmes Smith, Jr.

Charter Revision.—Dr. William H. Welch, of the Charter Revision Commission, has submitted a report to the commission with the following recommendations: To unite the City Almshouse Hospital and the Infectious Disease Hospital so that aid can be supplied from one to the other in case of need; the health commissioner and president of the board of supervisors of city charities jointly to appoint the superintendent of the two institutions; the health commissioner to have authority at his discretion to remove patients suffering from tuberculosis to a municipal or other hospital exactly as he does now in case of other infectious diseases, and the inspection of groceries. The commission adopted the recommendations of Dr. Welch.

MASSACHUSETTS

New Clinic Opened.—On January 10, an afternoon clinic for the free treatment of needy patients was opened at Harvard Medical School.

Personal.—Dr. Oscar C. DeWolf, formerly commissioner of health of Chicago, is reported to be critically ill with cerebral hemorrhage at his home in Huntington.—Dr. Charles Leeds, Chelsea, was thrown from his buggy recently in a runaway accident, fracturing three ribs.

Medical Society Elections.—At the adjourned annual meeting of Fitchburg Medical Club, January 11, Dr. John W. Stimson was elected president; Dr. Raymond C. Jones, vice-president; Dr. J. Everett Luscombe, secretary; and Dr. Curtis H. Jennings, treasurer.—The annual meeting of Hatherly Medical Society was held January 12 at Rockland. Dr. Oscar A. Bemis, Whitman, was elected president; Dr. Joseph Frame, Rockland, vice-president; and Dr. Charles Hammond, Hanover, secretary-treasurer.—The Association of Western Massachusetts Alumni of the Medical School of Vermont, held its annual meeting and banquet in Springfield, January 27, and elected the following officers: Dr. James M. Fay, Northampton, president; Dr. Vincent J. Irwin, Springfield, vice-president; Dr. Raymond A. Kinloch, Springfield, secretary-treasurer. The address of the evening was given by Dr. James N. Jenne, professor of materia medica of the University.

MICHIGAN

Change in Pardon Board.—Dr. James F. Rumer, Davison, formerly state senator, has been appointed a member of the pardon board, vice Dr. Henry F. Thomas, Allegan, term expired.

Tuberculosis Sanatoria.—Work on the sanatorium of the Detroit Tuberculosis Association will be commenced this month. More than \$22,000 have at present been received for the sanatorium fund and several individuals have offered to erect cottages. At a meeting of the trustees, Dr. Burt R. Shurly was elected vice-president, and Dr. Herbert M. Rich, secretary.—The tuberculosis shack at the State Hospital for the Insane, Kalamazoo, has been completed and will accommodate from fifteen to twenty patients.

Medical Society Meetings.—The executive council of the Michigan State Medical Society held its semi-annual session in Detroit, January 13, and elected Dr. Wilfred Haughey, Battle Creek, secretary and editor of the *State Medical Journal*, and Dr. George F. Inch, Kalamazoo, treasurer.—Sanilac County Medical Society, at its annual meeting in Sandusky, elected Dr. George S. Tweedie, president; Dr. John Campbell, Brown City, vice-president; Dr. James W. Scott, Sandusky,

secretary-treasurer; Dr. Colin G. Robertson, Sandusky, delegate to the state society, and Dr. Reginald Smith, Carsonville, alternate.—Manistee County Medical Society, at its annual meeting in Manistee, elected Dr. Harlan MacMullan, Manistee, president; Dr. David A. Jamieson, Arcadia, vice-president; Dr. Jens A. Christenson, Manistee, secretary and delegate to the state society; Dr. Humphrey D. Robinson, Manistee, treasurer, and Dr. Harlan MacMullen, alternate.—Gogebic County Medical Society, at its annual meeting, elected Dr. John W. Whiteside, Ironwood, president; Dr. D. C. Pierpont, Ironwood, vice-president; Dr. George E. Moore, Ironwood, secretary-treasurer; Dr. E. H. Madajesky, Bessemer, delegate to the state society, and Dr. Lester O. Houghten, Ironwood, alternate.—At the annual meeting of Kent County Medical Society, held in Grand Rapids, the following officers were elected: Dr. Richard R. Smith, president; Dr. J. D. Brooks, vice-president; Dr. John D. Hastie, secretary; Dr. Aaron V. Wenger, treasurer (reelected); Drs. William J. Dubois, Aaron V. Warnshuis, and Collins H. Johnston, delegates to the state society, and Drs. J. D. Brooks, Alexander M. Campbell, and Mortimer E. Roberts, alternate, all of Grand Rapids.

MINNESOTA

Graduate Study.—The Minnesota Post-Graduate Medical Society was organized at Glenwood, recently. Dr. James Crozier was elected president, and Dr. Carl A. Fjeldstad secretary-treasurer.—A special program aiming to give a graduate course to Minneapolis physicians has been planned by the Hennepin County Medical Society.

Elections.—At the annual meeting of Goodhue County Medical Society in Cannon, January 7, Dr. Frank W. Dimmitt, Red Wing, was elected president; Dr. Alvah W. Jones, Red Wing, vice-president, and Dr. Alonzo T. Conley, Cannon Falls, secretary-treasurer.—At the annual meeting of the Park Region Medical Society, held in Fergus Falls, January 14, the following officers were elected: Dr. Jorgen G. Vigen, Fergus Falls, president; Drs. A. Mason Randall, Underwood, and Willard L. Burnap, Pelican Rapids, vice-presidents; Dr. Luther A. Davis, Dalton, secretary-treasurer.

MISSOURI

Sell Hospital.—St. Francis Hospital, Cape Girardeau, has been sold by the Franciscan Sisters, and they ask the citizens to assist them in building a new hospital to cost about \$65,000.

Personal.—Dr. W. L. Rhodes, Kansas City, has been appointed a member of the city board of health.—Dr. James D. Smith, Nelson, is reported to be seriously ill with pneumonia.—Dr. Kearn C. Cummins, Maryville, who was severely injured several weeks ago by falling from the roof of his porch, is reported to be rapidly improving.—Dr. Forest V. Keeling, Elsberry, was operated on at the Baptist Sanitarium, St. Louis, for appendicitis, January 24.

St. Louis

Oto-Laryngological Section.—The Oto-Laryngological Section of the St. Louis Medical Society, at its meeting January 26, elected Dr. Greenfield Sluder, chairman; Dr. Fayette C. Ewing, vice-chairman, and Dr. Albert F. Koetter, secretary-treasurer.

Decision Reversed.—The supreme court has reversed the decision of the circuit court of St. Louis in the case of the students of Barnes Medical College against the State Board of Health for refusing to examine the class on the ground that the college was not in good standing as it had not met the requirements of the board for the minimum equipment of teaching. The supreme court remanded the case with instructions to quash the writ of mandamus against the board and dismiss the petition of the students. This decision establishes the legality of the board's action in promulgating rules for deciding on the reputability of medical colleges, and furthermore the responsibility of entering a college without first having satisfied himself that it is reputable, is placed on the student.

NEW HAMPSHIRE

Society Meetings.—Sullivan County Medical Society, at its annual meeting, held in Claremont, January 15, elected the following officers: President, Dr. Edwin C. Fisher, Sunapee; vice-president, Dr. Fred P. Clagett, Newport; secretary, Dr. Emory M. Fitch, Claremont; treasurer, Dr. David M. Currier, Newport; censors, Drs. Albion S. Marden, Newport, Oscar C. Young, Charlestown, and Henry C. Sanders, Claremont; and delegates to the state medical society, Drs. Emory M. Fitch and Samuel R. Upham, Claremont.—Dover Medical Society

held its annual meeting and banquet January 3, and elected the following officers: Dr. Harry O. Chesley, president; Dr. Edward C. Batchelder, secretary-treasurer; and Dr. A. Noel Smith, auditor, all of Dover.—The Centre District and Merrimack County Medical Society, at its annual meeting, held in Concord, January 11, elected the following officers: President, Dr. Arthur K. Day, Concord; vice-president, Dr. Alexander A. Beaton, Franklin; secretary-treasurer, Dr. Pearl T. Haskell, Concord; delegates to the state society, Drs. George C. Blaisdell, Contoocook, and C. E. Butterfield, Suncook, and censors, Drs. Arthur M. Fernald, Sutton, Charles H. Dolloff, Concord, and Anna M. Littlefield, New London.

NEW MEXICO

Elections of Officers.—Chaves County Medical Society, at its annual meeting in Roswell, elected Dr. Eugene M. Fisher, president; Dr. Charles F. Beeson, vice-president and censor; Dr. Charles M. Yater, secretary-treasurer, and Dr. Robert L. Bradley, all of Roswell, delegate to the territorial medical society.—Bernalillo County Medical Association, at its annual meeting in Albuquerque, elected the following officers: President, Dr. Lucian G. Rice; vice-presidents, Drs. Harry B. Kauffman and Charles A. Frank; secretary, Dr. Frank E. Tull; treasurer, Dr. Eligio Osma; censor, Dr. Walter G. Hope, and delegates to the territorial society, Drs. John F. Pearce and Harry B. Kauffman, all of Albuquerque.—Dona Ana County Medical Association, at its meeting in Las Cruces, January 27, elected the following officers: Dr. Robert E. McBride, Las Cruces, president; Dr. C. A. Mitchell, Mesilla Park, vice-president; Dr. Troy C. Sexton, Las Cruces, secretary-treasurer; Drs. James H. Johnson, Organa, Robert E. McBride, Las Cruces, and W. C. Field, Las Cruces, censors, and Dr. Bruce E. Lane, Las Cruces, delegate to the New Mexico Medical Association.

NEW YORK

Carnegie's Latest Gift.—A gift of \$50,000 from Andrew Carnegie to Cornell University has been reported. The donation is to be used for the enlargement of the laboratory for chemical research provided one hundred additional students can be enrolled.

The Tuberculosis Campaign.—The Jefferson County Board of Supervisors has made an appropriation of \$15,000 for a tuberculosis hospital to be established under the provisions of the Hamilton-Whitney law. This is the sixth county in the state to make an appropriation for this purpose.—Watertown has a new tuberculosis dispensary, made possible by a gift of \$1,000 from a person who desires to remain anonymous, and the use of a building, rent free, and with the visiting nurse service is now well equipped to find patients to be sent to the county hospital when it is ready, and to care for them in the meantime.—The Cohoes Committee on the Prevention of Tuberculosis, at its annual meeting, pledged itself to raise \$600 to support its visiting nurse for the remainder of the year.—Application has been made for authority to establish a tuberculosis hospital at Liberty, Sullivan county, by the Independent Order of Brith Abraham of the United States of America, with principal offices in New York City.

New York City

Harvey Society Lecture.—The sixth lecture in the course given by the Harvey Society will be given at the Academy of Medicine on February 19 by Dr. Eugene L. Opie of the Rockefeller Institute for Medical Research on "Inflammation."

To Increase Clinical Features.—The Section on Medicine of the New York Academy of Medicine announces its intention of increasing if possible the clinical features of the section, and to this end a list of hospitals, dispensaries, laboratories and medical schools has been prepared, to each of which a meeting has been assigned.

Vacancies in Staff.—The West Side German Dispensary announces that two vacancies exist in the staff of the genito-urinary night clinic of the institution, and these positions offer exceptional opportunity for advance and research work in the specialty. Inquiries should be made to Dr. Abraham R. Wolbarst, 105 East Nineteenth street.

Personal.—In commemoration of the fortieth anniversary of the commencement of his work as an alienist, a dinner was given in honor of Dr. Carlos F. McDonald, February 2. Dr. George D. Stewart was toastmaster and Hon. Delancey Nicoll, William Travers Jerome and Goodwin Brown, and Drs. Stephen Smith and Austin Flint responded to toasts.

New Officers for Italian Medical Society.—The New York Italian Medical Society has elected the following officers: President, Dr. Antonio Stella; secretary, Dr. Romeo Bellantoni;

treasurer, Dr. Antonio Vernaglia; council, the president and Drs. Gaetano Frank Samarelli, Giuseppe De Lignori, R. Muoio, and Salvatore Magnoni; and committee on audit, Drs. John LoPinto, Giovanni Buono, and Ignazio Collica.

Doctors' Building in Brooklyn.—The Hanson Realty Company has been incorporated with a capital of \$100,000 to take over the property at No. 67 Hanson place, which consists of a seven-story colonial structure, designed exclusively for the use of physicians. This is the first office building exclusively for physicians in Brooklyn. Drs. George McNaughton, Frank E. West and Calvin F. Barber compose the advisory board.

Clinics Organize to Fight Tuberculosis.—The Association of Tuberculosis Clinics of the City of New York has been incorporated. Its purpose is to organize dispensary control of tuberculosis and to develop a uniform system of operation of such dispensaries as are organized. The association will retain patients under observation until they are satisfactorily disposed of and will prevent them from drifting from one dispensary to another. The incorporators of this association are Drs. James A. Miller, John H. Huddleston and John S. Billings, Jr., and Gaylord S. White and Lawrence Weiller.

Radium Institute Incorporated.—The Radium Institute of America has received its certificate of incorporation. The primary objects of the institute are to discuss and study radium and radio-active substances in the interest of science and humanity. The incorporators purpose to maintain clinics, laboratories, libraries and meeting rooms. The institute will have its offices in New York City but may operate in other cities of the country. The directors are Dr. Nicholas Murray Butler, president of Columbia University; Dr. Edgar F. Smith of the University of Pennsylvania; Prof. Charles F. Chandler and Drs. Willy Meyer, Robert Abbe, Bergen Davis, William J. Gies, William Hallock Elwood Hendrick, Hugo Leiber, George B. Pegram and Hugo Schweitzer.

NORTH DAKOTA

New Hospital Opened.—Drs. Stephen Fisher and Goetsch have opened a private hospital in Dickinson. Two wards have been fitted up, with accommodations in all for twelve patients.

Personal.—Dr. A. T. Thorson is seriously ill with typhoid fever at his home in Dell Rapids.—Dr. Maud R. Williams, Devils Lake, who had an operation on the throat in Mercy Hospital, January 10, is reported to be convalescent.—Dr. Sigurd A. Berg, Mayville, has been appointed superintendent of the local board of health, and Dr. Harry E. Canfield, vice-president.—Dr. Charles M. Niles, Cathay, sustained a serious loss by the burning of his office and drug store recently.

OHIO

Personal.—Dr. James N. Nelson, Alliance, was reinstated as a practitioner by the state board at its meeting January 4, on recommendation of the Stark County Medical Society.—Dr. Jacob A. Stout has been elected president of the Columbus Board of Health and Dr. William L. Dick has been made temporary health officer, vice Dr. Sterling B. Taylor, resigned.—Dr. Louis H. Frechtling has succeeded Dr. Charles A. Shaeffer, resigned, as surgeon of the Hamilton police department.

Society Meetings.—The Dayton Academy of Medicine, at its annual meeting, January 14, elected the following officers: Dr. William F. Prather, president; Dr. Clifton L. Patterson, vice-president; Dr. Arthur O. Peters, secretary; and Dr. H. S. Patten, treasurer.—At the annual meeting of Portage County Medical Society, held in Ravenna, Dr. Wilford W. White was elected president; Dr. George J. Waggoner, vice-president; Dr. Cyrus O. Jaster, secretary, all of Ravenna, and Dr. Emily J. Widdecombe, Kent, treasurer.—At the annual meeting of Stark County Medical Society, held in Canton, January 18, the following officers were elected: President, Dr. T. Clarke Miller, Massillon; secretary-treasurer, Dr. G. F. Zininger, Canton; and corresponding secretary, Dr. Arthur J. Hill, Canton.—Canton Medical Society, at its annual meeting, January 28, elected Dr. George A. Kelley, president; Dr. Edward H. Schild, vice-president; Dr. J. G. Lawrence, secretary-treasurer; and Dr. Jargery J. Gilfillin, corresponding secretary.

Cincinnati

Would Utilize Isolation Hospital.—The smallpox hospital, which was completed eleven months ago, has not been in use because no funds were available for its equipment and maintenance. The city council is to be asked to appropriate from \$20,000 to \$25,000 for equipment of this building so that it can be utilized as an additional hospital for tuberculosis patients, to accommodate about 100 patients. The present tuberculosis hospital is already filled to its limit.

Lectures in Clinical Psychiatry.—Dr. Frank W. Harmon, superintendent to Longview Hospital, announces the following schedule of lectures in clinical psychiatry, open to all practitioners of medicine and to all senior students: February 12, Dr. Philip Zenner, Introductory; February 19, Dr. Frank W. Langdon, "The Manic-Depressive Psychoses;" February 26, Dr. D. I. Wolfstein, "Dementia Præcox;" March 5, Dr. H. H. Hoppe, "Alcoholic Insanity;" March 12, Dr. Philip Zenner, "Confusional Insanity;" March 19, Dr. Frank W. Langdon, "Paranoia;" March 26, Dr. D. I. Wolfstein, "Paresis;" April 2, Dr. H. H. Hoppe, "Senile Dementia." All lectures will begin at 2 p. m.

OKLAHOMA

To Build This Year.—Dr. Arch. K. West, dean of the Medical Department of Epworth University, Oklahoma City, announces that a new building will be erected for the medical department this year.

Personal.—Dr. A. T. Clark, superintendent of the State Insane Hospital, Norman, has resigned, and Dr. David W. Griffin has been appointed in his stead.—Dr. Albert E. Davenport has been appointed assistant to the Oklahoma county superintendent of health.

Consulting Staff of State Health Board.—Dr. John C. Mahr, state commissioner of health, moved his office from Shawnee to Oklahoma City, February 1. The following physicians have accepted positions as members of the consulting staff of the state board: Drs. Joseph B. Rolater, L. Haynes, Buxton, Everett S. Lain and William T. Salmon, Oklahoma City; John W. Duke, Guthrie, and Edgar E. Rice, Shawnee.

PENNSYLVANIA

County Society Publishes Bulletin.—The Schuylkill County Medical Society has commenced the publication of a monthly paper called *The Medical Society Bulletin*.

Officers Elected.—The Washington County Medical Society has elected the following officers: President, Dr. George B. Woods, Washington; vice-president, Dr. David M. Bell, Claysville; secretary and treasurer, Dr. John B. Donaldson, Canonsburg, and censors, Drs. John C. Kelso, Canonsburg, and Leonard C. Honesty and Olie P. Dearth, Washington.

Personal.—Dr. H. M. Carey was unanimously elected superintendent of the Eastern Pennsylvania State Institution for the Feeble-Minded and Epileptic, Spring City, February 2, vice Dr. Henry M. Weeks, deceased.—Dr. David Bemus, Washington, was thrown from his buggy in a runaway accident, February 5, fracturing his leg.

A Sane Fourth.—The committee of the Medical Society of the State of Pennsylvania on Independence day injuries, appointed to complete details by which such injuries may be avoided, is circulating the statement and resolutions which were adopted by the house of delegates. The statement gives the number of injuries in the United States, and especially in Pennsylvania. The resolutions condemn this method of exhibiting so-called patriotism; appeal to the powers of legal restraint for suppression of the evil; appeal to the moral sense of the people at large, and the moral and professional responsibility of the individual practitioners; and appeal to the public press of the state to have this information promulgated in the fullest manner practicable each year.

Philadelphia

Personal.—Dr. George E. Pfahler has been appointed clinical professor of roentgenology and Dr. John M. Swan, associate professor of clinical medicine in the Medico-Chirurgical College.—Dr. Henry W. Stelwagon, professor of dermatology in Jefferson Medical College, was elected an associate member of the Berlin Dermatologic Society, January 11.—Dr. John H. Musser has been elected a corresponding member of the Royal Society of Physicians of Budapest.

New Societies.—A society has been organized among the physicians connected with the American Hospital for Diseases of the Stomach, Wallace and Eighteenth streets, for the purpose of studying the normal and pathological conditions of the gastrointestinal tract. The name of the society is "The Stomach Hospital Gastro-Enterological Society," and the officers are: President, Dr. Robert D. Rhein; secretary and treasurer, Dr. Henry B. Ingle.—On January 23, "The Clinical Society of St. Mary's Hospital" was organized for scientific study of the cases in the wards of that hospital, and for the presentation of special cases, both medical and surgical, at the meetings rather than the presentation of papers. The society is composed of members of the staff, former members of the staff, members of the dispensary staff, and former residents. The following officers were elected: President, Dr.

Louis F. Love; vice-president, Dr. Joseph H. Ross; secretary, Dr. James A. Kelly; treasurer, Dr. Gerald D. O'Ferrell; and censors, Drs. Frederick Kalteyer and Ellwood R. Kirby.—At the meeting for the organization of the Clinical Society of Jefferson Hospital, January 28, the following officers were elected: President, Dr. W. M. Late Coplin; vice-president, Dr. Edward J. Klopp; secretary, Dr. Elmer H. Funk; treasurer, Dr. C. C. Smith; and executive committee, Drs. William M. Sweet, chairman, Aller G. Ellis, Duncan L. Despard and P. Brooke Bland.

SOUTH DAKOTA

Hospital Notes.—The Chamberlain Sanitarium has just completed an addition which has more than doubled its capacity. Seventy-one new rooms for patients have been added.—The new hospital for women in connection with the State Hospital for the Insane, Yankton, was formally opened January 7.

Society Meetings.—The Fourth District South Dakota Medical Society, pursuant to a call issued by Dr. Charles J. Lavery, Fort Pierre, was reorganized January 27. A scientific program was presented and the following officers were elected: President, Dr. Isaac M. Burnside, Highmore; vice-president, Dr. Charles M. Hollister, Pierre; secretary, Dr. Samuel R. Wallis, Miller; delegate to the state association, Dr. Harry T. Kenney, Pierre; and alternate, Dr. Theodore F. Riggs, Pierre. A resolution was unanimously adopted condemning the use of benzoate of soda in preserving foods, and the secretary was instructed to send copies to the senators and congressmen, the pure food commissioner of the state, and the chairman of the legislative committee of the American Medical Association. A committee was appointed to prepare a fee bill and report at the next meeting, to be held April 13.—Black Hills District Medical Society, at its annual meeting, held January 14, elected the following officers: President, Dr. John W. Freeman, Lead; vice-president, Dr. Frank S. Howe, Deadwood; secretary, Dr. Walter L. Vercoe, Lead; treasurer, Dr. Frances E. Clough, Lead; censors, Drs. Herman F. Ratte and Frederick W. Minty, both of Rapid City.

WISCONSIN

Donates Medical Library to University.—A library of more than 1,100 volumes on medical subjects has been given to the School of Medicine of the University of Wisconsin, by Dr. F. Byron Robinson, Chicago, a graduate of the State University in the class of 1878.

Work of Pasteur Institute.—The new Pasteur Institute, Madison, reports that 35 hydrophobia patients from 16 towns in 11 counties in the state have been treated during the past two months. The charge for treatment is nominal, being \$25 for each patient. The expense of treatment is \$21, and the remaining \$4 is put into a fund for indigent patients.

Postgraduate Societies Organized.—The Post-Graduate Medical Society of Beloit has been organized, and is to meet weekly under the supervision of Dr. Fred T. Nye, district counselor.—A number of physicians of Janesville met in the office of Dr. John F. Pember, January 3, and organized the Janesville Post-Graduate Medical Society, which held its first meeting, January 10.

GENERAL NEWS AND COMMENT

Health Officers to Meet.—The next meeting of the Conference of State and Provincial Boards of Health will be held in the New Willard Hotel, Washington, April 28 and 29.

Medical Supplies Burned.—The medical supply depot of the Army in New York City was destroyed by fire, February 4, with a loss estimated at more than half a million dollars.

New Surgeon General.—Medical Director Charles F. Stokes was nominated for Surgeon-General of the Navy, February 5, to succeed Rear Admiral Presley M. Rixey, who retired voluntarily.

Gift to Sanatorium.—The president of the Metropolitan Life Insurance Company, at its annual dinner, January 22, announced that a friend of the company had given 90 acres of land and \$100,000 in cash for building a tuberculosis sanatorium for the use of clerks and employees of the company. This institution, it is said, will be located in northern New York.

Pan-American Congress.—The Pan-American Medical Congress met in San Jose, Costa Rica, Dec. 25, 1909, and continued its sessions until January 3. It was attended by representatives from the United States, Guatemala, Honduras, San Salvador, Nicaragua, United States of Colombia, Panama, Venezuela, Chili and Cuba. The work of the congress dwelt especially on such contagious diseases as have been the object of international cooperation. Chief among these are cholera,

yellow fever, bubonic plague and smallpox. Resolutions were adopted by the congress recommending the continuation of the present international policy for the restriction and prevention of disease.

Association Establishes Headquarters in Baltimore.—The American Association for the Study and Prevention of Infant Mortality, which was organized recently in New Haven, has established permanent headquarters at the new building of the Medical and Chirurgical Faculty of Maryland, and will institute an active campaign. The section on federal, state, and municipal prevention of infant mortality will be under the chairmanship of Dr. William H. Welch, Baltimore; Dr. L. Emmett Holt, New York City, will be chairman of the medical section, and Dr. Helen C. Putnam, Providence, of the section on education. Dr. Hastings H. Hart, New York City, director of the department of child-helping of the Sage Foundation, is chairman of the section on philanthropic prevention, and Miss Gertrude B. Knipp is executive secretary of the association.

FOREIGN

Monument to Lombroso.—The city fathers at Verona have organized an international subscription for the purpose of erecting a monument to Cesare Lombroso, heading the list with \$1,000. Address Il Consiglio Comunale of Verona, Italy.

New Journal on Nutrition.—We are in receipt of the first number of a new journal devoted to diseases of nutrition, metabolism and digestion, the *Internationale Beiträge zur Pathologie und Therapie der Ernährungsstörungen, Stoffwechsel und Verdauungskrankheiten*. The editor is A. Bickel of Berlin and seventeen countries are represented on the editorial staff. Dr. C. A. Porter of New York representing the United States. There is also a long list of collaborators containing the names of many of the leading specialists. Contributions may be in German, English, French or Italian, but they must be accompanied by as complete a summary of the contents as is possible in brief form, which must be in German. The contents of the first number include seven articles, all dealing with the physiology and pathology of the stomach and intestines. While the journal is in a certain sense a competitor of the *Archiv für Verdauungskrankheiten* and of the *Archives des Maladies de l'Appareil Digestif*, the subjects covered are so important that there may well be room for three journals in the same field. August Hirschwald, Berlin, is the publisher.

LONDON LETTER

(From Our Regular Correspondent)

LONDON, Jan. 29, 1910.

A Radium Spa

The project to form a radium spa in Cornwall is announced. So radioactive are the waters of Trenwith—the site of the spa—that Harrogate and other health resorts promise to have a formidable rival which will also form an effective counter-attraction to continental resorts. It is at Trenwith that the radium mine, mentioned in previous letters to THE JOURNAL, is situated. When it was discovered that the hot springs of Bath, so long celebrated for their beneficial effects, were nearly four times as radioactive as the old sulphur spring at Harrogate, the medical world was fluttered, but the Trenwith springs are seven times as radioactive as those of Bath. "Would any danger be likely to arise from bathing in such springs?" is a question which was put to the eminent scientist, Sir William Ramsay. "Not a bit," he replied. "Many go to places on the Continent where the water is equally radioactive and return cured." The waters of all the well-known spas are now known to be radioactive in more or less degree and the theory is growing that their curative properties are due to this fact rather than to their mineral qualities.

Munificent Bequest for Research in Tropical Medicine

By the death of Sir Alfred Jones, the head of the great Liverpool shipping company, tropical medicine has lost its best friend. It was owing almost entirely to his munificence that the Liverpool School of Tropical Medicine was founded and also that the numerous expeditions were despatched to tropical countries to investigate their diseases. Sir Alfred not only placed his steamers free at the disposal of the members of these expeditions, but also contributed liberally to the other expenses. A Welshman, he embodied all that is best in the Celtic mind—a vivid imagination, rapid grasp of a problem, and instantaneous action as soon as he was convinced that a course was best. He had great faith in the commercial possibilities of West Africa and as soon as the great potentialities of medical science to make it habitable by the

white race were revealed to him he financed tropical medicine with a princely munificence which has rendered his name as familiar throughout the world as those of the great investigators of tropical disease—Ross, Manson, Bruce, Boyce and others. His estate in Great Britain is valued at \$3,000,000. Subject to certain legacies and bequests, the residue is left for such charitable purposes in England and the British possessions on the West Coast of Africa as his trustees may think fit. For their guidance he has indicated certain charitable purposes, mentioning particularly original research of all kinds into the causes of disease on the West Coast of Africa.

Damages for Libel Recovered from the British Medical Journal

Damages have been recovered from the *British Medical Journal* under peculiar circumstances. An army doctor's wife, who had given way to intemperance and lived apart from him, left the greater part of her property, amounting to \$40,000, to her medical attendant, Dr. Dunn. The husband contested the will, alleging undue influence on the part of the physician. The latter proposed a settlement out of court which was accepted. He resigned the greater part of the benefits he had obtained under the will and no costs were allowed him; and the husband, with the full approval of the judge, refused to withdraw the charge of undue influence. The *British Medical Journal* stated that all of the several wills made by the patient showed that she wished to benefit her physician and that, as she was separated from her husband and Dr. Dunn had befriended her and lent her money, he should have been allowed to receive the legacy. It further congratulated "Dr. Dunn on the virtual acquittal from an odious charge." To this and other remarks the husband objected and sued the *British Medical Journal*, alleging that these words meant that he had acted dishonestly and dishonorably and had made odious charges against Dr. Dunn without reason and with the object of benefiting himself. The *British Medical Journal* admitted this and published an apology but did not withdraw the facts asserted. A verdict was given for the plaintiff for \$3,750.

Proposed Reforms in Lunacy Legislation

A royal commission appointed to hold an inquiry into the care and control of lunatics has recommended that the statutory use of the word "lunatic" be discontinued and the term "mentally defective" be substituted. The object is to obviate what is called the "stigma" of lunacy. It is further recommended that the classes of persons to be subject to jurisdiction as "mentally defective" shall consist not only of idiots, lunatics and imbeciles, as under the present law, but also of the following: 1. Persons who through mental infirmity arising from age or decay of their faculties are incapable of managing their affairs. 2. Feeble-minded, i. e., persons who may be capable of earning a living under favorable circumstances, but who cannot manage their affairs with ordinary prudence or compete on equal terms with their normal fellows.

A Centenarian Physician

The secretary of the Royal College of Surgeons reports that Dr. Edgar Jones, who was admitted a member of the college in 1834, has attained the age of 100 years. He began practice in the country, near Bristol, but in a few years went to a small town, Saffron Walden in Essex, in which county he has resided ever since. He has been a magistrate over fifty years, and until a year or two ago regularly attended the sittings of the bench. He is in excellent health for his years.

A Victim to the X-Rays

The sad case of Mr. H. W. Cox, a pioneer maker of x-ray apparatus in this country, has been reported in previous letters. Some years ago x-ray dermatitis began on his hands, but he continued to work, and he exposed himself constantly to the rays while testing an apparatus for use in the Boer war in conjunction with Mr. Hall Edwards, another victim to the rays, whose case has also been reported in THE JOURNAL. The disease has progressed steadily during the past six years. Partial amputation of the left hand, the same operation on the right hand and amputation of the right arm have had to be performed. Mr. Cox is now in constant pain, and the disease has spread to his face and mouth. His prolonged illness has reduced him to financial difficulties, and a fund is now being raised for his assistance.

The Cost of the Antivaccinationists

As stated in previous letters, the repeated concessions made to the antivaccinationists by the government have greatly

reduced the number of vaccinated children in this country and increased the danger of an epidemic of smallpox. Dr. F. M. Sandwith has pointed out the waste of taxpayers' money which the antivaccinationists cause by comparing the cost of preparations for a possible epidemic in London and in Berlin. In Germany no extreme views as to the liberty of the subject, such as prevail in this country, exist to interfere with the thorough compulsory vaccination of the population. Consequently, the only provision necessary in Berlin for smallpox is a dozen beds in a general fever hospital. Near London a number of hospitals containing 2,040 beds have to be kept constantly ready for an epidemic. The capital outlay for this purpose amounts to \$2,500,000 and the annual expenditure to \$65,000.

PARIS LETTER

(From Our Regular Correspondent)

PARIS, Jan. 28, 1910.

Creation of a Fund for Immediate Assistance to Families of Physicians

The Association of the French Medical Press, in consequence of the constantly more frequent invitations to raise funds to relieve families of physicians reduced to poverty in consequence of the death of the father who has not been able to save enough to insure the future of his wife and children, and, in view of the slight results of appeals to the public, which is growing weary of such demands, has decided to create a general fund for the immediate aid of the families of physicians and for assistance by employment. It is intended to give aid to all the members of physicians' families, whether the death of the head of the family leaves his wife and children without resources, or whether a severe illness prevents the husband and father from providing for his family. The fund for immediate aid will insure the existence of the family during the period which follows the catastrophe, and the assistance by employment will insure their livelihood later. The association has addressed to all the professional bodies a circular inviting each one to designate two delegates to study ways and means for securing the new fund.

Foreign Students at the University of Paris

Foreign students continue to grow more numerous at the University of Paris. Twenty years ago, in 1888-9, the number of foreign students was only 457. Ten years ago, in 1898-99, there were 1,174; in 1909 there were 3,326. The number had doubled in five years, for in 1904-5 there were only 1,633. These students come from all parts of the world. There are 150 from England, 107 from the United States, 165 from Egypt, 233 from Roumania, 231 from Germany, 139 from Austria-Hungary, 1,356 from Russia, and some also from the Scandinavian countries, from Bulgaria, from Greece, from Canada, from Mexico, from Argentina, from Brazil, from China and from Japan.

Measures Against Criminal Abortion

At one of the last sessions of the Chamber of Deputies the question of the suppression of abortion was raised by M. Joseph Reinach. The administrative council of the *Syndicat des médecins de la Seine* has written to congratulate M. Reinach and to thank him for his stand. Deploing the frequency of abortion, the evil results of which are attested by physicians in all classes of society, the *syndicat* has decided to bring the question up before the next Congress of Practitioners, which is to be held in Paris during the Easter vacation in 1910.

The Program of the Congress of Practitioners

The program of the next Congress of Practitioners is almost complete. The following are the titles of the papers which will be discussed and the names of the authors: "The Law of 1902 in Regard to Public Health," Drs. Declercq of Lille and Wicart of Paris; "Liberty of Choice of a Physician in the Mutual Aid Societies," Dr. Bolliet of Lyons; "Liberty of Choice of a Physician Under the Public Charities," Dr. Vallat of Joinville; "Increase of Medical Fees," Dr. Bresselle Vesinet; "Illegal Practice of Medicine; the *Locum Tenens*," Dr. Levassort of Paris; "The Hospital for Paupers," Dr. Regis of Paris; "The Administrative Organization of Hospitals in France and Abroad," Dr. Leon Archambault of Paris; "Abortion from the Medical Point of View," Dr. Bertillon of Maisons-Laffitte; "Limitation or Non-Limitation of the Number of Students in the Medical Schools," Dr. Tourat of Paris; "The Superior Medical Council," Dr. R. Le Fur of Paris. The date has been designated as April 7, 1910.

The Prizes of the Paris Surgical Society

The Paris Surgical Society held its annual session January 19. Following is the list of prizes awarded: The Laborie prize, \$600 (1,200 francs), was awarded to Dr. Guibé, surgeon of the Hospitals of Paris, for a work entitled "Contusions and Traumatic Ruptures of the Duodenum;" the Ricord prize, \$60 (300 francs), to Dr. L. Batut for his work on "Genital Tuberculosis in Man;" the Marjolin-Duval prize, \$60, to Dr. C. Moreau, former intern of the Hospitals of Paris, for his work entitled "Sequelæ of Gastroenterostomy Performed for Non-Cancerous Stenosis of the Pylorus."

Incidental Consultations Given by a Physician During a Professional Visit

The local court has just decided that a physician who, in the course of a visit to a patient, gives medical advice to a member of his patient's household, has no right to demand a separate fee for such advice. It is to be hoped that the physician in question will appeal the case. It would surely be going too far to hold that on the occasion of illness of the master or mistress of the house a physician is bound to give medical advice to the governess, the servants, etc.

The Floods in France

The marquis de Vogüé, president of the French Red Cross, has just telegraphed to all the sections of the society the order to give aid to the victims of the floods which are now devastating various regions of France and which are more and more assuming the character of a national disaster. More than \$10,000 (50,000 francs) have been received, with which kitchens and dormitories have been organized in various suburbs of Paris, where the homeless are sheltered, fed and clothed. The Union of the Women of France is also organizing means of aid and is raising a fund by subscription for the purpose.

Because of the flood the Academy of Medicine was unable to hold its weekly session on January 25—a circumstance without precedent, even during the most terrible days of the siege of Paris and of the Commune. From the 24th, the academy was without electricity, and on the morning of the 25th the basements of the academy were flooded, and prompt action was necessary to save the reserves of vaccine stored there. A few hours later, the water put out the furnaces, and, for lack of light and heat, the council of the academy decided to adjourn the session.

Action Against Alcoholism

The National Antialcohol League held its annual celebration on January 23, under the presidency of M. Joseph Reinach, president of the antialcoholic group of the Chamber of Deputies. The president in his speech declared that there was no more imperative duty before individuals, parties and the government than the systematic and unrelenting struggle against alcoholism. The number of places licensed to sell liquor has increased 25 per cent. in thirty years, so that there are now 477,000 liquor shops, or one to every 80 inhabitants, or one to every 30 adults. This, moreover, is only an average; in several large cities and seaports, the number of licensed drinking-places has trebled. The annual consumption of alcohol may be reckoned at about 40,000,000 gallons (1,500,000 hectoliters) taxed and at least 20,000,000 gallons sold illegally.

International Congress of Physiotherapy

The Third International Congress of Physical Therapeutics will be held in Paris from March 29 to April 10, 1910, under the presidency of Professor Landouzy, dean of the Paris college of medicine. This congress comprises seven sections, as follows: (1) therapeutics by movement and rest; (2) by water, air, heat and cold; (3) by climates, sunshine and the sea; (4) by electricity; (5) by luminous and non-luminous radiations—radium, etc.; (6) by mineral waters; and (7) by diet, food and regulation of habits.

An Exchange of International Courtesies

The opening lesson in the course of Dr. Raphael Blanchard, professor of parasitology and medical natural history at the Paris college of medicine, was the occasion for a manifestation of sympathy between France and Great Britain because of the presence of Sir Rupert Boyce, professor of pathology at the University at Liverpool, and dean of the School of Tropical Medicine of that city. Out of courtesy, Professor Blanchard devoted this first lesson to a general outline of the recent progress made by English scientists and especially by the school at Liverpool in the domain of parasitology, with which tropical medicine has the closest relations. In a very

interesting speech Sir Rupert Boyce returned his thanks and paid a tribute to the school of parasitology of the Paris college of medicine. He recalled that Professor Blanchard was the first one in France to introduce this course of instruction, which has since become so popular. It is known, of course, that while London and Liverpool had the first two schools of tropical medicine, since 1902 Paris has also possessed an Institute of Colonial Medicine (THE JOURNAL, Sept. 18, 1909, liii, 960), due to the initiative of Professor Blanchard. This institute sustains relations not only with the English schools but also with similar schools in Brussels, Hamburg, Lisbon, Naples and Philadelphia. At the end of the lesson, Professor Landouzy, dean of the college, spoke, recalling the fact that Sir Dyce Duckworth some time ago came over to give a lecture before the college of Paris, and remarked on the felicitous influence of such intercourse between universities.

Formation of "France-America" Committee

A committee called "France-America" has just been formed in Paris and is established at 17 rue Cassette. This committee proposes to work for the development of economic, intellectual and artistic relations between the nations of the new world and the French nation; to found a monthly review and to gather together in it the most complete information in regard to the economic and intellectual life of the American peoples; to attract to France students and travelers from the two Americas and to extend to them a cordial welcome; and to encourage whatever will make America known in France or France known in America. Among the charter members of the committee are Professor Landouzy, dean of the Paris college of medicine, and Professor Pozzi.

BERLIN LETTER

(From Our Regular Correspondent)

BERLIN, Jan. 19, 1910.

An Episode in the Cologne Dispute Between the Physicians and the Sickness Societies

For nearly two years there has been a conflict between the physicians and the *Krankenkassen* of Cologne which has led to a strike of the physicians. The societies have succeeded in procuring second-rate physicians as substitutes and as the health of the Cologne workingmen has been in general satisfactory, in the absence of an epidemic, the substitute medical force has so far been sufficient to take care of the insured. There has been no change in the matter for a long time and it is impossible to predict how the strife will be settled. As neither party is willing to give in, it may be that no change in these unpleasant relations will occur until the new imperial insurance law, which is still before the Reichstag, comes into force, unless something notable renders the situation so intolerable as to lead to interference by the government. The physicians who have been displaced by the societies are being supported as heretofore by the Leipzig league which, it may be understood, requires a considerable sum of money. The self sacrifice of the German physicians and their unanimity and solidarity in the struggle against the aggressions of the sickness societies make it possible for the league to expend thousands monthly in Cologne for the support of those who were formerly physicians to the societies.

It is easily understood that the medical strike-breakers are not regarded by their colleagues as equally justifiable and worthy of honor. This difference in esteem found a distinct expression a few days ago. Among the eighty-six physicians attending a postgraduate course by Professor Hochhaus in the academy for practical medicine at Cologne, were two of the strike-breakers. As the lecture was about to begin the other eighty-four, members of the medical society of Cologne, stated that they would not attend the lecture along with the two sick benefit physicians and refused to enter the auditorium. As the two physicians would not leave the room Professor Hochhaus decided to abandon his course as he had no desire to deliver his addresses to two gentlemen only. This conflict was brought up at the last session of the Cologne board of aldermen. On this occasion the mayor expressed the view that the refusal of the members of the medical society to attend lectures in common with physicians of the *Krankenkassen* showed a tendency to carry the idea of professional solidarity too far. In his view, medical science constitutes a neutral ground on which any one can stand who follows the high and ideal calling of the physician. This conception will find no echo in the medical profession. Our Cologne colleagues can not be blamed for refusing to associate with physicians whose professional conduct must be regarded as unworthy and objectionable.

To Facilitate Literary References

The editorial department of the *Deutsche medizinische Wochenschrift* announces in its last number that the publisher of the journal has requested the department to use its efforts to secure the publication in all cases of the initials as well as the surnames of authors with their articles. The editor is thoroughly in accord with this suggestion, and supplements it by the request that not only in original articles, but also in abstracts, at least so far as concerns Germany, the residence of the author shall also be given. For the knowledge of the initials is often not enough to identify an author, especially if he has a not uncommon name. Only thus can indexes be made sufficiently complete and useful. Without this provision it is often impossible to determine which articles to include under the name of one and the same author. By the observance of this precaution the exchange of reprints would be greatly facilitated. That such an exchange is much to be desired was emphasized a short time ago in the *Deutsche medizinische Wochenschrift* by a Berlin physician, especially in reference to cases in which there is some dispute. The author in question points out that a scientific worker often has a rejoinder to his article published, merely by accident, when it would be very desirable that the opposing author should give notice of his position by sending the one whom he attacks a copy of his article, and in this way making possible an explanation of the opposing views.

VIENNA LETTER

(From Our Regular Correspondent)

VIENNA, Jan. 18, 1910.

The Smoke and Dust Nuisance

The "Austrian Society for the Prevention of Smoke and Dust," a vigorous young organization of medical men and lay persons, has recently begun its campaign of publicity. The services of men trained in improving badly constructed furnaces and chimneys may be obtained free of charge. Every one is invited to report such nuisances to the society, which will endeavor to improve matters by moral suasion. Agents of the society are sent out to educate proprietors of factories, etc., through self-interest, since better combustion means economy as regards fuel. The present method of collecting the household refuse of 800,000 households in Vienna is by pouring out the contents of all sorts of boxes and dustbins, in the open street, into the van, just at the time when children are sent out to school. The society has finally prompted the magistrates to adopt a model of a cart which permits of a hygienic removal of this material.

Excitement Over the Appearance of One Case of Smallpox

The papers have recorded with much excitement the fact that a case of smallpox—a single case it must be noted—has occurred within the precincts of this city. This is such a rare occurrence that the population were a little upset. While up till 1860 smallpox was constantly met with in hospitals, since the adoption of vaccination in this country the cases occurring among about 30,000,000 of inhabitants can be easily numbered, and in Vienna itself, years pass by without a case being observed. A couple of years ago an "epidemic," as it was termed, broke out in the city, altogether 151 cases; thereupon nearly the entire population submitted to revaccination. Only 68 of the patients were unvaccinated, the rest were vaccinated but less than nine days before the occurrence of symptoms; 19 cases were fatal—all of them amongst the non-vaccinated. The one case mentioned above was imported from Russia, and due precautions have been taken to ensure a speedy suppression of any outbreak.

Boarding Out of Pauper Children

An incident, in which fourteen children were discovered in a "nursery" conducted by a madwoman, gives rise to a reform in the system of boarding out children. A committee composed of representatives of the police, the board of guardians and some private persons, has assumed control of the matter, and the services of lady workers have been secured. The children will be visited at least every three weeks, and a report of their health will be recorded by the relieving officers of the district to which they belong. Persons desiring to take in such children will have to submit to investigations as regard their reliability and carefulness. The maintenance of the child is the duty of its home community (*Heimatsgemeinde*). The physical condition of the child will determine whether the foster-parents will be eligible to receive another child for nursing. The pay is \$5 to \$7 (25 to 35 crowns) a month per child, and the children can remain with their foster-parents up to their sixth year, when they are placed into orphanages.

Pharmacology

TOXO-ABSORBENT COMPANY*

The Postoffice Department Continues Its Good Work Against Mail-Order Cancer "Cures"

The latest "cancer cure" concern to be declared fraudulent by the postoffice authorities is that of the Toxo-Absorbent Company operated by one F. W. Warner, Rochester, N. Y. Warner is neither a physician nor a graduate chemist, but claimed to have "discovered" the "toxо-absorbent packs," which he advertised as a cure for such diseases as diphtheria, consumption, peritonitis, Bright's disease, cancer, syphilis and various other conditions.

A patient who was supposed to have cancer and who remitted \$10 to the Toxo-Absorbent Co., was sent a number

**Toxo-Absorbent—Cancer Cure
No. 8.**

Price \$5.00. Six for \$25.00.

This is the most successful cure for Cancers ever discovered. It has the chemical affinity for the poisons and microbes which cause the disease. It dislodges them and draws them out through the pores. Absorbs the growth and builds up the wasted tissues.

It cures Tumors by the same process. Cancers and Tumors, whether external or internal, are cured by Toxo-Absorbents.

Fig. 1.—Reproduction of one of the items from the descriptive price-list of the Toxo-Absorbent Company. Toxo-Absorbent No. 8, according to the government analysis, was composed of 98 parts sand and clay and 2 parts of charcoal. Each "pack" of this inexpensive mixture sold for \$5.

of cloth bags holding earthen material, referred to as toxо-absorbent packs "No. 7" and "No. 8" respectively; some tablets to be taken internally, labeled "Cancer and Tumor Tablets" and also a package of salve labeled "Cancer Ointment," to be applied locally. The "packs" were supposed to be warmed and applied each night externally to the "sore" after it had been well cleaned with hydrogen peroxid and packed with absorbent cotton.

The government chemists testified that chemical analysis of these preparations showed them to be composed as follows:

TOXO-ABSORBENT PACKS NO. 7	
Sand and clay.....	98 per cent.
Animal charcoal	2 per cent.

TOXO-ABSORBENT PACKS NO. 8	
Sand and clay	97.25 per cent.
Animal charcoal	2.75 per cent.

CANCER AND TUMOR TABLETS	
Sugar of milk	98.6 per cent.
Moisture	1.4 per cent.
Animal charcoal	trace

CANCER OINTMENT	
Vaseline	
Oil of tar	
Trace of vegetable matter, apparently witch-hazel leaves.	

Some of the claims made by the Toxo-Absorbent Company for its methods were:

"The great drugless treatment."
 "The most important medical discovery in the world's history."
 "The only treatment which cures disease by removing the cause."
 "The Toxo-Absorbent Cure can be relied on to cure . . . consumption . . . Bright's disease . . . cancer . . ."

* This matter may be had in a more complete form in a pamphlet entitled "The Toxo-Absorbent Company." Price 4 cents.

"Diseases hitherto considered incurable, such as certain forms of cancer, consumption, appendicitis, peritonitis, diphtheria . . . are readily cured."

"The fact is, diphtheria is one of the very simplest and easiest of all diseases to subdue . . . Absorbents have never failed of a prompt and complete cure."

"We have found many cases [of cancer] where the removal of the breast had been followed by the recurrence of the cancer. Such cases are considered as absolutely fatal and yet the absorbents have succeeded in making a cure in every case."

At the hearing it was shown that it was impossible to make a reliable diagnosis of cancer by having patients fill out a blank form and forward it through the mail. It was further shown that the treatment as exposed by the analysis would not cure "any case of cancer irrespective of its variety, duration and location in the body." Warner, the manager of the concern, entered a general denial of fraudulent intent but submitted no evidence of the value of the treatment excepting a number of "testimonials." These were to the effect that the individuals writing the "testimonials" had had what they believed to be cancer, had used the Toxo-Absorbent "packs," and had been cured. As there was no evidence to show that

**Syphilis—Toxo-Absorbent is the Only
Remedy Ever Discovered which
Will Positively Remove Every
Syphilitic Taint from the
Body—It Never Fails.**

Every physician will understand that it is almost impossible to get any evidence, either from doctor or patient, in these cases. Mr. [Name] holding a coat of arms.

Fig. 2.—Reproduction of part of one of the Toxo-Absorbent testimonials. The viciousness of selling a mixture of earth and charcoal as a positive cure for so serious a disease as syphilis, is evident.

the writers of these letters ever had cancer the testimonials were worthless. The assistant attorney-general in discussing the value of testimonials, said:

"Speaking generally it may be said that in all my experience in this office never has a medical concern, no matter how fraudulent its methods or worthless its treatment, been unable to produce an almost unlimited number of these so-called testimonial letters."

Then in summing up, the assistant attorney-general said: "I find that this is a scheme for obtaining money through the mails by means of false and fraudulent pretenses, representations and promises, and I therefore recommend that a fraud order be issued against this concern."

The fraud order was issued.

A Repudiated Testimonial on Sid-OL

Physicians in various parts of the country recently have received the following printed letter:

FROM ONE OF EUROPE'S MOST EMINENT PHYSICIANS

The Sid-OL Company, Brooklyn.

Dear Sirs: Your preparation "SID-OL" has been placed before me for opinion, and after careful trial I think you have furnished in your wonderful combination (SID-OL) the greatest upbuilding power and constructive force against the depleting and destructive force of the BACILLI of TUBERCULOSIS, I HAVE EVER MET. The blood becomes richer in red corpuscular elements with its use, digestion improves, and as far as I have been able to demonstrate, the most delicate stomach has not been deranged by its action.

Truly yours,
 Berlin, Germany. ROBERT KOCH, M.D.

Dr. H. Strosser, of New Britain, Conn., after receiving one of these advertisements of Sid-OL and doubting that Professor Koch had written any such endorsement, wrote to him regarding the testimonial and sent a copy of it with his letter. The following is a translation of the answer received by Dr. Strosser:

BERLIN, Jan. 20, 1910

Dr. H. Strosser, New Britain, Conn.

Professor Dr. Robert Koch desires to thank you very cordially for your friendly letter of the fifth of the month, and to state that he has had absolutely nothing to do with the testimonial for the preparation "Sid-01," a copy of which you enclosed, or with the "Sid-01 Company," and that the testimonial consequently was not given by him, but is a complete forgery [*durchweg gefälscht ist*].

Dr. Koch has no objection to your publishing this communication in periodicals there.

With best respects of Dr. Koch.

Very respectfully,

BOHNERT, Secretary.

It is conceivable, of course, that there may be another Dr. Robert Koch in Berlin besides *the* Dr. Robert Koch. If such is the case, however, it is not true that this second Dr. Robert Koch is "one of Europe's most eminent physicians." Whether the Sid-01 Company has been guilty of manufacturing the testimonial, or merely of raising a medical unknown quantity to the nth. power, makes little difference: that it has been guilty of attempting to deceive the medical profession seems undeniable.

Correspondence

Rat-Bite Fever

To the Editor:—In the letter from your London correspondent, dated Jan. 15, 1910, and printed in *THE JOURNAL*, Jan. 29, 1910, mention is made of an article by Dr. Harder of St. Bartholomew's Hospital published in the *Quarterly Journal of Medicine*, reporting a "previously undescribed disease" under the title of rat-bite fever.

In 1903, Dr. W. A. Evans, of Chicago, read a paper entitled, "A Fever Following Rat-Bite," before the Chicago Pathological Society, which was printed in the society's transactions, vol. v. No. 14, 1903. At that time Dr. Evans reported 3 cases which he had seen, and he had collected 55 cases from the literature, 15 of which were reported in America, 1 in France, 1 in Spain, and 38 in Japan. The earliest report in America was made by Wilcox in 1893. The other cases have followed at considerable intervals.

The striking features of the disease have been well described by Evans as follows:

"The wound heals promptly. After a varying interval—usually ten to twenty-one days—the fever appears. It is attended by pain, swelling, and usually some discoloration at the point of the bite. There is usually some chilliness, a moderate degree of general neuralgia, and sweating is rather noticeable. The marked peculiarity of the fever is its disposition to intermit. The intermissions may last for days, weeks, or possibly a month or more. During the intermission the patient feels well, and children frequently return to school. Local glandular enlargement is marked, and a general adenopathy may be present. The glandular enlargement usually increases and decreases with the fever. The enlargement may come on with the onset of the fever; sometimes it is delayed for weeks, as in the Sherwood case.

"The exanthematous or urticarial eruption is very striking. It may occur with the onset of the symptoms, but this is the exception. The rule is for the eruption to appear several weeks after the onset of symptoms. The eruption is reddish or purplish, with a red corona. It may be quite diffused. It is usually more pronounced in the vicinity of the bite than elsewhere. It fades as the temperature goes down, but it does not disappear entirely. It usually persists after all the symptoms have disappeared.

"Suppuration either in the wound or in the glands has not been found in recent years. The probability is that the sloughing wounds, suppurating glands and superficial boils reported in the cases of thirty to forty years ago, were the results of lancing and poulticing."

GEORGE H. WEAVER,

Secretary Chicago Pathological Society.

Plague in California—A Correction

To the Editor:—Referring to the editorial, "A Plague Focus in California," in *THE JOURNAL*, Dec. 18, 1910, enumerating the counties of California in which plague-infected squirrels had been found, an examination of the records shows that of the counties enumerated in the editorial no plague-infected squirrels have so far been found in San Joaquin, Stanislaus, Merced and Santa Barbara counties.

WALTER WYMAN,

Surgeon-General Public Health and Marine-Hospital Service.

Immunization Against Syphilis by Other Venereal Disease

To the Editor:—The article by Calabrese, abstracted in *THE JOURNAL*, Dec. 18, 1909, p. 2140, suggesting that the gonococcus and the Ducrey bacillus may exert an immunizing influence against syphilitic infection and that individuals infected by the *Spirochæta pallida* have not recently been infected with gonorrhea or chaneroid, presents an interesting subject for investigation. My experience, though limited, agrees with his observation, based on a much wider study, that only about 7.5 per cent. of syphilitics had suffered previously with either of the other infections mentioned.

Of the 16 cases of syphilis which have recently come under my observation, and in which the previous venereal history was obtained, 15 denied any venereal disease previous to the syphilitic infection: one had had both gonorrhea and chaneroid before the syphilis was acquired. The rule does not appear to work the other way, for several have had other venereal infections since becoming infected with syphilis.

LUCIUS W. JOHNSON, M.D., U. S. S. Minnesota.

A New Treatment of Spastic Palsies

To the Editor:—We wish to call to your notice some inaccurate statements contained in your editorial, Jan. 15, 1910, under the above title. These inaccuracies of statement and the unjustified conclusions in regard to the results of our procedure reflect not only on the work which has been done by us on the treatment of spastic paralyzes and athetoses, but would likewise result in preventing further use of this method at the hands of others. We feel that we are justified in asking space to explain briefly what our work is and what results are being obtained.

This quotation from the editorial in question, "Even injection of alcohol into isolated nerves (as suggested by Schwab) is found inadequate for the permanent relief of spasticity" is a statement which is hasty, inaccurate and not based on knowledge either of our work or of our results. You say that the method is inadequate. We are at a loss to see how you have reached this conclusion, as we, ourselves, who have had the cases under observation, have found it quite the contrary and look on it as being a method which holds considerable promise for the relief of these cases.

A paper by Dr. Allison and Dr. Schwab, embodying a preliminary report of this work, under the title of "Muscle Group Isolation in the Treatment of Athetoses and Spasticities," was published in the *Journal of Nervous and Mental Disease*, August, 1909. In this paper the results of three cases of spasticity and one of athetosis were given with a statement of what was conceived to be the theories on which the procedure was based. Reference to this paper will, we believe, convince your readers that the statements embodied in the editorial are entirely at variance with the actual facts. For those who may not be interested enough to read our original communication or to whom a copy is difficult of access, we ask you to publish the following statements: 1. There was no effort made to cure spasticity by alcoholic injections into the peripheral nerves. Such a statement is manifestly absurd. 2. Our procedure is based purely on the mechanical principles involved of which spasticity is only one of several groups of factors. 3. The operation was done for the purpose of temporarily paralyzing a spastic muscle group in order by exercise and other physiologic means to strengthen the antagonist group, so that when voluntary movement returns to

the once over-powerful group the proper mechanical balance might be restored. 4. There was further a chance that the peripheral pathway of the spastic impulses being temporarily blocked, their return in the original sum might be lessened. 5. In the case of athetosis a sensory paralysis was produced for the reason that the group of muscles attacked was supplied by a mixed nerve.

We wish further at this point to enter our protest against the procedure of posterior root section in attempts to cure spasticity. Our objections are based mainly on the following facts: The magnitude and seriousness of the operation, especially in cases of spastic children, is a positive objection to it. Furthermore, the operation is based on incorrect physiologic principles for these reasons: Motor nerves contain sensory fibers which have nothing particularly to do with the posterior roots, so that cortical rest, whatever that might be, could not possibly result from merely posterior root sections. The overlap mentioned in the editorial is so considerable that in order to affect a whole spastic extremity, a large number of roots would necessarily have to be cut. This would make the operation one of inadvisable magnitude in the majority of cases. Furthermore, no matter how many roots were cut no complete sensory paralysis would possibly result. Admitting even that complete sensory paralysis could result then the very object of an operation of this kind would be done away with, namely, the possibility of coordinated voluntary movement. It is a well-known fact that in absolutely anesthetic areas no properly coordinated movement can ever be possible.

The chief object of treatment in all cases of spasticity is to enable the patient to make properly coordinated movements, with the mechanical disability caused by spasticity rendered as ineffective as possible. The spasticity as such is scarcely the main object of treatment, for the reason that its origin, nature and localization is still a matter of great obscurity. To assign it to the cortex of the brain is neither justified by facts nor upheld by any well-known theories.

Our results with the peripheral operation have been very encouraging, and we are only awaiting the proper lapse of time to report them in detail.

You have scarcely shown the proper respect to the element of time which is so frequently destructive to the brilliant promise of operative procedure, and we feel that you have unjustifiably, and without any knowledge of our work, made a statement which it is your obligation in fairness to correct.

SIDNEY I. SCHWAB, }
NATHANIEL ALLISON, } St. Louis.

COMMENT: THE JOURNAL is glad to give opportunity to Doctors Schwab and Allison to protest against the portion of the editorial containing alleged "inaccuracies of statement" and "unjustified conclusions." It is felt, however, that they unduly exaggerate the seriousness of the matter, as no reflection on their work was intended. The only statement in the editorial in which their work is referred to is very brief and is quoted in the second paragraph of their letter. Let us answer their objections in the order in which they state them:

1. The editorial does not say "cure spasticity by alcohol injections;" it speaks of relief. It is relief that is sought by the method of Schwab and Allison, and the best they can say for it is that it "holds considerable promise for the relief of these cases," and that "there was a further chance that the peripheral pathway of the spastic impulses being temporarily blocked, their return in the original sum might be lessened." So that their claims resolve themselves into a "promise" and a "chance." It is known that the injection of alcohol into nerve trunks causes only a temporary inhibition of function, as shown by Patrick and others in the treatment of neuralgias by this method, and this is recognized by Doctors Schwab and Allison when they speak of the spastic impulses being temporarily blocked. The experiments reported by them in their article in the *Journal of Nervous and Mental Diseases*, August, 1909, it is understood were made and published within a few weeks, and although almost a year has elapsed we have seen nothing published by them since confirming the permanent value of their method, nor do they say anything

about permanent results in their letter. The method has not been adopted as far as we know, since they first presented it at the last meeting of the American Neurological Association. In view of these facts and in the absence of a record of definite results it is felt that the statement made that the method is found inadequate for the permanent relief of spasticity is fully justified.

2 and 3. It is agreed that the theory of the procedure is based on the mechanical principles involved, that of paralyzing the spastic group and giving opportunity to strengthen the opposing group of muscles. Nothing in our statement referring to their work controverts that theory.

4. This has already been answered.

5. May not the temporary relief reported by Doctors Schwab and Allison in their cases be due to the paralysis of sensory impulses from the muscles, which, as shown in the editorial, are the real cause of the spasticity, rather than the mere inhibition of motor impulses? This would be another argument in support of the method of section of the posterior roots.

As to the protest and objection against the method of section of the posterior roots, Doctors Schwab and Allison are of course entitled to their opinion, and their arguments against it may have force. However, endorsement of the method by such American neurologists as Fraenkel and Fisher, and orthopedists such as Gibney, and its practical employment by Clark and Taylor, Spiller and Frazier and the others mentioned in the editorial, including Foerster and Tietze, its originators, would seem to outweigh any merely theoretical considerations. We hold no brief for the new operation, however, and are willing to abide by the final reports of clinical results promised by the several workers in the field.

Association News

Fund for Physicians Disabled by Sickness

To the Secretary of Each State and County Medical Society, and to Other Interested Members:

At the last session of the American Medical Association at Atlantic City the following report of Committee on Miscellaneous Business was adopted:

"The committee recommends that the President of this Association appoint a committee of five members to inquire into the desirability and practicability of establishing under the auspices of the American Medical Association a fund for the assistance of physicians disabled by sickness, and for a sanatorium for the treatment of such members of the Association as may be afflicted with tuberculosis or similar diseases; such committee to report to the House of Delegates at the next annual session of the Association."

As a basis for wise action the committee urges that the officers of state and county medical societies, and others interested in the subject, should at the earliest possible date, forward to the secretary of the committee, Dr. A. C. Magruder, Colorado Springs, Colo., answers to the following queries, with some account of any special cases that seem to illustrate the need for provision for disabled members of our profession.

1. Is there any provision by your state medical society or local society for the care of destitute and disabled physicians and those dependent on them? If so, how is such care provided?

2. What number of instances of special need for such assistance (or sanatorium treatment) have arisen in your locality within the last five years, and what number of your members need such assistance now?

3. About how many members of your county medical society are at present afflicted with tuberculosis or similar diseases; or have, within the last five years, died or withdrawn from professional work on account of such disease?

It is earnestly requested that this matter be brought before each county and state society at its next regular meeting, and that the desired information be furnished our committee at the earliest possible date.

The medical press is respectfully requested to republish this letter in order to give the subject wide publicity.

EDWARD JACKSON, Denver.

JEFFERSON R. KEAN, Washington, D. C.

A. T. BRISTOW, Brooklyn.

H. B. ELLIS, Los Angeles, Cal.

A. C. MAGRUDER, Secretary.

305 N. Tejon Street, Colorado Springs, Colo.

NEW MEMBERS

List of new members of the American Medical Association for the month of January, 1910:

ALABAMA

Jones, W. C., Mobile.
LaVerne, D. C., Birmingham.
Rosser, W. W., Stevenson.
Somerville, J. H., Fairford.

ARKANSAS

Dooley, J. B., Little Rock.
Fuson, C. M., Piggott.
Hill, L. H., Greenway.

CALIFORNIA

Banks, A. E., Pescadero.
Beetle, C. H., Oakland.
Briggs, L. H., Oakland.
Burks, F. L. R., Fresno.
Carter, W. E., Los Angeles.
Cohen, E. W., Los Angeles.
Colburn, J. M., Riverside.
Fry, P. B., Benecia.
Gordon, S. B., Salinas.
Mansfield, T. D., Oakland.
Parsegan, J. H., San Francisco.
Paterson, F. H., San Jose.
Pope, S. T., Watsonville.
Powell, Alvin, Oakland.
Purves, John, Oakland.
Ragland, D. C., Los Angeles.
Richardson, G. H., San Francisco.
Riggin, L. L., Oakland.
Root, R. R., Corona.
Ross, M. H., Los Angeles.
Sanford, Paul, San Jose.
Skeel, D. W., Los Angeles.
Stockwell, G. N., Ventura.
Sutherland, R. T., Oakland.

COLORADO

Beggs, W. N., Denver.
Gilbert, G. B., Colorado Springs.
Lutes, W. B., Merino.
Osborn, W. S., Pueblo.

DISTRICT OF COLUMBIA

Lamb, I. H., Washington.

FLORIDA

Bitzer, E. W., Tampa.
Bryans, R. L., Pensacola.
Dean, R. H., Jacksonville.
Gwynn, G. H., Tallahassee.
Rush, J. D., Orlando.
Spencer, H. C., Gainesville.

GEORGIA

Edge, J. H., Toecoa.
Jarrell, W. W., Thomasville.
Jones, T. J., Newnan.
Sharp, C. H., Arlington.
Trimble, G. C., East Point.

IDAHO

States, G. W., Franklin.

ILLINOIS

Burrows, T. W., Ottawa.
Cables, H. A., E. St. Louis.
Carmack, A. C., Camargo.
Castle, Stanly, Springfield.
Coveny, M. J., Spring Valley.
Dice, H. F., Ridgefarm.
Dirkee, A. C., Pontiac.
Ehlers, F. F., Oak Park.
Graves, S. S., Chicago.
Hagar, C. E., Joliet.
Hager, D. S., Chicago.
Harrison, E. M., Chicago.
Hathaway, E. P., Ottawa.
Higby, C. B., Enreka.
Kerch, H. E., Dundee.
Kerr, R. A., Peoria.
Kinley, T. F., Rockford.
Leseemann, F. J., Chicago.
McCord, A. N., Streator.
Mendel, M. L., Chicago.
Orr, H. D., Chicago.
Otrich, G. C., Belleville.
Parker, O. S., Aurora.
Phillips, N. C., Freeport.

Rich, F. D., Joliet.
Ross, John, Pontiac.
Scholten, E. R., Chicago.
Spencer, Annie W., Batavia.
Sterrett, W. S., Merseilles.
Weld, Anna, Rockford.
Welsh, M. M., Odell.

INDIANA

Ditton, I. W., Fort Wayne.
Gooder, W. V., Lowell.
Hicks, J. R., Covington.
Kirk, E. W., Veedersburg.
Kirkpatrick, A. M., Columbus.
Lee, J. M., Winchester.

IOWA

Adair, G. M., Anita.
Byrnes, R. L., Avoca.
Cocklin, W. K., Shannan City.
Duhigg, T. F., Des Moines.
Gardner, P. E., New Hampton.
Hall, Lyman, Spring Hill.
McDannell, J., Nashua.
Riemecke, C. A., Muscatine.
Williams, T. J., Hitemare.

KANSAS

Carter, W. H., Wichita.
Daniels, M. L., Pawnee Rock.
Ervay, F. L., Fredonia.
Hill, Emma L., Oswego.
Longenecker, G. W., Elsmore.
Mason, K. P., Cawker City.
Newton, W. B., Glasco.
Potter, H. E., Clifton.
Quantius, L. F., McPherson.
Slayton, F. H., Wichita.
Stein, Chas., Glasco.
Van Meer, W. H., Valley Falls.

KENTUCKY

Bandy, C. E., Rumsey.
Gibson, A. P., Hellier.
Hillman, A. J., Glenwood.
Martin, G. E., Myers.
Nunnelle, S. B., Bullittsville.
Quinby, S. C., Louisville.
Woodburn, Clarence, Bremen.

LOUISIANA

Brown, A. B., New Orleans.
Burthe, J. L., New Orleans.
Canapa, Louis, New Orleans.
Clark, L. O., Lafayette.
Leake, W. W., New Orleans.
Nothacker, Wm., New Orleans.
Rupp, J. A., New Orleans.
Troescher, W. G., New Orleans.

MAINE

Hatch, L. B., Portland.

MARYLAND

Bowles, E. L., Middletown.
Fehsenfeld, A. L., Baltimore.
Hanby, C. M., Cambridge.
Moss, W. L., Baltimore.
Poulton, J. E., Baltimore.
Underhill, A. J., Baltimore.
Walton, H. J., Baltimore.

MASSACHUSETTS

Bigelow, E. B., Worcester.
Darling, A. E., Lynn.
MacLennan, A. D., Boston.

MICHIGAN

Barnebee, J. H., Vicksburg.
Bjorkman, Geo., Gladstone.
Burke, R. A., Ishpeming.
Combacker, L. C., Ann Arbor.
Hipp, Wm., Detroit.
Leland, R. G., Ann Arbor.
Martin, R. H., Mt. Clemens.
Pettis, J. H., West Branch.
Townsend, F., Saulte Ste. Marie.

MINNESOTA

Andrist, J. W., Owatonna.
Austin, E. E., Minneapolis.
Bockman, M. W. H., Thief River Falls.
Brigham, F. T., Watkins.
Darling, J. B., St. Paul.
Eriel, E. Q., Ellendale.
Farr, R. E., Minneapolis.
Hagen, G. L., Minneapolis.
Murdock, H. G., Taylors Falls.
Pilon, P. C., Paynesville.
Plonske, C. J., Minneapolis.
Reinestad, C. S., Brainerd.
Ulrich, H. L., Minneapolis.
Vinje, Syver, Henning.

MISSISSIPPI

Cox, W. A., Pascagoula.
Doty, W. H., Biloxi.
Strong, Robt. A., Pass Christian.
Wilson, J. J., Jr., Cold Water.

MISSOURI

Beatie, W. R., Marshfield.
Bland, W. W., Vandalia.
Carriere, T. L., St. Louis.
Harlan, W. E., St. Louis.
Holdenried, W. E., St. Louis.
Mack, M. L., Joplin.
Moore, H. M., St. Louis.
Richter, Richard, St. Louis.
Sale, Llewellyn, St. Louis.
Shy, D. E., Knobnoster.
Spencer, Selden, St. Louis.
Wall, O. A., Jr., St. Louis.
Weiterer, H. L., St. Louis.

MONTANA

Parbour, M. W., Helena.
Hoag, R. B., Aldridge.

NEBRASKA

Borglum, Frank, Lincoln.
Henton, G. E., Friend.
Mace, J. L., Glenville.
Thompson, I. L., Beemer.

NEW HAMPSHIRE

Graham, G. S., Hanover.
LaFrance, A. J., Laconia.

NEW MEXICO

Cartwright, M. G., Albuquerque.
Cheyney, V. S., Sawyer.
Smart, R. S., Albuquerque.

NEW YORK

Appelbaum, S. J., Rochester.
Brickell, F. L., Silver Creek.
Browne, W. T., Brooklyn.
Cutter, Harriet P., Utica.
Emerson, Haven, New York City.
Ginsburgh, E. L., New York City.
Green, A. R., New York City.
Haller, G. J., Buffalo.
Hoddick, Wm., Buffalo.
Jagle, Elizabeth C., New York City.
Kendall, H. A., Buffalo.
Lattin, C. B., Buffalo.
MacFarland, E. G., Clinton.
Macmillan, Isabel, New York City.
Rosenbloom, A. A., New York City.
Ross, Mary J., Binghamton.
Savidge, E. C., New York City.
Schaefer, A. C., Buffalo.
Seff, Isadore, New York City.
Stillman, R. G., New York City.
Wasch, M. G., Brooklyn.

NEW JERSEY

Coc, Richard, Newark.
De Mund, C. A., Ridgewood.
Jacob, A. N., Sparta.
Lewis, L. L., Hoboken.
Parke, Henry, Paterson.
Rogers, B. H., Paterson.

NORTH CAROLINA

MacConnell, J. W., Davidson.
Rhodes, J. S., Williamston.

NORTH DAKOTA

Bean, O. G., Walcott.
Benn, F. G., Kulm.
Boslough, A. W., Dwight.
Canfield, H. E., Hatton.
Fisher, A. M., Bismarck.
Greenman, N. H., Fairmount.
Hamilton, J. S., Hansboro.
Kron, L. O., Kenmare.
Labbett, L. H., Enderlin.
Lancaster, B. M., Crosby.
LaMoure, H. A., Grafton.
Mallarian, K. H., Fargo.
McCluskey, O. W., Carrington.
Slyfield, F. A., Grand Forks.
Tholen, W. P., Wilton.
Wug, I. C. J., Kenmore.

OHIO

Banta, M. B., Cleveland.
Brooman, C. J., Cincinnati.
Corwin, M. M., Savona.
Hauer, A. M., Columbus.
McKay, R. H., Akron.
Palmer, D. W., Cincinnati.
Perrin, D. A., Chillicothe.
Pollock, J. K., Ashtabula.
Shelton, H. P., Georgetown.
Siehman, Armin, Akron.
Ulery, G. C., West Milton.
Wedler, C. R., Cleveland.

OKLAHOMA

Clark, Guy, Milburn.
Johnston, J. C., Waurika.
Mitchell, R. L., Dow.
Sands, A. J., Capron.
Warmack, J. C., Muskogee.
Watson, L. F., Oklahoma City.

OREGON

Bettman, A. G., Portland.
Truax, L. L., Bonanza.

PENNSYLVANIA

Bashore, S. D., Palmyra.
Hodge, E. B., Jr., Philadelphia.
Ingram, T. E., Marietta.
Leach, W. W., Philadelphia.
Many, H. C., Tyler Hill.
Patterson, H. B., Pittsburg.
Shick, W. B., Philadelphia.
Woodside, H. L., Mahaffey.

RHODE ISLAND

Wilcox, R. S., Providence.

SOUTH CAROLINA

Baker, Mary R., Columbia.

SOUTH DAKOTA

Gundermann, H. R., Selby.
Hopkins, N. K., Arlington.
Youngs, A. H., Pierre.

TEXAS

Allison, Bruce, Fort Worth.
Earle, Hallie, Marlin.
Parrish, M. O., Hubbard.
Robbie, M. K., San Antonio.
Stephenson, H. H., Irene.
Wedemeyer, E. L., Mart.

UTAH

Faust, Elsie A., Salt Lake City.
Sandberg, Carl L., Salt Lake City.

VERMONT

Miltimore, H. H., St. Johnsbury.

VIRGINIA

Bowyer, C. B., Osaka.
McDowell, I. W., Jr., Butterworth.
Steere, F. E., Richmond.

WASHINGTON

Cooke, C. T., Seattle.
Lane, J. L., Seattle.

WEST VIRGINIA

Barrow, A. L., Kilsyth.
Gillespy, Thurman, Wheeling.
Whiteside, W. E., Fenwick.

WISCONSIN

Andrew, G. F., Birchwood.
Bishop, L. A., Fond du Lac.
Bass, E. A., Montello.
Bender, Jesse L., Boaz.
Bolton, E. L., Chilton.
Brooks, F. D., Fox Lake.
Chilson, Benj., Sharon.
Christofferson, P. J., Waupaca.
Collins, W. P., Racine.
Dusenbury, G. E., Amherst.
Edman, C. H., Stanley.
Fendon, C. D., Phillips.
Fifield, G. W., Janesville.
Hay, T. H., Stevens Point.
Kennedy, W. R., Milwaukee.
Lathrop, H. A., Marshfield.
McIndoe, T. B., Rhinelander.
Morgenroth, H. W., Oshkosh.
Park, W. H., Glenwood.
Parker, E. H., Eau Claire.
Quin, J. F., Milwaukee.
Raymond, R. G., Brownsville.
Reichert, J. E., Schleislingerville.
Sarazin, F. C., Superior.
Schell, G. F., Fond du Lac.
Scheid, M. M., Rosendale.
Thomas, W. O., Clinton.
Von Neupert, I. C., Jr., Stevens Point.

Queries and Minor Notes

PRONUNCIATION

To the Editor:—Please give me the correct pronunciation of "pellagra" and "hexamethylenamin."

M. R. DREWRY, Byrdville, Va.

ANSWER.—Pēl-lā'-grah; hēx-ā-mēth'-il-ēn-ām'-in. Some other pronunciations of the first-mentioned word can be called "correct" so far as having good authority, but the majority of the best dictionaries favor the pronunciation given.

METHOD OF MAKING EPSOM SALTS PALATABLE

To the Editor:—Please publish a formula for making Epsom salts palatable, and also state the best method of giving sodium nitrite, whether in simple solution or combined with other preparations.

A. F. BLACHLEY, Woodstock, Ohio.

ANSWER.—The most agreeable method of taking Epsom salts is by means of one of the effervescent preparations. Perhaps the next most pleasant method is to dissolve the salts in freshly made lemonade. Possibly some of our readers will suggest a better method.

The dose of sodium nitrite, being generally small, is well administered in tablet form, given directly after meals. The best tablet to have on hand is one that contains one grain. One or more of these may be administered as desired.

CAPITALS IN PRESCRIPTIONS

To the Editor:—Please give me advice on the following point: I notice that many of our Southern physicians, especially the older ones—men of education and large experience—in writing prescriptions invariably use capitals as in the following line:

R Unguenti Aquæ Rosæ..... 30
instead of

R Unguenti aquæ rosæ..... 30

M. R. DREWRY, Byrdville, Va.

ANSWER.—This is one of the cases in which, since no *a priori* rule can be applied, the only guide for individual taste and judgment is furnished by expediency and by the mass of good usage. Past generations used capitals with what appears to the present generation like lavish extravagance. Persons whose writing habits were formed twenty or twenty-five years ago are inclined to use capitals much more freely than do younger persons of equal educational advantages, for it is now considered better form to reserve capitals, as far as possible, for proper names, proper adjectives, etc. Almost universal custom sanctions the use of lower-case letters as the initials of the second terms of official titles in prescriptions.

DETECTION OF URINARY ACIDITY

To the Editor:—What is the simplest and best test for deciding the acidity of the urine.

S. T.

ANSWER.—Owing to the complexity of the composition of the urine it responds differently to different tests for reaction. Thus a urine which is alkaline to litmus may show a neutral or acid reaction with phenolphthalein. For practical purposes, it is usual to use litmus for the qualitative test. If the paper is turned blue it should be dried at a gentle heat to see if the alkalinity is due to ammonia. If this is the case the blue color at first given to the paper will disappear on drying. An alkalinity due to ammonia is only of significance if the urine is fresh. When fresh urine is alkaline from the presence of ammonia decomposition must have taken place in the urinary passages before the urine was voided. For quantitative estimation several complicated processes have been devised, but it is usually sufficient to titrate the urine with decinormal sodium or potassium hydroxid using phenolphthalein as an indicator. The acidity may be expressed by stating the number of cubic centimeters of the decinormal alkali required to neutralize the acid in 100 c.c. of the urine. Lack of space forbids an extended discussion of this subject for which we refer our correspondent to any good text-book.

TREATMENT WANTED FOR ATROPHIC RHINITIS

To the Editor:—I have a case of atrophic rhinitis in which I should like some help. The patient, a farmer's wife, aged 31, consulted me about 14 months ago. The nasal septum and turbinate bodies are entirely gone. There are horrible crusts and scales. Transillumination shows the frontal sinuses clear. There have never been nasal polypi. There seems to be some involvement of the

sphenoid sinus and ethmoid labyrinth. The mucous membrane is so sensitive that she cannot breathe without cotton in the nostrils; it also bleeds easily. The woman is in good health otherwise, and there is no specific history.

The treatment I have given has been: Mercury to the limit of tolerance for ninety days; potassium iodid for three weeks. Fowler's solution up to 30 drops a day with iron peptomanganate for ninety days; locally, I have used ichthyol 20 per cent.; strong solution of potassium permanganate; pure gualacol; and alkaline washes *ad libitum*. None of these gave any result. An injection of 7 minims Koch's bacilli emulsion (B. E. No. 3) caused a rise in temperature to 102 F., and the woman felt very ill. There was no local effect. One week later, 5 minims were given and the temperature rose to 101 F.; one week later, 7 minims were given and temperature rose to 100 F.; another week later, 5 minims were given without results. Ten injections of 1 cm. each of staphylococcus and streptococcus vaccines were given without results.

J. T. GRAY, Stillwater, Minn.

ANSWER.—It is somewhat difficult to venture an accurate diagnosis in this case from the data at hand, but it is possible to make a tentative diagnosis and offer some suggestions regarding the treatment. The term "atrophic rhinitis" is applied to a condition of the nasal chambers in which atrophy, accumulation of secretion and crusts exist accompanied by fetid nasal breath. From the description of the conditions in this case there is in addition to the above symptoms destruction of the cartilaginous and bony septum, a condition which is rarely present in ordinary atrophic rhinitis. Such destruction does take place, however, in syphilitic disease of the nose. It would perhaps be well in this case to explore the sphenoid sinuses and the ethmoid cells. If they are found to be diseased, treatment should be directed toward them first. The nasal chambers should be kept clean by frequent irrigations of a hot 2 per cent. solution of sodium bicarbonate; mildly astringent solutions may be used, but strong astringents or irritating lotions should be avoided as a rule. A 10 per cent. solution of ichthyol in glycerin applied on a tampon and left in position for half an hour is of value in some cases. In other words, the local treatment should be directed toward removing the source of pus formation if such can be found, keeping the nasal chambers clean and making the condition of the patient as comfortable as possible. The atrophic condition is of course permanent and as the mucous membrane becomes sclerosed the secretions will become less and the condition in this respect will be improved. As to constitutional treatment, the iodid of potassium in full doses might be used with benefit in this case and attention given to the hygienic conditions. This patient is past the stage in which much can be done except to relieve symptoms. The clearing up of sinus disease, if present, attention to local conditions and general treatment as outlined above may do much to improve the condition and check the destructive process.

A TUBERCULOUS PATIENT'S ENDURANCE OF FORMALDEHYDE GAS

To the Editor:—In THE JOURNAL, Jan. 15, 1910, page 221, I notice a question as to the poisonous effects of formaldehyde gas by slow or gradual inhalation. Having had some unique experience with this gas, I take the liberty of answering the query positively as to the one case.

In the winter of 1904 I had full control of our city hospital. A man with acute tuberculosis was admitted. The physical examination showed that both lungs were deeply involved, he was emaciated, weighing only 110 pounds. His temperature ran from 102 to 104 F. every day, night sweats were terrific, no appetite, pulse 160 to 170, respiration 60 to 80. He was so weak and emaciated that he could with difficulty walk across his room without feeling completely exhausted and out of breath. Microscopic examination of his sputa showed numerous tubercle bacilli. He had been treated by several physicians, all of whom had told him he could not recover; beside he had resorted to a number of the proprietary and "patent" medicines so easily found, until at last he decided to make no further effort to get well.

After carefully examining him I asked if he objected to my experimenting on him, provided I did him no harm. To this he replied by saying no, that he was convinced that medicine would do him no good and he was tired of trying it.

I had him put in a room 12x12x10 feet and began gradually to saturate the room with formaldehyde gas, allowing formalin to evaporate slowly from a dish placed in the room. At first I ordered one-half ounce of formalin poured into the dish every four hours. (I had explained to him fully what his sensations would be, and assured him that there was absolutely no danger.) The quantity of formalin was increased slowly from time to time, until the room became so saturated with the gas that no one could enter it. The nurse in charge did not dare enter, but in order to take his temperature would pass the thermometer through the partially opened door, when he would take his own temperature; then to count his pulse she would open the door slightly and have him pass his arm outside. I kept him in this room with the door and window closed, never opening either except as above, and when his meals were served, for four months. After this time I allowed him to sit outside in the open air, and soon began to have him take short walks.

When he came out of his formaldehyde room his temperature had been normal for six weeks, his pulse was 84 to 90, respirations 24 to 26, and he weighed 140 pounds.

At this time there could be found a few tubercle bacilli in the sputum but it required considerable time and search to find them. Being an ignorant man, he left the hospital at the end of the fifth month, without my permission of course, and really without my knowledge. Some six months thereafter I succeeded in locating him in an adjoining county whither he had gone after leaving the hospital, and at that time he was slowly dying with an acute exacerbation of the disease.

This shows clearly that in this one case the formaldehyde gas not only did no harm but actually did good, and so much good that I firmly believe that had he continued the treatment he would have fully recovered, and would probably be a well man to-day.

Considering the extent of the disease and the late stage reached before treatment was begun, the result to me was marvelous, and made me feel that formaldehyde gas might some day be our panacea for tuberculosis, and be the means of curing some patients, even after they were not in condition to take the prescribed treatment of the present time. This patient could walk two miles without a halt and would not feel fatigued therefrom, nor would his pulse quicken more than normally.

I attributed the wonderful improvement in this case not to formaldehyde gas alone, but to the gas, combined with rest and forced feeding. We all know what the result would have been, under similar circumstances, without the use of the gas.

This case was a most interesting one to me and I feel that it will interest the profession in general.

S. LILE, M.D., Lynchburg, Va.

ANSWER.—The remarkable tolerance of Dr. Lile's patient for formaldehyde gas seems most unusual. It seems to contradict the experience of others and they may be somewhat skeptical in regard to it, as in its use for disinfection purposes tolerance of its irritating effects on the respiratory and conjunctival mucous membranes does not seem to be acquired after its frequent employment over considerable periods of time.

The Public Service

Medical Department of the Army

Changes for the week ended Feb. 5, 1910:

Howard, Deane C., major, on expiration of leave of absence ordered to Jefferson Barracks, Mo., for duty.

Bradley, Alfred E., major, relieved from duty at Jefferson Barracks, Mo., and to sail from San Francisco, July 5, 1910, for duty in the Philippine Islands.

Raymond, Henry L., lieutenant, relieved from duty as Chief Surgeon, Department of Dakota, and to sail from San Francisco, April 5, 1910, for duty in the Philippine Islands.

Loving, Robert C., captain, relieved from duty at the U. S. Military Academy, West Point, N. Y., to take effect April 1, 1910, on expiration of leave of absence to sail from San Francisco, Aug. 5, 1910, for duty in the Philippine Islands.

Johnson, Howard H., lieutenant, will on arrival at San Francisco, proceed to Fort McDowell, Cal., for duty.

Christie, Arthur C., lieutenant, will on arrival at San Francisco, proceed to Columbus Barracks, Ohio, for duty.

Gostin, Bernard S., lieutenant, will on expiration of leave of absence, proceed to West Point, N. Y., and report to the Superintendent, U. S. Military Academy, for duty.

Bundesen, H. N., 1st lieutenant, M. R. C., assignment to duty in the Philippine Islands revoked.

Cohen, Hymen M., 1st lieutenant, M. R. C., relieved from duty at Fort Rodman, Mass., and to sail from San Francisco, April 5, 1910, for duty in the Philippine Islands.

Byrne, Charles B., colonel, January 28, retired from active service.

Duncan, William A., captain, sick leave extended 4 months.

Love, Joseph W., 1st lieutenant, M. R. C., granted 1 month and 15 days leave of absence.

Christie, Arthur C., lieutenant, leave extended 30 days.

Gapen, Nelson, captain, granted 4 months leave, to take effect when relieved from duty in Philippines Division.

De Niedman, Wm. F., 1st lieutenant, M. R. C., leave extended to March 5, 1910.

Stanton, Samuel C., contract surgeon, report for duty as Attending Surgeon, Headquarters Department of the Lakes, Chicago.

Rand, I. W., major, en route to Army and Navy General Hospital, Hot Springs, Ark., on detached duty.

Johnstone, E. K., 1st lieutenant, M. R. C., ordered to accompany troops from Presidio of San Francisco, to Fort Sill, Okla.

Haley, James C., and Ashburn, James K., 1st lieutenants, M. R. C., relieved from duty at the Army Medical School, and will proceed to their respective homes, and report by telegraph to The Adjutant General of the Army.

Ireland, M. W., ordered to proceed to Chicago, on official business, and on completion of this duty to return to his proper station in this city.

Kelly, John P., 1st lieutenant, M. R. C., ordered to Fort Rugar, H. T., for duty, instead of to Schofield Barracks, H. T., as issued in previous orders.

Hansell, Haywood S., captain, granted 30 days' leave of absence, with permission to apply for 30 days' extension.

Medical Corps of the Navy

Changes for the week ended Feb. 5, 1910:

Butts, H., asst.-surgeon, ordered to duty at the Naval Medical School and to additional duty at the Government Hospital for the Insane, Washington, D. C.

Pheips, J. R., asst.-surgeon, detached from the *Yankton* and ordered to the *Solace*.

Huntington, E. O., surgeon, placed on the retired list Jan. 29, 1910.

Cole, H. W., P. A. surgeon, ordered to the *Yankton* on the expiration of leave.

Hibbett, C. T., medical inspector, ordered to the Naval Recruiting Station, Baltimore.

Huntington, E. O., surgeon, retired, detached from the *Lancaster* and ordered home.

Angeny, G. L., surgeon, detached from the Naval Recruiting Office, Baltimore, and ordered to the *Lancaster*.

Marriages

ANSEL MARION CAINE, M.D., to Miss Pearl Jacobs, both of Rome, Ga., Dec. 14, 1909.

FRANCIS D'AGOSTINO, M.D., to Miss Diana Capasso, both of New Haven, Conn., January 23.

HUGH M. COX, M.D., to Miss Margaret Adelaide Kuhn, both of New York City, January 26.

WILLIAM D. CORSE, M.D., Gardenville, Md., to Miss Ethel Gordy, of Baltimore, January 26.

JOHN A. EVANS, M.D., Baltimore, to Miss Grace Estelle Causey, at Baltimore, January 26.

JOHN CUTLER BAKER, M.D., Ramona, S. D., to Mrs. Edith Corliss, of Ripon, Wis., January 26.

JAMES GORDON CUMMING, M.D., Ann Arbor, Mich., to Miss Helen Amelia Sullivan, of Chicago, February 1.

HENRY NICHOLAS BRUECHERT, M.D., to Miss Jeannette Plesher, both of Parkersburg, Iowa, January 6.

ALEXANDER FRANCIS STEVENSON, JR., Chicago, to Miss Karen Nielson, of Copenhagen, at Chicago, February 7.

SAMUEL HARVEY JAMS, M.D., Waynesboro, Pa., to Miss Elizabeth Stribling Rouse, at Baltimore, January 29.

JAMES SPENCER PURDY, M.D., Twin Falls, Idaho, to Miss Janet Seward Robinson, of Auburn, N. Y., at Aurora, N. Y., Dec. 25, 1909.

Deaths

John Stearns Jamison, M.D. University of Michigan, 1852; formerly a member of the American Medical Association and Medical Society of the State of New York; surgeon of the Eighty-sixth New York Volunteer Infantry, and later surgeon-in-chief of the Third Army Corps and a member of the board of medical examiners of the Army during the Civil War; who is said to have established the first contraband hospital in Washington; president of the pension board of Steuben county since 1873; died at his home in Hornell, January 19, from cerebral hemorrhage, aged 87.

Thomas L. Taylor, M.D. Georgetown University, Washington, D. C., 1882; a member of the Medical Association of the District of Columbia; and of many foreign scientific societies; for 39 years in the service of the Department of Agriculture, Washington; said to have been one of the first to make investigations regarding the adulteration of foods; died at his home, January 22, from senile debility, aged 90.

William Lyman Faxon, M.D. Harvard Medical School, 1862; assistant surgeon of the Thirty-second Massachusetts Volunteer Infantry during the Civil War; later a practitioner of Chicago; and from 1870 to 1892, superintendent of the National Sailor's Home, Quincy, Mass.; one of the incorporators of the Quincy Water Company; died at his home in North Reading, Mass., January 19, aged 72.

Joseph K. Combe, M.D. University of Virginia, Charlottesville, 1896; a member of the American Medical Association; and of the Association of Military Surgeons of the United States; and secretary of the Cameron County, Texas, Medical Association; acting assistant surgeon U. S. Army from 1898 to 1902; died at his home in Brownsville, Texas, January 19, from pneumonia, aged 38.

Frank E. Engleby, M.D. Cleveland College of Physicians and Surgeons, 1893; of Vermillion, Ohio; a member of the American Medical Association, and Cleveland Academy of Medicine; consulting physician to St. Clair Hospital, Cleveland; while answering a professional call during a blizzard, January 22, was struck by a train and instantly killed, at a street crossing in Vermillion, aged 45.

James Mallock Elliott, M.D. Long Island College Hospital, 1868; a member of the American Medical Association; charter member and ex-president of the Kalamazoo Academy of Medicine; for eight years a member of the board of pension examiners of Barry county, Mich.; died at his home in Battle Creek, January 28, from cerebral hemorrhage, aged 63.

Lewis L. Sharp, M.D. University of Pennsylvania, 1864; for several years president of the Burlington County (N. J.) Medical Society; from 1890 to 1892 a member of the legislature; chairman of the township committee and a member of the Board of Health of Medford township; died at his home in Medford, January 29, from cerebral hemorrhage.

Ramon L. Miranda, M.D. Ecole de Médecine, Paris, 1861; Madrid, Spain, 1861; a member of the Medical Society of the State of New York; and New York Academy of Medicine; and three times treasurer of the Academy of Sciences of Havana, Cuba; died at his home in New York City, January 25, from a cerebral hemorrhage, aged 73.

William Henry Haze, M.D. Western Reserve University, Cleveland, 1852; a member of the Michigan Legislature in 1857 and 1862; one of the first board of aldermen, and in 1866 mayor of Lansing; United States revenue assessor in 1870 and 1871; died at his home in Lansing, January 21, from cerebral hemorrhage, aged 93.

Willard P. Naramore, M.D. Starling Medical College, Columbus, Ohio, 1852; a member of the Illinois state legislature in 1852; and of the Illinois Constitutional Convention in 1861; president of the Lena (Ill.) bank; died at his home in Lena, January 29, from senile debility, aged 85.

Albert R. Barrett, M.D. University of Nashville, Tenn., 1877; of Germantown, Philadelphia; for many years national bank examiner; a veteran of the Civil War; died in the Homeopathic Hospital, Scranton, Pa., January 19, after an operation for disease of the stomach.

Robert Herbert Fegers, M.D. Rush Medical College, 1882; professor of dermatology in Keokuk Medical College; a member of the Tri-State Medical Society of Iowa, Illinois and Missouri; died suddenly at his home in Keokuk, January 28, from cerebral hemorrhage, aged 61.

Nicola Collora, M.D. University of Turin, Italy, 1898; formerly assistant to the obstetrical and gynecological clinics of Turin, Florence, Palermo, and Messina; of South Brooklyn; died in Seney Hospital, January 26, from septicemia due to an operation wound, aged 37.

James S. Manley, M.D. Cooper Medical College, San Francisco, 1861; of Glenwood Springs, Colo.; for many years district surgeon of the Denver and Rio Grande Railroad; died on his ranch near Glenwood, January 19, from senile debility, aged 80.

Russell Dexter Bush, M.D. Detroit Medical College, 1878; a member of the American Medical Association and ex-president of the Saunders County Medical Society; of Wahoo, Neb.; died at Lincoln, Neb., January 17, from nephritis, aged 57.

R. Richard Nuckalls, M.D. Nashville Medical College, 1859; assistant surgeon of the Thirtieth Tennessee Infantry, C. S. A. during the Civil War; died at his home in Station Camp, near Gallatin, Tenn., January 24, from nephritis, aged 73.

Edmund Lowell Marcy, M.D. Yale University, 1907; a member of the American Medical Association; and at one time editor of the *Yale Medical Journal*; died at his home in Buffalo, N. Y., January 24, from scarlet fever, aged 26.

William Davis Hughes, M.D. Howard University, Washington, D. C., 1884; of Washington, D. C.; formerly mayor of Troy, Ohio; and for many years an attorney; died at his home in Washington, D. C., January 24, aged 75.

Thomas H. Wentz, M.D. Jefferson Medical College, 1874; formerly a member of the Medical Society of the State of Pennsylvania; died suddenly at his home in West Philadelphia, January 29, from heart disease, aged 62.

James Monroe Dicks, M.D. Medical College of Georgia, Augusta, 1907; and valedictorian of his class; a member of the State Medical Association of Texas; died at his home in El Paso, January 24, from diabetes, aged 26.

Abel D. Brooks, M.D. Eclectic Medical College of the City of New York, 1872; a veteran of the Civil War; for a long time a justice of the peace on Grand Island, Buffalo; died at his home in Buffalo, January 15, aged 83.

David Lawry Davidson, M.D. Rush Medical College, Chicago, 1868; formerly a practitioner of Illinois and Missouri; died at the home of his daughter in Atlanta, Ga., Dec. 28, 1909, from cerebral hemorrhage, aged 66.

Abraham C. Smith, M.D. Pulte Medical College, Cincinnati, 1879; Eclectic Medical Institute, Cincinnati, 1879; formerly of Chicago; was found dead in his bed in Tulsa, Okla., Dec. 19, 1909, from asphyxiation by gas, aged 68.

Rolon M. Fulwider, M.D. Columbus Medical College, 1881; formerly a member of the Ohio State Medical Association; once mayor of West Liberty, Ohio; died in Urbana, Ohio, January 24, from heart disease, aged 55.

Joseph Nare Letourneau, M.D. Laval University, Montreal, 1889; formerly surgeon to Notre Dame Hospital, Montreal; a member of the New Hampshire Medical Society; died at his home in Laconia, January 13, aged 48.

Stewart Church, M.D. College of Physicians and Surgeons, New York City, 1870; a member of the Medical Society of the State of New York; died at his home in Brooklyn, January 17, from cerebral hemorrhage, aged 63.

Benjamin F. Hill (license, Washington county, Pa., 1881); surgeon of the One Hundred and Fortieth Pennsylvania Volunteer Infantry throughout the Civil War; died at his home in Candor, Pa., January 19, aged 82.

Hamilton Scott Burroughs, M.D. Jefferson Medical College, 1879; a member of the American Medical Association and College of Physicians of Pittsburg; died at his home January 26, from pneumonia, aged 57.

Abram Columbus North M.D. New York University, New York City, 1860; surgeon of the Seventh Georgia Infantry, C. S. A., during the Civil War; died at his home in Newnan, Ga., January 28, aged 71.

Charles Lewis Hammond, M.D. College of Physicians and Surgeons, Chicago, 1896; of Tonopah, Nev.; physician of Nye county; died in Lane Hospital, San Francisco, January 16, from erysipelas, aged 38.

William Harvey Burke, M.D. Fort Wayne (Ind.) College of Medicine, 1882; formerly a member of the Oklahoma State Medical Society; died at his home in Welectka, Dec. 22, 1909, from gastritis, aged 58.

James C. Metcalfe, M.D. University of Louisville, 1850; for a long time president of the St. Vincent de Paul Society of Louisville; died at his home in that city, January 21, from pneumonia, aged 85.

William H. Clendenen Teal, M.D. University of Maryland, Baltimore, 1897; formerly a medical examiner in the Baltimore public schools; died at his home in Baltimore, January 28, aged 35.

Alfred Sidney Allen, M.D. University of Alabama, Mobile, 1881; a member of the Medical Society of the State of Alabama; died at his home in Deposit, January 10, from disease of the liver.

David Peterson Bogart, M.D. Eclectic Medical College of the City of New York, 1868; M.C.P. and S., Ont., 1869; died at his home in Whitby, Ont., January 16, from cerebral hemorrhage, aged 83.

Augustus W. Stevens, M.D. College of Physicians and Surgeons, Keokuk, Iowa, 1881; a pioneer practitioner of Buena Vista county, Iowa; died at his home in Storm Lake, January 16, aged 78.

Nelson W. Reynolds, M.D. Marquette University, Milwaukee, 1898; instructor in the use of the x-ray in Marquette University; died at the home of his sister in Milwaukee, January 20, aged 36.

Charles Thomson, M.D. University of Maryland, 1867; for many years a practitioner of Middleburg, Md., but latterly of Baltimore; died in Frederick, January 15, from pneumonia, aged 67.

Dennis Calhoun Atkinson, M.D. College of Physicians and Surgeons, Baltimore, 1880; died suddenly at his home in McDade, Texas, January 19, from cerebral hemorrhage, aged 58.

Edward Noble, M.D. Indiana Eclectic Medical College, Indianapolis, 1886; formerly of Azusa, Cal.; died in the Los Angeles County Hospital, January 2, from tuberculosis, aged 69.

Seth W. Beckwith, M.D. Northwestern Ohio Medical College, Toledo, 1884; a member of the American Medical Association; died at his home in Toledo, Nov. 23, 1909, from paralysis, aged 54.

Edward T. Balch, M.D. Philadelphia College of Medicine and Surgery, 1865; and formerly professor of anatomy in that institution; died at his home in Santa Barbara, Cal., Oct. 11, 1909.

Harris K. Thayer, M.D. Louisville Medical College, 1892; a member of the Medical Association of Georgia; died suddenly at his home in Brooklet, January 17, from pneumonia, aged 40.

Edward Raphael Joyce, M.D. College of Physicians and Surgeons, New York City, 1905; died at his home in Lewiston, Maine, January 22, from cerebral hemorrhage, aged 29.

William Grant Roberts, M.D. Atlanta Medical College, 1866; a Confederate veteran; died in the hospital of the Soldier's Home, Atlanta, January 5, from cardiac asthma, aged 74.

Frank Duane Summers, M.D. Detroit Medical College, 1883; a member of the American Medical Association; died at his home in Detroit, January 20, from nephritis, aged 49.

Daniel Webster Jackson, M.D. College of Physicians and Surgeons, Keokuk, Iowa, 1878; died at his home in Villisca, Iowa, January 8, from chronic nephritis, aged 61.

Norton Brokaw, M.D. Northwestern Medical College, St. Joseph, Mo., 1880; for many years a druggist of St. Joseph; died in a hospital in that city, July 1, 1909.

Charles Emerson Jones, M.D. New York Homeopathic Medical College, 1882; of Hartford, Conn.; died in Norwich, Conn., January 24, from nervous collapse, aged 54.

James Robert Fowler, M.D. Medical College of the State of South Carolina, 1884; a Confederate veteran; died at his home in Laurens, S. C., January 12.

William Francis Rea, M.D. 1892; formerly of Brooklyn, N. Y.; died at his home in Verona Lake, N. J., December 5, from cancer of the stomach, aged 42.

Charles Henry Tasker, M.D. Rush Medical College, 1884; formerly of Anoka, Minn.; died at his home in Minneapolis, January 13, from paralysis, aged 62.

Ephraim Luellen, M.D. Eclectic Medical Institute, Cincinnati, 1863; died at his home in Westfield, Ohio, January 13, from cerebral hemorrhage, aged 85.

David G. Wilder, M.D. Cleveland University of Medicine and Surgery, 1873; died at his home in Cleveland, January 14, from cerebral hemorrhage, aged 63.

Luther Hansford, M.D. Transylvania University, Lexington, Ky.; died at his home in Springfield, Mo., Dec. 10, 1909, from disease of the kidney, aged 82.

William A. Wright, M.D. Southern Botanical-Medical College, Forsyth-Macon, Ga., 1847; died at his home in Barnesville, Ga., January 13, aged 86.

Edgar N. Potts, M.D. Tulane University, La., 1870; a Confederate veteran; died at his home in Desiard, La., January 24, from pneumonia, aged 66.

Frederick Samuel Hunter, M.D. Miami Medical College, Cincinnati, 1888; died at his home in Toledo, Ohio, January 6, from pneumonia, aged 43.

William J. Lee, M.D. Tulane University, New Orleans, 1860; a Confederate veteran; died at his home in Abbeville, Ala., January 13, aged 71.

Eben Behymer, M.D. Eclectic Medical Institute, Cincinnati, 1871; died at his home in Mount Washington, Ohio, January 24, aged 65.

James Robert Horn, M.D. University of Nashville, 1856; died at his home in Keatchie, La., Dec. 31, 1909, from uremia, aged 80.

W. J. Prendergast, M.D. Laval University, Montreal, 1882; died at his home in Montreal, January 21.

Society Proceedings

MEDICAL SOCIETY OF THE STATE OF NEW YORK

One Hundred and Fourth Annual Meeting, held at Albany, Jan. 25-26, 1910

(Continued from page 488)

The officers elected were given in THE JOURNAL, Feb. 5, 1910, p. 475.

President's Address to the Society: What Can We Do to Improve the Situation?

DR. CHARLES G. STOCKTON, Buffalo: The success of the physician has always depended on his ability to convince people, and he has a following in ratio to the extent of his command of public and private confidence. In these days, more than ever, we are devoting ourselves to the education of the community, not alone the individual members thereof, but society as a whole. An excellent instance of this is seen in the enactment of the pure food law in the face of the opposition of organized interests, its necessity having been shown not only to Congress but to the constituencies of the representatives. Another example is seen in the growing willingness of the people to obey quarantine laws. While there is much to be accomplished in the control of epidemics, the situation is steadily improving in proportion as the people are made to understand the necessities and to place con-

fidence in the guidance of professional authority. In the study of the care of the insane and of the blind, the movement to do away with ophthalmia neonatorum, and the gain in the matter of educating defective children stand out among numerous examples of altered public opinion, the outcome of professional education and guidance.

In proportion to the extent we command public confidence, we assume the burden of responsibility. In New York State we have a membership of nearly seven thousand, but what of the other thousands who are profiting to a fragmentary extent only, it is true, by our efforts, and yet who stand apart? Can we not by some means represent a more united profession? Indifference is a crime. It is so because it favors wrong-doing and retards other advance. The demands are so increased that the average worker in the profession finds it difficult to maintain himself in that social stratum to which he belongs. This matter probably contributes toward some of the defects in the profession and is offered as an excuse for the spirit of commercialism that occasionally shows itself. This evil takes many forms. Among other things, it affects the question of fees. Medical service cannot be treated on a commercial basis. It has been said that physicians render a service that cannot be measured and that cannot be weighed, and within reasonable limitations people should pay according to their means. If this position is made tenable for the profession, it must keep itself absolutely free from all charges of improper interestedness and dishonorable transactions, for example the division of fees. A few surgeons and other specialists have adopted the practice of giving to the family physician who brings them a case for operation a certain proportion of the fee. In some places there is a competition among the surgeons who practically out-bid each other as to the amount that shall be returned to the family physician. This is done secretly, without the knowledge of the patient who pays the money. Reduced to its last analysis, it is bribery and graft. It is a temptation for men to select a surgeon, not because of his ability, but because of his willingness to divide. It tempts men to recommend for operation patients who should be treated otherwise. It tempts surgeons to operate when unnecessary; and it leads them to charge for their services not what they consider just remuneration, but excessive fees, in order that they may pay a percentage to the family physician. It leads to demoralization in the profession, is lowering of professional dignity, and would prove a death blow, if it were generally practiced, to the high-minded, righteous and honest of the profession in the guidance of the public. National, state and municipal governments will cease to be influenced by men who resort to such dishonorable methods in their private business relations.

Consultation in these days seems to have suffered from a solution of continuity. Consultation and cooperation among physicians should be widely practiced, yet for one reason or another, such is not the case. Sometimes a spirit of narrowness leads to disinclination for consultation, often doubtless for the purpose of sparing the patient expense. At other times, it may be from fear of a confession of weakness. The result of this is that the patient not infrequently asks for a consultation which mortifies the physician and puts him at a disadvantage. At other times the patient, unknown to the physician, selects his own consultant, thus producing an unfortunate situation. The consultant lacks information, which might be acquired from the attending physician, whereby the patient is the loser; or, if the consultant happens to be right in making the diagnosis, he may unintentionally injure the family physician in his explanation to the patient. We should attempt to foster a greater trust among our patients, and if our conduct be based on a disinterested attempt to reach scientific grounds, at the same time eliminating as far as possible personal grounds, we are on the safest course for all concerned.

The Wassermann and the Noguchi Complement-Fixation Tests in Leprosy

DR. HOWARD FOX, New York, drew the following conclusions: 1. A positive Wassermann reaction is frequently obtained in cases of leprosy, giving no history or symptoms

whatever of syphilis. 2. The reaction is at times very strong, inhibition of hemolysis being complete. 3. The reaction occurs chiefly in tubercular and mixed forms of the disease, especially in the advanced and active cases. 4. In cases of the maculoanesthetic and purely trophic type, the reaction is generally negative. 5. The value of the test is not affected in the slightest by the results found in leprosy.

Splenomedullary Leucemia; Its Treatment by Roentgen Ray

DRS. HOMER E. SMITH, Norwich, and DR. L. A. VAN WAGNER, Sherburne, reported a case with leucocytosis of 580,000. The patient was treated by the *x*-ray and given liquor auri et arseni bromidi in small doses, and after nine months of treatment the leucocytes numbered 8,030.

DISCUSSION

DR. ALEXANDER LAMBERT, New York City: I have watched a number of these patients and treated them, but with different results from those reported by Dr. Smith. Some apparently were cured and others were much improved, but those who improve, so far as I have seen, speedily relapse, and those who are apparently cured speedily, without any apparent reason, become worse, and in my experience do not remain alive. It does not make any difference what treatment is given these patients with leucemia. Their symptoms may be relieved for a time, but for some unknown reason they sooner or later die.

DR. L. H. NEUMAN, Albany: My experience with the use of the Roentgen ray in these cases of leucemia is that we can bring about a decrease in the number of leucocytes, but how it is done we do not know. I have in mind a case in the hospital in which there were over 500,000 white cells, but with Roentgen therapy there was a gradual decrease until the leucocytes came down to nearly normal—8,500. I was congratulating myself on the success of the treatment when, without any assignable cause, the patient died suddenly. It seems to me that this leucocytosis in leucemia is a conservative process; that there are produced certain toxins as the result of the disease, and that these toxins bring about an increase in the leucocytes; that measures which simply reduce the number of leucocytes do not in themselves act in a curative way, and that we must look further than purely the question of leucocytosis to account for the symptom-complex which we call leucemia.

DR. HENRY L. ELSNER, Syracuse: As the result of a fair experience, I am forced to the conclusion that even with *x*-ray therapy we are not going to cure these patients. Last year, at my suggestion, Dr. Schnyler reported before this society the case of a patient I saw with him in Utica, of marked leucemia of the splenomyelogenous type. The results with the *x*-ray were so surprising that I insisted on reporting a case at the end of a number of months of treatment, and the change was so prompt that we were encouraged to believe that this young girl would make a permanent recovery. The case ended just as those which have been mentioned by Drs. Lambert and Neuman. Within the past two months this girl developed acute symptoms and died. I count among my cases of leucemia of the lymphatic and splenomyelogenous type five cases in which the patients were supposed to have been cured by *x*-ray therapy. In these cases the remedy acted promptly despite the enormous lymphocytosis, but not one of those patients is alive to-day. While we should not discontinue *x*-ray treatment in these cases, still if we hastily conclude that *x*-ray therapy is going to cure the patients permanently we make a great mistake.

DR. ALLEN A. JONES, Buffalo: If these cases are studied carefully, it will be found that the leucocytes will rise and fall, under no special plan of treatment. The rise may go as high as hundreds of thousands and fall down to eight or ten thousand.

DR. CHARLES O. BOSWELL, Rochester: I have seen cases of leucemia of the splenomyelogenous type in which the same results were obtained from Fowler's solution. While working with Dr. Simon in Baltimore I saw a case in which the myelocytes disappeared from the blood under Fowler's solution, and the number of leucocytes greatly reduced, but the patient ultimately died. I have seen one leucemia patient die of terminal erysipelas.

DR. ARTHUR HOLDING, Albany: I have seen in consultation eight cases of leucemia of the splenomyelogenous variety and two of pseudoleucemia. I have not treated any patients with leucemia of the lymphatic type. The two patients with pseudoleucemia died. Of the cases of splenomyelogenous leucemia, one was too far advanced to accomplish any results; two patients were symptomatically well, and subsequently died. Two became symptomatically well and passed from under observation; the others have improved and are under observation at the present time. The technic advocated now is that which was brought out largely through the efforts of Pancoast and Stengel, who insist that the spleen shall be avoided, and that the long bones shall be treated with the *x*-ray. I have the chart of a case in which the patient was brought to the office on a stretcher and expected to live only a short time. Soon after this treatment was instituted there was a fall in the leucocytes from 250,000 gradually working down to the normal limit. This patient under treatment lived three years and died. When one takes a patient who has been bedridden and gives him three years of life, so that he can walk around the street and attend to light duties about the house, the treatment is worthy of consideration. There is no question but that this treatment will take bedridden patients and put them on their feet and make them comfortable for six months or more, and in one case, as I have mentioned, for three years.

DR. HOMER SMITH, Norwich: Most of these patients die with the exception of a few in whom spontaneous cures take place, either with arsenic or without it. Under the administration of arsenic there will be a disappearance of the myelocytes, but that will occasionally occur without any drug treatment. A small percentage of patients—say 1 per cent.—recover spontaneously without any treatment.

(To be continued)

HOOKWORM CONFERENCE

First Southern Health Conference, held in Atlanta, Ga., Jan. 18-19, 1910

(Continued from page 486)

What the Churches Can Do as Regards Uncinariasis

DR. W. W. LANDRUM, Louisville, Ky.: Health is wealth. Those who have health are rich; those who do not have it are poor, and it is not within the province of many to buy back health when it has once been lost. Speaking on behalf of the churches, I wish to say, in the first place, that we are coming to emphasize more and more the present-day character of the word "salvation." Salvation is the biggest word in the education of the human race. Salvation is a present experience. It is something here and now. It relates to body as well as to mind and spirit. Salvation is the salvation of the man material, of the man intellectual, of the man spiritual. Salvation means the salvation of one's self, the salvation of one's family, the salvation of one's community, the salvation of one's country, the salvation of the world. I stand here, not to speak for one section of our common Christianity, but for all ministers of all subdivisions, the one great creed universal, to tell you we are deeply interested in this conference. We are glad it is in the hands of competent men, who are doing all in their power to eradicate this disease from the South, because we believe that the South ought to produce not merely cotton and iron and corn and coal, but men; and thank God it has produced men in the past. In the golden days of the Republic it produced the highest order of men, and while we are interested in everything that concerns the prosperity of the South, we are more interested in the quality of its manhood. What higher ideal can we have of man than that he is sound in intellect, sound in heart, sound in his intellectual faculties and sound in his physical powers?

General Discussion

DR. FRED J. MEYER, Jackson, Miss.: We have not progressed in our evolutionary development so much as the less favored East and North and West, and it is on account of the hygienic ignorance of the masses of our people. It is because the med-

ical profession of the South in the past has failed to realize that its chief function is prevention and not cure; it is because of the hygienic ignorance of the masses that an epidemic visitation brought forcibly to our minds that the mosquito is the transmitter of malaria and of yellow fever. While this fact was known for several years, measures were not instituted to destroy mosquito life, and in many portions of the South precautionary measures are not taken to this moment, nor will they be, until an epidemic visitation is again on us. But above all, the besetting sin of the South is soil pollution. Archeologists, when they dig down deep into the bowels of the earth, where they find cities superimposed on cities, with strata of clay and sand and gravel, have yet to find a city, even prehistoric cities, but what they have exhibited some form of sewage disposal. It remains for us of the South to have progressed no further in this matter than the ancient Hebrews in their wanderings through the wilderness, as you may verify by reading Leviticus. I have frequently thought that of all the monuments that the genius of the ancients erected, the greatest was not the pyramids of Egypt, not the Coliseum of Rome, not the traditional Colossus of Rhodes, nor yet the hanging gardens of Babylon, but the cloaca maxima of ancient Rome, which carried off the sewage of the city in the days of the imperial Cesars. Throughout the South we see colonial residences that apparently have every advantage, but they lack proper drainage and sewage disposal, and consequently we continue to poison the earth, the air, and the waters under the earth, and we are paying the price, not only in typhoid fever, but in hookworm disease, which stands in an immediate relation to soil pollution.

What, then, is the duty of the hour? To educate by the system of hygienic instruction which had its origin in 1878 in Louisiana. It passed the experimental stage in 1897, when the first popular institute of hygiene ever held convened in an interior town, where for seventeen consecutive hours a lay audience sat and listened to lectures on sanitary topics, and at midnight adjourned to enable the ladies to retire, and reassembled at 12:30 to listen to lectures on sexual hygiene. This was done by skilful interweaving of musical numbers between the scientific papers, in order to break the strain on the lay mind. The system is based on the great principle that the sanitary safety of the state is the first duty—the old Roman maxim. It is the duty of the state to furnish that instruction. The sanitary world has, at last, recognized the force of the first principle, because at the International Congress on Tuberculosis, held recently in Washington, the resolutions adopted pronounced in favor of education in tuberculosis; but no civilized state has recognized the duty of the state to furnish the instruction, unless it be the states of Louisiana and Mississippi. In Louisiana, in 1906, the cooperation of the clergy in the campaign of education resulted in the enlightenment of public opinion in the infected areas of the year before, so that, for the first time, in the epidemic history of the South there was no recrudescence of the fever in the year succeeding the epidemic. In the town of Patterson, where almost every one had had the fever the year before, there was not an outbreak, although new people moved in. The one exception proved the rule. In a town of 15,000 people who failed to hold an institute and to take proper precautions against the mosquito, a case of yellow fever broke out, but by the prompt action on the part of the board of health, by the education of the masses and the cooperation of the commercial interests, the fever was extinguished in the middle of August and business resumed its normal sway before cotton season opened.

As practical men, we must turn our backs on the glories of the setting sun and face the rising sun of the new South, and in doing so we must throw off some of our passions and prejudices and false pride, which, in the past, kept us from accepting anything in the shape of a gift without looking the giver or givers in the face. I believe that it is our duty to cooperate with the donor of this munificent gift, which I believe was given in the spirit of the broadest philanthropy, and that it is our duty to aid and cooperate with those men to whom the fund has been entrusted. If we may aid them with our counsel, we would suggest that after defining the exact area of infection, that laboratories be established

throughout the South, to aid the busy practitioner in finding out just where hookworm disease prevails. I think it would be unwise to attempt any effort to treat the afflicted to commence with, because it would absorb the fund, and perhaps antagonize practitioners of medicine, because many people who could afford to pay for treatment would take advantage of this fund. But the main proposition is to go out and educate the masses in the cause and prevention of the disease, and to lift by such education that great reproach which lies against us of constant soil pollution. If this is done, I believe that in four or five years public opinion will be so educated that legislative bodies will not be appealed to in vain.

Dr. J. J. KIRYOUN, Washington, D. C.: While many of us are deeply interested in eradicating this scourge from the people, it will not be an easy task. It is going to be a long period of years before we shall commence to see the results. Do not for once believe that within five years, even under the most favorable propaganda of an educational nature, that beneficial results will be apparent from this campaign. We have to deal with a peculiar people, and it is essential to commence with our physicians as well as patients. I have had some experience in trying to convince physicians of the necessity of carefully examining patients affected with hookworms. The great hope I have of the future of the South is that from a systematized educational propaganda, and it must be carried on in such a way as to impress the laity regarding the medical aspects of this disease; and much is to be expected from lectures on the lay platform, from the pulpit, and from the rostrums of schoolhouses. The uplift which is bound to come through the education of the people against hookworm disease is going to benefit the whole South not only with regard to this disease but with respect to all other communicable diseases. When we conduct anything like a proper and vigorous campaign against hookworm disease, then we can eradicate typhoid fever as well from the rural districts. In so doing one thing begets another. When we get better drainage we will have fewer mosquitoes and less malaria, and when we eradicate malaria and typhoid fever and hookworm we will find that almost immediately the death-rate will be lowered.

Dr. WILLIAM WESTON, Columbia, S. C.: All physicians probably are acquainted with the work of Dr. Rotch of Harvard University in connection with students. A certain number of students at Annapolis broke down absolutely and were unable to keep up with their studies. He started to examine the epiphyses of these students and found they were not developed. In discussing the subject with Dr. Rotch he asked me when I returned to Columbia to study this phase of the subject in connection with hookworm disease. I did so. I have examined a number of patients who gave a history of long-standing hookworm infection, and even in those who have reached the ages of 18 and 20 the epiphyses are not developed. I took occasion to look into the records of these patients at school as well as those who worked in the mills, and I found they made poor time and their records were not so good in general as other workers. Their health in general was very poor. A bill has been introduced in the South Carolina legislature which requires that all children under the age of 18 shall hold a certificate of health, and that that certificate shall only be issued by the State Board of Health. It is hoped to get practical results from the passage of that bill.

Dr. F. W. SCHNAUSS, Cecil Ga.: My observations regarding uncinariasis comprise 849 patients who have been treated during a period of 3 years. Of this number only 9 were colored patients. There are reasons for this. The farmers of South Georgia are generally white men, who own their small farms or rent them, and the negroes, with few exceptions, are employed largely in the lumber mill towns and turpentine camps, where they have privies, and hookworm disease is chiefly an affection of the farm, where seclusion and custom have not deemed it necessary to build privies and closets to prevent infection by means of grounditch. I am very skeptical as to any mode of infection, except through the skin. As a rule hookworm patients are stunted and undeveloped. In the more severe cases the patients show great loss of flesh. A medical student who was affected with the disease

gained 40 pounds in a few weeks after treatment. The pallor in the more pronounced cases is striking; the patients are tallow-faced, weazened, and with a greenish cast, and an examination with the Talquist chart shows a loss of hemoglobin that is sometimes appalling. The mucous membranes are pale, as also the gums, lips, and conjunctivæ. A hemic murmur is found on auscultation, and dyspnea and tachycardia are frequent concomitant symptoms. The eradication of the disease can be accomplished by education, medication, and legislation. As the majority of patients are children who dislike nauseating drugs, I secure the preparatory cleaning out of the bowel by using the saccharin pink tablets of calomel, which come in varying strengths, flavored with wintergreen, and I also give phenolphthalein. After cleaning out the bowel I give either thymol in capsules or betanaphthol. I use the thymol like granulated sugar; if powdered too fine it packs in the capsules and passes through the gut like a bullet. I like betanaphthol, as it is not so pungent and does not need to be given in quite so large a dose, although I give large doses, 100 grains or more in three doses, two hours apart, and use enemata if the bowels do not move rapidly enough.

DR. A. G. FORT, Lumpkin, Ga.: I have practiced in Stewart County, Georgia, for more than five years, and have had diagnosed and treated about 600 cases of pellagra. Stewart County has a diversified soil with its hills, valleys, broad areas of clay and sand. I consider that 25 per cent. is a low estimate for the number of pellagra patients. In the rural districts this disease affects the wealthy and poor alike, and as treatment costs something the wealthy are relieved and the poor continue to suffer, the disease spreading from one member of the family to another by infection from ground-itch. The phase of this subject which I wish to bring out is the economic and how best to reach the classes suffering. Those in good circumstances have no difficulty in securing treatment, but the poor and more ignorant classes are more or less careless and indifferent as to the treatment. Many have been treated gratuitously and their eyes opened to the benefits gained by a cure. I have had to treat more than 200 individuals gratuitously, and I have found patients of this class in a great measure indifferent, not realizing their condition and skeptical of benefits to be gained by treatment. A great deal of diplomacy is needed to reach them, but when their confidence is once gained and they are shown the good derived from treatment the way is paved to rid one small area of the disease. After securing the confidence of one family in a section the others can be more readily reached. For convenience I will divide the classes of infection in three divisions—mild, medium, and extreme—and will discuss them separately from an economic and social standpoint. Mild infection includes that class of cases in which practically all clinical symptoms are absent and the diagnosis is made only by finding the egg in the feces. To this class the term "lazy disease" does not apply, as many of these patients are industrious, although their physical ability to work is slightly impaired and their mental faculties are slightly dimmed. To this division usually belongs the wealthy and a large part of the middle class. By ridding them of this infection their physical capabilities are expanded and their mental faculties sharpened. Medium infection includes, in my section, the majority of all cases found among the whites and blacks, the latter predominating. Fully 60 per cent. of the cases seem to come under this division. These patients truly have the "lazy disease." Their physical ability is reduced by at least one-half and their mental capabilities in proportion. They present a few of the clinical symptoms common to the disease and eggs are abundant in the stools. After patients in this class are treated and cured their value as an economic factor is doubled. In the class of patients suffering with extreme infection belong usually the poor and ignorant of the white race and a few of the black race, the former predominating. The mortality of this class is heavy, as a few die from the disease itself, and more from some intercurrent disease. Their resistance to any infection is at a very low ebb and from an economic standpoint they are leeches on a community.

Now as to ways and means. First, interest the profession throughout the infected areas and demonstrate to them the

means of diagnosis and the value of treatment. If all sections are alike with reference to this matter the percentage of physicians treating hookworm disease is small; about one physician to every 10,000 people. Second, interest the school authorities and have every pupil examined and treated. Call attention to the means of infection and have the authorities protect the sanitation of the school ground. Third, interest from an economic standpoint, the men who have many employed in their mills, factories and on their farms. Fourth, provide means of treatment for the poor and make it some capable man's business to see that they are educated as to its danger, benefits derived from treatment and means of prevention. With this done we can hope for great results from this crusade.

(To be continued)

WESTERN SURGICAL AND GYNECOLOGICAL ASSOCIATION

Nineteenth Annual Meeting, Held at Omaha, Neb., Dec. 20-21, 1909

(Continued from page 359)

Extrauterine Pregnancy with Twins, Complicated with Ovarian Fibroid on Opposite Side

DR. D. W. BASHAM, Wichita, Kansas, reviewed the literature on this subject, and reported the following case:

On April 5, 1909, Mrs. C., aged 34, was seized with sudden sharp pain in the lower abdomen. The pain was rapidly followed by pallor of the face, weak thready pulse, and hemorrhage from the uterus. The situation became alarming and Dr. Jordan, who was in attendance, summoned Dr. J. D. Clark; they agreed on the diagnosis of ruptured tubal pregnancy. The woman had missed a period, but had had a slight flow from time to time for several days, the flow having begun about two weeks after the missed period. Restoratives were administered; normal saline solution was used frequently. I saw her on April 7. The abdomen was tense; a mass of doughy consistency could be palpated in the cul-de-sac. There was rectal tenesmus and considerable pain in the abdomen. The pulse rate was 110 and the temperature was 100 F. There was still some flow from the uterus.

The abdomen was opened by the ordinary median incision. On incising the peritoneum there was a gush of fluid blood mixed with dark coagula. The pelvic cavity was filled with dark-red clots of blood. The left tube was ruptured toward the outer end and was still bleeding. The placenta was still within the tube. One fetus was hanging in the rent in the tube and another was still in the sac or the remains thereof. Each had its umbilical cord intact and still attached to the placenta. The right ovary gave rise to a fibroma the size of a guinea-hen's egg and was of dense consistency; the uterus was much hypertrophied and of a dark-red color. The pregnant tube was ablated. Hemostasis was effected by a clamp applied to the pedicle over which a running suture was placed, the clamp withdrawn, and the suture drawn tight and tied. The right ovary and accompanying fibroid were removed and the abdomen closed by three tiers of sutures. The postoperative history was satisfactory save a slight infection of the catgut sutures uniting the fascia in front of the recti, and a mild phlebitis of the left leg. The ultimate recovery was satisfactory.

DISCUSSION

DR. R. C. COFFEY, Portland, Ore.: About five years ago Dr. Jessie McGavin, of Portland, called me to operate on a patient with ruptured tubal pregnancy. On opening the abdomen I found a ruptured tube and the bleeding continuing the tube was removed. Previous to this the patient had made the demand that she be not unsexed. She was determined to have a baby, as she wanted to have a child, and would not consent to have the tubes destroyed. But this one we destroyed. In looking at the other tube we found another pregnancy in it, showing enlarged vessels going up to the growth. We supposed at first it was a tumor of some kind, but found that a large probe easily passed into the tube and on up, and it was attached to one side. We remembered

her injunction and determined to try to save this tube. Therefore, we split the tube, removed the contents, scraped the tube with enrette and sewed up the tube. I heard no more of the patient for nearly three years, when her mother came in as a patient, with her daughter, who, I noticed, was pregnant several months. She had that child and has had two others since.

DR. I. B. PERKINS, Denver: I had one case in which there was pregnancy in one tube and a large hematoma in the other tube. In the second tube I was unable to demonstrate any product of conception. How the hematoma got there and what it meant I did not know. I have had two cases in which pregnancy occurred in one tube and in the uterus at the same time. In one of these cases I was able to get the specimen with the product of conception, the little fetus in the sac hanging out of the opening of the tube, and to show it in that condition. Three days later, the ovule was passed from the uterus in a perfect condition, showing the fetus in the sac just as perfect as the one in the other. In the other case it was not quite so far along. I did not see the fetus from the uterus, but there was a placenta there, and the other one was removed from the abdomen about a week later.

DR. ARNOLD SCHWYZER, St. Paul, Minn.: I wish to mention a case of extrauterine pregnancy in the wife of a brother practitioner. In this instance I was obliged to leave the tube, being asked by the husband to do so. Afterward I was called unexpectedly during the night and found the patient with extreme pallor. There was again a ruptured extrauterine pregnancy. The abdomen was opened at once and the fetus found on the same side in the stump of the tube we had left, the extrauterine pregnancy having developed about a year afterward. Howard Kelly states that he has not seen a case of intermediary extrauterine pregnancy. I had a case about six weeks ago in which I found in the edge of the uterine horn a rent going into the tube, and partly into the uterus—an extrauterine pregnancy. In this case there was the most profuse bleeding I ever saw while I was looking at it.

Abuse of Hypodermic Stimulation During and After Surgical Operations

DR. HORACE G. WETHERILL, Denver: Given a patient in fair physical condition, prepared for operation with due care, skilfully anesthetized and operated on without undue loss of time or loss of blood, by a fairly skilful surgeon, and with a few rare exceptions hypodermic stimulation will be unnecessary. More than this, if unnecessary it is definitely injurious. So far as my observation and experience go, the majority of the patients who are operated on in hospitals need no hypodermic stimulation whatever during or after the operation, and, furthermore, they are injured if such stimulation is given them. The anesthetic, if given with judgment and skill, is for a time a stimulant of itself. This is particularly true of ether, for the first thirty or fifty minutes. If, after this time has elapsed and the amount of anesthetic is diminished, as should usually be done, the depressing effect is not great, provided severe hemorrhage does not occur. If it does occur, hypodermic stimulation to increase the blood pressure is, of course, definitely contraindicated while it lasts. After the patient is returned to bed and as he recovers from the anesthetic, with the nausea, vomiting and pallor incident to its administration, his pulse softens and, not uncommonly, becomes very thin and small, and even intermittent. It is under these circumstances that the inexperienced nurse and the unthinking doctor rush for the strychnin and spartein, and "shoot it into him." In reality, all that is needed is postural treatment, the external application of heat, and possibly water or salt solutions by rectum or stomach, depending on the nature of the operation which may have been performed. More than once have I known of instances in which I have believed that the balance has been turned against a desperately ill patient by such a course of injudicious and irrational hypodermic stimulation. I have seen a patient die in the characteristic clonic convulsions of strychnin poisoning, and on making a calculation of the amounts administered as recorded on the chart it has been apparent that all conception of the enormous aggregate dose of the poison had been lost in the excitement of the effort to "pull the patient through."

The best results and the lowest mortality of the busiest surgeons of to-day are attained by the simplest methods. Careful diagnosis and accurate estimates of the ability of the patient to undergo the operation are made. He is prepared with great care, the anesthetic is wisely chosen and skilfully given, he is operated on without avoidable exposure, delays, or hemorrhage, he is returned to a warm bed, placed in a favorable position, watched by a competent nurse and let alone. If he is restless and really suffering from shock or severe pain as he emerges from the anesthetic he may be given a moderate dose of morphin or atropin but, notwithstanding its stimulating and soothing effect, he is ordinarily better off if it can be omitted.

Intrathoracic Goiter with Report of Cases

DR. C. H. MAYO, Rochester, Minn.: The transposition of the thymus and lower poles of the thyroid possibly acts as one of the causes of intrathoracic substernal goiter. These growths usually consist of diffuse colloid or encapsulated adenoma and when they are completely detached from the thyroid they are aberrant or wandering. Most of the symptoms occur from pressure on the circulation, the trachea, nerves or esophagus. These tumors are usually associated with an ordinary goiter, and probably one-half of them are discovered through complications arising during a thyroidectomy. As they are often enucleated with great difficulty, their removal may be followed by severe hemorrhage. Intrathoracic pressure obliterates the space; therefore, drainage should be brief.

(To be continued)

Medical Economics

THIS DEPARTMENT EMBODIES THE SUBJECTS OF ORGANIZATION, POSTGRADUATE WORK, CONTRACT PRACTICE, INSURANCE FEES, LEGISLATION, ETC.

The Coudrey Bill

Considerable mild excitement has been manifested in the editorial columns of the leading pharmaceutical journals for the past few weeks over the introduction in Congress of H. R. 13859, a bill introduced by Hon. Harry M. Coudrey, of St. Louis, amending the Food and Drugs Act. The discussion, while interesting, is unnecessary, since if the bill were passed in its present form it would be unintelligible to any lawyer, judge or jury. For instance, the second paragraph of the bill contains the following gem of "purest English undefiled," "a drug bearing the name in or out of the United States Pharmacopeia or National Formulary and branded to show a different standard of strength, quality or purity, it shall be a criminal act if this class of drugs are employed by druggists or manufacturers of proprietary or 'patent medicines' in prescriptions or preparations that are for the benefit of mankind or animals." This might be a very wise provision, if one only knew what it meant.

Apparently the intent is to provide for the compilation and publication, by the United States Government, of the United States Pharmacopeia and National Formulary, although this is not in the least what the bill says. What it really does say is that "the United States government should edit and publish the United States Pharmacopeia or National Formulary." One is irresistibly reminded of the young lady who wrote to Mark Twain: "Dear Mr. Clemens: I should like your photograph," to which the humorist replied, "My Dear Madam: Why don't you?"

Dominion Registration in Canada

The following corrections have been received from our Canadian correspondent regarding an article which appeared in this department recently in relation to the Roddick bill. We take pleasure in making this correction in order that readers of THE JOURNAL may understand the exact situation in Canada:

"In THE JOURNAL, Jan. 1, page 76, on the topic of 'Dominion Registration in Canada,' it was an error to state that the Med-

ical Council of Ontario was not represented at the Banff conference, as Dr. William Spankie, Kingston, was present as the duly accredited representative from the Ontario Council. It is an error to state that the Roddick bill, or the Canada Medical Act, provides for Dominion Registration as soon as five or more provinces agree to accept it. In the proposed amendments to the Canada Medical Act, which Dr. Roddick expects to have introduced at this session of the federal parliament, there is to be no change in that respect, the five or more province clause having been dropped and the original clause standing as before, providing that it shall become operative when 'all' the provinces have had passed in their respective legislatures the 'enabling' clause. Nor is it correct to state that the Canada Medical Act will substitute a central examining body for the numerous provincial boards. It will establish such a body, but each province will still retain its own examining board, although it is well understood that some of the provinces would be glad to do away with provincial examinations altogether."

POSTGRADUATE COURSE FOR COUNTY SOCIETIES

DR. JOHN H. BLACKBURN, DIRECTOR
BOWLING GREEN, KENTUCKY

[The Director will be glad to furnish further information and literature to any county society desiring to take up the course.]

Sixth Month—Fourth Weekly Meeting

OPERATIONS ON GALL-BLADDER AND DUCTS

- CHOLECYSTOTOMY: Indications, limitations, technic.
- CHOLECYSTOSTOMY: Indications, technic in detail. Variations in technic. Mortality.
- CHOLECYSTECTOMY: Indications. Detail of technic. Mortality.
- CHOLECYSTENTEROSTOMY.
- CHOLEDOCHOTOMY.
- DUODENOCHELEDOCHOTOMY.

Operative technic indicated in (a) gall-stones in gall-bladder. (b) stones impacted in pelvis of gall-bladder, (c) stones in cystic duct, (d) stones in common duct, (e) stones in hepatic duct, (f) cancer of common duct, (g) cancer of gall-bladder.

Monthly Meeting

- The Indications for Operation in Gall-stone Disease.
- The Significance of Jaundice in Gall-stone Disease.
- Etiology and Diagnosis of Malignant Disease of the Bile Tract.

Medical Education and State Boards of Registration

COMING EXAMINATION

WYOMING: State Capitol, Cheyenne, February 16-18. Sec., Dr. S. B. Miller, Laramie.

Missouri State Board of Health Upheld

The Supreme Court of Missouri on February 2, in a decision written by Judge Woodson, upheld the action of the State Board of Health in refusing to examine the graduates of Barnes Medical College, class of 1908, for license to practice medicine and surgery in Missouri. The board had refused on the ground that Barnes Medical College had not met certain laboratory requirements prescribed by the board. In the Circuit Court of St. Louis, Judge Muench ruled that the graduates of that year were entitled to examination; an appeal was made to the Supreme Court which reversed the decision of the Circuit Court. This decision holds that the State Board of Health has discretionary powers giving it the right to make regulations which it deems necessary.

Tennessee May Report

Dr. C. A. Abernathy, secretary of the State Board of Medical Examiners of Tennessee, reports the written and oral examinations held at Memphis, Nashville and Knoxville, May 4-5,

1909. The number of subjects examined in was 8; total number of questions asked, 64; percentage required to pass, 75. The total number of candidates examined was 284, of whom 277 passed, including 77 non-graduates, and 4 failed, all of whom were non-graduates. Three candidates were rejected for permanent licenses, but were granted temporary licenses, including one non-graduate. Sixteen candidates were issued licenses through reciprocity and 18 were licensed under the exemption clause. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
University of Alabama.....	(1907)		94.5
Atlanta College of Physicians and Surgeons.....	(1902)		93.3
Atlanta School of Medicine.....	(1908)	75,	80
Chicago College of Medicine and Surgery.....	(1908)		85.1
Northwestern University Medical School.....	(1907)		92.9
National Medical University, Chicago.....	(1907)		86
Eclectic Medical College of Indiana.....	(1904)		96.5
State University of Iowa, College of Medicine.....	(1905)		96.6
University of Louisville..	(1907) 92.7; (1908) 85.1; (1909) 75, 75.1, 87.2, 87.2, 87.4, 92.1, 92.7, 96.		
Kentucky School of Medicine.....	(1886)		76
Kentucky University	(1904)		83.5
Hospital College of Medicine, Louisville.....	(1903)		87.6
Louisville Medical College.....	(1907)		91.4
Tulane University of Louisiana.....	(1897)		92.7
University of Maryland	(1905)		94
Maryland Medical College	(1908)		92.6
Mississippi Medical College.....	(1909)		83.4
Washington University, St. Louis.....	(1909)		93.1
Columbia University, College of Physicians and Surgeons	(1889) 96.6; (1906)		94.1
University of North Carolina.....	(1905) 92.1; (1907)		92.2
Cleveland College of Physicians and Surgeons....	(1908)		92.6
University of Pennsylvania.....	(1906)		91.2
University of Nashville..	(1903) 91; (1906) 92.9; (1907) 86; (1908) 93.2, 93.2; (1909) 78, 80.7, 80.9, 82.9, 83.4, 84.1, 85.4, 85.9, 86.1, 86.7, 87, 87.4, 87.7, 88.6, 89.6, 91.4, 92, 92, 93, 94.6, 95.2, 95.4.		
Memphis Hospital Medical College..	(1895) 79.6; (1908) 77, 82.6, 85; (1909) 80, 80.1, 82.2, 82.5, 83.7, 86.1, 86.4, 86.9, 87.2, 87.6, 87.7, 87.7, 88.7, 88.7, 89, 89, 90.1; 90.6, 91, 91.2, 91.7, 93.1, 93.1, 93.2, 94.		
Meharry Medical College..	(1905) 79.9; (1906) 75.6, 82.6; (1907) 81.1; (1908) 76, 77.1, 78, 82.7, 90.1; (1909) 77.4, 81.5, 83, 83.9, 86.2, 86.4, 86.7, 87.1, 88.1, 88.6, 88.7, 89, 89.1, 89.4, 90, 90.6, 91, 91.6.		
Chattanooga Medical College..	(1905) 82.6; (1906) 81.7, 82.7; (1907) 86.9, 87.5, 87.7; (1908) 85.6, 88; (1909) 83.7, 85.7, 86.7, 87.9, 88, 88, 89.1, 90.9, 92, 93.5, 93.6.		
Vanderbilt University..	(1909) 82.1, 87.6, 89, 89.4, 89.7, 90.5, 92.5, 93.1, 93.5, 93.6, 94.4, 94.6, 96, 96.7.		
University of Tennessee..	(1906) 78.2; (1907) 90.2; (1908) 81.7; (1909) 77.1, 80.4, 84.1, 89.2, 90.2, 93.		
Tennessee Medical College..	(1906) 75.6; (1907) 89.2; (1908) 77.6, 85.7; (1909) 81.1, 83.5, 84.1, 85, 89.4, 89.6, 90, 90.4, 91.7, 91.9, 92.9, 94.2, 95.5.		
Knoxville Medical College..	(1905) 88.1; (1909) 88.7, 89.7, 91.1, 91.4, 92.		
University of the South..	(1902) 96.1; (1905) 80; (1908) 77.2, 83.6, 88, 88.7.		
College of Physicians and Surgeons, Memphis..	(1907) 75; (1909) 88.7, 91, 94.1, 97.1.		
University of West Tennessee..	(1905) 83; (1908) 83.1, 84; (1909) 89.4, 89.5, 91.5.		
Chattanooga National Medical College*.....	(1908)		85.1

CONDITIONED; GRANTED TEMPORARY LICENSES		
College	Year of Grad.	
Chattanooga Medical College.....	(1909)	
Memphis Hospital Medical College.....	(1909)	

LICENSED THROUGH RECIPROCITY		
College	Year Grad.	Reciprocity with
Georgia College of Eclectic Medicine and Surgery	(1902)	Georgia
Rush Medical College.....	(1902)	Illinois
American Medical Missionary College.....	(1901)	Nebraska
Indiana Medical College.....	(1880)	Georgia
Louisville Medical College.....	(1896)	Kentucky
Hospital College of Medicine, Louisville..	(1905)	Kentucky
University of Michigan, College of Medicine....	(1904)	Nebraska
University of Nebraska, College of Medicine....	(1904)	Nebraska
Cornell University Medical College.....	(1900)	Kentucky
University of Pennsylvania.....	(1900)	Illinois
Chattanooga Medical College.....	(1900)	Kentucky
Meharry Medical College.....	(1907)	Georgia
Knoxville Medical College.....	(1904)	Georgia

LICENSED UNDER EXEMPTION CLAUSE		
College	Year of Grad.	
Louisville Medical College.....	(1885)	(1890)
University of Louisville.....	(1875)	
Baltimore Medical College.....	(1888)	
Bellevue Hospital Medical College.....	(1889)	
Eclectic Medical Institute, Cincinnati.....	(1857)	
Tennessee Medical College.....	(1890)	
Memphis Hospital Medical College.....	(1894)	
University of Tennessee	(2, 1888)	
Chattanooga Medical College.....	(1890)	
Vanderbilt University	(1880)	
University of Nashville	(1838)	

Book Notices

HISTORY OF YELLOW FEVER. By George Augustin, Assistant Secretary Louisiana State Medical Society. Cloth. Pp. 1194, with illustrations. Price, \$6.00. New Orleans: Published for the Author by Searcy & Pfaff, 724 Perdido Street, 1909.

In this book of nearly 1,200 pages, the author, who is not a physician, has compiled an immense mass of historical notes and data on yellow fever. In addition the work gives an account of other pestilential diseases and of the great epidemics recorded in history. The book is divided into five parts: Part 1 contains general observations on pestilential diseases, the great epidemics, insects as propagators of disease, and definitions of technical terms such as endemic epidemic, the difference between contagion and infection, etc. The book contains much of interest to the layman and this definition of terms will contribute to an understanding of what follows. Part 2 discusses the geographic limits and nomenclature of the disease and the results of the examination of the literature as to its geographic origin, without, however, coming to any definite conclusion on the matter. An interesting chapter in Part 3 is that in which Major W. C. Gorgas, in charge of sanitation in the Canal Zone, shows that yellow fever has not heretofore been transmitted to Asiatic ports because there is little direct travel from South America to Asia, and that the possibility of its transmission after the completion of the canal may be somewhat increased; with proper sanitary precautions exercised in regard to vessels passing through the canal, however, this danger should not be great. The remainder of Part 3 gives briefly the history of yellow fever in each country of the world and each state of the union which has at any time been within the zone of its incidence. This completes the historical part of the book, the completion of which has evidently involved an immense amount of reading and research. A full bibliography is given, which will prove of great assistance to any one desiring to study or write on the subject. Parts 4 and 5 consist of a number of separate papers by Patton, Kohnke, Pothier, H. P. Jones, Chassaignac, Solomon and Mayer concerning various phases of the epidemic of 1905 in Louisiana and the neighboring states, and covering the etiology, sanitary prevention, pathology, diagnosis, prognosis and treatment, as well as the Louisiana method of hygienic education in regard to yellow fever. These chapters constitute a brief but comprehensive text-book on yellow fever by recognized authorities on the subject.

The book is printed in large type on good paper and contains many statistical tables and charts. It might have been improved in some respects by a little judicious editing. An author trained in medicine would have drawn conclusions of more value, perhaps, from the historical matter and would not have fallen into the error of calling St. Anthony's fire a form of bubonic plague. The work is an ambitious one for a layman to have undertaken, and altogether is very creditably done, and is valuable as a collation of the historical facts concerning a disease that will perhaps at no distant day be of interest historically only.

A PRACTICAL TREATISE ON OPHTHALMOLOGY. By L. Webster Fox, M.D., LL.D., Professor of Ophthalmology in the Medico-Chirurgical College. Cloth. Pp. 807, with illustrations. Price, \$6. New York: D. Appleton & Co., 1910. [When we printed announcement of this book in Books Received, January 1, we erroneously stated the price as \$4. We here quote the correct price—\$6.]

This book presents the subject of ophthalmology in a comprehensive manner. It includes references to the many researches and advances which have been made in this department of medicine and surgery in recent years. Since it is intended for students and general practitioners, the anatomy, physiology and bacteriology of the eye have been treated with sufficient thoroughness for the character of the work and its purposes.

In chapter 20 are discussed the ocular manifestations of constitutional diseases such as syphilis, tuberculosis and Bright's disease, and in diseases connected with particular systems, such as the digestive and reproductive systems, and also ocular manifestations in infectious diseases. The importance of the relations of the eye to general bodily conditions is emphasized.

Laboratory technique is discussed more fully than it usually is in most works of this character, and full directions are given for the use of instruments and appliances, methods of preservation, preparation and examination of specimens, etc.

Operations and methods of treatment are described fully and clearly. The operation for extirpation of the lacrimal sac is especially lucid. The work is profusely illustrated, and the illustrations are especially fine and well printed, many being in colors. Of more importance, they are of practical value, and not of the "padding" kind. The text is concise and readable and mechanically the book is above the average.

The author is to be commended for the fact that in the references to the work of other authors and investigators, he has given due prominence to English-speaking ophthalmologists, which is not the rule in most books on ophthalmology, and the work of Americans is recognized. The book is eminently practical in every way and is worthy of commendation and can be recommended to medical students, to general practitioners and to ophthalmologists.

LEHRBUCH DER TOPOGRAPHISCHEN ANATOMIE FÜR STUDIERENDE UND AERZTE. Von Dr. H. K. Corning, Professor E. O. und Prosektor an der Universität Basel. Second Edition. Cloth. Pp. 767, with 653 illustrations, 424 in colors. Price, 16.60 marks. Wiesbaden: Verlag von J. F. Bergmann, 1909.

While not intended as a complete atlas of human anatomy, this book abundantly fulfils the purpose expressed in the title. It contains a large number of carefully selected illustrations, most of which are original and many in colors. They are scarcely inferior to, if not quite the equal of those in, Spalteholz' Atlas. In studying the location of the heart in the living subject, the new method of orthodiagraphy, or outlining the organ by a specially adapted Roentgen apparatus, is briefly discussed and its results compared with those of other methods. Variations, physiologic and pathologic, and anomalies are given due importance or properly emphasized. Figure 191 shows the position and relations of cervical ribs, which are considered in the text, and Figure 363 is from a case of "*situs inversus totalis thoracis et abdominis*." Among Americans from whose works illustrations have been selected are the names of Piersol, Mall and Brödel. At the end of each section is a brief bibliography of the works considered best for further reference. The book is printed on thin paper of excellent quality, with good, clear type and in a very readable style. There is a commendable lack of padding.

ATLAS DER RECTALEN ENDOSKOPIE. Von Dr. Arthur Foges, Wien. 1. Teil. 40 Mehrfarbige Lichtdruckbilder auf 20 Tafeln und 7 Abbildungen in Texte. Paper. Pp. 62. Price, 14 marks. Wien: Urban & Schwarzenberg, 1909.

Professor Gersuny, in a foreword to this atlas, says that, from the time of Hippocrates until within a few years, methods of examination of the rectum have undergone very little change. A great betterment in this regard began with the study of proctoscopy about twenty years ago, and, during the past few years such improvements have been made in proctoscopic methods and instruments that it is possible to-day for any physician even with little previous practice to make satisfactory examinations.

Dr. Foges has enjoyed unexcelled advantages in the selection of cases for illustration from the enormous medical and surgical clinics of Vienna. The 40 illustrations of this, the first part of the atlas, have been drawn from life by the artist Wenzel and colored as seen by the artificial light of the endoscope. With each illustration there is a concise case-history and description of digital and endoscopic findings. The technique of rectal endoscopy is thoroughly and clearly set forth with full description of the necessary instruments.

MODERN MATERIA MEDICA AND THERAPEUTICS. By A. A. Stevens, A.M., M.D., Professor of Therapeutics and Clinical Medicine, Woman's Medical College of Pennsylvania. Fifth Edition. Cloth. Pp. 646. Price, \$3.50. Philadelphia: W. B. Saunders Co., 1909.

In the fifth edition of this work some new remedies have been described and new formulas added. The old matter has been revised and much of the section on the action and uses of drugs rewritten. Serums and vaccines are treated in accordance with present knowledge. In the section on measures other than drugs it is to be regretted that in connection with enteroclysis the drop method of proctoclysis could not have been mentioned. Mechanically the book is excellent and the arrangement good. It is a practical book for student or practitioner.

Medicolegal

Liability for Death After Failure to Provide Required Ambulance

The Supreme Court of Pennsylvania says that in the case of *Lenahan and wife vs. Crescent Coal Mining Co.* (74 Atl. R., 58), a son of the plaintiffs, a boy about 15 years of age, was severely injured by being struck by a runaway car in the defendant's coal mine. He was brought to the surface and left in the engine house about half an hour, when he was placed on a stretcher, two quilts thrown over him, and he was then carried by some workmen a distance of about one mile to his home. The day was cold and sleety, and the evidence tended to show that during the half hour required to make the journey the clothing of the men, and the covering over the boy, became wet and cold. A physician who was called to attend him testified that the boy's leg was so badly crushed that the only hope at all would be in amputation, but he was in a dying condition at the time as the consequence of shock, as the result of exposure and accident. The negligence charged against the company was its failure to provide an ambulance at its mine, as required by the Pennsylvania statute of June 2, 1891, by which the boy might have been promptly and carefully removed to his home, after the injury. Counsel for the company contended that the evidence that the death of the boy was due to this neglect to provide an ambulance was not sufficient to be submitted to the jury. The trial judge instructed the jury that the substantial question in the case was, "Did this boy die by reason of the exposure to which he was submitted, by not being provided with an ambulance, or because of the injury inflicted by the car?" He then brought to their attention the testimony as to the condition of the boy after he was struck by the car, and before he was taken home, and pointed out to them that if the injuries were necessarily fatal, and if he would not have recovered, however carefully he might have been handled during the removal, then the verdict should be for the company; that the verdict could be in favor of the plaintiffs only on the proviso that it was the exposure during the removal to his home that caused the death of the boy. In all this, and the submission of the case to the jury, the court does not see that the judge committed any error, and affirms a judgment for the plaintiffs, for \$1,924.50.

Insanity, Intoxication and Epilepsy as Defenses to Crime—Admissibility of Evidence—Expert Testimony

The Supreme Court of Pennsylvania says that in the homicide case of *Commonwealth vs. Snyder* (73 Atl. R., 910), there were offers of evidence to show that the defendant, a young man who had passed his majority, in the early years of his life was subject to frequent attacks of convulsions or spasms, which for the time being rendered him unconscious, that after his twelfth year the attacks became less frequent, much milder in form, never attended with unconsciousness, that he was still subject to these attacks in modified form, and that he suffered one as recently as the day before the crime was committed with which he was charged. This evidence was to be followed by medical expert opinions, predicated on the facts proposed to be shown as to the character and frequency of these attacks, that they were epileptic seizures, and further, that, because of this infirmity and the added circumstance, already appearing in the evidence, that the defendant had been drinking during the afternoon and evening of the occurrence, if it was he who did the killing, he was at the time acting under an uncontrollable epileptic impulse during which it was impossible for him to distinguish right from wrong, and during which it was impossible for him to deliberate or consider the nature and consequence of his act.

The court holds that these offers of evidence were properly rejected. The offers, it says, associated and combined two mental conditions which need always to be clearly distinguished where the effort is to refer an illegal act to their joint influence—insanity and intoxication. The former excuses the act. The latter at most can only mitigate its criminality. The unsoundness that excuses must be so great

as to control the will of the subject and deprive him of free moral action. When this mental condition has been shown, the defense is complete and absolute, and it helps nothing to show in addition that the unfortunate subject was intoxicated as well. When the unsoundness is not of the degree which exempts from legal liability, it helps nothing to show intoxication by way of excusing.

It may be a physiological fact that one effect of epilepsy is to produce a state of mind easily excited by provocation, and that this state of mind is intensified by intoxication to a degree that would be unexpected in one not epileptic from the same amount of drink; but except as the epilepsy can be shown to have resulted in an unsoundness, which by itself would excuse an act, it cannot become a factor in determining the question of guilt or innocence. The epileptic who is not shown to be insane can no more escape liability for his acts done while intoxicated than can one not so affected. Were it otherwise, it would follow that in every case where intoxication is set up a necessary inquiry would be the susceptibility of the party to intoxicating influence; and the question of guilt would be made to depend on peculiarity of individual temperament as affected by drink. The law knows no such doctrine. It does not divide men into classes according to temperament or intellect, judging some more favorably than others, but it judges all alike.

It followed that in ruling on the offers which were made to show mental condition which would excuse, the court could have no regard to what was therein included as showing intoxication. No more could the expert witnesses in forming their opinions. And yet the offers without the expert opinions could have served no purpose whatever. The facts proposed to be shown were to be introduced for no other purpose than to lay the foundation for such testimony based on the concurrence of disease and intoxication. Any such opinion based on one or the other of these alone would not be within the offer. If based on intoxication alone, it would be valueless, for that in law does not excuse. It would be but little better if based on the testimony as to the defendant's epilepsy, for the court would have been bound to hold that whatever the medical expert might say, the law derived no immediate presumption of insanity from the fact of epilepsy, but left the insanity to be proved as any other defense, not by secondary evidence, which at best this would be, but by evidence establishing the direct fact.

Again, the court says that intoxication is a matter of degree. It may be so mild as to disturb normal mental action but slightly; again, it may be so deep that the subject is almost, if not entirely, without consciousness. Between these two extremes there are many degrees. Mere intoxication does not imply loss of power to form specific intent; and therefore the evidence offered here was irrelevant, the offer disclosing nothing as to the degree of the defendant's intoxication.

Current Medical Literature

Medical Record, New York

January 29

- 1 Laryngologic Work of the British Medical Association and of the Sixteenth International Medical Congress in 1909. D. B. Delaven, New York.
- 2 *Importance of Correct Diagnosis of Diseases of the Eye. A. E. Davis, New York.
- 3 *Peculiar Province of Ergot. A. T. Livingston, Jamestown, N. Y.
- 4 *Anatomic Hereditary Peculiarities as an Etiologic Factor in Deflected Nasal Septa and Accessory Sinus Disease. J. G. Wilson, New York.
- 5 Spondylitis Deformans. S. Epstein, New York.
- 6 Hookworm Infection Endemic in New York. H. Brooks, New York.
- 7 *Letters to a Neurologist (continued). J. Collins, New York.

2. **Correct Diagnosis of Diseases of Eye.**—Davis claims that intestinal toxemia is a contributing factor in many eye affections, including those of all the structures of the eye. The remedy is strict diet, and antiseptics for the intestinal troubles. Affections originating in the accessory nasal sinuses

also affect the eye conditions markedly. Troublesome asthenopia and conjunctivitis result from sinus troubles and are readily relieved by removal of the sinus disease.

3. **Peculiar Province of Ergot.**—Livingston claims that the peculiar province of ergot is to stimulate diseased rather than normal unstriated muscle. He prefers the less refined preparations, since some principle seems to be removed by standardization.

4. **Anatomic Hereditary Peculiarities.**—Wilson is of the opinion that the accessory nasal sinuses do not at present subserve any specific useful purpose, but are to be classed among the disappearing or vestigial organs, which facts largely account for their susceptibility to infection. The presence of deviated nasal septa is probably equally common in all races, becoming pathologic only in those races which are congenitally narrow nosed. The cause of congenitally narrowed air passages and deviated septa is primarily developmental, and finds its true explanation in the fact that the brain case is being developed at the expense of the bones of the face and olfactory apparatus.

7. **Letters to Neurologist.**—Collins receives a letter from a female patient who thinks that she is suffering from dual personality, which has led her to show a saintly nature in one phase and a foolish and lying one in the other. She thinks she must be crazy. The neurologist tells her that conflict between good and evil goes on in every individual; heaven and hell dwell within our own hearts. The good must be fostered, the evil suppressed. She must fight her battle against herself daily with courage and patience.

Boston Medical and Surgical Journal

January 27

- 8 Correlation of the Digestive Functions. W. B. Cannon, Boston.
- 9 Examination of the Feces in Clinical Work. H. F. Hewes, Boston.
- 10 Three Cases of Sporadic Elephantiasis of the Lymphatic Type. G. C. Shattuck, Boston.
- 11 Infectious Diseases and the Mouth. W. R. Woodbury, Boston.

New York Medical Journal

January 29

- 12 *Administration of Drugs with Regard to Absorption and Elimination. W. Brady, Elmira, N. Y.
- 13 Malignant Growths of the Sigmoid and Rectum. J. F. Erdmann, New York.
- 14 *Treatment of Spastic Paralysis by Resection of Posterior Spinal Nerve Roots. L. P. Clark and A. S. Taylor, New York.
- 15 Aspects of the Serodiagnosis of Syphilis. J. G. Fitzgerald, Toronto.
- 16 The Prostate (A Summary). B. M. Ricketts, Cincinnati.
- 17 Recent Advances in Roentgen-Ray Diagnosis. C. L. Leonard, Philadelphia.
- 18 Typhoid in Children. H. Heiman, New York.
- 19 *Chronic Diarrhea Due to Pyloric Insufficiency Successfully Treated with Hydrochloric Acid. E. Palier, New York.
- 20 *Total Absence of the Adrenals. C. R. Love, Brooklyn.

12. **Absorption and Elimination of Drugs.**—It is emphasized by Brady that to obtain the full benefit of the administration of drugs in disease it is quite as necessary to know the frequency as it is to know the quantity of dosage. This knowledge may be gained only from a careful study of the absorption and elimination of drugs and observation of their effect on cases in actual practice. Possession of such knowledge renders the physician more self-confident in his management of the sick.

14. **Treatment of Spastic Paralysis.**—By means of unilateral laminectomy Taylor has resected the posterior nerve roots three times in the cervical region, the posterior roots on both sides from the seventh to tenth dorsal inclusive without damage to the cord proper, in one case, and the lumbar roots on one side in one case. These patients have shown practically no shock, and the wounds have healed promptly by primary union, even though one patient had locomotor ataxia of some years' standing. In each of these cases the escape of spinal fluid when the dura was opened was very free but neither then nor afterward was there any appreciable effect noticeable in the patient's condition. This operation properly performed is said to give ample room for any exploratory operation on the cord, for the removal of many tumors, and in the case of tumors too large for this route, indicates just which lamina of the opposite side must be removed to render easy the extirpation of the tumor.

The operation is recommended by Taylor for consideration in treating all degenerative lesions *per se* of the pyramidal system, attended by severe spastic palsy, cerebral as well as spinal. One needs, however, to study each case closely and adapt the operation to the particular case with full knowledge of the ends sought. The relation of the spastic and parietic elements in each case needs to be thoroughly studied. The removal of contractures and restoration of an approximately normal breadth of excursion in the movements of limb segments, and with the elimination of the very perturbing defensive flexor reflexes and removal of associated movements (associated with voluntary efforts); and finally, last but not least, with the return of voluntary motion, a basis for the acts of standing and walking. Obviously, in congenital cases in which there has been no experience of this sort, the prognosis is much less favorable.

19. **Chronic Diarrhea Due to Pyloric Insufficiency.**—Palier is now convinced that there is such an affection as pyloric insufficiency, though it is denied by some authors. He reports a case which he thinks proves the efficiency of the administration of hydrochloric acid in this disease. The patient was allowed a liberal diet with plenty of water, including even small amounts of fresh vegetables to guard against scurvy, and as medication hydrochloric acid was given. The patient was, in addition, fitted with an abdominal belt which proved grateful to him. The patient took only ten drops of hydrochloric acid twice daily after meals, and then only once after supper. He could so well regulate his bowels by it that by taking fifteen drops of it twice daily the bowels would become costive, and by diminishing the dose they would move again.

20. **Total Absence of Adrenals.**—The patient, a woman, aged 52, on September, 1902, noticed that her hands frequently became cold and discolored. In January, 1903, the joints of fingers and wrists became stiff and swollen; during April she suffered from pleurisy, and one month later noticed that the skin of the entire body was becoming darker (Addison's disease), the abdomen enlarged, and she discovered a slight discharge from the umbilicus. The skin grew darker and harder (scleroderma). The joints of the fingers and wrists became almost immovable and several of the finger joints ulcerated, attended with a purulent discharge (Raynaud's disease). She suffered intensely with the pain, cold and stiffness in all the joints of the extremities. She became emaciated and the whole integument became dry, hard and cold.

Under treatment with desiccated suprarenal capsule immediate improvement was noticed. The ulcerated joints healed, pain in them ceased, and they became more limber. The skin softened and grew lighter. Improvement continued for about one year, when the patient complained that the powder disturbed her stomach and refused to continue the drug. From this time she grew gradually worse and the previous ulcerated, stiff, cold and painful condition of the joints returned, associated with the increased pigmentation and hardness of the skin. She died suddenly, Dec. 14, 1906. At the autopsy no trace of the adrenals could be found.

Northwestern Lancet, Minneapolis

January 15

- 21 Administrative Problems in Relation to Public Health. W. Wyman, Washington, D. C.
- 22 *Right Inguinal Hernia and Concurrent Appendicitis—Personal Experience in Seventy-six Cases. W. Courtney, Brainerd, Minn.
- 23 *Sterilization of Habitual Criminals and Degenerates. B. Foster, St. Paul.

22, 23. Abstracted in THE JOURNAL, Nov. 20, 1909, pp. 1847, 1850.

Kentucky Medical Journal, Bowling Green

January 1

- 24 Surgical Cure of Cancer of the Gastrointestinal Canal. W. J. Mayo, Rochester, Minn.
- 25 *Indications and Limitations of Local Anesthesia in Anorectal Surgery. S. G. Gant, New York.
- 26 *Clinical Diagnosis of Amebic Dysentery. C. D. Render, Louisville.
- 27 *Treatment of Chronic Amebic Dysentery. G. S. Hanes, Louisville.
- 28 *Diagnosis and Treatment of General Peritonitis. J. R. Wathen, Louisville.

- 29 *Etiology and Pathology of the Various Toxemias of Pregnancy. W. A. Jenkins, Louisville.
 30 *Treatment of the Toxemia of Pregnancy. E. Speidel, Louisville.
 31 The Combined Course. J. W. Pryor, Lexington.
 32 Cost of Venereal Infection as Viewed by the General Practitioner. C. H. Vaught, Richmond.
 33 Cost of Venereal Infection as Viewed from the Standpoint of the Lawyer. R. W. Bingham, Louisville.
 34 Cost of Venereal Infection as Viewed by the Minister. E. L. Powell, Louisville.
 35 Cost of Venereal Infection as Viewed by the Sociologist. J. H. Hager, Louisville.

January 15

- 36 Army Medical Work in the Philippines. H. McConathy, Louisville.
 37 Splanchnic Arteriosclerosis. O. P. Nuekols, Louisville.
 38 Pleonexia. J. H. Peak, Louisville.

25. Abstracted in THE JOURNAL, Nov. 13, 1909, p. 1682.

26. 27, 28, 30. Abstracted in THE JOURNAL, Nov. 27, 1909, pp. 1853, 1854.

29. **Various Toxemias of Pregnancy.**—Jenkins classifies all toxic manifestations that occur during and are induced by the pregnant state, under the head of toxemias of pregnancy; for example, pernicious vomiting of pregnancy, eclampsia, acute yellow atrophy of the liver occurring in pregnancy, and the so-called toxic or tubal nephritis of pregnancy. He gives a detailed consideration of the possible factors which may become causative agents, namely, the placenta, autointoxication, the fetus, the amniotic fluid, disease of or deficient action on the part of the parathyroid bodies, bacteria, syncytial elements, etc. In discussing the pathology, Jenkins takes up those cases that are milder in character in which there is present every evidence of a systematic saturation, due to the accumulation of certain retrograde products of metabolism not necessarily accompanied by gross organic changes. He then takes up the severer or fatal cases, with marked and extensive organic changes primarily in the liver and kidneys; secondarily, in the spleen, brain and other organs.

Virginia Medical Semi-Monthly, Richmond

January 7

- 39 Suturing of Nerves. J. S. Horsley, Richmond.
 40 Fractures Involving the Elbow Joint. A. R. Shands, Washington, D. C.
 41 Borderline Phthisis. C. F. Beeson, Roswell, N. Mex.
 42 Case of Fracture-Dislocation of the Spine. H. S. MacLean, Richmond.
 43 Treatment of Typhoid in Private Practice. L. H. Pate, Lake Arthur, N. Mex.
 44 Vaginal Cesarean Section for Eclampsia. J. F. Moran, Washington, D. C.

Annals of Surgery, Philadelphia

January

- 45 *The Blood in Surgery. J. G. Mumford, Boston.
 46 *Two-Stage Principle in Operative Surgery. H. Lillenthal, New York.
 47 *Effect of Scarlet Red in Various Combinations on the Epitheliation of Granulating Surfaces. J. S. Davis, Baltimore, Md.
 48 *Chloroma of the Jaws. H. A. Bruce, Toronto.
 49 Cervical Subcutaneous Cavernous Hemangioma. J. B. Carnett, Philadelphia.
 50 *Aneurism of Internal Carotid Treated by Matas' Method. C. G. McMullen and E. MacD. Stanton, Schenectady, N. Y.
 51 *Operation for Paralytic Shoulder Joint Due to Infantile Paralysis. O. G. T. Kiliani, New York.
 52 *Surgical Treatment of Empyema Thoracis. C. E. Tennant, Denver.
 53 *Pancreatitis and Pancreatic Reaction of Cammidge. J. T. Pilcher, Rochester, Minn.
 54 *Paralytic Ileus as Sequel of Fractured Ribs. J. E. Adams, London, England.
 55 *Fibrinous Calculi in Kidney. H. Gage and H. W. Beal, Worcester, Mass.

45. Abstracted in THE JOURNAL, July 24, 1909, p. 318.

46. **Two-Stage Principle in Operative Surgery.**—The operations which Lillenthal believes are suitable for division into two or more stages, are (1) for intracranial disease; (2) for intrapulmonary disease; (3) for obstruction on the bile passages; (4) for obstruction at the pylorus; (5) for malignant disease of the rectum; (6) for hypertrophy of the prostate; and (7) for suppuration in the kidney (nephrectomy). Lillenthal says that two valuable points in operative surgery are: First, arrange the operation whenever possible so as to permit cessation of the work at any moment. Second, get through with the essential part of the operation early, so that if one must stop the patient will have been relieved.

47. A similar article was published in the *Bulletin of the Johns Hopkins Hospital*, June, 1909.

48. **Chloroma of the Jaws.**—Woman, aged 38, about Jan. 5, 1909, suffered from violent neuralgic pains over the temporal region, cheek and upper jaw on the left side, and then first noticed a swelling of the gum of the upper jaw in the region of the first bicuspid tooth of the left side. A day or two later she noticed a similar swelling at a corresponding point on the opposite side, and simultaneously a swelling made its appearance around the first bicuspid of the lower jaw on the left side. Within a day or two the pain subsided, but the swelling continued to increase. On examination, February 12, a marked swelling of the gums was seen involving both jaws on the lingual and buccal aspects, except on the right side below, where the teeth were absent, but for one or two roots. There were swellings under the jaw on both sides involving the sublingual and submaxillary lymphatic glands. The glands were fairly movable and not tender to touch. No other glands were enlarged in the neck. The skin was swarthy but not pigmented. The breath was very foul. The swelling of the gums was very marked, spreading between the teeth, convoluted, dark, purplish-red in color, covered with epithelium, firm to touch, and not bleeding readily. The tonsils were not enlarged. Temperature was 99.6 F. March 8, a firm ridge about the size of a whipcord could be seen, running all round the jaws above and below, just at the junction of the cheek with the gums. The breath was very foul and there were one or two sloughing areas. Some of the teeth were loose. The pulse was rapid and the temperature 102 F. Later the woman developed a septic temperature, running from 100 to 104 F., while the pulse rate varied from 110 to 140. Pus was exuding from around the teeth and gums. An operation was undertaken, with the object of not only removing the growth but of getting rid of the septic condition around the growth and teeth and stopping absorption. She survived the operation only a few hours.

50. **Aneurism of the Internal Carotid.**—The authors regard this case as worthy of reporting because, first, no similar case of aneurism of the internal carotid surgically treated has ever been reported, and second, because the technical difficulties encountered in this case (which necessitated freeing the aneurismal sac from the surrounding structures) and the subsequent sloughing of the sac wall as a result probably of insufficient blood supply, add something to our knowledge of the factors which determine success or failure in conservative aneurismorrhaphy.

For one year the patient noticed a painless, pulsating, gradually but steadily developing mass just above the bifurcation of the carotid on the right side of the neck. There was no evidence of nerve involvement, no cerebral symptom and the general health of the patient was good. The usual physical signs of aneurism were present. General physical examination was negative. At the operation the tumor proved to be a saccular aneurism of the internal carotid arising 4 cm. above bifurcation, sac about 4 cm. in diameter. The following procedure was carried out. Crile clamps were placed on the internal carotid above and below aneurism, also untied ligatures to be used in case of emergency. Sac was opened longitudinally and some fresh blood clot removed. The neck of the sac was sharply defined, arising from about 2 cm. of artery. No. A silk, saturated with vaselin was used, the first row of sutures being so placed as to close the neck of the sac with preservation of lumen practically without narrowing. Crile clamps and emergency ligatures were then removed. There was only slight bleeding from stitch holes, which was easily controlled by temporary gauze pressure. Vessel was pulsating normally when last seen. The incision was closed with deep plain catgut sutures, and horse-hair skin sutures, without drainage. No bad effects were noticed from temporary compression of the internal carotid, which lasted about twenty-five minutes.

Three days after leaving the hospital a hematoma formed beneath the scar, which was opened and drained. The next day there was a moderate hemorrhage. On the twentieth day following the operation a large hematoma formed in the neck and it was decided to reopen the wound and ligate the bleeding vessel. Under ether the incision was opened and

immediately there was an alarming hemorrhage. The common carotid was at once clamped, but the hemorrhage came chiefly from above and all clamps placed on the internal carotid above the site of the aneurism simply ruptured the friable vessel wall. The hemorrhage was finally controlled by packing, but the patient died within a few hours from the effects of the hemorrhage. Examination at the time of second operation showed that the flaps of the aneurism sac had apparently sloughed. The secondary hemorrhage came apparently from the junction of the upper end of the sutured aneurism sac with the internal carotid.

51. Infantile Shoulder Paralysis.—Kiliani reports a case of paralytic shoulder joint due to infantile paralysis, on which he operated to improve function. An incision was made about nine inches in length at the anterior border of the deltoid. The capsule was exposed and severed horizontally at its insertion to the humerus in about three-quarters of its circumference. The biceps tendon was not cut through. The free upper border was sewed down to the periosteum of the humerus about two inches and a half lower down. This was done while the arm was brought in horizontal position. Then the long tendon of the biceps was pulled through the inter-tuberculous mucous sheath of the capsule, and the surplus material used to make a double loop which was sewed together.

These two steps in the operation brought the head which had been hanging down more than two inches and a quarter hard up against the glenoidal fossa. Then Kiliani dissected the deltoid from the clavicle and the acromion entirely, so that the upper border was completely free. Then the insertion of the trapezius was severed from the two bones named. The free edges were then united by interrupted chromic catgut sutures, thus making one muscle out of the shoulder part of the trapezius and the deltoid. The wound was completely closed and healed promptly by primary union. The arm was dressed in abduction. Three weeks after the operation the patient began to use the arm, and slowly could abduct the arm from the hip.

52. Empyema Thoracis.—Tennant emphasizes three points in the treatment of empyema thoracis: 1. The early attainment of an opening so located as to secure a large and free drainage, followed by the introduction of fenestrated tubes of sufficient caliber to quickly and effectually drain the cavity. 2. The removal of these tubes at the earliest possible moment, after they have done their work. 3. The application of the Bier hyperemic cup to drain the cavity after the tubes have been removed; this treatment to be continued until the lung is well expanded and the parietal pleura permanently closed.

53. Pancreatitis.—In 62 cases of pancreatitis, Pileher found the urinary reaction positive in 82 per cent. and negative in 18 per cent. Positive reactions were obtained in all cases of sub-acute and all of the more marked chronic types of pancreatitis. The negative results were obtained in cases of moderate localized chronic pancreatitis of interlobular type. In 293 cases of pancreatitis, stones were present in 77 per cent.; 52 per cent. in the gall-bladder, and 25 per cent. in the common duct. Cholecystitis was marked in 33 per cent. *per se* and plus other factors. In 3,095 operations on the gall bladder and biliary tract, 9.5 per cent. of the cases were accompanied by gross changes in the pancreas. In 394 operations in which stone was found in the common duct, 19 per cent. were accompanied by gross changes in the pancreas. Pileher concludes that the disturbance of internal secretion of the pancreas is responsible for the pancreatic reaction; that this may be effected by reflex irritation as well as by direct, which may prove the forerunner of gross changes in the gland. A typically positive reaction with a negative control is almost pathognomonic of pancreatic derangement. The converse is not shown.

54. Ileus After Rib Fracture.—The patient fell against some banisters and fractured several ribs on his right side. Before the fall the patient's bowels had acted with regularity, but after it they refused to act, although aperients and three enemata were administered. Vomiting set in on the day of admission to hospital; at first it was bilious in character, but as its frequency increased the color became darker—so that when admitted the patient was bringing up black vomit.

There was slight abdominal pain. The abdomen was opened through the right rectus, but no lesion save distended bowel could be discovered; the distention chiefly affected the small bowel, and the cecum and colon were only moderately dilated. There was no free fluid. As no sign of organic obstruction could be discovered the abdominal cavity was closed in layers. After the operation the patient showed signs of profound shock, and, while the abdominal distention was markedly decreased, his general condition was far from satisfactory. Death occurred some 48 hours after operation.

The second case was similar to the first in its clinical features. The clinical picture was one of intestinal obstruction, enemata and the passage of a long rectal tube afforded no relief. Puncturing the bowel through the abdominal wall with a hollow needle gave great relief. This treatment was followed up by the injection of eserin salicylate gr. 1/50 into the buttock at four-hour intervals. After two doses the bowels acted twice and the man was greatly relieved. This improvement, however, only lasted for about sixteen hours, and at the end of this time his condition was as bad as before. An incision was made under local infiltration anesthesia, and a coil of small intestine blown up firmly against the parietal peritoneum, was exposed. A very small opening was made and a winged rubber catheter was tied into the bowel. The production of this small fecal fistula to all appearances saved the patient's life.

55. Fibrinous Calculi in Kidney.—Gage and Beal record the autopsy findings in a case of fibrinous calculi in the kidney reported by them in September, 1908. There were general arteriosclerosis; myocarditis; dilated heart; general abdominal adhesions; renal infarcts; multiple fibrinous concretions in ureter; and chronic ureteritis.

Denver Medical Times and Utah Medical Journal

January

- 56 Raynaud's Gangrene. H. G. Wetherill, Denver.
- 57 Local Anesthesia by the Intravenous Method of Bier. L. Freeman, Denver.
- 58 Restoration of Finger Ends after Traumatic Loss. G. W. Mill, Denver.
- 59 Streptococcus Infection: Its Treatment and Report of Cases. F. M. McCartney, Denver.
- 60 What may be Shown by Means of the Roentgen Ray. G. H. Stover, Denver.
- 61 Uselessness, Damage and Dangers of Corrosive Sublimite as an Antiseptic. J. R. Hopkins, Denver.
- 62 Strangulated Hernia with Resection of the Intestine. C. B. Lyman, Denver.
- 63 Treatment of Burns. C. E. Tennant, Denver.
- 64 The Pupils under General Anesthesia. C. G. Parsons, Denver.
- 65 Complete Transverse Rupture of Prostatic Urethra. M. R. Root, Denver.
- 66 Hemorrhage and Transfusion. E. F. Root, Salt Lake City.

Journal of Infectious Diseases, Chicago

January

- 67 *Comparative Study of Intestinal Streptococci from the Horse, the Cow and Man. C. E. A. Winslow and G. T. Palmer, Boston.
- 68 *Investigation of Extent of Bacterial Pollution of the Atmosphere by Mouth Spray. C. E. A. Winslow and E. A. Robinson, Boston.
- 69 Bacterial Flora of Milk Held at Low Temperatures. M. P. Ravenel, D. G. Hastings and B. W. Hammer, Madison, Wis.
- 70 Production of Sanitary Milk. P. G. Heinemann, A. B. Luckhardt and A. C. Hicks, Chicago.
- 71 Reactions of Various Bacteria on Esculin Agar. O. Klotz and A. C. Rankin, Montreal.
- 72 *New Color Medium for Isolation and Differentiation of Streptococci. D. D. Todd, Chicago.
- 73 Testing of Shellfish for Pollution. S. DeM. Gage, Lawrence, Mass.
- 74 *Precipitin Reaction in Tuberculosis. A. E. Porter, Edinburgh, Scotland.
- 75 *Injections of Homologous Streptococci Killed by Galactose in Treatment of Suppurative Complications of Contagious Diseases. T. H. Boughton, Chicago.
- 76 *Interaction of Serum Leucocytosis; Bacteria in Phagocytosis as Observed in Recurrent and Relapsing Erysipelas. T. H. Boughton, Chicago.
- 77 *Concentration of the Antibodies in the Body Fluids of Normal and Immune Animals. F. C. Becht, and J. R. Greer, Chicago.
- 78 *Complement Fixation in Gonorrheal Infections. T. Watabiki, Tokio, Japan.

67. Intestinal Streptococci.—In full accord with the findings of certain English bacteriologists, Winslow and Palmer show that the chief types of streptococci in the normal human intestine are *Streptococcus mitis*, which ferments dextrose and lactose, and *Streptococcus fecalis*, which ferments dextrose, lactose and mannite. It is pointed out that the pollution of water with road washings may be distinguished from wastes of other kinds by the streptococci present.

68. **Bacterial Pollution of the Atmosphere.**—The results of the observations of Winslow and Robinson in regard to the particles of mouth spray correspond with the results previously obtained. The particles are rather coarse and settle out rapidly; consequently aerial infection proper concerns rather bacteria that remain suspended in the air, and they conclude that the danger in this last score is rather small. Quantitative tests of the air from points 35 cm. to 2.4 meters in front of vigorously speaking persons failed to show any mouth streptococci in 74 liters of air examined.

72. **Color Medium for Streptococci.**—Todd finds that neutral red lactose agar is of value in the isolation and differentiation of mouth streptococci and pneumococci.

74. **Precipitin for Tubercle Bacilli.**—Normal human sera gave a negative result in 68.4 per cent. of the cases, whereas only 15.4 per cent. of the tuberculous sera did not precipitate. A large percentage of tuberculous sera yielded a precipitate on the addition of carbolic acid. The serum is diluted 1 to 20 and added in equal parts to a 0.5 suspension of phenol in 0.85 per cent. sodium chlorid solution.

75. **Streptococcus Vaccine in Complications of Contagious Diseases.**—Continuing the observations of Weaver and Boughton, Boughton finds that the injection of homologous streptococci killed in galactose solution hastens the recovery in local streptococcus complications of scarlet fever and erysipelas. The initial routine dose should represent on an average 100,000,000 cocci.

76. **Interaction in Phagocytosis.**—Observations in connection with a case of chronic recurring erysipelas show that a degree of specifness may obtain in the relation of serum, leucocytes and bacteria to one another. The phagocytic power of the leucocytes may differ in their own serum from that exhibited in foreign serum, and the opsonic power of serum may vary independently of variations in the phagocytic power of the leucocytes.

77. **The Concentration of Antibodies.**—In normal animals the various antibodies decrease in concentration in the following fluids in the order named: serum, thoracic lymph, neck lymph, and immunization increases the concentration in the same order. The passage of antibodies from blood to lymph in passive immunization is a relatively rapid process.

78. **Complement Fixation in Gonorrheal Infection.**—Watabiki finds that the serum of patients with chronic gonorrheal infection usually gives positive results with the complement-binding reaction. Similar results were obtained with the serum of immunized rabbits. The reaction is specific and the method may be used to differentiate meningococcus from gonococcus. He found no relation between the complement-binding reaction and agglutination.

Journal Medical Society of New Jersey, Orange

January

- 79 *Problems in Treatment and Prevention of Mental Diseases. H. A. Cotton, Trenton.
- 80 *At what Age Should a Child be Admitted to our Public Schools? J. Funk, Elizabeth.
- 81 The School Inspector and the Family Physician. E. J. Marsh, Paterson.
- 82 Appendicitis from a Mechanical Viewpoint. J. A. MacLay, Paterson.
- 83 The Detail Man. T. W. Harvey, Orange.

79, 80. Abstracted in THE JOURNAL, Aug. 28, 1909, pp. 737, 738.

California State Journal of Medicine, San Francisco

January

- 84 *The Lambotte Method. W. L. Wills, Los Angeles.
- 85 The Problem Presented by Tuberculous Railway Employees. R. A. Peers, Colfax.
- 86 *Use of Nitrous Oxid and Oxygen to Maintain Anesthesia and Positive Pressure for Thoracic Surgery. S. Bunnell, San Francisco.
- 87 Conservative Treatment of Tuberculosis of the Genitourinary Organs. E. G. McConnell, San Francisco.
- 88 Necessity for Active Campaign Against Venereal Diseases. F. M. Greene, San Francisco.
- 89 Impure Drugs. H. H. Rusby, Redlands.
- 90 Enucleation of Tonsil in its Bearing on General Infections. R. Payne, San Francisco.
- 91 Central Cavity Formation in the Spinal Cord due to Trauma without Fracture or Dislocation of Vertebral Column. E. T. Dillon, Los Angeles.
- 92 Tropical Medicine. C. Wellman, Oakland.

84. **The Lambotte Method.**—Wills has made use of this method in seven cases. Two were old ends which had slipped past and large calluses enclosed ends of bones which never would have had a good union. In the third patient the fracture was thirty hours old—a fracture into condyles of right femur, joint capsule torn, and lower fragment tipped backward by gastrocnemii heads and drawn up behind shaft. Apparatus was applied, wound healed and man was out in chair in ten days; no splint was used, except a double inclined plane for eight hours. Of the remaining four cases, two patients had some suppuration and two did not. One case was absolutely perfect in whole course of repair and an ideal result—absolutely no shortening, and perfect functional result.

86. **Nitrous Oxid and Oxygen Anesthesia.**—Bunnell claims that the chest may be kept open for at least one hour and fifty-seven minutes with nitrous oxid and oxygen with positive pressure without cardiac or respiratory embarrassment. Without positive pressure the first opening of the chest is a shock, but a dog can live at least 16 minutes without it and with left (smaller than right) pleural cavity open, but is cyanotic, has a vagus pulse and is in such respiratory distress that he struggles strenuously for breath. With both pleural cavities open, one dog was dying after three minutes, but positive pressure restored him to comfortable breathing.

Washington Medical Annals

January

- 93 Importance to a Community of an Educated Medical Profession. E. A. Balloch, Washington, D. C.
- 94 Four Years in Tuberculosis Dispensary Work. B. M. Randolph, Washington, D. C.
- 95 Review of Surgery. E. M. Hasbrouck, Washington, D. C.
- 96 Review of Orthopedic Surgery. W. G. Erving, Washington, D. C.
- 97 Problem of Milk Production in the District of Columbia. G. L. Magruder, Washington, D. C.
- 98 Poisoning from the Bite of a Copperhead Snake (*Ancistrodon Contortrix*). P. Willson, Washington, D. C.
- 99 Interstitial Ectopic Pregnancy. H. D. Fry, Washington, D. C.

St. Paul Medical Journal

January

- 100 *Surgical Cure of Cancer of the Gastrointestinal Canal. W. J. Mayo, Rochester, Minn.
- 101 The Beginning of Antiseptic Surgery. W. A. Dennis, St. Paul.
- 102 Hernia: Report of 158 Cases. F. C. Schnldt, St. Paul.
- 103 *Sterilization of Habitual Criminals and Degenerates. B. Foster, St. Paul.

100. **Cancer of Gastrointestinal Canal.**—The Mayos have resected the large intestine 69 times for carcinoma. Of these 28 were of the cecum and ascending colon; 9 of the transverse colon and flexures; 32 of the sigmoid and descending colon. Sixty per cent. of the patients subjected to resection more than three years ago, and who recovered from the operation, are alive and well; several of them have passed the five year period. Mayo calls attention to cancer of the gall-bladder as an illustration of the fact that cancer is primarily a local condition and curable by surgical operation in that stage, and again because it illustrates the perniciousness of chronic irritation of gall-stones in its production.

Of the 3,084 patients with gall-stone disease which they have operated on, in no less than 74, nearly 3 per cent., cancer involved the gall-bladder and biliary tract, and in every case in which they were able to ascertain the facts, gall-stones were present. In 8 cases the gall-bladder and a considerable portion of the liver were removed for a known cancer process. None of these patients lived a year, but in 5 instances the removal of a thickened functionless gall-bladder containing stones, in which cancer was not suspected, the microscopic examination of the removed gall-bladder showed early cancer. All but one of these patients are alive and well.

103. Abstracted in THE JOURNAL, Nov. 20, 1909, p. 1850.

Louisville Monthly Journal of Medicine and Surgery

January

- 104 *Pellagra as a National Health Problem. J. W. Kerr, U. S. P. H. and M.-H. S.
- 105 Complete Tonsillectomy. S. G. Dabney, Louisville.
- 106 *Tuberculous Toxemia in Surgery. A. C. Wiener, Chicago.
- 107 A New City Hospital. P. L. Atherton, Louisville.

104. Abstracted in THE JOURNAL, Nov. 13, 1909, p. 1661.

106. Abstracted in THE JOURNAL, Oct. 30, 1909, p. 1505.

Southern Medical Journal, Nashville

January

- 108 *Some of the Surgical Junk Demanding Further Surgical Interference. J. Price, Philadelphia.
109 *Plea for the More General Use of Cholecystenterostomy in Certain Cases of Pancreatitis. LeG. Guerry, Columbia, S. C.
110 *Experimental and Clinical Research into Nitrous Oxide Versus Ether Anesthesia. G. W. Crile, Cleveland, Ohio.
111 Skin Sterilization by Tincture of Iodin. I. S. Stone, Washington, D. C.
112 *Exophthalmic Goiter. J. R. Deaver, Philadelphia.
113 *Adhesion of Sigmoid to Tube and Broad Ligament as a Cause of Pain in Salpingitis. H. A. Royster, Raleigh, N. C.
114 *Myositis Ossificans Traumatica. J. M. T. Finney, Baltimore.
115 Skin Grafting. A. C. Scott, Temple, Tex.
116 Symptoms and Ultimate Treatment of Hydatidiform Degeneration of the Chorion. J. E. Stokes, Salisbury, N. C.
117 *Gastrosesenteric Ileus Following Gastroenterostomy. T. C. Witherspoon, Butte, Mont.
118 Treatment of Advanced Extrauterine Pregnancy. R. Peterson, Ann Arbor.
119 Abdominal Cesarean Section for Puerperal Eclampsia. L. Mullally, Charleston, S. C.

108, 113. Abstracted in THE JOURNAL, Jan. 1, 1910, pp. 70, 71.

109, 114. Abstracted in THE JOURNAL, January 8, pp. 151, 152.

110, 117. Abstracted in THE JOURNAL, January 15, pp. 233, 234.

112. **Exophthalmic Goiter.**—The factors which are most important for successful surgery on exophthalmic goiter, according to Deaver, are as follows: Selection of the cases and choice of time for operation; careful anesthesia, his personal preference being for ether in the absence of definite contraindications; avoidance of mental excitement; suiting the operation to the case, *i. e.*, not to do an excision on a patient who can only endure a ligation; quick, skillful operation; the avoidance of injury to the recurrent laryngeal nerve and to the parathyroid glands by preservation of the posterior capsule and of the parathyroid arteries; adequate drainage of the wound.

Maryland Medical Journal, Baltimore

January

- 120 Surgery of Thyroid (continued). R. Winslow, Baltimore.
121 Surgery of Kidney (continued). A. McGlannan, Baltimore.
122 Sydenham (1624-1689). H. M. Cohen, Baltimore.

Albany Medical Annals

January

- 123 Heredotuberculosis. J. L. Archambault, Cohoes, N. Y.
124 Toxemias of Intestinal Origin. V. C. Myers, Albany.
125 The Maidstone Typhoid Epidemic. W. P. Mason, Troy.
126 State Ownership of the Head Waters. C. G. Rossman, Hudson, N. Y.
127 *Surgical Treatment of Injuries to the Patella. J. H. Mitchell, Cohoes, N. Y.
128 Fatal Esophageal Hemorrhage Eight Days after Swallowing Foreign Body. P. G. Waller, New Baltimore.
129 *Traumatic Esophageal Stricture in a Two-Year-Old Child. G. W. Ross, Port Ewen, N. Y.

127. **Injuries to Patella.**—Mitchell summarizes his views as follows: Suture of the patella with wire or chromicized catgut is now generally accepted as a justifiable measure; thorough asepsis must be had to forestall the possibility of suppuration of the joint cavity; the transverse incision made directly across the joint between the inner and outer aspect at or close to the line of fracture permits the most extended examination of the joint cavity and the best opportunity to repair the lateral lacerations of the capsule and better opportunity to remove anything that might get between the fragments thereby; it is well to seal the wound without drainage, if possible; it is advisable to commence passive motion early.

129. **Traumatic Esophageal Stricture.**—The stricture in this case followed the drinking of water from a tin can which had contained lye. The stricture was located by means of the Roentgen ray, and was dilated by means of bougies. The patient was only 2 years old.

Vermont Medical Monthly, Burlington

December

- 130 A Defense of Sanity. F. S. Lee, Burlington.
131 Laboratory Diagnosis. E. A. Colton, Montpelier.
132 Hydrophobia and the Pasteur Method of Immunization. W. H. Lane, Brattleboro.

New York State Journal of Medicine, New York

January

- 133 *Treatment of Alcohol and Morphin Addictions. A. Lambert, New York

- 134 Fresh-Air Treatment of Surgical Tuberculosis. B. H. Whitbeck, New York.
135 Surgical Anatomy of the Gasserian Ganglion; Special Reference to Deep Injection of the Nerve Roots for Trifacial Neuralgia. W. F. Campbell, Brooklyn.
136 *Food Adulteration. J. C. Olsen, Brooklyn.
137 *Work the Federal Government is Doing for the Protection of the Public Health in Enforcement of the Food and Drugs Act of June 30, 1906. R. E. Doolittle, New York.
138 The Board of Health and Food Supply of New York. J. P. Atkinson, New York.
139 Employment of Solid Carbon Dioxide as a Therapeutic Agent. W. S. Gotthell, New York.
140 Plague Among Ground Squirrels. W. Wyman, Washington, D. C.

133. **Treatment of Alcohol and Morphin Addictions.**—This treatment was described fully in THE JOURNAL, Sept. 25, 1909, p. 985.

136. **Food Adulteration.**—Olsen says that the modern preservatives are tasteless. The consumer has a right to know if they are present in the article he purchases. Olsen cannot see how the verdict of a thousand referee boards can deprive him of the right to eat what he fancies and refuse what he personally considers injurious. No amount of argument that salt, spices and vinegar are injurious can affect the matter. The first morsel Olsen tastes will tell him if these substances are present, and if he has learned by experience that they are injurious to him he can reject the food so treated. Smoke undoubtedly contains matter far more poisonous than benzoate of soda, but smoked foods are instantly recognized, while we must depend on the label for the information that benzoate of soda or any other preservative has been used. Olsen deems it reasonable to demand that an investigation be made of the effect on children, the aged or infirm, of eating food containing benzoate of soda. He says that we also need assurance that the methods of handling and preparing foods when benzoate of soda is used are as sanitary as when the preservative is excluded. A great deal of information at hand leads us to conclude that this is not the case.

137. **Enforcement of Food and Drugs Act.**—Doolittle points out that far more work has been done by the government in enforcing the Food and Drugs Act than is generally supposed. In support of his statement, he quotes part of an address delivered by the Secretary of Agriculture before the Association of State and National Food Departments last August. He says that perhaps not so much has been accomplished in the three years that the law has been in force as some of its advocates had hoped for, but many obstacles were met that no one could have foreseen, and it takes time with the law of the scope of the national food law to organize the working force for the enforcement and perfect the same for perfect working order. But, withal, good progress has been made.

Iowa Medical Journal, Des Moines

January

- 141 The Making of a Surgeon. J. R. Deaver, Philadelphia.
142 The Medical Department of Drake University. W. W. Pearson, Des Moines.

Bulletin Medical and Chirurgical Faculty of Maryland, Baltimore

January

- 143 Pure Food Legislation. H. W. Wiley, Washington, D. C.
144 Pure Drug Legislation. L. F. Kebler, Washington, D. C.
145 The Faculty Pure Food Law. W. L. Marbury, Baltimore.

Journal of Biological Chemistry, Baltimore

January

- 146 *Effects of the Presence of Carbohydrates on the Artificial Digestion of Casein. N. E. Goldthwaite, New York.
147 The Quantitative Separation of Calcium and Magnesium in the Presence of Phosphates and Small Amounts of Iron Devised Especially for the Analysis of Foods, Urine and Feces. F. H. McCrudden, Boston.
148 The Estimation of Total Sulphur in Urine. S. R. Benedict, New York.
149 *Fate of Sodium Benzoate in the Human Organism. H. D. Dakin, New York.
150 Chemical and Bacteriologic Study of Fresh Eggs. M. E. Pennington.
151 Phlorhizin Glycocholia. R. T. Woodyatt, Chicago.
152 *Toxicity of Thallium Salts. R. E. Swain and W. G. Bateman, Baltimore.

146. **Effects of Carbohydrates on Digestion of Casein.**—Goldthwaite investigated the effect of the presence of carbohydrates on the artificial digestion of casein, using glucose, maltose, dextrose and galactose with the result that the addition of any

of the carbohydrates tested to the digestion solution retarded the digestion in proportion to the amount of added carbohydrate.

149. Fate of Sodium Benzoate.—Dakin summarizes his results as follows: Benzoic acid taken by men in doses of from 5 to 10 gm. daily for two or three days, in the form of sodium benzoate, undergoes a practically complete conversion into hippuric acid and is eliminated as such in the urine. Under these conditions, no free benzoic acid is excreted. There is no evidence, he says, of the conversion of benzoic acid into any aromatic oxy-acid; neither is there any evidence of any material part of the benzoic acid undergoing complete combustion in the animal body. With the doses of benzoic acid mentioned the increase in glycuronic acid derivatives in the urine is trifling. These results confirm and extend those of Lewinski and are in opposition to those of Brugsch and Tsuchiga.

152. Toxicity of Thallium Salts.—In consequence of the inconsistent statements regarding the toxic action of thallium and in view of some unexpected results from its use as medicine Swain and Bateman undertook to study the question experimentally. Their experiments were made on rats, guinea-pigs, rabbits, toads and dogs. It is apparent that thallium stands in an entirely different class from lead, which it greatly excels in toxicity, and ranks very close to arsenic. The fatal single dose appears to be less than that of arsenic but the animals exhibit no tolerance for the metal. There is a strong tendency toward accumulative action. The administration of a given amount of one of its salts in repeated small daily doses seems to be scarcely less effective than when given as a single dose. The following are the principal symptoms exhibited: Incoordination of movement with gradual paralysis of the hind quarters, persistent trembling, occasional great dilatation of the pupils, increased quantity of urine, apparent increase in the secretion of bile, diarrhea, gradually increasing and eventually marked difficulty of breathing, albuminuria. Death occurs in coma and was plainly due to asphyxia induced by an inhibition of respiratory impulses. There was no indication of heart failure. In all the experiments none of the subjects gave any expression of suffering. Excessive loss of hair was observed in all dogs which were kept under observation for a prolonged period after the administration of thallium, thus bearing out a symptom already noted on human patients.

New Mexico Medical Journal, East Las Vegas

January

- 153 *Improved Methods for the Examination of Sputum and Blood in Relation to Tuberculosis. F. T. B. Fest, Las Vegas.
- 154 The Practicing Physician and his Care of the Consumptive. J. W. Laws, Lincoln.
- 155 Eyestrain: Its Diagnosis and Treatment. F. E. Tull, Albuquerque.

153. Published in the *Interstate Medical Journal*, November, 1909.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

Lancet, London

January 15

- 1 Problems Relating to the Evolution of the Brain. G. E. Smith.
- 2 *Congenital Family Cholemia; Recurrent Familial Jaundice. F. J. Pointon.
- 3 *Phthisis in Children. C. Riviere.
- 4 Jaundice of Doubtful Origin; Fatal Termination, Occurring during Pregnancy. G. F. England, and F. R. Thornton.
- 5 *Infective Endocarditis as Complication of Pregnancy. E. E. Norton.
- 6 Fatal Poisoning by Phosphorus: Unusual Subcutaneous Hemorrhages. R. H. Hann and R. A. Veale.
- 7 *Friedreich's Ataxia. A. R. Moody.
- 8 Displacements of the Semilunar Cartilages. K. H. Digby.
- 9 Septic Infection Consequent on Mastitis. A. D. Pithie.
- 10 Circulatory System (continued). H. Campbell.

2. Congenital Family Cholemia.—The cardinal features of Poynton's three patients were: 1. They all had jaundice immediately after birth. 2. They had more than one attack. 3. They all had enlarged spleens and during their attacks enlarged livers also. 4. They were anemic, and showed definite changes in the blood. 5. They were somewhat undersized and delicate.

3. Phthisis in Children.—Riviere holds that the term "phthisis" should be reserved, when speaking of children, for a disease identical with phthisis in the adult, and should not be used to cover all forms of pulmonary tuberculosis. Using the term in its proper meaning, phthisis is not a common form of tuberculous disease in childhood. Fatal tuberculosis is (comparatively) uncommon at school ages, the bulk of tuberculous infection during this period being localized and recoverable. Phthisis, when it occurs in children, is eminently curable in early stages, but when fatal, it generally runs a shorter course than in the adult.

5. Infective Endocarditis as Complication of Pregnancy.—Both of Norton's cases occurred in young women; each of the patients was the subject of an unwelcome pregnancy, and each had been making attempts to procure abortion. In each case there was a sudden attack of severe illness, miscarriage occurred, and death rapidly followed on a profound toxemia. These two deaths resulted from infective endocarditis, the fatal issue being possibly hastened in the second case by uremic conditions following on the widespread changes in the kidneys. Norton says that it seems justifiable to conclude that the occurrence of miscarriage was the inevitable result of the infection and death *in utero* of the fetus, and had probably no relation whatever to any attempts which had been made to terminate pregnancy. It is at least impossible to substantiate any theory which would connect such attempts with the causation of death. The cases were of the "fulminating" type, though in one there was certainly some slight cardiac hypertrophy. No steps were taken even after death to determine the nature of the infecting organisms.

7. Friedreich's Ataxia.—The history of four cases occurring in one family Moody thinks strongly supports the theory that the disease is hereditary, and bears out the idea that it may be caused by some error in the developmental forces which is not accidental and which may possibly arise in some cases from consanguinity. But apart from the interest in the hereditary character of this disease to which this range of cases clearly points there are some clinical aspects which are unusual. Edema appeared in the three children who suffered for the greatest number of years and was a symptom which developed late in the course of the disease and which progressed *pari passu* with the paresis. At the same time, the skin also underwent a progressive change, becoming, in the first place, coarse and pitted, and eventually assuming almost the appearance of elephantiasis. In these cases it was associated with trophic ulcers, which, however, were different from the ulcers found in cases of locomotor ataxia and other spinal lesions in that they were markedly painful.

The eldest child, a girl, first had symptoms of the disease at the age of 14, and died from it at the age of 26, being then unable to leave her chair to which she was lifted out of bed. The eldest son commenced to show symptoms between 13 and 14. When Moody saw him he was a man of enormous physique, 6 feet 2 inches in height, and broad in proportion. His mental powers were good, but there was complete paresis of the legs, with great stiffness, and the legs were swollen to an enormous size, the skin being coarse and pitted, almost suggesting elephantiasis. The feet were characteristically deformed, short, stumpy, with high-arched instep, with the toes over-extended at the interphalangeal joints.

The next child affected, a girl, showed symptoms first at the age of 14 years. She was able to get about up to the age of 35, but is now unable to walk or feed herself. The fourth is a girl aged 22, who has been afflicted for 8 years. Moody thinks he noted much improvement under thyroid and ovarian extract treatment.

British Medical Journal, London

January 15

- 11 *Diseases of the Orifices of the Body. P. Daniel.
- 12 *Causation of Angina Pectoris. B. Bramwell.
- 13 *Points in the Treatment of Nerve Injuries. J. Sherren.
- 14 *Spasmodic Syringomyelia. J. S. Bury.
- 15 *Dry Iodin Catgut. W. S. Dickie.
- 16 Osteitis Deformans Terminating with Cerebral Symptoms. R. G. Hann.
- 17 Development and Malformation of the Glans and Prepuce. F. W. Jones.
- 18 *Primary Epithelioma of Penile Urethra. W. E. Peacock.

11. **Diseases of the Orifices of Body.**—Daniel formulates certain axioms which he has found to stand the test of investigation, of treatment, and time:

1. The vast majority of "everyday" pathologic processes are secondary to diseased orifices.

2. All orifices are concerned, but the important ones are (a) the mouth and nose, (b) the urethra, and (c) the vulva.

3. The bacteria chiefly concerned are the cocci: (a) they give rise directly to disease; (b) they so break down the resistance of the body both locally and generally, that other pathogenic bacteria are enabled thereby to invade successfully the organs and structures of the body; (c) they cooperate with and increase the destruction and toxemia due to other bacteria.

4. An enormous number of the diseases which make themselves manifest in adolescence and adult life originate—that is, commence—during infancy. Daniel is convinced that some of the graver diseases are congenital; that is, the fetus is inoculated through the placenta—antenatal infection. He also believes that if the mother is the subject of these orificial septic processes the toxemia must profoundly affect the well-being of the fetus *in utero*.

5. Repeated small infections and intoxications taking place over an indefinite period of time ultimately give rise to pronounced and violent disorders, polymorphic in their manifestations, often culminating in virulent septicopyemia.

6. Orifice disease among the poorer classes is universal, and exceedingly frequent in the upper spheres of society, if properly sought for. Thus, as a direct result of septic processes taking place in the mouth, nose, and nasal sinuses, the urethra or bladder or elsewhere, certain consequences arise.

The presence of hitherto undiscovered sepsis as a cause of obscure disease is, in Daniel's experience, common, and explains many cases of goiter, neuritis, arthritis, so-called heart disease, general ill-health and hysteria. Daniel regards oral sepsis as being responsible for most, if not all, cases of gastrointestinal disturbance, even hepatic cirrhosis, and that orificial infection somewhere is the cause of nearly every disease, including cancer and insanity.

12. **Causation of Angina Pectoris.**—Bramwell is convinced that in many cases of angina pectoris the sequence of events is as follows: First, a sudden strain is thrown on the left ventricle, either as the result of muscular effort or an increase of the peripheral resistance due to contraction of the peripheral arteries, the result of some external condition (sudden effort, exposure to cold, mental agitation, etc., some reflex impulse arising within the body, or changes arising in the central nervous system (vasomotor center). The strain or increased blood-pressure may be actual or merely relative in proportion to the weakened left ventricle. In some cases in which the cardiac muscle or cardiac nerves are diseased, the attack arises independently of any muscular effort or sudden increase of the peripheral resistance. Under such circumstances, a strain on the left ventricle, which under ordinary circumstances would not be attended with cardiac pain, would probably be sufficient to produce the condition.

Second, in consequence of the strain (either actual or relative) which is thrown on the cavity of the left ventricle, or rather those fibers of the left ventricle which are degenerated, either as the result of imperfect blood supply (disease of the coronary arteries) or of degenerative changes in the cardiac muscle, irritation of the sensory cardiac nerves is produced. This irritation is attended with severe pain (angina pectoris). The exact cause of the irritation of the sensory cardiac nerves is not clear, and this seems to be the point with regard to the pathology of angina pectoris which needs to be cleared up; perhaps it is spasmodic contraction of some of the muscular fibers, perhaps increased tension in the cavity of the ventricle.

Third, this irritation of the terminal branches of the afferent (? sensory) nerves in the wall of the left ventricle (including under this term the pericardium, myocardium and endocardium), is reflected via the sympathetic branches of the cardiac plexus, distributed to the left ventricle and the spinal cord (left side of the upper dorsal segments) in the form of pain, to the periphery.

13. **Treatment of Nerve Injuries.**—Three small, but important points in connection with the operation of secondary nerve suture, says Sherren, are often overlooked, seriously interfering with full recovery: (1) The suture must be of absorbable material; (2) the wound in the nerve must be protected; (3) in wounds in the region of the wrist the deep fascia must be united separately. Fine catgut should be used to unite the ends of the nerves, plain if there is no tension, lightly chromicized in cases in which any tension falls on the junction. Non absorbable materials—silk, linen thread, cellu-

loid thread—should be avoided; they give rise in many cases to symptoms months after suture, when recovery is well advanced, causing relapse and seriously interfering with complete recovery. In all cases in which a nerve has been wounded it should be protected from forming adhesions to surrounding structures by wrapping in Cargile membrane. When tendons have been divided they should be treated in a similar way. Failure to protect the nerve is responsible for imperfect recovery in a certain number of cases, and often necessitates a second operation, even when the nerve was not completely divided.

After wounds in the region of the wrist the deep fascia should always be sutured carefully. If this is not done the tendons may become adherent to the skin, interfering considerably with their mobility, and in many cases, when the wound has been extensive, a hernia of tendons forms, which is a source of weakness until remedied by operation. If these three points were remembered in operations on recent nerve injuries, Sherren believes that the percentage of cases of recovery of conduction in the nerve and of complete restoration of function in the damaged part would be much higher than it is.

14. **Spasmodic Syringomyelia.**—Bury reports a case which in its main features—namely, the intense and widespread rigidity, the peculiar attitude of the upper part of the body, and the dissociated sensibility, corresponds to the spasmodic form of syringomyelia, and he found it difficult to admit the possibility of any other diagnosis. The rigidity, he said, might be caused by cervical pachymeningitis, but in this condition one should expect pain and muscular atrophy in the arms. In all probability, the cavity occupied a considerable length of the spinal cord, and there was evidence in the presence of nystagmus and of analgesia of the face that the lesion extended into the bulbar region. The extreme muscular rigidity suggested that the pyramidal tracts were severely implicated. The patient, aged 36, had "fits" at 5, gonorrhea at 21. At 24 curvature of the spine was noted. At 27, the left arm became weak and gradually became stiffer and stiffer. At 30, the left leg, right arm and right leg became similarly affected. From that time on his condition rapidly became worse.

15. **Dry Iodin Catgut.**—Dickie uses a dry iodine catgut prepared according to Moschowitz's method.

18. **Primary Epithelioma of Penile Urethra.**—The patient, aged 74, complained of indefinite pains in the lower abdomen, back and rectum. He had some soreness and pain on micturition, with irritation round the glans penis. A discharge around, and the moist condition of the glans, was found to be due to a secretion of the coronary glands. A catheter (No. 14 English) was passed easily, and nothing abnormal was found in the bladder or urethra. The pain during micturition gradually increased and the urethral canal became narrower, so that instead of being able to pass No. 14 catheter easily, gradually only No. 7 could be passed. No actual stricture seemed present, but the desire to micturate or the passage of urine or a catheter seemed to cause a spasm of the urethral canal. On external examination no thickening of the penis could be felt in the region corresponding to the spasm about one inch from the urethral orifice.

Peacock began to suspect a carcinomatous condition of the canal, and yet nothing could be felt to warrant the diagnosis, and there were no enlarged glands in the groin. Two years previously he had removed an epithelioma from the patient's lip, and his father was said to have died of cancer. The spasm and pain became so severe that Peacock induced him to allow removal of half the penis. The condition was found to be epitheliomatous. The man is now well, nearly two years after the operation.

Clinical Journal, London

January 5

19 *Treatment of Spasmodic Asthma. H. Campbell.

20 Diagnosis and Treatment of Retrodisplacements of Uterus.

F. E. Taylor

21 New Method of Treating Nevi (Electrolysis). R. Morton

January 12

22 Duodenal Ulcer. D.A. Power.

23 Diagnosis of Duodenal Ulcer; Special Reference to the Value of Cambridge's Pancreatic Reaction. G. Herschell.

24 Kissing. E. von Ofenheim.

19. Treatment of Spasmodic Asthma.—Campbell says that all exercise which does not cause unpleasant breathlessness is good. Sudden, violent effort is to be avoided. If the patient is in an asthmatic vein, he must be doubly careful to set about in a cautious and gradual manner any exercise he may undertake; he may find a gradual improvement in his breathing as he proceeds. Walking is the best of all exercises. Respiratory exercises properly carried out are of great service. Massage may be of great help, especially when it is decided to put the patient to bed, as when an exceptionally rigorous dietary is to be enforced. The diet Campbell employs is that recommended by Francis Hare. The quantity of starch, sugar and fat is curtailed, and the patient is fed mainly on animal food. If the weight is supernormal it should be got down to normal; if it is subnormal we should seek to raise it to the normal. As a rule, the constitutionally stout individuals respond more readily to treatment than the constitutionally thin. It sometimes happens that the method of treatment Campbell advocates increases the fat-forming capacity in those in whom it is defective, and he says the more we succeed in this the more successful shall we be in combating the asthmatic tendency. All the patients with asthma treated in this manner have improved; a large proportion have been practically cured.

Medical Press and Circular, London

January 5

- 25 Surgical Treatment of Tuberculous Ulcers of the Nasal Septum. A. Onodi.
- 26 Case of Tetanus. J. L. Roberts.
- 27 Laboratory Methods for Diagnosis of Syphilis. H. W. Bayly.

Journal of Tropical Medicine and Hygiene, London

January 1

- 28 Two Cases of External Myiasis. J. M. Swan.
- 29 Earth-Eating in the Egyptian Sudan. J. B. Christopherson.

Intercolonial Medical Journal of Australasia, Melbourne

November

- 30 Surgery of the Nerves. B. Kilvington.
- 31 A Visit to Rochester, Minn.: An Impression of the Mayos and Their Work. D. M. Morton.
- 32 Treatment of Gonorrhea. A. Morris.
- 33 Anatomic Considerations of Recent Heart Surgery. W. MacKenzie.
- 34 Gumma Near the Left Red Nucleus. J. W. Springthorpe.
- 35 Case of Rodent Ulcer. T. G. Beckett.
- 36 Radium in Treatment of Eye Cases. H. Lawrence.
- 37 Foreign Body in the Eye. J. M. Baxter.

Archives des Maladies du Cœur, etc., Paris

December, II, No. 12, pp. 673-752

- 38 *Operative Treatment of Adherent Pericardium. (La cardiolyse ou opération de Brauer. Ses indications et ses résultats.) P. Lecène.
- 39 Myeloid Leucemia. Intermediate between Progressive Pernicious Anemia and Myeloid Purpura. E. Lenoble and J. Quelme.

38. Operative Treatment of Adherent Pericardium.—The operation which Brauer of Marburg recommended and called cardiolysis consists in resection of ribs and costal cartilages over the heart region, and the results have been good in treatment of adherent pericardium. The ultimate outcome depends more on the general practitioner, however, than on the surgeon, Lecène remarks, as the early recognition of the condition is the main element in success. He regards the operation as simple and benign in comparison, the relief that follows restoring the patients to active life, often for a number of years. Search should be made for signs of chronic mediastinitis and of the fusion of the pericardium with the pleura or chest walls, edema, subjaundice and enlargement of the liver, etc. He tabulates the details of 20 cases of cardiolysis in European literature.

Lyon Chirurgical, Lyons

January, III, No. 1, pp. 1-128

- 40 *Treatment of Fracture of Nose and Deviation of Nasal Septum. (Traitement des fractures du nez et des déviations de la cloison nasale.) C. and F. Martin.
- 41 Eight Cases of Laryngostomy with Dilatation. C. Viannay.
- 42 *Tuberculous Abscess of the Chest Wall Originating in Costosternal Articulations. (Les abcès froids de la paroi thoracique d'origine articulaire.) L. Tixier and L. Thévenot.

40. Fractures of the Nose.—Martin gives an illustrated description of devices which he states have proved useful in correction of deformities of the nose and especially to aid in healing of fractures of the nose. A little frame fits into each nostril, with an adjustable arm that can be raised and held

immovable by means of a screw in the lower part, turned by a watch-key. The two parts are connected by a gold wire which is all that shows as it crosses the septum in front. In some cases more support is needed, and for this he uses a little frame fitting on the face just around the nose with a little hook in front to hold the gold wire. This frame is held in place by a spring passing over the head. He gives illustrations of the results in a number of cases to demonstrate the advantages of his technic, which, he asserts, scarcely discommodates the patient. The principle includes operative correction, chiseling off bone if necessary to restore the normal shape and then immobilization, continued until complete consolidation, by means of a small apparatus placed in the cavity of the nasal fossæ. The pressure induced by the adjustable arm is graduated to secure the maximum of effect without discomfort; the screw is adjusted from day to day as needed.

42. Tuberculous Abscess of the Wall of the Chest.—Tixier remarks that a cold abscess in the ribs is liable to involve the sternocostal or chondrocostal articulations or both, and that, consequently, mere resection of the focus is not enough. The whole joint must be removed as the cartilage is certain to be involved as well as the bone, as he shows by fourteen cases reported in detail.

Obstétrique, Paris

December, II, N. S., No. 12, pp. 885-960

- 43 Carcinoma of the Placenta. (Tumeurs malignes du placenta.) A. Brindeau and L. Nattan-Larrier.
- 44 Infant Consultations. (Le service des débiles à la maternité de Paris.) C. Maygrier.
- 45 Fatal Poisoning of Fetus at Term from Illuminating Gas. Survival of Mother. (Asphyxie par le gaz d'éclairage.) Tissier.
- 46 Medicolegal Study of Decreasing Birth-Rate. (En marge de la dépopulation.) P. Delmas.

Presse Médicale, Paris

January 1, XVIII, No. 1, pp. 1-8

- 47 *Wounds of the Cervical Thoracic Duct. (Plaies du canal thoracique au cou.) P. Fredet.
- 48 *Diagnosis of Tuberculosis by Fixation of Complement. (Diagnostic de la tuberculose par la fixation du complément.) A. Bergeron.
- 49 *Experimental Surgery of Thoracic Aorta Facilitated by Meltzer's Method. A. Carrel.
- 50 *Intradermal Tuberculin Reaction and its Clinical Interpretation. C. Mantoux.

47. Injury of the Thoracic Duct in the Neck.—Five mortalities occurred in the 58 cases of this injury which Fredet has found recorded in the literature. In one of the cases, however, this injury probably was not responsible for the fatality. A lateral suture is advisable when possible, but if the duct has been cut across, ligation of the peripheral stump is advisable. Tamponing alone is not enough unless the other measures are impossible for any reason.

48. Diagnosis of Tuberculosis by Fixation of Complement.—In 204 cases out of 213 tested, the findings of the test corresponded with the clinical diagnosis. The technic is that suggested by Marmorek, using urine for the test instead of the blood serum.

49. Published in THE JOURNAL, Jan. 1, 1910, p. 28.

50. Intradermal Tuberculin Test and Tuberculin Treatment.—Mantoux's technic has been previously mentioned in these

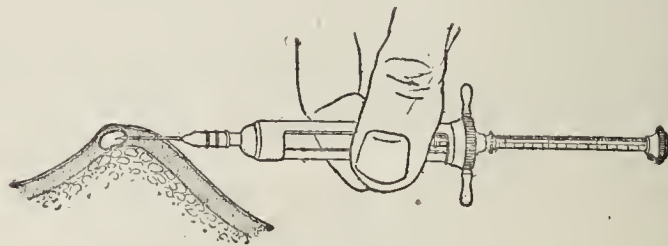


Figure 1.

columns and he states that further experience has confirmed his belief in its peculiar advantages, not only for the tuberculin diagnostic test but also as a means of injecting the tuberculin—the local reaction indicating the reacting powers of the individual and thus determining the suitable dose each time. Figure 1 shows the correct way of injecting the tuber-

culin in the fold taken up in the skin, using a fine and short needle with beveled tip and with the open side up. Only a single drop is injected, representing 0.00001 gm. of tuberculin. When the dose is to be increased he still injects only a single drop but uses a more concentrated solution. For the test he uses a 1 to 5,000 solution, mixing one drop of the standard



Figure 2.

1 per cent. solution with 49 drops of physiologic salt solution. He states that his experience and that of others have confirmed the specific reliability of the findings of the test, especially when compared with the postmortem findings. Its principal value lies in its exclusion of tuberculosis; it is not so much a test for tuberculosis as it is a test for the non-existence of this disease. Figure 2 shows the wrong way of injecting the drop, injecting it so deep that it diffuses into the subcutaneous tissue. Mantoux' previous communication was summarized in these columns Dec. 5, 1908, page 2007, and Römer's experiences with the test, April 3, 1909, page 1149.

Semaine Médicale, Paris

January 5, XXX, No. 1, pp. 1-12

- 51 *Phantom Appendicitis and Pseudoappendicitis. (Les appendicites fantômes et les fausses appendicites.) L. Cheinisse.

January 12, No. 2, pp. 13-24

- 52 *Heart Disturbances in Erysipelas. Acute Dilatation of the Heart. (Les troubles cardiaques dans l'érysipèle: les dilatations aiguës du cœur.) P. Teissier.

51. **Phantom Appendicitis and Pseudoappendicitis.**—Cheinisse applies the term phantom appendicitis to a neuralgic or hysterical affection with pain at McBurney's point and otherwise suggesting appendicitis except that other painful points may be discovered at the exits of certain nerves, or a history of hysteria, influenza or syphilis may explain the trouble. Treatment as for neuralgia or articular rheumatism in general will sometimes cure the supposed appendicitis, thus confirming its deceptive nature. In addition to this group there is a syndrome suggesting chronic appendicitis but which in reality is the expression of chronic dilatation of the cecum from atony, the features of the trouble resembling those of dilatation of the stomach. The pain on pressure radiates upward instead of remaining localized to the appendix, and it cannot be induced through the rectum, as with true appendicitis; the abdominal walls are not rigid, there is no fever, and no special leucocytosis, and the pulse is normal. The presence of mucus in the stools, the relief after defecation and the variability in the tumefaction point to the true nature of the disturbance, as also the absence from the anamnesis of preceding trouble in the appendix or uterine adnexa. The diet should exclude articles liable to induce flatulence; massage and exercise should be advised, tennis, rowing, etc., but purgatives should be avoided. Bismuth may be found useful, alone or combined with calcined magnesia, and alternating with a laxative.

52. **Acute Dilatation of the Heart in Erysipelas.**—Teissier describes a number of complications on the part of the myocardium observed in previously healthy patients during the course of erysipelas of the face. The heart is involved more often than is generally supposed, but seldom seriously. He has examined 500 patients with erysipelas, applying the various means for determining the condition of the heart, and found acute dilatation in 11 of 145 male patients and in 33 of 200 girls or women. The only physical sign seems to be the change in the outline of the heart and this may not appear during the first attack of erysipelas. The erysipelatous myocarditis does not leave traces to such an extent as that with acute articular rheumatism. It seems to be due to toxic action but is not necessarily severe: the trouble appears to pass over without leaving permanent impairment.

Centralblatt für die Grenzgebiete der Med. und Chir., Jena

December 30, XII, No. 23, pp. 881-928

- 53 *Roentgen-Ray Diagnosis of Skull and Brain Lesions. (Die Röntgendiagnostik der Erkrankungen des Schädels und Gehirns.) A. Schüller. Commenced in No. 22.
- 54 *Tuberculous Articular Rheumatism. (Der tuberkulöse Gelenkrheumatismus.) E. Melchior. Commenced in No. 21.

53. **Roentgen-Ray Diagnosis of Lesions in Skull and Brain.**—Schüller has compiled 285 articles on this subject and compares their conclusions, discussing the value of the x-rays in differentiation of malformation, destructive processes, excessive growth and injuries of the skull and eye, ear and teeth affections, with the technique and the interpretation of the findings.

54. **Tuberculous Articular Rheumatism.**—This new conception already has a large literature which Melchior reviews. The tuberculous nature of a joint affection may be suspected when there are tuberculous lesions elsewhere, or at least a positive tuberculin reaction; also when the course is particularly insidious, especially in one or more of the joints involved, with a tendency to ankylosis; also from the impotency of salicylic medication and the extremely unfavorable influence on the general health. He does not agree with Poncet that every arthritis in a tuberculous individual is necessarily due to this infection, as true acute articular rheumatism may develop in the tuberculous. Melchior concludes from his review that there is nothing to sustain the assumption of a tuberculous etiology for chronic arthritis in adults, and that the evidence still is merely presumptive for the young.

Correspondenz-Blatt für Schweizer Aerzte, Basel

January 1, XI, No. 1, pp. 1-32

- 55 Perception of Vibrations by and Sensibility of the Skeleton. (Ueber Vibrationsgefühl und Skelettsensibilität.) R. Bing.
- 56 Prophylaxis of Trachoma in Switzerland. A. Siegrist.

Deutsche medizinische Wochenschrift, Berlin

January 6, XXXVI, No. 1, pp. 1-56

- 57 *Concussion of the Brain. (Ueber Hirnerschütterung.) F. Trendelenburg and Windscheid.
- 58 *Incarceration of Loop of Intestine in Inner Inguinal or Femoral Ring. (Einklemmung einer kurzen Darmschlinge im inneren Leisten- resp. Schenkelringe.) B. Riedel.
- 59 *Epicondylitis of the Humerus. F. Franke.
- 60 *Dangers of Subcutaneous Saline Infusion in Eclampsia. (Gefahren der subkutanen Kochsalzinfusion bei Eklampsie.) A. Sippel.
- 61 *Diagnosis and Treatment of Glaucoma. O. Haab.
- 62 Behavior of Glucosids in the Organism and their Relations with the Paired Glycuronic Acids. (Verhalten von Glykosiden im Organismus und ihre Beziehungen zu gepaarten Glykuronsäuren.) H. Hildebrandt.
- 63 Study of Degeneracy and Degenerative Insanity. G. Voss.
- 64 Successful Operative Treatment of Circumscribed Chronic Leptomenigitis of the Motor Area of the Brain. A. v. Sarbo.
- 65 Raising the Pelvis as Aid in Healing Cecal Fistula. (Steile Beckenhochlagerung zur Heilung der Blindarmfistel.) Schmlz.
- 66 Seroagglutination of *Sporothrix schenckii*. (Agglutination des Sporotrichon de Beummann durch Serum von Aktinomykosekranken.) L. Rothe.
- 67 *Treatment of Rectal Spasm by Rectal Instillation of Salt Solution. J. Rosenstern.

57. **Concussion of the Brain.**—Trendelenburg discusses the subject from the surgical point of view and Windscheid from the neurologist's. The latter says that the symptoms of pure concussion of the brain, without organic changes, are mainly those of impaired power of attention, especially for names and figures, with a tendency to easily induced and excessive mental fatigue. The patients respond slowly to demands on their attention and it is easy to see that it is hard for them to think. They are also emotionally excited, extremely irritable, with tendency to frights and depression. If the pulse persists slow for a number of months after the accident, this bradycardia is more likely to be due to arteriosclerosis than to the effects of the concussion itself. It is probable that the latter causes disturbances in the innervation of the vessels in the brain, and in many cases rouses to active manifestations a hitherto latent cerebral arteriosclerosis. If there is no loss of consciousness at the time of the trauma he thinks that true concussion of the brain can be excluded. It has been his experience that the most serious traumatic neuroses developed after comparatively insignificant accidents, sometimes not affecting the skull at all.

58. Incarceration of a Short Loop of Intestine in the Internal Ring.—Riedel reports 2 cases in which incarcerated hernia in the internal inguinal or femoral ring was readily diagnosed and remedied, but in 2 other cases the hernia was not suggested by any external signs, the patients merely presenting the symptoms of ileus of unknown origin. This tendency of a short loop of the intestine to slide into the internal ring should always be borne in mind when confronted with ileus of obscure origin. It generally occurs spontaneously or during coughing, with no history of trauma. The tumor formed by the congested loop may not be discoverable from without, not even by the finger introduced into the inguinal canal as the tumor may not be larger than a nut in size and is too deep to be reached by the finger. Severe vomiting is generally the first sign of trouble. Distinct peristalsis is observed at first in the loops of small intestine, but this subsides later as peritonitis develops or tympany masks it. Such cases emphasize the dangers of delay when signs of ileus develop. A hernia of this kind can be reached only through a transverse or median incision. He adds that 2,000 men die annually from ordinary hernia in Prussia and he is convinced that nearly all might be saved by operative intervention in time. Some refuse operation but most succumb because taxis had been applied in vain. In 7 recent cases in his own service the patients were brought in with the hernial sac ruptured from attempts at taxis. This, he says, seems to be particularly the case with the most dangerous of all hernias, those in the abdominal wall.

59. Epicondylitis of the Elbow.—Franke has suffered from the disease he describes, a peculiar rheumatic circumscribed inflammation of the epicondyle and its innervation. It is generally preceded by influenza, runs a protracted course, but finally heals completely. Slight accidents may be found sometimes in the etiology but as a rule the trouble begins abruptly, without apparent cause, with more or less intense pain in the elbow. The period of lively pain may last for four or six weeks or even longer if proper treatment is not instituted, and the region may remain sensitive and tender for months. In some cases the pain first develops with paresthesia in the dorsal ulnar side of the forearm; the pain in the epicondyle itself follows in a day or two, confirming the assumption that the nerve fibers are involved in the inflammatory process. No medication or external measures proved of the slightest use and they even seemed to aggravate the condition in some cases, as he relates in detail; the only measure that proved effectual was complete rest for the arm and elbow and avoidance of getting chilled. With this treatment recovery was certain in four weeks. When this long rest of the arm is impracticable for any reason, he has found good results follow a simple operation under local anesthesia, chiseling off the epicondyle. Differentiation is very simple if the focus of inflammation is sought for in the joint. The affection has been described by others but erroneously ascribed to bursitis or other lesion, but Franke has never found any anatomic grounds for these assertions at autopsies. Vulliet is the only writer who has described the typical trouble in question. The pain seems to radiate according to the course of the radial nerve.

60. Dangers of Saline Infusion in Eclampsia.—Sippel warns most emphatically against subcutaneous saline infusion in eclamptics with disturbed kidney functioning, believing that this was responsible for the fatal outcome in certain cases in which great improvement followed decapsulation of the kidney, but conditions grew grave again after infusion of salt solution, the action of the salt on the kidneys proving the last straw that turned the scale for a fatal outcome. With subcutaneous or intravenous injection all the salt passes into the circulation and has to be eliminated through the kidneys, but taken into the gastrointestinal tract, only as much salt is absorbed as is required to answer the physiologic needs of the body. This difference is evident with a strong salt solution. Taken into the intestines it induces diarrhea as it draws water from the blood serum into the intestines until the blood serum and bowel content become isotonic. The same solution in intravenous injection causes constipation and dry stools as the hypertonic blood draws all the fluid out of the bowel

content to restore the osmotic balance. The lower the osmotic pressure of the fluid introduced into the gastrointestinal tract of eclamptics with kidney disturbances, the more effectual its action in reducing the molecular concentration of the salt content of the blood and thus the less irritating its elimination through the kidneys. In the special case described the eclamptic convulsions kept up unmodified for thirty hours after delivery by vaginal Cesarean section. Decapsulation of one kidney then was followed by great improvement, with copious urination, and the albuminuria and coma subsiding. In a few hours, however, the coma returned with anuria soon proving fatal. He connects this surprising return of menacing symptoms with the infusion of 3 liters of physiologic salt solution during the intervening period, and cites similar experiences by others.

61. Glaucoma.—Haab warns against instilling atropin for any purpose when there is the slightest suspicion of glaucoma, and even in elderly people in general, as liable to rouse a sleeping tendency to glaucoma. Cocain and other drugs that induce mydriasis are also dangerous in the same way. On the other hand, prolonged use of pilocarpin is of benefit, even after the glaucoma has received operative treatment. It should be kept up for years and decades and he has thus used it for twenty years and with the best results. When with uncomplicated glaucoma the pupil contracts well with pilocarpin, this drug alone may be sufficient for years in many cases.

67. Continuous Saline Instillation in Treatment of Pyloric Spasm.—Rosenstern has applied the method of continuous saline instillation—Murphy's proctoclysis—in four cases of pyloric spasm to restore the needed water to the tissues. He found to his surprise that at the same time it had a pronounced favorable influence on the spasm, promoting relaxation as evidenced by the cessation of vomiting. He used Ringer's solution for the purpose, a mixture of 7.5 parts sodium chlorid, 0.42 parts potassium chlorid, and 0.24 parts calcium chlorid, with 1,000 parts water. He consequently recommends this systematic continuous enteroclysis as a direct means of influencing the pylorospasm, in addition to its other advantages.

Medizinische Klinik, Berlin

January 2, VI, No. 1, pp. 1-44

- 68 *Chlorosis. C. v. Noorden.
- 69 Inherited Taints. (Das pathogenetische Vererbungsproblem.) F. Martius.
- 70 Opinions of the Value of Tuberculin Treatment of Tuberculosis. F. Kraus, H. Eichhorst and others.
- 71 *Atropin in Treatment of Ileus. A. Lederer.
- 72 *Connection between Genital Lesions and Digestive Disturbances. (Zusammenhang zwischen Affektionen der Genitalorgane mit Störungen der Magen- und Darmverdauung.) C. Wegele.
- 73 Acute Otitis. E. Ruttin.
- 74 Modification of Species from Standpoint of Modern Geology. (Die Deszendenzlehre in der modernen Geologie.) F. Frech.
- 75 History of Antisepsis and Antipyresis. E. Harnack.

68. Chlorosis.—A typical case of chlorosis is reported in detail by von Noorden as basis for discussion of the condition of the blood, diuresis and connection between the genital apparatus and development of chlorosis, also the high diaphragm and retraction of the lung generally encountered, the constipation under iron treatment, best mode of administration of arsenic, and the necessity for a sufficiency of albumin in the diet. He protests against the restriction to vegetable food which is now the fashion, stating that it is distinctly harmful in chlorosis, such patients needing about 100 or 120 gm. (3 or 4 ounces) of albumin daily, preferably in the form of meat, and best ingested at breakfast. This is a comparatively small amount but it is more than the patients would eat, as a rule, if left to themselves. He thinks that there is much to sustain the assumption that chlorosis is a special form of defective formation of blood resulting from the fact that the physiologic excitation proceeding from the female genital apparatus and acting on the nerve centers presiding over the production of blood is abnormally weak. The genitals are frequently infantile in chlorosis but may develop later so that the genital apparatus may be apparently normal after the age of 30, or the infantile state may persist. Out of 85 sterile women examined, 56 stated that they had had chlorosis during their girlhood. This proportion is too

large for it to be a mere coincidence in all cases. The assumption that chlorosis is not a primary metabolic disturbance, but a neurosis seems to be sustained by certain facts he cites indicating the direct mediation of the nervous system as well as of the internal secretions and the blood in transmitting the stimulation from the ovaries to the bone marrow. He mentions that the signs of temporary eunuchoid conditions, sometimes observed in boys just before puberty, are generally found in families in which the girls present chlorosis. The boys develop the transverse roll of fat above the symphysis and their skin becomes like that of a girl, all of which in time they outgrow. The transient obesity is probably due, he thinks, to defective thyroid functioning at this time, owing to the lack of sufficient interstitial tissue in the testicles. He has frequently encountered in late years a condition suggesting chlorosis in some points and yet in others directly opposite. Young girls previously entirely healthy cease to menstruate after some acute infectious disease; they lose appetite and weight and look old while trophic disturbances are noted in the skin and fingers. In 3 such patients there was considerable scleroderma. The blood does not suggest chlorosis but rather polycythemia. In one such case there was pronounced scleroderma of breast and arms while the body of the uterus was palpably atrophic. The rapid and alarming emaciation and inability to take sufficient nourishment on account of diarrhea when over a certain amount of food was taken, and other features of this condition are so marked and so uniform that he regards the syndrome as a typical affection which might appropriately be termed "genito-sclerodermic degeneracy." Further comparison of dermatologic and post-mortem findings are necessary to clear up this clinical picture; it seems to involve some reciprocal action between the genital apparatus and the thyroid. Chlorotic girls generally breathe superficially, and this entails retraction of the lung and an unusually high diaphragm with resulting air-hunger. Systematic breathing exercises persevered in will improve the ability to walk and climb stairs, etc., long before the blood shows any decided change for the better. The constipation that follows the use of iron may be due he says to too great reliance on the rectal syringe. Constipation from stagnation above the rectum can be cured by dietetic measures without fail, but when the rectum has been trained to sluggish action from too frequent use of the syringe to promote defecation, conditions are far less favorable for a cure. In his experience, this is almost the sole cause of obstinate rectal constipation. He has found iron mineral waters more beneficial and less liable to induce constipation than pharmacopial iron, and also that arsenic in the form of a mineral water is better tolerated than in any drug preparation. Both iron and arsenic act by stimulating the blood-producing apparatus, reinforcing the too feeble excitation from the ovaries. He relates some instances of polyneuritis and optic neuritis following the use of the eucodylates and atoxyl. It is impossible to foretell with these drugs the amount of arsenic that will be liberated and thus become therapeutically and toxically active.

71. Atropin in Ileus.—Lederer reports 10 cases of paralytic ileus to illustrate the prompt action of a subcutaneous tentative injection of 0.001 gm. atropin, followed soon after by a larger dose, up to 0.003 or 0.005 gm. The desired result was attained in less than ten hours in every instance, although the general condition was grave.

72. Connection Between Genital and Gastrointestinal Disturbances.—Wegele states that in both sexes there is liable to be gastrointestinal derangement for which organic or more often functional affections of the genital organs are responsible. This fact should be borne in mind in treating the digestive derangement and warding off intestinal auto-intoxication.

Münchener medizinische Wochenschrift

January 4, LVII, No. 1, pp. 1-56

- 76 *Conception and Treatment of Uterine Hemorrhage and Cervical Catarrh. (Auffassung und Behandlung von Uterusblutungen und Zervikalkatarrhen.) E. Opitz.
- 77 Charcoal in Treatment of Cancer, etc. (Ueber Carbenzym.) Falk, Sticker and zur Verth.
- 78 Cause of Goller. (Zur Aetiologie des Kropfes.) C. Blauel.
- 79 Acetic Acid Test for Differentiating Exudates and Transudates. (Die Essigsäureprobe zur Unterscheidung der Exsudate und Transsudate.) K. Pieper.

- 80 *Coagulation Curves in Hemophilia and the Treatment. (Beitrag zur Hämophilie mit spezieller Berücksichtigung der Gerinnungsverhältnisse des Blutes an Hand von Gerinnungskurven.) K. Kottmann and A. Lidsky.
- 81 Autolysis in the Blood in Advanced Pulmonary Tuberculosis. (Ueber Autolysine im Blute bei schwerer Lungentuberkulose.) E. Vogt.
- 82 Seroreaction in Erythematous Lupus. (Positiver Ausfall der Wassermann-Neisser-Bruckschen Syphilisreaktion bei Lupus erythematosus acutus.) L. Haack.
- 83 *Quinin in Treatment of Pemphigus. R. Bergrath.
- 84 Nail Extension in Treatment of Fractures. (Die Codivillasche Nagelexension ein zweckmässiges Behandlungsverfahren bei Knochenbrüchen.) M. Hirschberg.
- 85 The Medical Press and Writers for it. (Reformen in medizinischen Publikationswesen.) C. Oppenheimer.

76. Treatment of Uterine Hemorrhage and Catarrh of the Cervix.—Opitz agrees with those who think that the ovary is mainly responsible for uterine hemorrhage as it certainly is for menstruation. This is confirmed by the frequency of menstrual disturbances during the periods of puberty and menopause and the changes in the ovary found with myoma in hemorrhagic cases. Chronic constipation, possibly unsuspected, is liable to induce hyperemia in the pelvis and thus increase the tendency to hemorrhage. In treatment, general measures are the main feature, and local treatment should be subordinate to them and always mild and cautious. Measures which women can apply themselves should be preferred. Prolonged courses of harsh local measures are directly injurious, and he cites some cases to confirm this view that specialists far too often ignore the organism, as a whole, in treating a single organ. In one such case a young anemic woman had been under a specialist's treatment for four years; he had cauterized the cervix twice a week with never more than transient effect. Except for the profuse secretion and the erosions at the os, the genital findings were negative. Opitz gave iron, regulated the bowel functioning and ordered tepid vaginal douches with 4 to 1,000 solution of alum, twice daily, and in two weeks the secretion had entirely ceased. He warns that these cases form the stock in trade of quacks; a woman who patiently endures for four years an ineffectual, disagreeable mode of treatment naturally becomes an ardent believer in the first quack who by simple hygienic measures, without special intervention, relieves her from her trouble. Opitz adds that it cannot be emphasized too often that the human body should be regarded as a whole; the connection between disorders of a single organ and the rest of the body should never be forgotten.

80. Coagulation in Hemophilia and Treatment.—Kottmann gives several graphic tracings taken with the coaguloviscosimeter which he has devised. His experiences sustain the assumption that the trouble in hemophilia is a lack of thrombokinase, and that hemophilic hemorrhage can be arrested by supplying this from without. He advises all those who have anything to do with hemophiliacs to be instructed to check hemorrhage at once by tamponing with fresh animal blood or serum. The thrombokinase can be obtained at any time by simply soaking in water chopped and ground fresh rabbit liver or liver from any other animal. After filtering through an ordinary cloth, the turbid suspension thus obtained provides a rational hemostyptic which does not soon lose its efficacy like the ready-made fibrin ferment, but in contact with the blood constantly sets free new amounts of the ferment which is thus applied nascent and displays most efficient action. The extract must be made fresh each time.

83. Quinin Treatment of Pemphigus.—Bergrath states that quinin has proved extremely effectual in four old and previously rebellious cases of pemphigus at Neisser's clinic at Breslau. He gave 1.5 gm. fractioned (22.5 grains) of the quinin and then reduced the dose for a few days.

Therapie der Gegenwart, Berlin

January, LI, No. 1, pp. 1-48

- 86 *Treatment of Gastroptosis. C. v. Noorden.
- 87 *Treatment of Diabetes Insipidus. O. Minkowski.
- 88 Importance of Excretion of Acetone Bodies in Diabetes and Value of Oatmeal Courses. (Zur Bewertung der Azetonkörperausscheidung beim Diabetiker sowie über den Wert von Haferkuren.) H. Lüthje.
- 89 *Treatment of Scarlet Fever. (Behandlung des Scharlachs.) A. Baginsky.
- 90 Advantages of Nail Extension in Treatment of Fractures. (Die Leistungsfähigkeit der Nagelexension in der Frakturbehandlung und Knochenchirurgie.) W. Anschütz.

86. Treatment of Gastropnoia.—It has been v. Noorden's experience that the sagging of the stomach is the result not only of loss of elasticity in the stomach walls but also of lack of support from fat in the abdominal walls. The gastropnoia seems to be more common in the very thin, and in treatment the greatest reliance should be placed on fattening and strengthening the patient. As he takes on fat and as the fibers in general gain tone, the stomach walls share in this benefit and the organ gradually draws up into its normal place. He gives some illustrations showing the difference in the position of the stomach before and after a systematic course of forced feeding, the Roentgen rays revealing that the lower margin of the stomach is from 3 to 8 cm. higher than before as the patients have gained from 8 to 15 pounds in weight. It is important to avoid overloading the stomach, and consequently small frequent meals are preferable, and he advises against the simultaneous ingestion of solid and fluid food. After the principal meals he has the patient recline with the body slightly turned toward the right. Strychnin, physostigmin and pilocarpin have proved useful in promoting tonicity. The subjective disturbances subside as the neurotic conditions improve. A supporting bandage is seldom of any use as it could not be tolerated if applied tight enough to be of actual service; as the patients gain in weight and strength the gastropnoia subsides spontaneously.

87. Treatment of Diabetes Insipidus.—Minkowski advises examination of the specific gravity and chlorid content of the urine after ingestion of a considerable amount of salt, the intake of water being the same as before. If the specific gravity and chlorid content increase, showing that the power of concentration is still retained, then restriction of the intake of water may prove a useful therapeutic measure. On the other hand, if the dose of salt is seen to influence more the amount of urine than the chlorid content, then the patient should be put on a diet poor both in salt and nitrogen. This generally affords great relief under these conditions. This strict dieting should not be kept up for long at a time but repeated at intervals. If no benefit is apparent from withdrawal of salt, there is little hope of benefit from any other measure. The trouble then is generally the result of syphilis or some organic lesion of the nervous system. Anti-syphilitic treatment may prove effectual even then.

89. Treatment of Scarlet Fever.—Baginsky declares that scarlet fever should always be regarded as a serious disease, no matter how mild apparently its manifestations. He insists that the patient should be kept in bed for four weeks, with an absolutely non-irritating light diet, as free from salt as possible. Even more harmful than salt, he regards the extractives of meat, and, worst of all, both combined. Consequently the diet should exclude soups, meat of all kinds and bonillon, and consist principally of milk. He has always succeeded in conquering even a distaste for milk, and brought the patient to a ration of 2 or 3 liters of milk a day, gradually supplementing it with cocoa, vegetables and zwieback. In the fourth week the patient may be allowed to get up occasionally if the urine is still free from morbid elements, but should be kept under supervision for six weeks and at the slightest change in the general health should be compelled to go to bed. This is the only means, he asserts, of warding off nephritis, anuria and uremia so liable with scarlet fever. He has never encountered them except when the above rules were not followed. He has witnessed severe injury in certain cases from serum treatment as also from general inunctions with silver salt ointment. The fever at first in scarlet fever is like that of most acute infectious diseases and requires the same measures, but later it is the expression of complications and varies with them. He does not approve of much bathing and urges the greatest caution against catching cold. During the febrile state a cool room is permissible but only with great caution after the fever subsides. In measles a warm environment is necessary throughout.

Wiener klinische Wochenschrift, Vienna

January 6, XXIII, No. 1, pp. 1-24

- 91 Laws Regulating Biologic Phenomena. (Funktionsbegriff, Energetik und Biotik.) K. Helly.
92 Bile Acids as Purgatives. (Gallensäuren als Abführmittel.) K. Glaessner.

- 93 Nature of Wassermann Reaction. (Zum Wesen der Wassermannschen Reaktion.) R. Bauer and A. Hirsch.
94 Withdrawal of Sugar in Digestive Disturbances in Infants. (Einfluss der Zuckerentziehung auf die Darmreizsymptome bei den Ernährungsstörungen der Säuglinge.) A. v. Reuss and B. Sperk.
95 *Etiology of Phlyctenular Eye Lesions. (Zur Klärung der Aetiologie der phlyktänulären Augenerkrankungen auf Grund von 102 neueren Beobachtungen.) A. Schütz and R. Videky.

95. Origin of Phlyctenular Eye Lesions.—Schütz classes the cases of phlyctenular affections of the eyes as due to the exudative diathesis or to tuberculosis. In the former case strict dieting will cure as he shows by a number of examples from his practice. The tuberculous form yields to general antituberculosis measures. The beneficial influence of restriction of eggs and milk, he declares, sustains the assumption of the alimentary origin. The diet must be regulated with particular care during convalescence as it has a great influence on exacerbation of old lesions and development of new. His experience includes now 200 cases of phlyctenules during the last two years, and confirms this separation of the affection into the kind induced by tubercle bacilli and that of exudative origin.

Zentralblatt für Chirurgie, Leipzig

January 1, XXVII, No. 1, pp. 1-40

- 96 *Catgut or Unabsorbable Suture Material? (Catgut oder unresorbierbares Fadenmaterial?) M. Madlener.
97 *Operative Treatment of Epilepsy. E. Bircher.
January 8, No. 2, pp. 41-72
98 Peculiar Typical Fracture of Skull. (Ein eigenartige typische Schädelfraktur.) E. Bircher.
99 *Infusion Treatment of Postoperative Epileptiform Seizures. (Zur Behandlung der Krampfanfälle nach orthopädischen Operationen.) A. Schanz.

96. Catgut or Unabsorbable Suture Material?—Madlener remarks that the efforts to produce aseptic catgut are going to make it still more expensive, while he is convinced that equally good results can be obtained in surgical work with the use of unabsorbable material. An important point is to have it fine—all suture material under a certain diameter heals readily in place while the thicker varieties are liable to make trouble. For more than two years he has been using ramie almost exclusively, the suture material made from the fibers of an Indian plant. In 757 operations in which it was used alone it proved satisfactory, healing following by primary intention in all but 2 of the 122 Bassini operations, for example.

97. Operative Treatment of Epilepsy.—Bircher has applied massage directly to the brain in several cases of epilepsy and asserts that he obtained good results. One patient succumbed to heart disease two months later. This patient was a young man whose epileptic seizures had commenced four years before and had grown constantly more severe, sometimes being accompanied by unconsciousness for days. It was impossible to determine positively whether the seizures were of the true or Jacksonian type of epilepsy. The dura was opened with an X incision, the flaps turned back, and then the exposed surface of the cortex was cautiously massaged with the thumb for from three to five minutes. The dura was then left open to serve as a valve. The effect, he states, is not adequate or permanent if the massaging is done through the dura, without attempting to open it. At autopsy no adhesions were found but the massaged region could be readily distinguished from the rest of the brain; the patch was whiter and brighter and the region had sunk in a trifle. The gray matter had become distinctly atrophied in consequence of the massage. The massage, Bircher declares, evidently answers the same purpose as excision of the cortical area involved, only that the results develop more slowly and gradually and there is no tendency to paralysis such as may be observed after excision. The illustrations show how the gray matter of the massaged area had grown thinner. From the average of 8 or 10 mm. elsewhere it had decreased in thickness to 2 or 3 mm., and at one point seemed to have vanished entirely.

99. Prevention and Treatment of Convulsions After Orthopedic Operations.—Schanz has encountered ten cases in which signs of fat embolism became apparent after an orthopedic operation on the bones; the vessels in the brain evidently

became elagged by the fat from the bone marrow, and convulsions followed. In the first case the child succumbed, and in the second there was hemiplegia for some weeks. The other patients all recovered and he ascribes this favorable outcome to his routine method of saline infusion; the salt solution is injected at several points in order to accomplish most promptly and effectually the desired dilatation and flushing out of the capillaries involved. The effect is most marked the earlier and the more abundant the infusion. He injects up to a liter subcutaneously at the first sign of trouble, and in case of very severe symptoms would make the infusion directly into a vein.

Zentralblatt für Gynäkologie, Leipsic

January 1, XXXIV, No. 1, pp. 1-32

- 100 *Prophylaxis of Embolism after Gynecologic Operations. J. Veit.
101 Negative Levulose Test and Seroreaction in Eclampsia. (Zwei Mitteilungen zum Eklampsietheema.) P. Aisberg.
102 *Operative Treatment of Prolapse of Anus and Rectum. (Neue Operation des Prolapsus ani et recti.) L. Seeligmann.
103 *Formation of Vagina from Loop of Small Intestine. (Scheidenbildung unter Benutzung einer verlagerten Dünndarmschlinge.) M. Mori.
January 8, No. 2, pp. 33-64
104 Retronterine Fixation of Round Ligament. M. Hirsch.
105 *Decapsulation of Kidney in Eclampsia. (Nierendekapsulation zur Behandlung der Eklampsie.) Lichtenstein.
106 Special Reaction of Blood Serum in Puerperium. A. Falco.
107 Reduction of Operative Loss of Blood. (Zur Blutsparung.) A. Bauer.

100. **Prophylaxis of Embolism After Gynecologic Operations.**—Veit has been studying the 25 cases of fatal pulmonary embolism that have occurred in his service at Halle in the last eight years, and he has found one common factor in all, namely, that organs containing infectious germs were opened in the course of the operation. Further study of the technic has convinced him that some of these germs must have found their way into gaping veins and that the latter were responsible for the development of thrombosis and subsequent embolism. He describes in detail the 8 cases of fatal embolism following abdominal hysterectomy. He lost one patient from pulmonary embolism who was allowed to leave the bed early as a prophylactic measure; this shows, he says, that getting up early is not an absolute preventive of thrombosis and embolism. From empirical observation, therefore, he feels it incumbent on him to throw a ligature around the veins liable to bleed later or already bleeding, and this must be done before the infectious focus is opened, and before the operator's hand has come in contact with probably infectious germs.

102. **Prolapse of Rectum.**—Seeligmann's patient was a woman of 70 with prolapsed uterus and extreme prolapse of the vagina, and, especially, of the rectum, the latter bleeding and eczematous. He corrected the genital prolapse with a Lawson-Tait operation, during which he passed the needle through the anterior wall of the rectum, below the mucosa, thus tending to sustain this wall better. He then made a circular incision around outside of the anus and drew the rectum out through this incision. After taking a few buried sutures in the outer layers of the wall of the rectal ampulla, to bring it back to normal size, he reduced the bowel and held it in place with a few buried sutures. The fibers of the sphincter ani and levator ani were then sutured across together, and the periphery of the rectum sutured to the incision in the skin at the anus. The patient was completely relieved, he states, and conditions have been practically normal during the ten months since.

103. **Formation of Vagina out of Loop of Small Intestine.**—Mori relates the satisfactory outcome to date in the case he reported a year ago. The operation was done March 25, 1908. Another similar case was reported in these columns Jan. 29, 1910, page 419.

105. **Decapsulation of Kidneys in Eclampsia.**—Lichtenstein reports four cases in detail, all but the last ending with statement: "discharged cured the fifteenth day." This fourth patient was prematurely delivered with the inflatable bag on account of severe nephritis and convulsions developed sixteen days later. She succumbed on the second day and autopsy revealed total fatty degeneration of both kidneys. In the other cases induction of delivery did not seem to

have any influence on the eclampsia but the results of decapsulation surpassed all anticipations, especially in respect to the diuresis, both quantitatively and qualitatively. He is convinced that decapsulation is destined to save at least a third of the eclamptic women who now perish without it. The kidneys were found under considerable but not extreme tension.

Zentralblatt für innere Medizin, Leipsic

January 1, XXXI, No. 1, pp. 1-32

- 108 *Non-Agglutination of Typhoid Bacilli by Tuberculous Serum. (Zur Frage der Agglutination von Typhusbazillen durch das Serum Tuberkulöser.) O. Roth.

108. **Non-Agglutination of Typhoid Bacilli by Serum of the Tuberculous.**—Roth obtained positive findings only in 5 out of 100 patients at Zurich and this included only 1 agglutinating over 1 to 50. The larger proportion of positive findings in the experiences related by others is due, he thinks, to the fact that the tuberculous patients must have been typhoid bacillus carriers or have passed through typhoid at some time in the past. This is especially likely as the other investigators reside in districts where typhoid is prevalent.

Gazzetta degli Ospedali e delle Cliniche, Milan

January 2, XXXI, No. 1, pp. 1-16

- 109 *Treatment of Tuberculous Peritonitis by Injection of Air. A. Florio.

Policlinico, Rome

December, XVI, Surgical Section, No. 12, pp. 509-552

- 110 *Treatment of Cancer. (Sulla cura del cancro.) F. Durante.
111 Changes in Shape of Leucocytes during Suppuration. (Contributo sperimentale allo studio delle alterazioni leucocitarie descritte da Cesaris-Demel.) G. Razzaboni.
112 *Removal of Tumors from Posterior Part of Orbit with Retention of Eyeball. (Un processo operativo per lo svuotamento dell'infundibolo orbitario con conservazione del globo.) S. Calderaro.
113 Inflammatory Tumors in the Cecum. (Cosiddetti tumori infiammatori del cieco.) L. Fioravanti.
114 Erysipeloid. G. Pieri. Commenced in No. 10.
January 2, XVII, No. 1, pp. 1-36
115 Coley's Fluid in Treatment of Inoperable Sarcoma. (La cura dei sarcomi inoperabili con tossine batteriche miste secondo William B. Coley.) C. Brunetti.
116 *Epidemic of Jaundice. (Epidemia d'itterizia.) F. Mancini.
January 9, No. 2, pp. 37-66
117 The Nervous Disturbances in Mediterranean Fever. (I disturbi nervosi nella febbre di Malta.) P. Timpano.

109. **Treatment of Tuberculous Peritonitis by Injection of Air.**—Florio has found the benefit of injection of air so pronounced in three cases that he urges others to give these patients the advantage of this simple measure. He injects about as much air as he has withdrawn of the ascitic fluid, about 4 quarts in the first case. The air was all absorbed by the twenty-third day and there has been no trace of further effusion during the three years since, the patient continuing his work on a farm. In the second case nearly the same amount was withdrawn and air injected, all of which was absorbed by the thirteenth day, and the patient, a woman of 31, has been in good health during the two years since. In the third case the air was not injected until the patient, a ii-para of 28, had been tapped twice, the ascites soon recurring, but after injection of 1.5 quarts of air there was no return of the ascites later. The air was absorbed in six days. The patient was seen again recently in the best of health, after an interval of two years. In all these cases medical measures of various kinds before had failed entirely to benefit. Injection of air, he thinks, seems to answer practically the same purpose as a curative laparotomy in this disease, while free from the dangers of a major operation.

110. **Treatment of Cancer.**—Durante remarks in the course of this general review that he has witnessed the cure of inoperable malignant growth in two cases by an intercurrent erysipelas. In one case the sarcoma involved dorsal vertebra and the scapula. The erysipelas attacked the ulcerating focus, resulting in gangrenous degeneration of the entire neoplasm which was cast off, leaving a vast defect of substance which healed over with a healthy scar and the patient has been in good health during the ten years since. In the second case, the epithelioma sloughed likewise under erysipelas infection and the lesion healed but the patient succumbed a year

later to metastasis. Durante's experience, however, with Coley's fluid has been disappointing and he has now abandoned it, as also the Sanfelice serotherapy. He cannot accept the theory that true cancer is of parasitic origin, but he is certain that many tumors classed as malignant are the work of parasites and that these are the ones which benefit by certain medical measures. In one such case he witnessed the complete subsidence of a large tumor on the head of the humerus which he had assumed to be a sarcoma, after five minutes' exposure to the x-rays. In another case he removed a large tumor in the masseter region, histologically verified as a sarcoma, which then recurred in an inoperable form but was radically cured by a course of mercurial treatment. On the whole, he concludes, not much progress has been realized in the treatment of cancer; now as in the days of the surgeons to the Cæsars excision into sound tissue is still the only means of cure.

112. Removal of Tumors from the Orbit with Retention of the Eyeball.—Calderaro has applied the technic he describes in three clinical cases for removal of tumors in the rear of the orbit without disturbing the eyeball. The results were satisfactory in each case, the retention of the eyeball preventing disfigurement. He makes a curving incision from the center of the brow down nearly to the middle of the cheek, keeping about 1 inch from the outer margin of the orbit, cutting down to the periosteum and turning back over the nose the large flap thus formed. The operation is simple, permits ample access and does not interfere with the symmetrical growth of the orbit later in the young.

116. Epidemic of Jaundice.—Mancini's patients presented intense jaundice, with scanty, turbid urine, fever and albuminuria, oppression in the epigastrium, headache and general depression, the syndrome developing insidiously and subsiding completely by the end of the twentieth or fortieth day except in 3 parturients. In one the jaundice seemed to be running a mild course for the first 10 days, but then grew more intense and under the measures to reopen the passage of the bile into the intestines the patient sank into profound coma for three days, rousing on the fourth and the jaundice subsiding, but the fever remained high and the disease assumed more of a typhoid course with final complete recovery. The second parturient was delivered in the course of the manifest catarrhal jaundice, at the seventh month of pregnancy, but died in coma two days later. Another parturient, five days after apparently normal childbirth, was seized with jaundice and died on the fifteenth day. A third parturient at term presented signs of jaundice but recovered notwithstanding severe atonic uterine hemorrhage. Mancini ascribes the peculiarly malignant character of the epidemic disease in the parturients to the changes in the kidneys and liver resulting from the pregnancy; this interferes with the elimination of the bile pigments by the natural routes.

Ugeskrift for Læger, Copenhagen

December 23, LXXI, No. 51, pp. 1401-1436

118 Trauma and Organic Brain Lesions. (Trauma og organisk Hjernelidelse.) A. Wimmer. Commenced in No. 50.

119. Trauma and Organic Brain Disease.—Wimmer discusses in particular post-traumatic degeneration of the brain, especially traumatic dementia, and the connection between trauma and progressive paralysis. He presents a number of examples of each type, including several with court decrees in respect to the industrial accident indemnity allowed. Although he is convinced that syphilis is an indispensable factor in the development of general paresis, yet the trauma may be responsible for rousing a hitherto latent progressive paralysis to active manifestations, and in this view the legal authorities seem to concur, allowing full or partial indemnity in the cases cited. Traumatic mental disturbances may resemble what is observed with arteriosclerosis, in many points; the principal symptom is the apathy, the increasing lack of interest in the environment and awkwardness in the work to which the patient was previously accustomed. He may have to be waited on like a little child, but this tendency to imbecility after reaching a certain point stops there, and does not continue a progressive course. Weakness of the memory is the most striking feature of traumatic degenera-

tion of the brain; the patient forgets orders and is liable to do the opposite, forgets names and addresses, etc. Depression and emotional torpor are the rule but occasionally there is a tendency to the reverse, extreme emotionalism or moral depravity and almost always extreme intolerance of alcohol, unusually small amounts of liquor making the patients temporarily violent.

Books Received

All books received are acknowledged in this column and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender. A selection will be made for review in the interests of our readers and as space permits.

DIAGNOSTIC THERAPEUTICS. A Guide for Practitioners in Diagnosis by Aid of Drugs and Methods other than Drug-Giving. By Albert Abrams, A.M., M.D., Consulting Physician to the Mount Zion Hospital and the French Hospital. Cloth. Pp. 1039, with 99 illustrations. Price, \$5. New York: Rebman Company [1910].

MEDICAL DIAGNOSIS. A Manual for Students and Practitioners. By Charles Lyman Greene, M.D., Professor of Medicine and Chief of the Department in the College of Medicine, University of Minnesota. Flexible leather. Pp. 725, with illustrations. Third Edition. Price, \$3.50 net. Philadelphia: P. Blakiston's Son & Co., 1910.

ARTHRITIS DEFORMANS: COMPRISING RHEUMATOID ARTHRITIS, OSTEO-ARTHRITIS, AND SPONDYLITIS DEFORMANS. By R. Llewellyn Jones, M.B., Fellow and Member of Council of British Balneological and Climatological Society. Cloth. Pp. 353, with 38 illustrations. Price, \$4 net. New York: William Wood & Co., 1909.

THE MORPHIA HABIT AND ITS VOLUNTARY RENUNCIATION. (A Personal Relation of a Suppression After Twenty-five Addictions.) With Notes and Additional Cases. By Oscar Jennings, M.D. (Paris), Fellow of the Royal Society of Medicine. Cloth. Pp. 492. Price, \$2 net. New York: William Wood & Co., 1909.

CONSTIPATION AND ALLIED INTESTINAL DISORDERS. By Arthur F. Hertz, M. A., Assistant Physician, Physician in Charge of the Electrical Department and Demonstrator of Morbid Anatomy at Guy's Hospital. Cloth. Pp. 344, with 34 illustrations. Price, \$4. London: Oxford University Press, 1909.

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Original Articles

SYMPTOMATOLOGY AND LOCALIZATION OF BRAIN TUMOR*

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PHILADELPHIA

The most important indication of brain tumor is a gradual development of signs pointing to a sharply limited lesion of the brain; this may occur when the general symptoms of tumor, headache, nausea, vomiting and papilledema, are absent. It may, of course, be produced by other lesions, but in none is it so common as in tumor.

It is desirable to call attention in this connection to a symptom-complex that I have treated more at length in a paper read at the last meeting of the American Medical Association, namely, gradually developing hemiplegia. The importance of this complex is frequently overlooked. Since the presentation of the paper referred to I have had the opportunity of observing in consultation another case in which the only important signs of brain tumor had been a hemiplegia of uncertain beginning with hemianesthesia, in which, without any sudden increase of symptoms, the weakness had imperceptibly from day to day increased to a complete unilateral paralysis. Hemianopsia probably existed on the side of the hemiplegia. The diagnosis of hemorrhage or thrombosis had been entertained, and, as the patient lived in the country, an ophthalmoscopic examination had not been made. The very positive statement as to the slowness in the development of the hemiplegia led me to suspect brain tumor and, as the patient was a woman, to examine the breasts. A hard nodule with a retracted nipple was found, and further investigation elicited the information that the patient had had headache for some time, and other members of her family had had carcinoma. A necropsy was refused, and yet I do not feel venturesome in making a diagnosis of metastatic carcinoma of the brain. In this case is shown the importance of focal symptoms without the general symptoms of tumor. It is not a bad idea to examine the breasts of a female patient who has symptoms of cerebral or spinal tumor.

We hear from the surgeons chiefly, but it is a truth that others also should emphasize, that operation in cases of brain tumor must not be delayed long—that to be successful it must be done early. There are two sides

to this question, as to many others, and the neurologist more than the surgeon sees the early clinical aspect. A patient does not usually consult a surgeon for some cerebral lesion until he has been at least partially convinced that operation may be advisable. He may not have acknowledged this to himself, but his attitude toward operation is a receptive one. The neurologist more frequently sees the first indications of what may be brain tumor, and yet with his experience he often is unable to make a positive or even a probable diagnosis of tumor in an early stage of the disease. He must not be hasty or he will have many a head opened when there is no need.

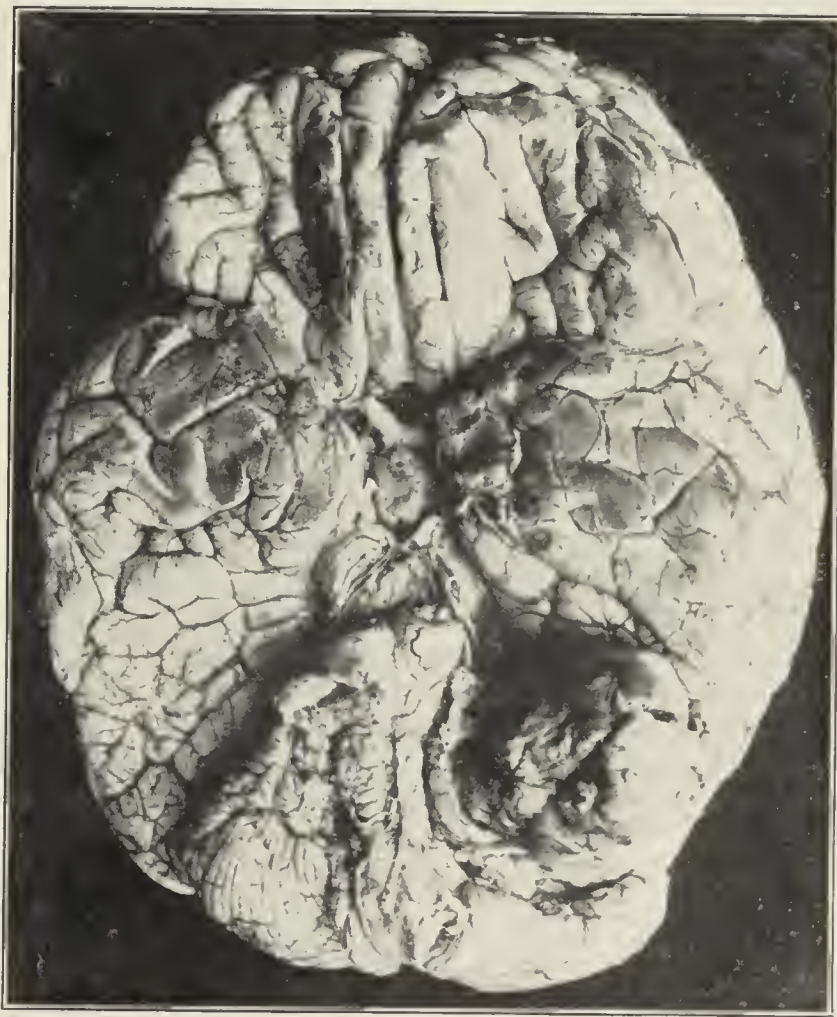


Fig. 1.—Tumor which developed just below the tentorium and caused vertigo, ataxic gait, disturbance of speech, deafness, nystagmus, paralysis of the left external rectus muscle, some facial palsy, etc.

His responsibility is great. A necessity for moderate delay for observation and antisyphilitic treatment is not to be ignored, but the delay must not be too long or antisyphilitic treatment pushed too far. It must also be borne in mind that in glioma the symptoms may be decidedly lessened by the administration of an iodid, as in a recent case under my observation. The Wassermann reaction has become an important aid to diagnosis, but we must not forget that a syphilitic person may have a non-syphilitic tumor.

* Read by invitation before the Chicago Medical Society, Oct. 27, 1909.

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Especially serious is the delaying of decompression when papilledema is developing rapidly, as it may in tumor of the pons or cerebellum. I have known it to reach a high degree within a few days. As tumors of the pons often exist for a long time without causing papilledema, and then suddenly may give rise to a rapid swelling of the optic discs, the danger of being caught off one's guard is by no means imaginary.

As an illustration of the difficulties in deciding from the early symptoms as to the existence of a tumor a recent case under my observation may be briefly referred to.

A man of much intelligence with a syphilitic history had a convulsive attack confined to the left side of his body about a year ago. This was the only attack he had had. Headache and vertigo had occurred, but had not

pression. I much prefer the antisyphilitic treatment before the skull is opened. Of course, the delay must not be too great, but the wise physician must learn by experience how long he dare wait. Decompression is a trauma of the head, and when mental failure has begun it may be intensified by this operation, as has occurred in my own practice, and in some instances decompression does not benefit the patient.

The interpretation of symptoms of brain tumor is not always easy. General symptoms may be mistaken for focal symptoms, and this is especially liable to occur if the supposedly focal symptoms appear late. The early appearance of focal symptoms has much greater diagnostic value than the appearance of the same symptoms after intracranial pressure has been increased for some time. No one makes a focal diagnosis from papilledema;

at most he employs it only as indicating the side of the brain affected, but nerve deafness occurring with other signs of tumor has been regarded by almost all as of focalizing value. If it develop late in the symptom-complex there is a possibility that it may be merely a sign of intracranial pressure, and comparable with papilledema. Some evidence is at hand to indicate that possibly early appearing nerve deafness may be from general intracranial pressure, as in a case reported recently by Ruekert, in which tinnitus aurium and nerve deafness were among the first signs of tumor of the frontal lobes. Internal hydrocephalus may be used to explain certain cases of this character, or pressure driving the posterior part of the brain into the foramen magnum, but such lesions are not early even if the symptoms so produced appear to be early, and neither condition mentioned was present in Ruekert's case. A similar case has been reported by Souques, and explained as the result of general intracranial pressure. It is well perhaps to be a little cautious in regarding nerve deafness as one of the general symptoms of intracranial pressure; it is far more frequently a focal symptom, and not entirely parallel with papilledema.

Other cranial nerves may be affected by general intracranial pressure, but the signs of such involvement are usually late in appearing in the symptom-complex. I have known loss of smell to occur from a tumor at the foramen magnum, and paralysis of an external rectus muscle from a tumor of the parietal lobe. The abducens nerve has the

longest intracranial course of any of the cranial nerves, arising, as it does, at the union of the pons and medulla oblongata and leaving the skull through the sphenoidal fissure; and one should be cautious in accepting its paralysis as a localizing sign, unless when it occurs early.

Every experienced neurologist has met apparent contradictions between focal lesions and symptoms. Certain areas of the brain have been generally recognized as having to do with certain functions, and yet these areas have been destroyed without a corresponding loss of function. Various explanations have been sought. The statement has been made that a portion of the area must have been left intact, or the corresponding area in the opposite hemisphere must have assumed a vicarious function. These explanations have not satisfied all investigators; von Monakow has put forward his diasehisis theory,

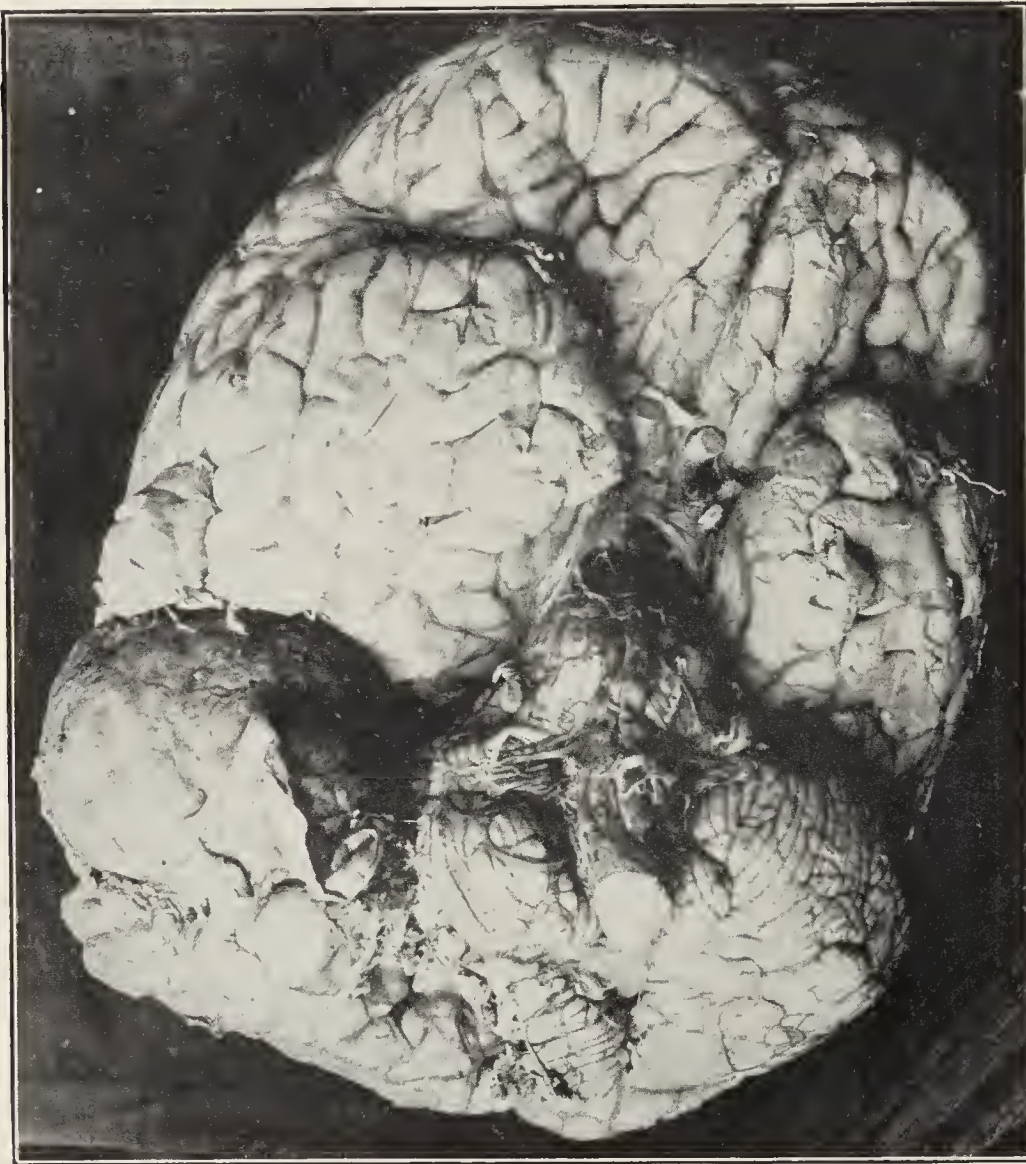


Fig. 2.—Tumor much larger than that shown in Figure 1, but growing above the tentorium. The only important signs were large head, nystagmus, papilledema, and diminished patellar reflexes.

been important. No changes in the eyegrounds were found. A short time ago left hemiplegia developed gradually within a period of four days, and then gradually diminished and disappeared in a few weeks. These were the only symptoms, and yet they were suggestive of a focal lesion in the right motor region. Operation did not seem to me advisable at this early period, as the case was probably one of vascular disease. I was, however, prepared for the possibility of an operation later.

I am not in sympathy with the teaching that when there is any doubt as regards the existence of a brain tumor decompression should be performed and later the antisyphilitic treatment should be carried out. In my opinion, decompression is indicated in cases in which grave symptoms of increased intracranial pressure exist, and if the symptoms do not call for immediate decom-

and insists that we must not identify localization of function with localization of symptoms. Localization of focal symptoms is a complicated reaction of the injured nervous system to the local cortical insult; whereas the localization of function depends on the action of all the elements of the function concerned in the entire central nervous system. When an area of the brain is destroyed, many tracts in connection with this area, commissural, associative, projectile, are injured or destroyed, and the effect is demonstrated by the disturbed action of distant parts of the central nervous system. The loss of tendon reflexes of the lower limbs in hemiplegia, for example, is the effect of diaschisis, as shown by disturbed function in the lumbar portion of the cord from a lesion of the cerebrum. As the various tracts differ to some extent in different individuals, the symptoms of a lesion, i. e., the reaction of the nervous tissue not directly affected in the lesion, varies from case to case, both in intensity and duration. We probably have in diaschisis one of the most satisfactory explanations for the apparent contradictions between symptoms and lesions that we frequently observe, and by it possibly we may explain astereognosis and other sensory disturbances following operations confined to the area of the brain anterior to the central fissure. In such operations, however, we must not discount the effect of exposure of a considerable area of the brain, of the results of handling the brain during operation, and especially the interference with the circulation of adjoining regions caused by the removal of a tumor or merely the ligation of vessels. The importance of the last procedure in causing symptoms has been demonstrated by the ligation of cortical vessels in the treatment of epilepsy.

In this connection I would refer to the recent valuable Linaere lecture by Sir Victor Horsley on the function of the so-called motor area of the brain. He describes a case in which, because of the athetoid movements of the left hand and later violent convulsive movements of the whole left upper limb, he removed the entire motor region for the upper limb in the gyrus precentralis, as determined by the response to electric stimulation. The whole depth of this gyrus was excised without any injury to the neighboring gyri or even to the vessels of the sulci, beyond the laceration of the smallest branches entering the portion of gyrus removed. Although not germane to the question under discussion here, it may be mentioned that the spasmodic movements totally disappeared from the moment that the gyrus was removed, and have remained absent to the time of publication of the paper (thirteen months), and a month after the operation voluntary movements began to return and are increasing in efficiency.

The result of this operation led Horsley¹ to conclude that in man the gyrus precentralis is the seat of representation of tactility, topognosis, muscular sense, arthric sense, stereognosis, pain and movements.

We may, perhaps, ask whether this case proves all that is claimed for it. Granting that the motor area of the gyrus precentralis was accurately defined, and that it is possible to do so by electricity, concerning which I have some doubt, as electrical response may not be identical with voluntary motion: still we must all admit that after the excision of so large a piece of cortex, measuring approximately 4.5 cm. in length—if I read the somewhat indistinct photograph of the scale correctly—the disturbance to connecting tracts must be considerable, and the results of diaschisis so produced might well persist

thirteen months. Therefore it seems questionable whether one may make so decisive arguments from this case for the sensory area of the gyrus precentralis. I have never been able to convince myself, however, that the gyrus precentralis is entirely motor and the gyrus postcentralis entirely sensory. From *a priori* reasoning this conclusion seems improbable. The regions of the brain are not separated so sharply from one another as to form a map with outlines as definite as those of the United States, and we all admit that the motor cortical centers are not sharply defined from one another. It seems decidedly schematic to say that the central fissure is a line of sharp definition—indeed, the bottom of the fissure is supposed to be the line of definition—that in front of it is the entire motor area, and behind it the entire sensory area. The same objections to these conclusions in this extremely valuable paper of Horsley's may be made to some of those in Hoppe's recent impor-



Fig. 3.—A larger view of the same tumor shown in Figure 2.

tant paper² on the location of stereognosis in the gyrus precentralis.

Possibly more valuable in determining the representation of sensation in the precentral region is the experience of Cushing,³ who in a person not under the effect of an anesthetic obtained the sense of muscular movement from the gyrus precentralis by electrical irritation. He states that his patient was perfectly aware of the movements, and described his appreciation of them as a drawing sensation, as when the muscles are "pulled" by peripheral electrical stimulation. Was this, however, the stimulation from the muscular movement conveyed from the limb through sensory fibers to the parietal lobe?

Horsley's case seems to show what he claims for it regarding motion, namely, that motion is not represented solely in the gyrus precentralis, and to justify his conclusion that the gyrus postcentralis is in man part of the area for the upper limb in which the sensorimotor representation is of the same kind as that in the gyrus

1. Horsley: Brit. Med. Jour., July 17, 1909, p. 125.

2. Hoppe: Jour. Nerv. and Ment. Dis., September, 1909.

3. Cushing: Brain, 1909, xxxii, 48.

precentralis, but in it probably provision for sensorial coordination is greater, and that for efferent impulses less. It is to be remembered that he destroyed the whole motor area for the upper limb in the gyrus precentralis and yet much voluntary motion returned. Horsley states that such conclusions were made probable by the experiments of Grünbaum and Sherrington on the chimpanzee, in which animal these observers found that after the arm area in the so-called motor precentral gyrus was excised the purposive movements returned in a few weeks, and compensation was not effected by the opposite arm area in the contralateral hemisphere.



Fig. 4.—The larger of the two tumors here shown grew from the petrous portion of the right temporal bone and caused as first signs, twitching of the right side of the face and pain in the region of the ear. The smaller tumor was removed from the front part of the cerebrum, and was a glioma. Sudden death occurred five or six hours after the removal of the tumor.

Horsley shows by his case that the Betz cells are not necessary for motor function, and refers to the fact that Brodmann likewise demonstrated that they are not indispensable for purposive muscular actions; therefore conclusions based on the histology of the cortex in defining the motor region contain an element of uncertainty. The same is true of Campbell's conclusions as to the sensory area posterior to the Rolandic fissure as determined by the alteration in a sensory nervous disease as tabes, conclusions which have been shown to be erroneous by Gordon Holmes.⁴

In November, 1899, I reported⁵ that I had employed the degeneration of amyotrophic lateral sclerosis extending to the cortex as a means of determining the extent of the motor cortex in man. No one previously had used this method, and yet the degeneration of this disease is chiefly one of the motor system. The gyrus postcentralis was not intact in my case, but was considerably less degenerated than the gyrus precentralis. It is true that tracts other than motor are sometimes slightly degenerated in amyotrophic lateral sclerosis, but this degeneration probably is not early and may be secondary. I am not aware that anyone has observed pronounced degeneration detectable by the Marchi stain in the posterior columns in this disease.

Later Campbell employed this means without reference to my work, but was unable to find degeneration in the gyrus postcentralis. Rossi and Roussy⁶ still later found degeneration in the gyrus postcentralis by this method.

It is singular that a case very similar to Horsley's should be reported by P. L. Friedrich⁷ about the same

time that Horsley's paper appeared. The upper limb center in the gyrus precentralis was defined by electrical irritation and excised because of epilepsy. The return of motor power after five and a half weeks was very marked. Contrary to the findings in Horsley's case, sensation was not altered in any way. The operation produced a cure, at least until the time of the report, six months after the operation. Friedrich explains the return of power as the result of "compensation," and implies that it was from the opposite cerebral hemisphere, although this statement is not clearly made. Before this question of the method by which return of power occurs can be satisfactorily answered it will be necessary to have the results of excision of the centers for corresponding limbs in both cerebral hemispheres in man, and it is not likely that these will be obtained soon.

Few American or English surgeons or neurologists, so far as I know, have advocated cerebral puncture. As yet this procedure seems to be recommended chiefly by certain German physicians. It has the approval of Oppenheim, but is discountenanced by Krause, and has led to open letters between these two men. There are grave dangers in connection with it that have deterred many from adopting it, and it seems doubtful whether it will ever come into general use.

It is likewise doubtful whether the search for tumor cells in the cerebrospinal fluid by lumbar puncture will be of much service. It is true that Sicard and Gy⁸ obtained sarcoma cells in this way in sarcomatous meningitis, but a solitary tumor would be unlikely to produce sarcoma cells in the cerebrospinal fluid, and sarcomatous meningitis is extremely rare. Lumbar puncture also is serious in cases of suspected tumor of the brain and has repeatedly caused a fatal termination.

When multiple fibromas occur in superficial parts of the body associated with signs of tumor of the cerebello-pontile angle, they are regarded as indicating that the cerebral tumor is likewise a fibroma. In none of the cases of tumor of the cerebello-pontile angle that I have seen were fibromas of superficial parts found, and this

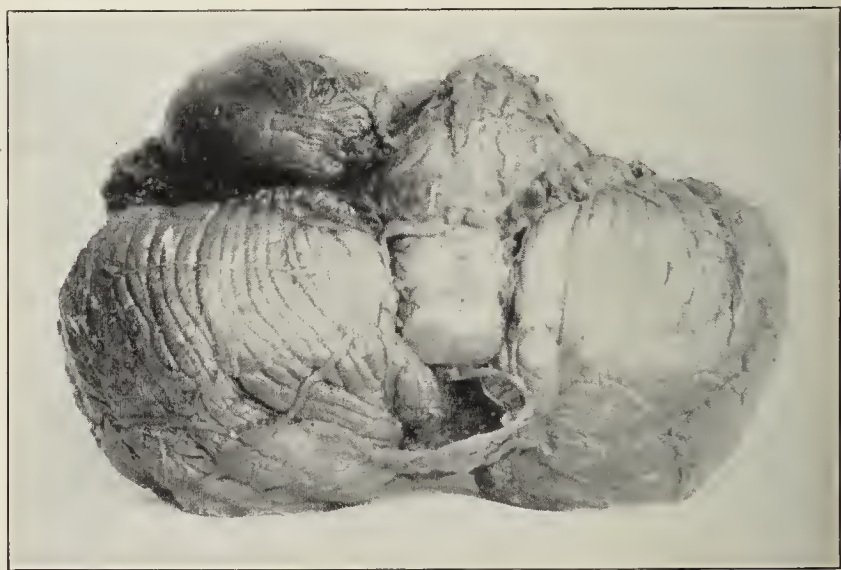


Fig. 5.—Thrombosis of the inferior petrosal and cavernous sinuses, causing symptoms like those of tumor, lasting about a year.

association of superficial and deep growths seems to be so rare as to be of comparatively little value in diagnosing a brain tumor, although occasionally it is of much importance, as in a case described to me recently by Dr. G. Bastianelli, of Rome, Italy.

4. Holmes, Gordon: *Rev. Neurol. and Psychiat.*, 1908, p. 5.
5. Spiller: *Jour. Nerv. and Ment. Dis.*, 1900, p. 165; *Contrib. from William Pepper Lab. Clin. Med.*, 1900.
6. Rossi and Roussy: *Rev. Neurol.*, Aug. 15, 1907.
7. Friedrich, P. L.: *Monatsschr. f. Psychiat. u. Neurol.*, 1909, xxvi, 129.

8. Sicard and Gy: *Rev. Neurol.*, Dec. 15, 1908, p. 1245.

The x-rays also have been unsatisfactory in my experience. I have never been convinced that the shadows shown and supposed to indicate brain tumors were reliable. When the bone of the skull is much thinned, as from increased intracranial pressure or when the sella turcica is enlarged, x-rays may be of service.

I have examined the specimens of brain tumor in my possession in the Laboratory of Neuropathology of the University of Pennsylvania, and have counted 72; probably some have been overlooked. By far the larger number of these (40) were in the cerebrum. The tumors in the pons (7), in the cerebello-pontile angle (8) and in the cerebellum (7) were nearly the same in number. Most of the tumors are gliomas or sarcomas, and the numbers of these two varieties differ according to the interpretation of the examiner. The diagnosis between glioma and sarcoma may be difficult, and the term gliosarcoma is an attempt to avoid the distinction.

The diagnosis of gliosarcoma usually implies a tumor that has resemblance to both glioma and sarcoma, and not usually a tumor partly a glioma and partly a sarcoma. Such a mixed tumor must be rare and difficult to recognize, but that it may occur is shown by the report of a recent case by Merzbacher.⁹ In this a tumor of the brain contained as a center a sarcoma with a periphery of glioma. The sarcoma was considered the primary tumor, and Merzbacher speaks of glioma following sarcoma or reactive glioma in preference to gliosarcoma.

Only two gliomas in my collection were fairly sharply defined, and one of these was infiltrating at one portion. I have had no sharply defined glioma with one exception, and I am a little in doubt in regard to this. Well-defined gliomas are reported by others. I have never had any finding that would lead me to believe that a glioma may entirely disappear and give place to a cyst.

Dr. F. B. Mallory regards sarcoma as a rare tumor of the brain, and some tumors sharply defined that would be classed by many as sarcomas he places among the gliomas. The fibromas or fibrosarcomas within the cranium he classes as endotheliomas.

I would call attention especially to the small number of macroscopic gummas (4) in my collection. We often hear the diagnosis of gumma made when cerebral syphilis is suspected, and yet the findings do not justify this diagnosis. I have for years taught students to be careful in making the clinical diagnosis of gumma of the brain. Cerebral syphilis is extremely common, but the usual lesions are arteritis and meningitis, and it is because of this that antisyphilitic treatment may be so valuable in the early stages of syphilis of the nervous system before degeneration has occurred. I do not believe that it is possible to dissolve by drugs a well-organized growth.

The tumors growing in the pons (7) in my specimens were: glioma 4, tubercle 3. Tumors of the cerebello-pontile angle are almost always fibromas or fibrosarcomas, although by some these growths are described as endotheliomas. They differ from the tumors I have regarded as endotheliomas, which develop from the dura. The cerebello-pontile angle tumors are well defined and easily removable, so far as their attachments are concerned, but they are situated in such a dangerous region that the attempt to remove them is almost always fatal, or, if not fatal, the condition of the patient usually is not improved by the operation, or is even rendered more pitiable. It seems, indeed, strange that the most favorable form of tumor (fibroma) as regards structure and

sharp definition should favor above all portions of the brain the cerebello-pontile angle, the most vital region.

Carcinoma rarely occurs; in my collection it is present in 3 cases; nor is tubercle very common. I have seldom found multiple tumors, and this infrequency is important as regards operation. Most tumors growing from the dura are fibromas, fibrosarcomas, or endotheliomas; occasionally gumma is found, and these are all favorable for operation. The gumma is more likely to be a superficial tumor, but is never sharply defined; when growing in the brain substance it is not very favorable for operation, but may be so when confined to the dura.

Sarcomatosis, or tumor meningitis resembling sarcoma or glioma tissue, I have seen four times. It seems to be little known in this country, and the clinical diagnosis because of the diffuseness of the symptoms, is extremely difficult. Where a sarcoma develops elsewhere in the body and is recognized, sarcomatosis of the nervous system also may be diagnosed, or it may be suspected where symptoms of brain tumor are associated with those indicating focal symptoms of the spinal cord.

Occasionally a condition of general clonic spasms occurs in tumor of the brain, resembling that of a patient in a state of acute alcoholism. It is not unlike the *epilepsia partialis continua*, to which I called attention in this country in June of this year,¹⁰ although it has been known to Russian writers many years. I have recently had an opportunity to observe this general clonic spasm in a man who had a large tumor extending almost to the cortex and occupying the motor area of the brain. If such a case were brought before the physician without any knowledge of the previous history, a diagnosis of alcoholism might be excusable.

The symptoms of tumor are seldom mistaken for the nephritis of pregnancy, but this is a possibility that must be considered. In one of my cases (No. 296) the early symptoms of tumor (an endothelioma) occurring during the late stage of pregnancy and persisting after delivery might have led to a diagnosis of nephritis of pregnancy. Papilledema, convulsions, nausea, vomiting, and headache might easily be explained by such a diagnosis. Unfortunately the report of the urinary examination has been lost, but an examination was certainly made. The loss of tendon reflexes of the lower limbs, paresis of the left facial nerve and of the left external rectus muscle which occurred in this case would suggest a focal lesion, but these symptoms were few and slight considering the large size and position of the tumor. The escape of the fifth nerve is noteworthy with a tumor situated as this was, near the cerebello-pontile angle, but above the tentorium. Cases of tumor without any focal symptoms are by no means rare, and one may readily understand the difficulty that might arise in diagnosing between nephritis of pregnancy and tumor.

As compared with the case just mentioned, another case of tumor (a fibroma, No. 338) was typical, and yet the two tumors were in nearly similar situations. In the latter the symptoms were vertigo, ataxic gait, occipital headache, thick and slow speech, failure of hearing on the left side, and failure of sight with optic neuritis, slow nystagmoid movements in attempts at rotation, paralysis of the left external rectus muscle, cessation of menstruation for almost six months, slight weakness of the left side of the face and of the left muscles of mastication, exaggeration of patellar reflexes, especially of the right with patellar clonus, and uncertain Babinski reflex on the right side. The diagnosis of a tumor of the left

9. Merzbacher: *Monatsschr. f. Psychiat. u. Neurol.*, August, 1909, p. 176.

10. Spiller: *THE JOURNAL A. M. A.*, June 12, 1909, III, 1921.

cerebello-pontile angle was as certain as such a clinical diagnosis ever can be.

Still more illustrative of the difference in the symptomatology of a tumor immediately above the tentorium and, therefore, in the middle cranial fossa, and of one immediately below is the following case (a fibrosarcoma, case No. 337), in which the tumor was exceedingly large and measured 8 cm. in diameter, and was round as a ball, and yet the symptoms were indistinct. The man was a patient of Dr. Mills' and was for a time under my care. His father was said to have a very large head, of about the same size as the patient's. The man was admitted to the hospital Feb. 20, 1906. About five months previously he had what was diagnosed as acute Bright's disease. Then he complained of his eyes becoming weak so that he could not see so well as formerly, but he states that for some years he was obliged to squint in order to get a good view of an object. He had no pain, no nausea, no vomiting (except vomiting during a short period), and no vertigo. His only serious symptom was impairment of vision. The report from Dr. de Schweinitz concerning the eyes was:

Vision, O.D. 6/100; O.S. 6/100. Horizontal nystagmus, ocular movements free. Convergence practically nil, O.S. deviating. O.S. shows blurring and striation of nasal side of disc with some dipping of vessels, beginning neuritis +3D., large crescent out but edges seen. The swelling in O.D. is very vascular. O.D. shows a decided choked disc, height 10-11 D.

His head was so large as to suggest hydrocephalus. In looking directly forward he had lateral nystagmus and also occasionally in looking to either side; it seemed to be more an ataxic movement of the eyeballs. Finger-to-nose test showed slight ataxia on each side. Circumference of the head measured 25 inches, and from one external auditory meatus to the other 14 inches. The patient wore a $7\frac{3}{4}$ hat. The patellar reflex was almost lost on each side. He did not have Romberg's sign. Gait with the eyes closed was a little ataxic, but he did not really stagger.

As the symptoms might be interpreted as those of tumor, although hydrocephalus was possible, he was referred to Dr. Frazier's service. Operation was performed February 21 over the occipital bone and a portion of the lateral lobe of the cerebellum was removed, but the patient's condition was so serious that the operation had to be hastily concluded. He died March 9.

The necropsy was performed by Dr. Lavenson. The brain without the tumor weighed 1,920 gm., with it 2,110 gm. The convolutions were considerably flattened. The tumor weighed 190 gm. and was found on the right side of the brain adherent to and apparently taking its origin from the tentorium cerebelli. It was entirely encapsulated and nowhere firmly adherent to the brain tissue. It had destroyed the anterior basal portion of the right occipital lobe and the greater portion of the basal part of the right temporal lobe. The tumor was firm, dense, and smooth. Two or three smaller nodules adherent to it were found at its attachment to the dura. A growth situated as this was at the base of the occipital lobe may not interfere with the optic radiations, which are situated higher, and therefore may not cause hemianopsia.

Vomiting was slight, and there was no headache and no vertigo. The only important signs were the large head, nystagmus, changes in the eyegrounds, and diminished patellar reflexes; truly very insufficient disturbance when the large tumor is taken into consideration. The case shows the extraordinary degree of pressure the

brain will occasionally endure, and yet in most cases such a growth would cause grave symptoms.

The early appearance of symptoms in basal tumor probably depends on the early involvement of one or more cranial nerves in the growth. If these nerves are merely distorted by the developing tumor, especially if the distortion be of slow development, the symptoms are much less intense.

Another case (an endothelioma, No. 494) I may refer to in which the tumor developed in the posterior fossa and, although small, gave very definite symptoms. At first it was not easy to exclude entirely a lesion in the petrous portion of the temporal bone, or a multiple neuritis of cranial nerves. The insidious onset that a tumor may have was well shown in this case. The twitching of the right side of the face with pain in the region of the ear was the earliest and for some weeks the only sign of tumor. The subjective disturbance of hearing preceded many weeks any objective deafness, and this is one more evidence that subjective disturbances are likely to precede objective. A patient's statement of his symptoms, provided he be intelligent, may be of great value to us in diagnosis when our examination reveals nothing. In the recent case reported by Horsley and referred to above, the statement is made that several days before the movement of the fingers and thumb returned the patient stated that he felt that the power was returning, and that he would shortly move the members.

In my case considerable complaint was made of numbness in the right side of the face, although no impairment of sensation could be detected by examination. I have seen a subjective sense of weakness in a limb precede by twenty-four hours any objective paresis.

The diagnosis of a lesion, probably tumor, near the exit of the seventh and eighth nerves was not difficult when the pain and twitching of the right side of the face were followed by complete right facial palsy, right nerve deafness, paresis of the right side of the soft palate, some ataxia in walking, and exaggerated left patellar reflex with left ankle clonus; but for a long time it was very difficult to decide whether the lesion was in the inner ear or within the cranium, and at first the possibility of multiple neuritis of the cranial nerves had to be considered, and also that of glioma of the pons and medulla oblongata, as glioma does not produce symptoms from all the structures it implicates. The diagnosis of location was fully confirmed by the two operations that became necessary.

Both Dr. Frazier and I were very loath to have a second operation in this case, as the patient nearly died after the first, but he and his relatives insisted on having it performed, and it did not seem right to refuse him the one chance for his life. The tumor at the second operation was removed by Dr. Frazier.

It is worthy of note that no evidence of papilledema was present in this case, although the growth was in the posterior cranial fossa and of fairly large size. When removed it measured 4 cm. in length. The pain began in the region of the right ear, and was one of the earliest symptoms, and sometimes the ear and adjoining part of the face were tender to touch. The pain was not in the forehead unless it radiated there from the ear. The possibility of this pain being caused by irritation of the seventh nerve must be considered. It was not in the distribution of the fifth nerve, and there were neither objective sensory nor motor signs of implication of this nerve. It followed twitching of the right side of the face and, therefore, like the twitching, seemed to be caused by irritation of the facial nerve.

The twitching of the facial muscles from irritation of the facial nerve, occurring in attacks and resembling cortical irritation, is a phenomenon not very well known. It was present in this case, and I have known it to occur in at least two cases in which I was associated with Dr. Mills, who has put these cases on record.¹¹ The first case occurred about 1900 and was reported by Dr. Mills and me at that time before one of the Philadelphia medical societies. The spasms were witnessed by both of us, and was so suggestive of cortical irritation that it was difficult at that time, without any similar occurrence reported in the literature, to attribute it to irritation of the facial nerve. It differed from the more common forms of facial spasm in that it occurred at rather long intervals and was more like an epileptic attack. Further reference has been made to these cases by Dr. Weisenburg.

It was desirable in the case to which allusion has been made above to determine whether the tumor implicated the seventh and eighth nerves at their exit from the cranium or at their exit from the pons where it joins the medulla oblongata. The symptoms did not permit a differential diagnosis as regards these two locations, and I doubt whether such a diagnosis would be possible.

Sudden fatal termination is common in tumors situated anywhere in the brain, but especially when the tumor is in the posterior cranial fossa. Operation was attempted by Dr. Frazier in one of the cases referred to in this paper (No. 296), in which after an opening about the size of a silver dollar had been made in the occipital region the patient suddenly became pulseless and respiration ceased. Her condition improved, but she died the same day.

The explanation may be that the tumor in this situation causes dislocation of the posterior part of the brain into the foramen magnum, but a more probable explanation seems to me to be that the cardiac and respiratory centers of the medulla oblongata are damaged by the pressure of the tumor and are less likely to withstand an operation.

In another case (Rosenfeld) in which the diagnosis was cerebellar tumor, decompression over the cerebellum was performed. The patient, a child 8 years old, rallied from the operation and slept well during the following night. The next morning with the temperature 98 degrees, pulse 84, and respiration 20, she suddenly began to gasp for breath and then ceased breathing, and soon the heart ceased to beat. This sudden death was observed also in a cerebellar case without operation (Lokuta), and in a case of cerebellar tumor (McClain), after decompression over the posterior cranial fossa. The patient, a boy aged 13, did well after the operation by Dr. Frazier for ten days, and had been in a wheel chair frequently. On the tenth day about midday he suddenly became very cyanotic, respirations became rapidly reduced until they practically ceased, and he sank into profound stupor. After prompt and prolonged artificial respiration, administration of oxygen and stimulation, the cyanosis disappeared and the patient recovered from the attack. Near midnight of the same day he had another attack of respiratory failure with cyanosis similar to the previous one and gradually sank and died within two hours.

Sudden death is not confined to cerebellar lesions, as shown by still another case (No. 495) in which death occurred very suddenly five or six hours after the remo-

val of a small tumor, a glioma, by Dr. Frazier from the front part of the cerebrum, when the patient had seemed to be in excellent condition for some hours after the operation until twenty minutes before death (Fig. 4). It would be easy to add other illustrative cases.

The causes of sudden death are numerous and not always detectable even at necropsy. Candler has shown¹² that hemorrhage into the suprarenal capsule may give rise to obscure abdominal symptoms or nervous manifestations difficult of diagnosis, and may even be a cause of death without any appreciable symptoms whatever, and there are many other ways in which death, even sudden death, may occur without the cause being clearly demonstrated. To one aspect of a case in which sudden death occurred (Lokuta) I would call especial attention. A Pole with symptoms of tumor of the posterior cranial fossa was evidently very much frightened when brought into the operation room, and went into collapse just before etherization was begun. The attack which preceded etherization seemed to be brought on by fear of the operation. It is the only instance in which I have known fear to have such serious results in brain tumor, and the occurrence seems to indicate that severe depressive emotion may impair the chances in a serious cerebral or possibly cerebellar operation, much as Crile has demonstrated it may in operations on the thyroid gland.

In this case, as in others I have tested, the conjunctival and corneal reflexes were normal. Oppenheim regards a diminution of these reflexes as indicative of cerebellar tumor, and when unilateral as being on the same side as the tumor. I have never found a loss of these reflexes in cerebellar tumor. I would suggest that where the test is made with a piece of cotton wool the examiner may be deceived, as many normal persons may stand this sort of touch of the eyeball without winking.

In one case (No. 338) the left motor fifth was affected, but the sensory portion of this nerve escaped. In another case (No. 477) the sensory portion of the fifth nerve was affected by pressure of a thrombotic inferior petrosal sinus and the motor portion escaped. We have in this one of the peculiar selective actions of lesions in producing symptoms so common in nervous diseases.

Ataxia in walking and standing may be increased by closing the eyes, notwithstanding the lesion is cerebellar. It is often stated that a diagnostic point between the ataxia of tabes and that of cerebellar disease is the absence of increase in the ataxia on closing the eyes in the latter disease. This is not an absolutely reliable sign, as in some cases of cerebellar ataxia closing the eyes increases the incoordination.

Repeated attacks of hemiplegia are a rare manifestation of tumor. In one of the cases (No. 495) left hemiplegia with stupor and convulsions followed by almost complete recovery, and later by a return of the palsy with stupor and convulsions, seemed to be a form of exhaustion paralysis. That paralysis may follow convulsions and last several days, and even much longer if the convulsions be repeated, is well known. There could not have been any sudden increase in the size of the tumor to cause two attacks of paralysis, nor could the condition be regarded as uremic. The exhaustion paralysis of epilepsy was strikingly shown in a case reported recently by Williams Cadwalader,¹³ and the literature is given by him.

12. Candler: *Arch. Neurol. and Psychiat.*, 1909, iv.

13. Cadwalader, Williams B.: *THE JOURNAL A. M. A.*, Nov. 21, 1908, ii, 1778.

11. Mills: *Boston Med. and Surg. Jour.*, April 26, 1906.

It is well to remember that a cyst of the cerebrum or cerebellum is usually in association with tumor, and it is proper, therefore, to search for tumor when a cyst is found at operation. In one case (No. 326) the diagnosis of cerebellar tumor was easy. The improvement after the finding and evacuation of a cyst was striking, but it became my painful duty when informed of the results by letter to suggest that caution was needed. I much feared that the evacuation of the cyst would produce only temporary relief by diminishing the pressure on the brain. Such proved to be the case, and a glioma of the cerebellum was found later. A cyst is very often associated with a glioma.

The important question as to whether Jacksonian epilepsy is a sufficient cause alone for operation on the brain is of importance. The Jacksonian spasm in a case (Davenport) observed by me was for about a year and a half the only sign of cerebral lesion, and it was not until after this period that slight motor aphasia and slight hemiparesis developed. Headache and papilledema were not symptoms. I felt that an exploration of the brain was desirable, because convulsions strictly unilateral occurring occasionally during eighteen months were very suggestive of focal lesion, and such a focal lesion most likely would be tumor. The existence of idiopathic unilateral epilepsy has been discussed, and such a condition is clearly recognized, even status hemiepilepticus of idiopathic character. Shall we or shall we not operate in such a case as that mentioned above? I am distinctly in favor of exposing the brain at the region indicated by the symptoms. The possibility that we may not find anything abnormal is not to be ignored, and yet the hope in operating on brain tumors lies in the removal of the tumors while they are small. The motor area responds promptly to the irritation of a small tumor that might remain latent in many other parts of the brain. If this recommendation be followed, operations will probably be performed without revealing tumors, but that is the less of two evils. I am well aware also that the mere opening of the skull may prove fatal, occasionally by infection of the brain, as when a patient in stupor disturbs the bandages; or by postoperative hemorrhage from a small vessel, or by injury of one of the large venous sinuses with extensive hemorrhage, or when a piece of bone is removed for decompression and occlusion of vessels in a cerebral hernia occurs with extensive cerebral softening, or, still more rarely, from some unknown or remote cause as pulmonary embolism. I have seen death produced in all these ways, and yet we must remember the extreme seriousness of brain tumor; that operation alone affords any hope of recovery or of prolonging life, unless perhaps in tumor of the pituitary body, which is often of slow growth; and that operation must be done early if it is to be successful. Therefore, when symptoms are persistent, indicate a focal lesion of the brain, and are gradually increasing, even though general symptoms of increased intracranial pressure are absent, such as papilledema, headache, nausea and vomiting, I believe that as a general rule operation is advisable if the lesion, as shown, for example, by Jacksonian epilepsy, gives any reasonable hope of being found near the surface of the brain. Palliative operation is not to be considered in such a case as I have described, because the occasional unilateral spasms, the slight aphasia and slight hemiparesis would not seem to warrant it. Decompression, in my opinion, is more serious than mere exposure of the brain with return of the osteoplastic flap to its proper position—more serious because from

the removal of a portion of bone, the size or less than the size of a silver dollar, a hernia cerebri is very likely to occur, and sometimes the hernia becomes very large, even becomes infected and forms fungus cerebri, or by pressure of the brain against the bone and occlusion of vessels leads to extensive cerebral softening.

In one of my cases of probable tumor of the pituitary body (G. S.) in which the most important symptoms were bitemporal hemianopsia, some mental dulness, tendency to jocosity, and marked asthenia, a peculiar sexual disturbance was present, first detected by Dr. Thompson S. Westcott, under whose care the patient had been. This patient had failure of ejaculation with preserved normal sexual desire and normal erection. It is well known that the genital functions in both male and female are impaired or lost as a result of lesion of the pituitary body, but the dissociation of the sexual functions, as manifested in this case, is unusual, and like that which sometimes occurs from lesions low in the spinal cord.

The diagnosis of frontal tumor is often difficult. In one of my recent cases I depended on the jocosity (*Witzelzucht*) and apathy, in connection with general symptoms in diagnosing frontal tumor, and the tumor was found in the frontal lobe; when, however, we try to decide between the right and left frontal lobes we often are helpless. The patient to whom I refer (R.) had come for the purpose of operation from a distant city. He informed me when I asked for his hand in examination that he had four hands, and this he said as a sort of joke. Such a statement as this under such serious circumstances indicates a peculiar condition of the brain, and probably a frontal lesion.

In one case only have I seen a pressure palsy of the seventh nerve follow operation, and in this it was caused by the head-rest and was of short duration. The facial nerve is not likely to be affected by any pressure from without, but pressure palsy of it has been reported. Knapp, in a case reported by him,¹⁴ found that it resulted from sleeping a couple of hours with the cheek on the table. When the man awoke the face was paralyzed on one side from the pressure, and the faradic and galvanic reactions of this side were quantitatively diminished. Recovery occurred within about four weeks.

The symptoms of brain tumor may be caused by a variety of lesions, especially well recognized in this connection are brain abscess, hydrocephalus and meningitis, more commonly the syphilitic or serous variety of the latter, and a considerable amount of literature has appeared on pseudotumor. My attention has been called recently to some of the rarer lesions of the brain which may simulate tumor closely, and because of their infrequency may be more likely to cause a mistaken diagnosis, and even lead to operation. Of these lesions, poliomyelitis, thrombosis of the cerebral vessels, and thrombosis of the venous sinuses are especially noteworthy.

The following is a case illustrative of the difficulties that may be caused in diagnosis by poliomyelitis:

A girl, 14 years of age, was referred to me by Dr. F. H. Macfarland, June 24, 1908. She had been well until about six weeks previously, at which time the right lower limb began to grow weak, and in about one week the right upper limb also became weak. The paresis of these two limbs became gradually greater and was associated with nausea, vomiting, headache and unilateral convulsions.

14. Knapp: *Monatsschr. f. Psychiat. u. Neurol.*, October, 1905, p. 309.

At my examination after her entrance to the hospital the child was weak in the lower part of the right side of the face, and in the right upper and lower limbs, especially in the lower limb. No form of aphasia and no disturbance of sensation were present. The tendon reflexes were exaggerated, the right more than the left, and patellar clonus was obtained on the right side. Babinski's sign was pronounced on the right side.

One of the convulsive attacks was carefully observed. It began with numbness in the right upper limb and soon extended to the right lower limb; the right side of the face was drawn up and held rigidly distorted. The left side of the body was not implicated. The right side of the body was rigid about four minutes, without any clonic movements, and the child was unable to move the right upper and lower limbs about two hours following the attack. She did not lose consciousness.

It is very evident from the record here presented that we had to deal with a focal lesion of the brain. The duration of symptoms for about six weeks; headache, nausea, vomiting, progressively developing right hemiplegia, right-sided convulsions, made the diagnosis of location in the motor region positive, especially as all sensory disturbances and hemianopsia were absent. The symptoms were those of some lesion gradually increasing in size, and more like those of tumor than any other lesion. This diagnosis was rendered more probable by the report from Dr. de Schweinitz, which was as follows:

Vision 5/6 in each eye. Beginning papillitis in each eye; nasal, upper and lower margins obscured, temporal still visible, veins full. Pupils react normally, no muscle palsies.

Believing that the symptoms warranted an exploration, I requested Dr. Frazier to operate over the left motor area, and the brain was found distinctly diseased in this part. A portion of the tissue was removed, as at the operation it was impossible to exclude glioma, as the diseased tissue, especially after the brain had been exposed a short time resembled glioma. When the flap was first turned back the lesion impressed us as probably one of encephalitis. The microscopic examination revealed poliomyelitis.

The extreme difficulty that may occur in diagnosing between poliomyelitis and brain tumor is well shown by this case, as papillitis is not a common sign of the former condition, although known to occur. I am quite sure that fever was not present at any time while the child was under my observation, and no statement regarding the existence of fever was made by those who had had charge of her in the onset of the symptoms. The temperature charts taken at the hospital were mislaid.

For a time hemiplegia was increased after the operation, but power was regained later on the right side to the extent that the gait showed only a little limp, but the paralysis of the right upper limb was pronounced.

In the report of the committee appointed by the New York Neurological Society to study the epidemic of poliomyelitis occurring in New York during the summer of 1907, embracing an examination of 2,000 cases, Dr. B. Sachs¹⁵ remarked that few cases lent support to Strümpell's view that there is a poliomyelitis closely allied to poliomyelitis; and yet non-purulent poliomyelitis unquestionably occurs, as shown by the case referred to. I have specimens also from three or four other cases.

In another case the diagnosis had to be made between cerebral thrombosis and brain tumor. This usually causes little perplexity, but the following case in the service of Dr. John H. Musser shows that the diagnosis may not be easy. The man had had the symptoms about a year, namely, frontal headache, later left-sided headache, word-blindness, occasional loss of memory, vertigo, nausea, vomiting, subjective weakness of the right upper limb, later paraphasia, some word-deafness, right lateral homonymous hemianblyopia, dissociation of color sense, and ataxia of the right upper limb. The case has been referred to in my recent paper¹⁶ read at the meeting of the American Medical Association in June, 1909.

The diagnosis between tumor and softening from thrombosis was not easy. The absence of papilledema did not exclude tumor, as I have known glioma of the occipital lobe to reach a considerable size without causing any swelling of the disc. There was unquestionably a gradual increase in symptoms, and this was very suggestive of tumor, but the increase seemed to occur rather abruptly, within a few days, and then no further increase was observed for weeks. This might occur in tumor, and is sometimes seen in thrombosis when the thrombus extends further in the vessel first occluded, or extends into a branch of this vessel. The age of the patient could not help us, for while thrombosis is not uncommon at the age of 60, glioma also may develop at this period.

There could be no doubt as to the position of the lesion. The word-blindness, word-deafness, right lateral homonymous hemianblyopia, etc., made the first temporal convolution of the left side the seat of the lesion.

The visual disturbance in this case was very interesting. At no time could I find complete hemianopsia. The man could always recognize the movements of objects in the right fields, but he could not distinguish well between objects in these fields, and was positive that he saw them less distinctly than he did in the left fields. Here probably was an important sign in favor of thrombosis. It might readily be overlooked and called hemianopsia, but in my examinations it was never more than hemianblyopia. It indicated in connection with the other symptoms that a lesion was present which had a considerable superficial extent in order to produce word-blindness, word-deafness, etc., and yet did not extend far toward the optic radiations, which are not remote from the first temporal convolution. Such a lesion would more likely be thrombosis than tumor. Therefore, in the indications that the growth was large but chiefly superficial, and in the rather abrupt increase of symptoms, we had two signs in favor of thrombosis rather than tumor.

After careful consideration, even though the diagnosis of thrombosis of the posterior branch of the middle cerebral artery was made as probable, exploration seemed advisable, as it was at least possible that a tumor would be found. The patient and his relatives wanted some active intervention. I therefore requested Dr. Frazier to expose the brain with the posterior part of the left first temporal convolution as the center of the opening. The operation revealed unmistakable thrombosis in the region diagnosed as affected, and a piece of the diseased tissue excised and examined microscopically showed softening. The man made an excellent recovery.

Another case resembling the one just reported was one I had the opportunity of studying in 1900 in association with Dr. Mills, under whose care the patient

15. Sachs: Jour. Nerv. and Ment. Dis., Oct. 19, 1909.

16. Spiller, W. G.: Brain Tumor, THE JOURNAL A. M. A., Dec. 18, 1909, III, 2078.

was. Dr. Mills has published a report of this case.¹⁷ The man had impaired recognition of objects in the right hand with the eyes closed, diminution in pain and temperature sensations on the right side of the body, word-deafness, word-blindness, paraphasia and right lateral hemianopsia. The first symptoms appeared in the early spring of 1898. The patient suddenly became dizzy and was numb in the right upper and lower limbs. The numbness soon disappeared, but recurred at intervals lasting a few moments at a time. The patient had no other symptoms of importance until he began to have headache in February, 1900. The headache was not continuous, but the attacks of numbness became more and more frequent. Dr. Mills first examined the man on June 2, 1900, at which time he had the symptoms above enumerated. Dr. de Schweinitz found high myopic astigmatism, but no positive optic neuritis, although he stated that the condition was such as to indicate the possibility of an incipient nerve inflammation. The congestion of the optic discs present at previous examinations could probably be attributed to disorders of refraction, and was more marked on the left side. The left side was the side of the lesion.

About June 23, 1900, a decided paresis of the right half of the body developed and operation was decided on and was performed by Dr. W. W. Keen, assisted by Dr. William J. Taylor. An area of softening in the distribution of the Sylvian artery was found and was caused by thrombosis.

The whole condition was evidently of vascular origin. The early symptoms were dependent on impaired nutrition of the parietal lobe, the symptoms which developed acutely about three months before the operation were caused by thrombosis of the branches of the Sylvian artery supplying the first temporal convolution and parietal lobe, and the weakness of the right arm which came on suddenly was the result either of thrombosis of the branch supplying the arm center or of hemorrhage occurring within the softened brain tissue.

The most interesting features of this case were the successive abrupt increases in symptoms, indicating that additional areas of the brain had become affected. The weakness of the right upper limb developed suddenly, not very gradually as is suggestive of tumor, and yet in tumor paralysis may develop rapidly.

Thrombosis of a venous sinus also may cause difficulty in diagnosis, as shown by the following case referred to me by Dr. William Zentmayer. The patient had presented the general symptoms of brain tumor about a year, some of the symptoms preceding the others several months. They were headache, nausea, vomiting and choked discs. As symptoms of localizing value were tinnitus in the left ear, weakness of the right external rectus muscle, some diminution of each patellar tendon reflex and of each Achilles tendon reflex, tendency to go to the right in walking, and, most important of all, diminished sensation to touch in the right scleral conjunctiva and cornea, and to touch and pain in the right forehead, and possibly slight diminution to pain sensation in the right infra-orbital region, without disturbance of the motor supply of the right fifth nerve.

The case seemed to be one of brain tumor, but the localization was not easy. The tendency to go to the right and the diminution of the patellar reflexes were slight and not of sufficient importance to weigh much in diagnosis. The tinnitus of the left ear probably was from ear disease. The only important localizing signs

were weakness of the right external rectus muscle and partial impairment of objective sensation in a portion of the right fifth distribution, distinct only in the right forehead and the right eyeball, and more so in the latter. Paresis of an external rectus muscle first observed late in a case is of doubtful diagnostic value. The objective disturbance of sensation in the distribution of the right fifth nerve was, therefore, the most important sign, but this was not complete, varied in different examinations, was only in a small portion of the fifth nerve distribution, and was without any implication of the motor fifth. I could not doubt that the fifth nerve was implicated in the lesion, but the symptoms were not sufficient to justify exploration of the base of the brain, especially as the patient had never had signs of irritation of this nerve, namely, pain or tenderness to pressure over the points of exit, and spontaneous pain. A glioma of the pons could cause the slight disorder of the fifth nerve without other symptoms if the tumor were small. I have recently called attention to this possibility.

The study of this case did not seem to warrant a basal operation, and, therefore, in the hope of relieving the patient of headache, nausea, vomiting and vertigo, I requested Dr. Frazier to do a subtemporal decompression, believing that later a basal operation would be called for if the symptoms became more decided.

The hernia of the brain that developed caused much pressure of the right frontal lobe and motor region by the protrusion of the brain through the opening, and the cutting off in this way of the blood-supply. Softening of the brain in the area of the occluded vessels occurred, and a purulent meningitis was produced by the patient handling the dressings and the wound before he could be restrained.

The findings in this case were extremely interesting. The necropsy was performed by Dr. H. T. Karsner, who kindly gave me the brain for examination.

A thrombus was found in the right inferior petrosal sinus extending into the cavernous sinus, and causing a depression in the pons. It was about an inch in thickness and about an inch and a quarter in length. The clot was shown by the microscope to be well organized. Whether the thrombus had its origin in some disease of the sinuses communicating with the nose or not, it is impossible to say.

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THE IMPORTANCE OF ANIMAL EXPERIMENTATION IN THE DEVELOPMENT OF OUR KNOWLEDGE OF DYSENTERY, CHOLERA AND TYPHOID FEVER *

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Before successful warfare can be waged against an infectious disease it is of the highest importance, if, indeed, it is not absolutely necessary, to know with precision the nature of the agent which produces that disease, how it invades the individual, what its method of action is, how it is excreted, and, finally, how it perpetuates itself outside the living body.

* This article is one of a series issued in pamphlet form by the Council on Defense of Medical Research of the American Medical Association for circulation among the public. Eight of these pamphlets are now ready, taking up the relations of animal experimentation to ethics, diagnosis, cancer, vaccination, the live stock industry, tuberculosis, typhoid, dysentery, etc.

17. Mills: Philadelphia Med. Jour., April 20, 1901.

In studying the possible causes for any such infectious process, the suspected causative agents must be applied under strict scientific control either to members of the human or of the animal species to see whether under fixed conditions there is a definite relation between the suspected causes and the effects produced by them.

Typhoid fever, cholera and dysentery are diseases associated symptomatically and pathologically, in the great majority of instances, with the intestinal tract, and in the search for the causes of these diseases it was natural that study should focus itself on the rich bacterial flora of the intestines. This study, under the influence of new methods developed during the past twenty-five years, brought to light from the diseased intestines a great variety of living organisms, and the relation of any or all of these to the diseases under consideration offered a problem of the greatest complexity. To inoculate human beings with the various organisms found was manifestly impossible. Recourse to the use of the lower animals, therefore, had to be taken, and in the pursuit of knowledge concerning these diseases many thousands of animals have, undoubtedly, been sacrificed. It was found early, however, that, though many of the intestinal germs caused sickness and even death in the animals used, a clinical picture characterized by symptoms relative to the intestinal tract was rarely produced. An important link, therefore, in the chain of evidence connecting the germ with the human disease was lacking.

In the early nineties, however, an important discovery was made by R. Pfeiffer—a discovery which has in many ways revolutionized our knowledge of bacterial disease.¹ Pfeiffer found that by inoculating guinea-pigs and rabbits with gradually increasing numbers of different races of bacteria, he could at last bring the animals to a state in which they could stand without symptoms doses which, at first, would have proved fatal. In other words, the animals had become immune. In fact, they resembled the man who, having passed through typhoid fever, rarely has it again.

In the further study of this phenomenon, Pfeiffer investigated the fate of cholera and typhoid germs when introduced into the peritoneal cavity of guinea-pigs, and found that, whereas in the untreated animal the bacteria grew rapidly and soon caused death, in the immune animal the germs became clumped together and gradually dissolved, the animal remaining in good health.

This clumping and dissolution of disease germs in the peritoneal cavity of guinea-pigs under the influence of specific immune agents is known as Pfeiffer's phenomenon, and constitutes one of the greatest contributions to our knowledge of infectious disease, for it soon became clear that similar results could be obtained if the germs were put into the peritoneal cavity of an untreated guinea-pig, provided that blood-serum from an immune animal was introduced at the same time.

The next step was to show that the serum from the sick human being would bring about similar results with the suspected organism, and the chain linking the germ to the human disease was thereby made complete.

Incidentally, however, much more was accomplished. It was next discovered that typhoid and cholera germs would undergo in a test-tube the same clumping, and sometimes the same disintegration, as that seen in the guinea-pig when brought in contact with typhoid and cholera serum, and this fact, further elaborated by Gru-

ber and Widal, has brought the so-called Widal test—a procedure most valuable in the diagnosis of typhoid fever and many other infectious diseases.

From a known variety of serum, therefore, we can now in many bacterial diseases determine with great exactness whether a suspected germ is the one corresponding to that serum, and, *vice versa*, given a known germ, we can determine from the blood-serum whether a sick man or animal is suffering from an infection due to that germ.

The importance of these discoveries can hardly be overestimated. For example, a patient is found to have a fever with symptoms referable to the intestinal tract. An organism is isolated from the stools and shows with a known cholera-serum a specific reaction. From this knowledge it becomes certain that the patient is suffering from cholera; he is properly isolated, and possible danger to those in his surroundings is removed. Similar procedures are possible, furthermore, with typhoid and dysentery. It is impossible to say how many lives are saved annually and how much disease and suffering are prevented through these methods of diagnosis alone, made possible by the discovery of Pfeiffer's phenomenon.

This work of Pfeiffer, moreover, was of equal if not greater importance in another direction. As stated above, Pfeiffer found that by inoculating animals with gradually increasing doses of disease germs the animals could be made immune against these specific diseases. Furthermore, it became plain that the blood-serum of an animal which had been made immune to a certain infection would give protection when introduced into the body of a normal animal. This fact stimulated investigation all over the world and, as a result, we now have not only means for preventing the occurrence of disease but also for its cure when once acquired.

For the prevention of the three diseases under discussion the method commonly employed is that of protective inoculation, which, as above stated, is a direct outgrowth of experimental work on artificial immunity in animals. Subcutaneous injections are made of dead bacteria in varying amounts, from which injections there results, at most, a mild and transient illness.

The human body, however, having overcome the infection in mild form, is for considerable periods of time thereafter in a condition to resist with unusual strength any subsequent exposure to the disease.

In cholera, for instance, Haffkine² found that the incidence of the disease among those inoculated was one-tenth that among the uninoculated.

As to bacillary dysentery, Shiga³ inoculated in Japan 10,000 people with a mixture of dead bacilli and specific dysentery serum. The incidence of the disease was, to be sure, not much affected, but the death-rate was reduced from 25 per cent. to practically nothing.

In typhoid fever, protective inoculation has been practiced to a considerable extent, especially in the British army. Leishman⁴ states that of 5,473 soldiers who were inoculated only 21 became subsequently infected, and of these but 2 died. Of 6,610 soldiers uninoculated but in the same regiment, 187 had typhoid fever and 26 died.

During the Spanish-American war, out of 107,973 enlisted men 20,738 had typhoid fever and 1,580 died of the disease. According to the English experience, protective inoculation in typhoid fever, impossible except through knowledge gained by animal experimentation, would have saved thousands of American soldiers from sickness

1. Pfeiffer: *Ztschr. f. Hyg.*, xix, 75; Pfeiffer and Koile: *Ztschr. f. Hyg.*, xxi, 203.

2. Haffkine: *Bull. de l'Inst. Pasteur*, Sept. 15 and 30, 1909.

3. Shiga: *Osler's Modern Medicine*, 1907, ii, 800.

4. Leishman: *Jour. Roy. Army Med. Corps*, February, 1909.

and hundreds from death, to say nothing of the secondary typhoid fever spread by these soldiers throughout the country during their convalescence, for, as is now known, about 4 per cent. of persons who have typhoid fever become chronic carriers of the disease, through the presence of typhoid bacilli either in the stools or urines, or both. Similar conditions obtain in cholera and dysentery.

The rôle of carriers in the spread of these infections is a most important one, and one unsuspected until within recent years. The knowledge that such individuals may exist in any community will strengthen to a very great extent the hands of the health officer in checking the ravages of these diseases, but this source of infection could never have been discovered had not the lives of many animals been sacrificed in establishing the identity of the specific organism.

Protective inoculation for typhoid fever has been introduced recently into the United States army. I have instituted this practice⁵ at the Massachusetts General Hospital among the nurses and ward tenders, who, during the summer and fall seasons, are especially exposed to this disease.

Stimulated by the success attained through the use of antitoxin in diphtheria, much experimentation has been done in an effort to secure similar protective serums for cholera, dysentery and typhoid.

With cholera, the results thus far have not been very encouraging. In dysentery, however, favorable reports of serum treatment of those afflicted with the disease come from Russia, France, England, Austria and Japan. Shiga, for instance, treated 298 dysentery patients with a death-rate of from 9 to 12 per cent. In 212 patients treated with drugs the mortality was 22 to 26 per cent. In typhoid fever, Chantemesse⁶ treated 1,000 cases with a death-rate of 4.3 per cent. Of 5,621 patients to whom routine treatment was given during the same period, 17 per cent. died.

As the result, therefore, of the combined studies of research workers throughout the world during the past thirty years, we know what causes cholera, dysentery and typhoid; we know how the diseases are transmitted; we know how to determine whether or not an individual has one of these diseases; we know how to protect a human being against these diseases; and, finally, how to help him intelligently when he is sick.

To gain this knowledge, experimentation on many thousands of animals has been necessary. Can there be any doubt that this experimentation has justified itself?

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ALCOHOL AS A POISON

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The very common theory that alcohol is a tonic and stimulant, at times a valuable medicine, and always a safe beverage, when used in small quantities and with care, and when the quality is good, is fallacious and has no support in modern scientific studies.

The toxic action of alcohol is a well-recognized fact. Its poisonous action depends on the quantities given over long periods of time. A presumptive theory is urged that this drug has two distinct physiologic actions, one tonic and beneficent, the other toxic and destructive, and that the province of the physician in using it is to

know how to secure the former effects and avoid the latter.

This opinion, in many instances, is accepted without question. In reality, there are many drugs whose toxic and destructive action on cell and tissue are controlled and made to contribute to medicinal purposes.

Thus, opium is a toxic agent, yet in small doses this narcotic toxic action on the cells and nerve terminals may be made to contribute to restoration by diminishing the sensitiveness and activity of the cells. Again, the anesthetic properties of alcoholic ethers in chloroform and sulphuric ether are distinct poisons, and yet their use has made possible the most brilliant work in surgery.

The toxicity of alcohol has been emphasized more and more with every advance in scientific medicine. The unfounded theories of the past built up on delusive experiences and perpetuated in text-books are disappearing with every exact laboratory study and clinical research.

These researches point out conclusively that alcohol has a toxic action on cell and tissue, varying only in accordance with the quantities used, and that physiologically it is the same in all conditions, the difference being in degree, and that previous studies of its therapeutic effects furnish no guide which can be followed except after critical examination and study. In brief, the alcoholic problem, including the action of alcohol and the results which follow, must be studied at the bar of scientific analysis, irrespective of all theories, opinions or conclusions of the past.

ALCOHOL A PROTOPLASMIC POISON

A poison is clearly defined as any substance which acts on living cell and tissue to destroy its power and impair its activity. Alcohol is clearly a poison according to this definition.

Dr. Kesteven, of London, in a recent study, showed that alcohol was distinctly toxic to the ameba, and the simplest forms of protoplasm. These cells being concentrated in the microscopic field and treated to a 1 per cent. solution of alcohol, a distinct narcotic action was apparent which lasted several hours.

In a 2 per cent. solution the narcotism was deepened and every cell was stiffened. Some of them died. Others recovered after a while. In a 4 per cent. solution a very large percentage died, and a 5 per cent. solution was fatal to all cell life.

This experiment can be repeated in every laboratory and is confirmed by a great variety of studies in other directions, showing that alcohol is a distinct protoplasmic poison. A number of observers have shown that this poisonous action is due to the retarding power of the cell to absorb oxygen.

The action of alcohol on lower forms of cell life has been the subject of many remarkable investigations.

Professor Rauber of Vienna, the late Drs. Richardson and Ridge of London, and Professor Hodge of Worcester have conducted extensive experiments, showing that alcohol is not only a narcotic and paralyzing agent on protoplasm in all forms, and that this is apparent in very small doses, as low as one drop of alcohol to a thousand drops of water, but that it is also injurious to cell life.

A very common experiment can be made with the growth of plant life and seeds. Thus pots containing similar soil and the same kind of seeds are treated with clear water and with water containing alcohol in propor-

5. Richardson, M. W.: *Am. Jour. Pub. Hyg.*, August, 1909.

6. Chantemesse: *Hygiène générale et appliquée*, 1907, p. 577.

tions of one to one hundred, one to five hundred and one to one thousand.

The difference in the growth is very pronounced, although all are treated exactly alike in other respects. The seeds treated with pure water come up strong and vigorous; those treated with alcohol and water show a decided retarded growth, and many of them die.

The uniform inferiority of the plants treated with alcohol and their stunted defective growth indicates the poisonous action of alcohol on the cells. This experiment can be repeated in a great variety of ways on ordinary flowering plants or the growth of seeds seen in a transparent medium.

A very common experiment of dwarfing puppies for the purpose of changing the breed by giving alcohol in food is another very marked illustration. The small quantity of alcohol used indicates beyond question its continuous toxic action on protoplasm.

Under very high microscopic power, cells when immersed in a medium containing very minute quantities of alcohol shrink and become distorted; evidently there is some dehydrating effect, absorption of water, retraction of the hyaloplasm and, no doubt, a paralyzing irritant action.

A larger solution of alcohol makes greater impression on the walls of the cell; the granules gather in clusters, their activity ceases and their forms break down.

The inference is unmistakable that the same action so marked on cell life in plants and animals is the same in the human body, and that its toxicity to protoplasm is beyond all question.

ALCOHOL AS A CHEMICAL POISON

This action is equally prominent. The sensation of coldness following its application on the surface of the body is due to its rapid absorption of water. When alcohol is taken in the mouth as a beverage, this dehydrating property is so pronounced as to produce irritation and this would rapidly lead up to inflammation. Hence the use of water with spirits is physiologic and simply an effort to overcome its corrosive action.

This chemical absorption of water by alcohol extends to every tissue with which it comes in contact until it reaches the point of saturation. The feeling of warmth in the stomach is the first stage of irritation which would rapidly extend to inflammation and pain.

The value of alcohol applied to the surface of the body as a refrigerant or cooling substance is its chemical, dehydrating, water-absorbing properties. An alcoholic sponge bath is simply chemical absorption of the moisture on the surface of the body, and thus diminishing the temperature, but principally drawing the water off from the capillaries.

This dehydrating property is very marked; an examination of the blood shows it in the shriveled blood corpuscles and diminished phagocytes, particularly in persons who are paralyzed and profoundly intoxicated. The temperature is lowered and the functional activity is reduced almost to the point of suspension.

Some very interesting studies have been made of the resistance and immunity of the body to this chemical absorption and derangement of the fluids. While the dehydrating effects are uniform in a general way, there are some organs which seem to suffer more than others. The corrosive effects are not noticed in all the organs alike.

Sometimes the liver, the kidneys or the brain tissues are most markedly disturbed. In other cases they are less so. There can be no question about the two condi-

tions present; one, the abstraction of water from the cell and tissue, the other the coagulation of albumin, the deposit of fibrin and the pronounced disturbance of the balance necessary to carry on the uniform functions of the body.

ALCOHOL AS A CIRCULATORY POISON

The effect of alcohol on the circulation is very evident from the increased action of the heart, the congestion of the blood-vessels of the face and other significant signs. This increase of the action of the heart is followed by depression, and with instruments of precision the rise and fall of the heart's action is measured with exactness.

The muscular output from the increased action of the heart is followed by a similar diminution in exact ratio to the high level which it had attained. This toxic action due to the suspension of the control centers and vasomotor paralysis can be studied on the mucons membranes and the congestion of the face, and extends, disturbing the circulation, to the liver, kidneys, brain and all the vascular organs.

Often the face is a good index to this deranged circulation, and paralysis of the facial nerves extends to the brain. The man with an alcohol-paralyzed face has a similar derangement of the cortex of the brain.

The physiologic effect of deranging and paralyzing the circulation of the blood in the veins and arteries is followed by a diminished absorption of gases, defective distribution of nutrient plasma, and checked elimination of waste products. The direct result is poisoning and starvation, with depression, fatigue and finally organic changes.

This particular poisonous effect on the circulation extends to the respiratory system and is manifested in various ways. The diminution of the vasomotor control of the arteries and veins is followed by congestion, formation of toxins, and the retention of waste matter.

The spasmodic action of the heart to overcome this condition and restore the lost balance is noted in fatigue, which falls most heavily on the lungs and nerve centers. Hence, pneumonia, occurring in persons who have used spirits, is very frequently fatal, because of the defective circulation, vasomotor paralysis of the capillaries and diminished vitality. Giving alcohol as a remedy for this condition is increasing the difficulty and making fatality more certain. In the same way, giving spirits for tuberculosis has no support in any modern physiologic or pathologic studies.

At the recent antialcoholic congress in London two papers were read on the increased mortality in cases of pneumonia from the use of spirits as a remedy. A study of over 2,000 cases, in which half were treated without spirits, showed a mortality of 31 per cent. when spirits were used, and without it 19 per cent.

In another study of 500 cases of tuberculosis, the use of alcohol was followed by a mortality 40 per cent. higher than in those cases in which no spirits were given. There is evidently a very wide field here in which the poisons of alcohol on the circulatory system when fully recognized will revolutionize many of the practices of to-day.

ALCOHOL AS A POISON TO THE BRAIN AND NERVOUS SYSTEM

The effect of alcohol on the brain and nervous system is familiar to all ordinary observation. The intoxicated man on the street either stupid or with delusions shows the toxic action of alcohol very markedly. These extreme toxic stages are only terminal conditions of

what may be traceable back to the smallest quantity of spirits.

Many years ago Kraepelin of Heidelberg began a series of observations to determine the effects of alcohol on the brain and nervous system. He assumed that finding a normal standard of sensory and mental activities in different individuals, then giving spirits and comparing these conditions with what existed before, would determine the exact action of alcohol on the person.

Thus, the personal equation in a certain individual having been found, from one dram to a half-ounce of absolute alcohol was given him; then he was measured with instruments of precision from forty minutes to one hour afterward. The difference, other things being equal, was due to alcohol.

These experiments have been carried on for many years by Kraepelin and other observers. They indicate uniformly that alcohol in small doses both impairs and diminishes the activity of the senses, and that this derangement is measurable, although not recognized by the persons experimented on.

Thus a person able before the use of alcohol to distinguish letters or hear sounds at a certain distance, after the use of alcohol suffers impairment of vision and hearing, which can be stated in exact figures. The same way in the sense of smell, taste and touch, and these can be stated in exact terms.

Going beyond the senses, similar studies of rapidity of mental action, power of reasoning, capacity to judge and memorize, emotional control, fatigue, muscular output, endurance and other mental activities are studied and measured, both before and after the use of alcohol; and a table of this diminution and paralysis can be made with as much exactness as one stating any mathematical problem.

The results from a great variety of observers have been singularly uniform and confirmatory of the fact that the action of alcohol is narcotic and paralyzing in all instances, and even in very small doses, and that there is no tonic, stimulant or any other action from its use.

Hence, the word "paralysis" is exact and literal in describing the action of alcohol on the body. From a great variety of observations, clinical studies, and everyday experience, there is a tremendous confirmatory flood of evidence. Thus in accidents and mistakes and a great variety of faults and errors, there is unmistakably a paralytic action of alcohol in perverting, diminishing and deranging the sense impressions, their receptivity, and the capacity of the brain to judge of the conditions and their relation.

These laboratory researches give no support to previous theories that alcohol in any form gives power, capacity or strength that did not exist before. On the contrary, it brings out markedly delusive effects and indicates that in some persons a single dram of absolute alcohol produces measurable effects of narcotism and paralysis. In others a larger dose is required. The literature on this particular poisonous action of alcohol has grown to great proportions in volume, pamphlet and proceedings, and it would require hours to simply summarize it.

POISONOUS ACTION OF ALCOHOL ON METABOLISM, NUTRITION AND DIGESTION

Another toxic action of alcohol, namely, its effects on metabolism, nutrition and digestion, has attained prominence as the result of a mass of laboratory researches,

clinical experience, delusive theories and widely differing opinions.

Atwater's most unfortunate reasoning and deductions gave great prominence to the subject, brought out a variety of facts that were practically unknown before, and established others on a permanent foundation. The oxidation of alcohol, the liberation of energy, and its supposed protective power have been subjects of a great deal of reasoning, but the final conclusion, that its irritant, paralyzing and corrosive action always precedes and follows these chemical changes, has been fully established.

A number of the most eminent physiologists in this country have examined this subject with great exactness, and all conclude that in no sense does alcohol give new force or generate new power in the body, and in no way can it be called a food, building up and restoring lost energies.

It is pleasant to note that the epoch-making studies and papers on this point of Professor Abbe of Johns Hopkins, Professor Benedict of the Wesleyan University, Professor Hall of the University of Chicago, Professor Beebe of Cincinnati and Dr. Reid Hunt of the U. S. Public Health and Marine-Hospital Service, and others, have been supported by the most eminent foreign authorities and laboratory physiologists. While these authorities differ on minor points and give greater prominence to some phases than others, there is a remarkable agreement among them that alcohol is a metabolic poison, introducing into the system toxins which not only grow themselves, but favor the growth of other ferments and toxins, and are followed by conditions of profound derangement and degeneration.

This toxic quality is aptly summed up by Sir Victor Horsley in the following statement:

The toxic action of alcohol lowers the energy and vitality of the body. It diminishes the production and maintenance of heat; it interferes with nutrition, and the absorption and utilization of plasma; it increases the waste products and checks elimination.

In confirmation of this there is a great variety of clinical evidence and laboratory studies which would require volumes to enumerate. One practical point very often observed is neuritis, an inflammation of the nerve terminals, due directly to alcohol and called rheumatism, gout, and various other names. It is the result of the corrosive action of spirits on the dendrites. The same toxic action of alcohol on the liver, kidneys and in the stomach is followed by a great variety of the most complex disturbances which are not understood and cannot at present be explained with any clearness or satisfaction.

The very extreme toxic states due to alcohol and complicated with other toxins have had a beginning, are the result of long use of spirits, and are simply the chronic stages of what began long before.

This is in accord with the uniform laws of degeneration and disease processes.

Prof. George Harley of London has analyzed the metabolic poisoning from alcohol at some length in a recent study. The following sentence is an outline view:

The normal oxidation of the blood is retarded and broken up by alcohol, and with it the process of storing up nutriment; the manufacture of secretions and their distribution, the production of energy, and muscular output, are all diminished and lowered; and with it all the excretion of waste material is checked, and becomes the soil for the growth of new toxins and ferments; therefore alcohol is clearly a metabolic poison of the most pronounced character.

ALCOHOL AS A SYSTEMIC POISON

Alcohol has been termed by many writers of eminence a systemic poison, and the evidence on which this view is based is the subject of very extensive literature. The central fact of this is that alcohol particularly diminishes the vitality of the body and the resisting power to overcome disease. Professor Laitner, in the Norman Kerr Lecture, recently delivered in London, brought out this fact very prominently, in the conclusions of his laboratory studies, extending over several years and based on an examination of over 300 persons. He showed that the normal resistance of the red blood corpuscles was diminished to a measurable extent in all cases in which alcohol was used, and that the bactericidal power of the serum against germ disease, particularly typhoid, diphtheria and other infections, was pronouncedly impaired. The final conclusion from over 1,000 examinations was that from 2 to 4 drams of alcohol showed their injurious influences in the blood-counts and serum-resisting forces of the body. This highly technical paper, which was remarkable for the exact mathematical deductions, will soon be published in full.

Clinical experience brings a great variety of evidence confirming this fact, that the vitality and resisting power of the blood and nerve energies are lowered, and that alcohol is a systemic poison, not only in destroying reparative forces, but in diminishing the combative powers of the blood-cells and developing toxic germs whose activity is noted in the entire body.

This systemic poison is registered in the high-tensioned arteries from vasomotor paralysis, the deposit of fibrin in the liver and other tissues, and the final sclerotic conditions so common in persons who use spirits. It is a clinical fact that the fibrinous deposits due to alcohol resist medication and are practically unresolvable by therapeutic agents, except in the most general way, whereas tumors and growths from specific poisons, tuberculous deposits and syphilis are readily influenced by various drugs and resolvable by a variety of measures.

Belief in the toxic action of alcohol from the smallest measurable doses is supported by a great variety of evidence that is remarkable in its uniform conclusions, particularly that this poisonous action is narcotic, anesthetic and paralyzing in diminishing and lowering the activities of the body.

To all students of this subject it is evident that the wide-spread use of alcohol as a beverage and the delusive theories which have grown up about it in medicine are due exclusively to its fascinating, narcotic action for relief of pain, discomfort and suffering. It is not stimulation that is sought for, but narcotism, anesthesia and relief.

Some of the conclusions from this outline study may be stated as established beyond all question or doubt:

1. The particular poisonous action of alcohol begins with its dehydrating properties, extracting the water from the cell and tissue so rapidly as to produce irritation, then narcotism. The ethers of alcohol, such as chloroform and similar substances, act specifically on the sensory centers, paralyzing them and cutting off all activity. These ethers vary in their action and specific poisonous effects through a wide range, but are all dehydrating and paralyzing in their action.

2. Alcohol acts specifically on nerve cells and nerve centers, cutting off the sensations and disturbing the capacity to judge and reason, particularly of the surroundings and the relations to them. One fact standing

out above all others has startling significance, namely, the highest and last-formed faculties of the human brain, the consciousness of right and wrong, the ethical conceptions of duty and responsibility, are the first to become anesthetized and paralyzed from the effects of alcohol.

The third toxic effect of alcohol is its diminution of vital power and capacity to resist disease and degeneration of any form. The defenses of the body are diminished and the conservative reserve powers lowered.

As a result mortality is increased, liability to disease intensified, and capacity for restoration and recovery lessened. This is confirmed in every day's experience. The treatment of all kinds of fevers and local inflammations, and particularly all kinds of surgical operations, is far more difficult, grave and uncertain where the person has used spirits. This is a clinical fact outside of all theories and explanations.

Finally, the toxic action of alcohol, whether given in small or large doses, is not a matter of theory or opinion. There is one fact becoming more and more prominent, namely, that the subject of the action of alcohol covers a wide unknown territory, and that it is exceedingly dangerous to dogmatize and state positively what is and is not true.

The few outline facts which I have given are like mountain-peaks, and the wide ranges of country between them are unknown. I cannot conclude without referring to the unfortunate position of physicians toward the alcoholic problem.

The startled public, led by reformers, clergymen and enthusiasts, is making a great effort to accomplish some practical reform to overcome the alcoholic evil of to-day. Rapacious quacks profit by the situation, making the most delusive assertions and claiming miraculous results; and the medical profession stands by indifferent or in the attitude of sneering critics.

There is no evil of greater magnitude, none of which the cure so entirely pertains to medicine and hygiene, and none so closely related to the work of physicians, as the alcoholic problem. A new and practically unoccupied realm of practice both for preventive and curative measures, is before us. Every medical man should be the teacher and leader in the community, and not the follower of blind theories and stupid delusions.

THE BACTERIEMIA THEORY OF TUBERCULOSIS

A REFUTATION

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PHILADELPHIA

During the past few years Dr. R. C. Rosenberger, of Philadelphia, has made a series of contributions, first, with reference to the reliability of the various methods of staining the tubercle bacillus and other acid-proof bacilli and their resistance to decolorizing agents; second, with reference to the frequency with which tubercle bacilli occur in the feces of tuberculous patients; and, third, with reference to the presence of tubercle bacilli in the blood of persons afflicted with tuberculosis. The logical outcome of these studies, which we know from personal observation were conducted with great pains, patience and perseverance, was a new theory of tuberculosis constructed on the successive steps embraced by the researches. Thus Rosenberger first came to the con-

clusion that for all cases in which differential staining was to be performed the Pappenheim reagent was indispensable; with the aid of this reagent he was able to satisfy himself that tubercle bacilli were constantly present in the feces, not only of those tuberculous patients whose open pulmonary lesions made it probable that they frequently swallowed sputum, but also of those whose closed, partly healed or deeply seated lesions made it evident that the only means by which the bacilli could reach the intestinal contents was by excretion through the liver or intestinal glands from the blood, and that therefore they must circulate in the blood prior to such elimination. Scant attention was paid to Rosenberger's opinions until the final step in the argument was reached and he ventured the opinion, based on 100 per cent. of positive results in a study of 300 cases, that in all cases in which tuberculous infection of any kind occurred the bacilli existed in the blood in numbers permitting their discovery by microscopic examination of the blood itself.

His inevitable conclusion was that tuberculosis was primarily a bacteriemia, which was followed by secondary localization of the organisms and the occurrence of the well-known lesions. This conception was so revolutionary that it could not be accepted without hesitation and without much confirmation.

That tubercle bacilli are at times present in the blood has never been doubted. The occurrence of primary lesions of the bones, joints and deeply-seated organs, and occasional cases of primary miliary tuberculosis show that there must be times when the bacilli find their way through the blood to their seat of primary localization, while the almost invariable occurrence of miliary tubercles widely distributed throughout the body in advanced and fatal tuberculosis, and the occasional occurrence of tuberculous meningitis, as a complication of advanced tuberculosis, point unequivocally to the occasional admission of bacilli to the blood in larger or smaller numbers. This well-recognized condition is, however, a very different matter from the constant presence in the blood of numbers of the micro-organisms sufficient to permit their ready discovery by microscopic examination of the blood itself.

The possibility of finding the organisms by microscopic examination, not as a matter of diagnostic importance, but of scientific interest, had, indeed, occurred to one of us (Holmes) as it had probably done to many others, and in February, 1908, some attempts were made by a method suggested by another (McFarland) that did not materially differ from that later published by Stauble or that later was described by Rosenberger. As, however, it was but a matter of interest rather than importance, the attempt was abandoned after it had been made a few times without success.

When, however, it was declared that the discovery of tubercle bacilli in the circulating blood was a diagnostic method exceeding in reliability the recognition of physical signs, and when the occasional discovery of the organisms in the blood of apparently normal persons was interpreted to indicate that they were in a pretuberculous stage of the disease, it seemed time to give the new idea a sufficient amount of attention to permit a correct judgment of its truth or falsity to be formed.

Accordingly a varied series of experimental investigations were begun and carried to completion so recently that they have not yet appeared in the *Reports of the Henry Phipps Institute*. It is because of the unavoidable delay in this publication that this preliminary report is made.

The first experiments had to do with the elimination of tubercle bacilli from the circulation by the bile and succus entericus, and were undertaken by Dr. E. J. G. Beardsley, who began by a patient study of the bacteria of the feces of normal rabbits and guinea-pigs for the purpose of discovering whether any of the usual methods of staining tubercle bacilli would demonstrate the presence of acid-fast bacilli.

It was supposed that the feeding habits of these animals might result in the occurrence of saprophytic acid-fast bacilli in their intestinal discharges, but, in spite of most painstaking and time-consuming efforts, not a single acid-fast bacillus was found. The animals whose feces had been studied were next infected with tubercle bacilli, and frequent examinations of their feces continued during the progress of the disease toward its fatal termination. The guinea-pigs were injected intraperitoneally with a bacillary suspension, and rabbits were injected with a similar suspension of tubercle bacilli into the ear vein. In spite of the expenditure of much time and effort, there was not a single instance in which acid-fast bacilli were found in the feces, though they were commonly present in the urine of the animals. From these researches we were led to the conviction that the tubercle bacillus does not commonly pass from the blood to the intestinal contents either through the bile or the succus entericus.

The next step in the series concerned the length of time that the tubercle bacillus, when artificially introduced, remains in the blood of an experimental animal. It is well known that saprophytic bacteria and indifferent minute particles, if introduced into the streaming blood, are quickly caught in the capillaries and so disappear. To determine whether this was true of the tubercle bacillus, we prepared a fairly homogeneous suspension of dead tubercle bacilli, by grinding them in a mortar, adding physiologic salt solution, drop by drop. After a suspension of a density somewhat greater than that employed for making the opsonic test had been prepared, it was centrifugated for a few minutes, so that the coarser clumps were thrown out and a homogeneous suspension secured. When this was stained and examined it showed the bacilli well divided, clumps of any magnitude few in number, and some of the bacillary substance pulverized by the action of the pestle.

Three cubic centimeters of this suspension were thrown into the circulation of a large white rabbit by means of a hypodermic needle inserted into the posterior marginal vein of the left ear. Blood for examination was secured from the same vein of the other ear at intervals of five, ten, fifteen, thirty, sixty, one hundred and twenty and three hundred minutes, respectively. In order that the slides prepared from these samples of blood might be more carefully examined, two sets were prepared and given to two men in different institutions, each being told he was to check the other's work. This resulted in a rivalry of effort, each being determined that the other should not triumph over him in carefulness; but it is interesting to relate that Dr. Beardsley, who made his examinations at the Phipps Institute, and Dr. E. A. Case, who made his at the Medico-Chirurgical College, came to exactly the same results, both being totally unable to discover any acid-fast bacilli in any of the samples of blood taken from the rabbit. In view of the laborious nature of the experiment and its entirely negative result, it was thought unnecessary to repeat the work, for it seemed to us that the tubercle bacilli must follow the course of other foreign particles and quickly disappear from the circulation.

The third step was an investigation of the blood itself for the demonstration of bacilli in tuberculosis. This part of the work was undertaken by Dr. E. Burville-Holmes, the patients of the Hospital and Dispensary of the Henry Phipps Institute of Philadelphia and the Bryn Mawr Hospital furnishing the necessary cases. At first the Rosenberger technic, learned from its originator himself, was employed, but, as it involved the use of the Pappenheim stain, we found ourselves frequently disturbed by the presence of artefacts that bore some considerable resemblance to bacilli. After a number of experiences of this kind, this solution was abandoned for other methods less apt to be confusing. With this exception the Rosenberger technic was adhered to. The experiments will appear in detail in a paper to be published in the *Report of the Henry Phipps Institute*, but a brief synopsis will be given here, as they are of great interest.

Of the cases at the Phipps Institute, a total of fifty were examined. Of these, forty-nine were cases of undoubted clinical phthisis—pulmonary tuberculosis—representing nearly all the phases or stages of the disease; one was a case in which the clinical findings were, and still remain, so atypical as to make it very doubtful whether the patient is tuberculous or not. In the blood of the forty-nine patients known to be tuberculous, not a single tubercle bacillus could be found; in the one almost certainly not tuberculous, acid-fast organisms were found in very small numbers.

At the Bryn Mawr Hospital four cases were studied. They embrace the cases of (1) a child with acute military tuberculosis; (2) a student of the Villa Nova Seminary admitted to the hospital with symptoms atypical in character, but suggesting typhoid, who soon developed meningitis, thought to be tuberculous meningitis, and died; (3) this young man's roommate, who was admitted about a week later, also with meningitis, and in whose cerebrospinal fluid meningococci were present; and (4) an old woman with double senile pneumonia.

In all of these four cases, acid-fast bacilli were found in the blood in large numbers. The contradiction was most perplexing. At the Phipps Institute, forty-nine cases of tuberculosis and no bacilli; one case not tuberculous with bacilli, contrasted with the Bryn Mawr Hospital, where there was one case tuberculous and three not tuberculous, all with bacilli. (Here let it be said that the appearance of the second student with epidemic cerebrospinal meningitis convinced us that the first suffered from the same malady.)

We could not harmonize these perplexing results, and were much disturbed by them. Why should these organisms be found in 100 per cent. of the cases at Bryn Mawr, and always in considerable numbers, when they could be found in only 2 per cent. of the cases at the Phipps Institute and only in small numbers?

Just at this moment Brem published his paper,¹ in which it was declared that the laboratory distilled water, when permitted to stand for some time, became the habitat of an acid-fast bacillus, easily mistaken for the tubercle bacillus, admitted to the specimens of blood during the technical preparation, and leading to erroneous conclusions when the slides are studied.

This suggestion, especially because of the way in which Brem's investigations had been performed, carried conviction with it and opened our eyes to the probable source of our paradoxical results.

Rosenberger, having long before received the suggestion that the micro-organisms he found might be contained in some of his reagents, had carefully examined them, without finding any contaminating organisms, and at the Phipps Institute, the same circumstance having been mentioned, the reagents, including the distilled water, had been carefully examined with negative results.

But Brem first thought to fix the sediment, collected by centrifugation and evaporation, to the slide with albumin and so caught and retained the organisms. This plan seemed to be an excellent one, we adopted it and made a study of the laboratory distilled water at the Bryn Mawr Hospital and at the Phipps Institute. The results were of surpassing interest, for the water from the former institution was found to contain great numbers of acid-fast bacilli, not unlike tubercle bacilli, and resisting the decolorizing effect of Pappenheim's solution, while in the water of the latter institution none were found.

The whole matter immediately became clear, and our paradox explained. At Bryn Mawr, where the distilled water was full of the acid-fast organisms, they entered the blood during the sedimentation following the addition of the citrate solution, or, in the later suggested technic, during the laking of the blood, being caught in the soft film of adhesive material and fixed with it, and so were present in all the specimens of blood derived from tuberculous or non-tuberculous cases. At the Phipps Institute, where the water must have contained exceedingly few of the organisms, they contaminated only one of the many preparations made.

From these experiments and experiences we feel constrained to believe that Rosenberger has been the unfortunate victim of a mistake, the peculiar character of which it was exceedingly difficult to discover. We believe that the presence of these "water bacilli" in the preparation explain most of the cases in which what were supposed to be tubercle bacilli were found in the blood or feces, and that the use of the Pappenheim reagent explains the remainder; that in consequence there is every reason to believe that tubercle bacilli do not often circulate in the blood in quantities capable of ocular demonstration; and that the deductions made by Rosenberger (that tuberculosis is primarily a bacteremia, and that the easiest and earliest means of arriving at a diagnosis is by an examination of the blood) are unsupported by reliable evidence.

MIGRAINE *

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In this brief review I shall limit myself to a discussion of what by analogy might be termed "idiopathic megrim" as opposed to the symptomatic hemicrania which we occasionally meet as a manifestation of hysteria, in cases of general paresis, of tabes, of focal lesions of the brain, of periodic ophthalmoplegia and even less frequently in other organic lesions of the cerebrum. This distinction is one which is not infrequently ignored in practice as well as in the literature on the subject, a fact which has undoubtedly contributed in no small measure to the many differences of opinion among the authors.

1. Brem, Waller V.: Investigation of Blood for Tubercle Bacilli, *THE JOURNAL A. M. A.*, Sept. 18, 1909, liii, 909.

* Read before the joint meeting of the Chicago Ophthalmological and Chicago Neurological Societies, Nov. 8, 1909.

Idiopathic migraine is a disease which is slightly more common in women than in men. That it is especially frequent in brain workers, as is claimed by most observers, is denied by Moebius. A very large number of famous persons, however, have been sufferers from this malady, and many of those who have discussed it in medical literature have added to our stock of knowledge from their own experience.

The first attack usually occurs early in life—in about two-thirds of all cases supposedly before the twentieth year; and probably this percentage would appear still larger if only the cases of true idiopathic megrim were considered. In one instance, the case of Bohn, the disease is even said to have been congenital. Among the etiologic factors, one overshadows all others, and that is heredity. There is certainly no one nervous disease of a functional nature which is transmitted from parent to offspring as frequently as is hemicrania—no one in which direct heredity plays so important a rôle. In 18 out of 110 cases Kovalevsky could trace the malady through three generations, Mills in one instance even through five generations. Not solely megrim, but other nervous troubles, such as epilepsy, neurasthenic or hysterical conditions, etc., are found in the ancestry of migrainous patients. So common, in fact, is this history of neuropathic taint that it seems at least very probable that without it migraine does not occur.

Gout is supposed by English writers to have an important influence in the genesis of megrim, but the fact that the former is very common in that country and that in other regions where such rheumatic disturbances are rather rare no such influence can be traced, rather discredits the theory. That two maladies, both of which are far from rare, should often be found in the same individual, seems hardly to justify the conclusion that the one is the cause of the other. Among American physicians the theory that eyestrain may produce megrim has found much favor. From my own observation I am not inclined to consider it an important cause of true idiopathic migraine, and least of all can I induce myself to believe that it could produce the disease in a person who is not predisposed to it by heredity, so that at best it could, in my opinion, be considered an exciting cause only, rather than the *fons et origo* of the malady. The same is probably true of nasal troubles and enlarged tonsils, as well as of the infectious diseases, such as typhoid fever, measles, scarlet fever, malaria; of the intoxications, especially through alcohol and nicotine; of trauma, malnutrition, over-exertion, frequent parturition and prolonged lactation. All sufferers from megrim are familiar with the baneful influence of overexertion and worry, grief or prolonged irritation. Very strangely insomnia does not seem capable of exciting an attack. My own personal experience coincides with that of Moebius, who found that the pain was especially liable to appear after an unusually long and sound sleep; in fact, I can produce an attack in myself with almost absolute certainty by sleeping a few hours longer than is my habit. Sexual overindulgence, insolation, foul air in an overheated room, sometimes an indiscretion in diet, may bring on an attack. The vast majority of sufferers from megrim also suffer from chronic constipation. In women each menstrual flow may bring on the pain, while pregnancy—in some instances at least—brings temporary relief. Sudden changes in weather, thunderstorms, a damp atmosphere, are sometimes given as exciting factors.

Many such patients can predict the coming of an attack. For a day or so they feel depressed, tired, less

energetic, irritable and cross, while with others periods of euphoria have an equally ominous significance. I never feel more happy, more energetic and buoyant than on the day preceding an attack and have long ago learned to expect a day of suffering to follow these pleasurable sensations. Others are even less fortunate, for they are troubled by all sorts of disagreeable prodromal symptoms, such as chills, gastro-intestinal distress, indefinite fear, intermittent slight pains in the head. Occasionally, even before the patient himself is conscious of the coming of an attack, his facial expression may indicate fatigue; one eyelid may droop or, in rare cases, diplopia may develop. This is often followed by the abnormally sound sleep already referred to, and on the following morning the patient awakes with the headache.

Such a prodromal stage as has just been described is far from being a constant phenomenon. It may precede or be replaced by an aura, the latter most frequently affecting the sense of vision. Almost invariably it is only one-half of the visual field that is disturbed, at least at the beginning of the attack. It is hardly necessary here to describe the various phenomena that occur—the simple feeling as though a veil were being passed in front of the face, as though one-half of the visual field were black, the spots, sometimes luminous, then again dark, the showers of sparks, the zigzag lines, either black or else in all the colors of the rainbow. Transitory hemianopsia, central scotoma, concentric limitation of the field of vision, all have been observed, these latter usually affecting both eyes.

Of other symptoms of similar import, paresthesias, beginning in the periphery of one extremity and ascending toward the trunk, those in the arms often reaching the face, lips and tongue and then spreading to the opposite side of the head as well, deserve mention. They may sometimes be associated with hypesthesia or with weakness in the affected limb.

The various forms of aphasia have been seen, both of the motor and of the sensory type. One of my patients reported a brief but complete motor aphasia in the beginning of an attack. Sometimes confusion, vague fear or vertigo may occur, as do occasionally auditory or gustatory hallucinations of a very primitive character.

In many instances neither prodromi nor aura are present. The patient retires in the best of health, often has a night of unusually sound sleep—as was already stated—and awakes in the morning with the fully developed attack on him. Pain is, of course, the most prominent feature. It is usually unilateral, or at least more marked on the one side than on the other, more often on the left than on the right side of the head, and as a rule most intense around the region of the temple and the eye, but often extending along the frontal and occipital regions, as well as along the upper jaw. Attacks do not always affect the same side in the same individual. The character of the pain varies greatly, but it is perhaps most often throbbing. It is not intermittent, but remissions and exacerbations are frequent, either spontaneous in origin or due to external causes. All external stimuli may be painful; hyperesthesia to light, to sound, to odors is common. Valleix's points are frequently sensitive to pressure, as are other points along the head. A moderate degree of mental depression is common; somnolence and stupor are rarer phenomena. The affected side is often warmer to the touch than the other, and in that case the temporal arteries are prone to be more prominent, but abnormal local pallor may occur as well as alternating pallor and redness.

The action of the heart is not commonly altered, but occasionally bradycardia has been noted. The conjunctivæ are often injected; there may be lacrimation, and sometimes the distance between the two lids is lessened on the affected side. The latter symptom may perhaps have its origin in the existing photophobia, which leads to a partial closing of the eye. The pupils are often contracted, rarely dilated and often unequal, Moebius' statement to the contrary notwithstanding. Next to the pain and eye symptoms, gastro-intestinal disturbances are of greatest importance. In severe attacks it is usually impossible for the patients to take any nourishment at all, all such attempts leading to nausea and vomiting. Even a small quantity of water or the administration of drugs in any form by mouth may lead to this unpleasant result. But even independently of the ingestion of food, nausea is an almost constant symptom of an attack and it often leads to emesis, which may or may not terminate the seizure. Often we see diarrhea, either with or without colicky pains, and these again may or may not mean the end of the suffering. Obstinate constipation is, however, probably more often met, and in my own case at least there is very peculiar abdominal sensation, which I have also experienced in myself during an attack of ptomain poisoning. It is hard to describe and may perhaps best be characterized as a negative sensation, the absence of a sensation normally present, which I am inclined to attribute to the absence of the normal peristaltic movements. At such times my intestinal tract, ordinarily very sensitive to cathartics, fails to react to their administration.

In some instances, eructations, spasmodic sneezing, a profuse flow of tears, hyperidrosis, epistaxis or polyuria may terminate the attack. Mangelsdorf claims repeatedly to have seen a temporary dilatation of the stomach during the attack, which gradually lead to a permanent atony of the walls of that organ. Hemorrhages into the sclera or other parts of the eyeballs have been reported as rare occurrences.

Mantoux observed four tuberculous patients who had migraine, in whom the temperature would invariably drop with the onset of the headache, occasionally below the normal, as low as 96.8 per rectum. Both he and Steckel had seen a similar hypothermia in non-tuberculous individuals.

Russow found that the number of lymphocytes in the blood was increased in migrainous persons, slightly during the free interval only, markedly while the pain lasted. This increase seemed to bear a direct relationship to the frequency as well as to the intensity of the attacks.

Finally Gordon's paper on "Migrainic Psychosis" is deserving of brief mention. He reports 12 cases of transitory mental disturbances associated with megrim, of which several, however, are clearly epileptic, while two seem distinctly hysterical. The forms observed were: confusion, mild stupor with hallucinations, sometimes vague unsystematized delusions and delirium.

The attacks have an average duration of approximately twelve hours, varying, however, between a few minutes and several days. I have myself suffered from migraine for three days at a time. A patient seen very recently had daily mild attacks lasting only a few hours, and every two or four weeks a severe one, lasting all day. Sometimes they occur at regular intervals, as, for instance, in women with each menstrual period. In most cases the trouble appears in a mild form early in life, increases in intensity with adult age, the period of greatest stress, and then gradually moderates with

advancing years. Occasionally a severe intercurrent illness seems to cause the megrim to disappear. Moebius mentions two cases in which tabes acted in this way. The menopause not infrequently brings an amelioration, sometimes a cessation, but it has been known to produce the opposite effect.

It has been asserted by some and denied by others that migraine may result in permanent hemiplegia, amaurosis, aphasia and epilepsy. The majority of such cases were undoubtedly instances of symptomatic rather than of idiopathic hemiparesis.

Little can be said about the prognosis of the disease that has not already been given. The disease usually lasts the greater part of life, probably never terminates fatally, very rarely produces really grave results. Treatment rarely brings complete relief, but from my personal experience and that with my patients I should conclude that a marked improvement may often be obtained by a long-continued course of treatment. In my own case it has been possible to reduce the frequency of the attacks materially and to modify them so that they no longer incapacitate me from my work, and that at a time of life at which exactly the opposite development was to be expected. As a curiosity I wish to mention one patient, who for many years had been a sufferer from megrim as well as from exophthalmic goiter and who, when the latter disease had been very beneficially influenced by the serum of the thyroidectomized animal, ceased to have attacks of migraine.

Prophylactic treatment seems practically out of question. If we were to advise our migrainous clients not to marry, they would probably laugh at us, and, even if they did not, such advice would hardly seem justified. Where we have reason to suspect a predisposition for the disease, a simple mode of living, plenty of fresh air, a late beginning of school education, avoiding of excitement and mental exertion and—where a tendency to constipation exists—the administration of salines at regular intervals may be suggested. If we can influence the choice of occupation in such an individual, a vocation which will keep the patient out of doors should be counseled. Meat should be taken only in moderation, alcohol prohibited altogether, coffee and tobacco used only in small quantities and sexual excess avoided. A proper climate, preferably one that is dry, sometimes brings relief. Excessive mental work, excitement and anger, living in rooms with foul air, much "society," indiscretions in diet are to be shunned as much as possible.

Of drugs, the bromids have found enthusiastic advocates in Chareot and others. They recommend that the drug be continued for some time, perhaps with larger doses whenever there is any indication of a threatening attack. I have tried this treatment thoroughly and have had but very little success with it. The salicylates and the host of coal-tar anodynes are often useful and may sometimes abort an attack. Salipyrin especially has given me satisfactory results in a number of instances. Gowers recommends nitroglycerin in those cases in which the face turns pale. My personal experience does not justify me in expressing an opinion as to its value. Cannabis indica often is helpful in an attack. It is hardly necessary to state that the opiates should never be used if there is any other method of procuring relief. Hydrotherapy, massage, gymnastics, electricity are all of them useful in improving the patient's general health, the most important thing in the treatment of this malady. Gentle massage of the painful area often decreases the suffering. That an existing tendency to constipation requires careful attention need hardly be empha-

sized. During the attack a cup of strong coffee, the application of menthol to the temple, a mustard plaster to the back of the neck, an ice-bag to the head, may be soothing. Oppenheim claims marked improvement in many cases from the administration of arsenic, in some even a cure. Moebius mentions the curious fact that in some of the milder cases mental effort brings relief. I can confirm this statement from personal experience. The reading of a novel will not do it, but the study of an involved problem, one that requires the closest attention, often stops the pain with me.

What is migraine? A neurosis, say the text-books. That, translated into plain English, simply means that we know nothing of its pathology. The old theory of the sympathetic nerve origin has long since been dropped by most physicians, and it appears more than probable that the brain is the seat of the disease. That is as far as our knowledge goes. The rest is theory. That in these days it could not escape the fate of all mysterious diseases, that of being considered the result of auto-intoxication, is a matter of course. Those who hold this belief cannot prove it; those who do not share it cannot disprove it. There is no denying, however, that strong arguments can be advanced in its support. With a brief reference to the view that megrim is a manifestation of epilepsy I shall conclude these remarks. While in some details a superficial resemblance may be traced, in all essential and important features the two diseases seem to bear but a scant resemblance.

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THE DIAGNOSIS AND TREATMENT OF AMEBIC ULCERATION OF THE LARGE INTESTINE *

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I have chosen the designation "amebic ulceration of the large intestine" instead of the customary "amebic dysentery" in order to emphasize several points which seem to me of vital importance to a profitable study of the subject:

1. The essential feature of the disease process is always ulceration. Inflammation of the mucosa, more or less general, loose stools, mucous and bloody discharges, etc., are usually present, but they are properly to be regarded as incidental or secondary and in no sense distinctive.

2. The characteristic lesions of the disease are always found in the large bowel. The consensus of opinion is that the primary site of invasion is the cecum, whence the infection is carried by natural forces throughout the colon and rectum. Involvement of the distal portion of the ileum is occasionally mentioned in autopsy reports, but clinically this possibility may be, and usually is, ignored.

3. In the majority of cases there are no constitutional symptoms except such as may properly be considered secondary to derangement of the bowel function. Impairment of the general health is a sequel, not an inherent part of the pathologic process.

The disease is, therefore, to be regarded as a local, not a general, systemic disease, and may be tersely defined as a chronic ulcerative affection of the large bowel due to the local action of the *Ameba coli* (*Entameba histolytica*, Schaudinn).

It is more than unfortunate that the term "dysentery" should ever have been applied to this affection, for the reason that it so often leads to confusion and error with respect to the therapeutic management. In the traditional teachings as to the treatment of dysentery, whether acute or chronic, medication by the mouth was uniformly emphasized as all-important and all-sufficient; and, in spite of our present-day enlightenment on the subject, the profession seems strangely reluctant to abandon the old fallacy. The very name "dysentery" still, with lamentable frequency, suggests a therapeutic routine which begins with calomel and the salines, includes opiates, astringents and intestinal antiseptics, and ends with bismuth and ipecac. Often there is no other symptom than bloody discharges from the bowel on which to base the diagnosis, and sometimes, sad to relate, there is only the statement of the patient that he has "bloody flux." Happily the modern teaching on this point is clear and emphatic. It is now well understood that the passage of blood from the rectum may be due to a wide variety of causes in no way related to dysentery, and the necessity of a careful local examination in every case is coming to be recognized as a sacred obligation.

It would be interesting, did time permit, to discuss the various views advanced by pathologists as to the real etiologic factor in these cases. By some the primary causative relation of the amebas is variously disputed, the contention being that a sound normal mucosa is proof against invasion by the organism. This view is very probably correct, at least as regards the initial infection. But in the light of pathologic findings it cannot be gainsaid that the nature and chronicity as well as the gravity of the affection are determined by the protozoa.

DIAGNOSIS

The symptoms of amebic ulceration of the large bowel do not differ from those due to ulceration from other causes. Loose stools, discharges of mucus, pus and blood, tenesmus, abdominal distention, loss of appetite, strength and flesh, progressive anemia, etc., etc., are the phenomena common to all forms of ulceration of the large intestine, but characteristic of none. It remains, then, in every case to institute a thorough local examination both to determine the site and extent of the trouble and to differentiate its exact nature. As heretofore observed, the rectum and sigmoid are practically always involved and with the use of the perfectly simple modern methods of examination, the direct inspection of these parts presents no difficulties. If the lesions be of the amebic type, their appearance is so characteristic as to render them easy of recognition by anyone who has ever before examined a case. The ulcers are variable in size, number and location, irregular in shape, but showing a tendency to extend in the direction of the circular muscular fibers, and covered with white or dirty gray pellicles, the removal of which usually leaves bleeding surfaces. Except in old neglected cases the lesions do not extend deeper than the submucosa, but present undermined edges and not infrequently are connected by submucous tracts. The free margins and proximal surfaces of the rectal valves seem to be favorite sites of invasion.

But while the clinical picture is often—I may say generally—sufficient for a diagnosis, it is strongly advisable that the confirmatory evidence of the microscope be sought in every case. This involves no great outlay of time or trouble and requires no special laboratory train-

* Read before the Section on Medicine of the Southern Medical Association, New Orleans, Nov. 9-11, 1909.

ing. It is only necessary that the slide be warmed to approximately body temperature and the cover-glass pressed well down on the specimen so as to spread it thinly and uniformly. When present, the amebas with their characteristic movements are always the most conspicuous objects in the field.

In order for the microscopic examination to be of any real value in the diagnosis, it is of great importance that the specimen be properly obtained. Neither mucus nor feces are reliable for this purpose. Amebas may be found in them, but their presence is more or less accidental and their absence without diagnostic significance. The only reliable method of obtaining a specimen is by ennetting an ulcer under direct vision through the proctoscope, the scraping being transferred to a slide and handled exactly as though it were merely mucus. If the case be one of amebic infection the organisms will rarely fail to appear in such a specimen.

Another aid to diagnosis, but one of only corroborative value, is the leucocyte count. Leucocytosis is usually present and is closely proportionate to the degree of inflammation and the amount of tissue destruction. By this means some knowledge of the patient's power of resistance may be gained and so, in doubtful cases, assistance in settling on the best plan of treatment.

TREATMENT

The treatment of amebic ulceration may be considered under three heads: general, local and surgical.

General Treatment.—This includes (1) rest, (2) diet, (3) hygienic and sanitary measures, and (4) medication by the mouth.

1. Rest is always of great importance. Ordinarily, time will be saved by confining the patient strictly to bed until control of the disease has been established. This may require only a few days or several weeks, depending on the severity of the case, but treatment will be far more promptly effective than if the patient continues on his feet.

2. Diet is also a matter of importance. For a few days it may be well to restrict it to liquids given in small or moderate quantities at frequent intervals. I am convinced, however, that serious error is often committed in this connection. These patients usually come to us weak, emaciated and semistarved from their own efforts at dieting, and one of the urgent indications is to give them nourishment as soon and as rapidly as possible. This can generally be done even in severe cases much earlier than is customary by devoting due care and attention to the subject. In addition to the predigested foods, peptonized milk, junket, etc., it has been my observation that in the majority of cases thoroughly browned toast, juice expressed from fresh beef, and soft-boiled eggs are well borne. Fruits, sweets, and all but the simplest foods should be withheld.

3. As for hygienic and sanitary measures, the former refer to the patient himself, and include fresh air, sunshine, cheerful surroundings, etc. In obstinate cases a change of climate may be helpful through its effect on the general health. Sanitary measures refer more particularly to the protection of the patient's family and community. The nurse or attendant should be given explicit instructions as to destroying all discharges from the bowel, and also as to the proper cleansing of his hands after waiting on the patient. The infectious agent is probably, in the main, water-borne, and the danger of contaminating the water-supply should be fully explained to all concerned.

4. Medication by the mouth. Referring first to the so-called specific medication, holding, as I do, most firmly that this disease is purely a local affection of the large bowel, I cannot believe that ipecac or any other medicinal agents administered by the mouth will retain sufficient potency after traversing the twenty-odd feet of small intestine to exert a destructive effect on the amebas when these are finally encountered. If this principle were correct, it would seem that the practically unanimous verdict of authorities with reference to the inefficacy of the antiseptic treatment of typhoid fever would, to say the least, be inconsistent. I am aware that the ipecac treatment is lauded by many whose opinions are entitled to all respect. But it is to be remembered that they have not relied on the drug alone. On the contrary, their reports show that dietetic and hygienic measures as well as irrigations have been coincidentally employed, and from my point of view these were in reality the effective agents. I would interpose no special objection to the use of ipecac; but I would strongly urge that, in the light of our present knowledge, dependence on it to the exclusion of other measures is both unwise and unwarranted.

Speaking generally, the administration of medicines by the mouth should be resorted to only in the presence of well-defined indications. The routine administration of any remedy is to be condemned. In the beginning and from time to time during the progress of the case benefit may be expected from a mild mercurial purge. Occasionally an opiate will be required, though extreme caution should be exercised on this point. Intestinal antiseptics sometimes seem to be of benefit, acting by inhibiting fermentation and preventing toxemia, rather than by any special germicidal effect on the offending organisms. Among the more reliable agents of this class, salicylate of bismuth, betanaphthol, thymol, resorcin and phenyl salicylate (salol) may be mentioned. The first-named in my experience has proved the most dependable.

Local Treatment.—Whatever difference of opinion may exist as to the efficacy of ipecac, there is a striking and complete unanimity with reference to the value of local treatment. There is, however, some disagreement as to the best methods and measures to employ. Basing what follows on personal experience, let us consider the local treatment under two heads: (1) topical applications and (2) irrigations.

1. Undoubtedly in the average case the greatest single factor contributing to the patient's discomfort is the tenesmus. This it is which, in spite of the pain, forces him to seek the commode at short intervals, only to obtain momentary relief by passing a small quantity of blood-stained mucus and pus. The result is that sleep is disturbed, food is refused because it excites peristalsis, and strength is rapidly exhausted. This state of affairs is as unnecessary as it is deplorable. Tenesmus is a rectal symptom, due in this disease to the ulceration and inflammation practically always to be found in this organ. Now, when we reflect that the rectum throughout is as accessible to sight and treatment as the pharynx, or, indeed, as any corresponding area on the surface of the body, the term "unnecessary" as applied to this symptom and its sequels is justified. Topical applications to the diseased parts act like magic. The proctoscope is carefully introduced, the mucosa gently cleansed, and each ulcer touched with a solution of silver nitrate, 60 to 120 grains to the ounce. Before withdrawing the instrument a general application of the same agent, 3 to 5 grains to the ounce, may be made by

means of the atomizer. The treatment should be repeated daily until the symptom is under control; thereafter according to indications. The ulcers heal with remarkable rapidity and the further management of the case is greatly simplified.

2. With the large majority of clinicians, irrigations constitute the main dependence of treatment. A wide diversity of opinion exists as to the most effective solution, one man advocating one kind, another another. Personally, I believe that the effectiveness of irrigations depends rather on the mechanical cleansing action of the solution than on any medicinal agent it may contain. And I believe also that failure to cure every patient by this method of treatment is due alone to inability to reach all infected portions of the bowel with the solution.

The intolerance of the rectum, due to the local inflammation and tenesmus, renders it impossible in many cases, even with the aid of posture, to force the fluid into the higher portions of the intestine. The only means, by which this difficulty can be overcome is the introduction of the colon tube. In spite of emphatic claims to the contrary, this is a most difficult feat as ordinarily attempted, the tube curling on itself in the rectum, thus leading to a misapprehension as to the height it has reached. By placing the patient in the knee-chest or inverted posture and passing the six-inch proctoscope the manipulation is rendered both easy and accurate, the tube being introduced through the proctoscope well into the sigmoid and the latter then withdrawn. At first the irrigations should be used daily or twice a day, not less than half a gallon of the solution being carried into the bowel before any portion of it is allowed to return. Later, as the patient improves, every other day or twice a week will be often enough, but the treatment should not be entirely discontinued for some weeks at least after the cure seems complete.

The medicinal agents employed in the solutions include boric acid, quinin, ichthyol, common salt, hydrastis, formalin, etc. Cold water alone has some advocates. My preference is the formalin in boric-acid solution, beginning with 1 dram to the half-gallon and increasing the strength as tolerance is acquired.

G. S. Hanes¹ calls attention to the wonderful curative effect of ordinary coal-oil when used for irrigation, asserting that it is healing to the inflamed mucosa, destructive to the amebas and absolutely non-toxic in any amount.

In some cases it is not impossible to irrigate the colon completely with no other tube than the ordinary two-inch syringe nozzle, provided the rectum is first given careful attention and the proper posture of the patient is secured.

Surgical Treatment.—Resort to surgery in the management of this disease is warranted for one purpose only, namely, to provide a means for irrigating the entire large intestine when for any reason this is impossible per rectum and the infection is proved to exist at a higher level than can be reached from below. Obviously, then, it will be indicated in only a limited number of cases.

The operation of choice is appendicostomy, in which the appendix is utilized as a conduit for the irrigating solution. The technic of the operation is exceedingly simple, it can be very quickly performed, and is practically free from danger.

When by reason of anatomic abnormality or pathologic change the appendix is found to be unsuited for the purpose intended, resort may be had to cecostomy, which, though not so simple in technic, is neither difficult nor dangerous and answers every purpose.

The solutions for irrigating are the same as those mentioned for use per rectum. It is worthy of remark, however, that benefit apparently follows the use of plain water as promptly as the medicated solutions, seeming to prove that the effect depends rather on the mechanical action of the fluid than on its antiseptic action.

If I were asked to specify the indications for appendicostomy, I should name just two: (1) failure to relieve by non-surgical methods faithfully and intelligently carried out; (2) recurrence of the attacks at such frequent intervals as to demonstrate that certain foci of infection exist in higher portions of the intestine than can be reached by irrigations per rectum. But I should add an earnest plea that the operation be not reserved for moribund patients. Performed under proper conditions and by competent operators, it should give no larger mortality than the interval operation for appendicitis, which at the present time is practically *nil*. On the other hand, the disease itself is by no means free from danger to life, the single complication of amebic abscess of the liver and other organs causing a far higher mortality rate than that of appendicostomy.

Is appendicostomy a curative procedure? Obviously not *per se*. But that it offers a means—in certain cases the only available means—of cure is the positive verdict of many competent and credible observers. Of course, the irrigations should be kept up for a sufficient length of time to effect a cure—not less than six months or, better, twelve; and, of course, a cure following the operation does not preclude the possibility of a reinfection.

Jackson Building.

THE EARLY HISTORY OF ABDOMINAL SURGERY IN AMERICA*

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The history of abdominal operations forms one of the most interesting chapters of surgery. It is not the purpose of this paper to write it in its entirety, since, treated in detail, it would fill a large volume. It is rather the desire to give a few pen-pictures, chiefly of a personal type, of the experiences of men whom I have known and to show, if I may, the earnest cooperation of a considerable group of America's most distinguished surgeons.

As it is still the custom in some parts of the south, speaking of events transpiring a generation ago, to group them chronologically as happening before or since the war, so we may wisely group the early data into the former period. America is justly credited with the initial step in this new departure of surgery and Ephraim McDowell of Kentucky is properly called the father of ovariectomy. Although this goes back to 1809, it teaches that the world then was not so very large, and the world of thought even smaller, since Dr. McDowell was a student in Edinburgh and carried with him to his then backwoods home the wise training which he received in what was, for a long time, the first center of European medical knowledge and education. In

¹ Hanes, Granville S.: Amebic Dysentery, THE JOURNAL A. M. A., June 19, 1909, III, 1990.

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this later day, when specialism thrives in the great centers of population, we often look in vain among the specialists to find the splendid all-around educated men who can compare favorably with the judicial-minded, self-centered, better type of country practitioners. Such was Dr. McDowell, who necessarily had to do his own thinking; and it is the universal verdict that he did it wisely and well. Such also were the distinguished coterie of his followers, some of whom I had the honor to count as my friends, although they were in their full maturity while I was yet a junior. Thus I knew and loved the Atlees, splendid specimens of manhood, of masterly intellect blended with a gracious sweetness and kindness as tender as that of a woman. Gilman Kimball of Lowell, Horatio R. Storer of Boston, and the immortal Marion Sims and Addison Emmet of New York were also among my early masters and life-long friends.

Washington L. Atlee was born in Lancaster, Pa., in 1808 and graduated from Jefferson Medical College in 1829. In an address to the alumni of that college Professor Gross described him when a student as tall, erect and handsome in person, neat in his appearance and possessed with an amount of industry, intelligence and ambition which foreshadowed his future success. Young as he was, he was constantly in search of new truths and devoted to his profession. In a pamphlet published by him entitled "Retrospect of the Struggles and Triumph of Ovariectomy in Philadelphia" he states:

On the 29th of June, 1843, my brother performed ovariectomy. This was the first time that both ovaries were removed. Being associated with him in the case, I commenced studying the literature of the operation and soon realized the bold and important step taken thirty-four years before by McDowell, of Kentucky.

Dr. Atlee operated twice in 1844. The first case, that of a woman of 61 years, proved fatal; the second patient recovered. His third operation, the first case in Philadelphia, was performed in March, 1849. He says, however:

On moving to Philadelphia I found I had roused up a hornet's nest. Ovariectomy was everywhere decried. It was denounced by the general profession, in the medical societies, in all the medical colleges and even by the majority of my own colleagues. I was misrepresented before the medical public and was pointed out as a dangerous man, even as a murderer. The opposition went so far that a celebrated professor, a popular teacher and a captivating writer, in his public lectures invoked the law to arrest me in the performance of this operation.

The name of Atlee stands without a rival in connection with uterine fibroids. His operations were so heroic that no one for a long time dared to imitate him.

He died in September, 1878.

Dr. John L. Atlee shared the honors with his brother. In the discussion of the better methods of treating the pedicle of ovarian tumors (American Medical Association, June, 1876) he advocated the use of the clamp when possible, stating:

I have used the ligature; I have used the hot iron; I have used the needle through the pedicle and walls of the abdomen; I have employed every method of treating the pedicle except pocketing it, and I prefer the clamp. I think the advantage of the clamp consists chiefly in keeping dead tissues out of the abdominal cavity. It fixes the uterus in position. Owing to the relaxed abdominal wall it is not a drag on the pedicle.

I have now operated over 340 times; over 200 times with the clamp with 79 per cent. recoveries.

Dr. Sims objects to the clamp, since it may produce a sloughing of the pedicle and give rise to septicemia; this I have

never seen. The pedicle recedes and the wound heals by granulation.

Dr. A. Dunlap of Ohio, a man whom, for his many excellent qualities, I learned to love, and a great admirer of Dr. McDowell, took exception to the use of the clamp, preferring small silk ligatures. He said:

The majority of the patients I have operated on would not have borne to have had the clamp applied putting the pedicle on stretch, since that would have endangered the patient on account of inflammatory action.

He states that he has had 80 per cent. of recoveries with which he has not been satisfied. He obscurely recognized infection and stated that some of his most favorable-looking cases were fatal, but not because of disturbance of the peritoneum. He used drainage-tubes in his most serious cases. He pointed out the increased mortality in patients operated on in large general hospitals and advocated careful exclusion in private wards. He gave the following reason for his objection to the drainage-tube:

The air will pass into the cavity of the peritoneum as readily as the fluid will pass out. Every motion of the diaphragm and abdominal muscles acts like a suction-pump and will draw air into the cavity of the peritoneum alternately with the outflow of the fluid. Blood and bloody serum which without the contact with air might have been safely absorbed, will be more likely to putrefy and thus increase the danger to the patient. In cases, however, in which it has already occurred, the insertion of a drainage-tube is useful in aiding the discharge of the pus and putrescent fluids.

Closely associated with ovariectomy is hysterectomy for the removal of large uterine myomata. Mr. Charles Clay of Manchester, England, is accredited with the first operation deliberately undertaken for this purpose. The patient died two hours afterward from hemorrhage. This was in August, 1843. In November of the same year Mr. Heath operated, the patient's death, attributed to shock, probably from hemorrhage, taking place seventeen hours afterward. The cause of death in both cases was considered to be the division of the pedicle by the knife rather than by écraseur. Mr. Clay's second case was in January, 1844. Death, caused by the nurse letting the patient fall on the floor, took place thirteen days after the operation. The first successful case was that of a patient of Dr. L. P. Burnham of Lowell, Mass., operated on in June, 1853. After describing the operation in detail, Dr. Burnham said:

I then passed a strong double ligature through the neck of the uterus and tied on each side; then, to make doubly sure against hemorrhage, a ligature was placed around the whole neck. No hemorrhage followed. After the removal of the uterus an examination of both ovaries revealed a diseased condition and they were accordingly extirpated. The abdominal cavity was then carefully sponged and all blood clots removed.

The wound was treated with cold water dressings. Severe inflammation followed with free suppuration. The last ligature came away the fifth week. In all, Dr. Burnham performed fifteen hysterectomies for fibroid tumors with three recoveries. One death was due to hemorrhage. In the light of modern knowledge death in the other cases was due probably to infection.

Dr. E. R. Peasley of New York operated in 1853, death occurring on the eighth day from intestinal obstruction—the intestine protruding between the abdominal sutures.

More than passing notice is due one of my first teachers, Dr. Horatio R. Storer of Boston. Personally I am under a debt of gratitude to Dr. Storer which can never be paid. We loved him despite, if not for, the enemies that he made. His equally distinguished father had

carefully supervised his education. A graduate of Harvard, a student at law, in due course a doctor of medicine and for four years a sharer in the home and training of the immortal Simpson of Edinburgh. As a labor of love for such instruction, he and the late Dr. Priestley of London edited the works of Dr. Simpson in two volumes. Dr. Storer returned to Boston and was appointed an instructor on the diseases of women in the Harvard Medical School. He had a most enthusiastic following when, as an undergraduate, I first met him. He soon became one of the most popular practitioners in the city of Boston and was said to have had the largest income of any member of the profession in New England. He was indefatigable in his work. He founded the Gynecological Society of Boston, the first special society devoted to the diseases of women in the world; and for seven years he published the *Journal of the Gynecological Society of Boston*. The first successful case on record undertaken for the cure of umbilical hernia was one of his early operations. In September, 1865, he successfully performed hysterectomy; and this was the twenty-fourth case of the operation placed on record and the fourth successful case operated on in America. In 1866 Dr. Storer contributed an elaborate paper on the treatment of the pedicle of fibroid tumors and strongly advocated the use of the clamp. He devised an instrument which he called his clamp-shield, an instrument capable of producing enormous compression and hinged on a pivot rotating so as to allow closure at any angle. I consider it the best, as well as last contribution for the external treatment of the pedicle by compression.

Dr. Storer made a further contribution, and in my judgment a more valuable one, which he called "pocketing the pedicle." Briefly, it was to suture the stump of the pedicle through and through with the deeper layer of the abdominal wall and thus keep under easy inspection the divided parts. By it he was enabled, in the non-infected cases, to close off the abdominal wall and protect the peritoneal cavity. This was, of course, a step in the direction of aseptic surgery, although taken blindly. There is no doubt that Dr. Storer was the "best-hated" member of the profession in Massachusetts. A long and dangerous illness removed him from the active arena and years were spent in Europe in quest of health, unfortunately never restored fully. He gave brilliant promise of being the leader of gynecology in America, notwithstanding the vituperative abuse unsparingly showered on him by men who should have known better. A generous share of this attention was bestowed on me as his ardent defender. I have somewhere a letter of his, written at the time, containing a touching appeal to forget him and his service to suffering humanity lest it work my ruin. He is a man of strong magnetic power, quick of thought and action, fluent of speech, equally ready to attack his enemies and to defend himself; and there are yet many who hold his service in grateful remembrance.

Dr. Gilman Kimball of Lowell, Mass., continued active until late in life. I saw him operate a number of times when past 70 with his usual skill and ability. I attended him in his last illness; he died when past 80 of hemorrhage from the stomach. He was a man to command attention in any assembly, although modest in the extreme. His abdominal operations totaled about 300. He removed the uterus in fourteen cases with six recoveries.

One of the earliest hysterectomies under the antiseptic method which I find recorded was by Dr. T. G. Thomas of New York, who used his clamp and passed

four knitting-needles at right angles through the pedicle to prevent slipping. Although Dr. Thomas called this the antiseptic method, in his report of the case, it may be questioned if infection did not follow, since he states that "the portion of the uterus in and below the clamp entirely sloughed out; the cavity which was left healing by granulations, so that no trace of the organ remained."

About this period Dr. Thomas invited me to New York to see him remove an abdominal tumor and pass judgment on his technic. The tumor proved to be a large multiple cystoma without adhesions and the operation, simple as it was, should have been a brilliant one. All the paraphernalia of the time was in requisition. Two large steam atomizers played constantly on the field of operation. The room was very hot and close. The small pedicle was ligated and dropped within the abdominal cavity. All went to the seeming approval of the select group of distinguished guests. Coming from the operation, Dr. Thomas asked my criticism of the operation, to which I replied asking if he sought compliment or the detection of faulty technic. He answered he hoped the latter. Then I called his attention to the fact that he had taken an unsterilized towel and wiped the perspiration from his face and hands during the operation. The patient died on the third day from infection; and Dr. Cleveland, his then assistant, told me that special preparations had been made in order to show me a faultless technic.

Of the distinguished men who founded the Woman's Hospital of New York and who laid the foundation for abdominal surgery Sims, Emmet and Thomas stand out in bold relief. No men in America have had such splendid following. Sims was the magnetic, dashing Southern leader. Thomas and Emmet were his distinguished lieutenants, equally honored and beloved. The work of such masters is stamped with immortality.

Even the devastating war, which, directly or indirectly, brought death, calamity and sorrow into every household of our great country, had a fruitage of good. One of these benefits was the resultant better training of the younger generation of medical men in the field and camp. Many of the young army surgeons saw more clearly the need of higher education in their profession and were led to seek postgraduate training, then to be obtained almost exclusively in Europe. The surgical history of the Civil War was written by Dr. George A. Otis, formerly of Springfield, Mass., in a work perhaps unequalled by any American contributor to our literature. It is a mine of information which may be worked advantageously by any seeker of surgical knowledge; and I commend its careful study to those who would be masters of our art. I had the good fortune to begin my study of medicine with Dr. Otis as my preceptor and again to meet him when we were both surgeons in the Union army. He was a Virginian by birth. I sought his instruction on the recommendation of one of the first practitioners, who stated that Dr. Otis was probably the best educated physician in western Massachusetts. He had for a long time been a special student in Paris; for six years a medical editor in Richmond, Va., and later made Springfield, Mass., his home. He was a devout Catholic, fond of music and leader of the choir in his great church and an earnest union man. As a man of wealth he lived generously, his fine estate being nearly opposite the great Springfield arsenal. He appreciated the political situation far more accurately than most men of the north; and when, under the direction of Secretary Floyd, the arsenal was depleted of

its hundred thousand modern rifles to stock the storehouses in the southern states, he pointed one day to the long line of teams with their precious freight and said to me, "You men of the North have little conception of the volcano over which you are living." He remained in the service of the United States until near his death, which occurred in Washington. I think he was never quite so happy as when preparing some interesting specimen; and our army museum is the monument of his skill and industry. His voice was soft and pleasing; his southern accent modified by his long Parisian training. He was small in stature, quick in action, and at once impressed himself on those about him as a leader. He collected the records of 3,717 cases of penetrating wounds of the abdomen during the war of the rebellion and gives the ratio of mortality at 87.2 per cent. In 2,559 cases in which visceral injury had taken place 92.9 per cent. died.

In the *Transactions of the American Medical Association* for 1881 my late and beloved friend, Dr. Hunter McGuire, another distinguished Virginian, discussed gun-shot wounds of the peritoneum. He pertinently inquires:

Why are all penetrating wounds of the abdomen, with or without visceral injury, so fatal? Why, when the patient has escaped shock, exhaustion and hemorrhage should peritonitis kill within forty-eight hours? I believe the mortality is often due to some kind of blood poisoning connected with peritonitis just as often we see septicemia associated with peritonitis under other circumstances, notably after parturition and ovariectomy.

He said:

The wound in the abdominal wall should be enlarged or the linea alba opened sufficiently so that the injured parts could be thoroughly examined. Hemorrhage should be arrested. If intestinal wounds exist, they should be closed with animal sutures, first trimming their edges if lacerated and ragged. Blood and all extraneous matter should be carefully removed and then provision made for drainage.

He stated that these were the measures which he advocated in November, 1873, before the Virginia Medical Society. It must be recalled that at that date few accepted Mr. Lister's then novel views of infection, and it remained for Parks and Senn to enlarge on his teachings and engraft the new discovery on Dr. McGuire's urgent advocacy of peritoneal drainage. These three men were active co-workers until so recent a period that they are known to most of our present members. Perhaps less is known, however, of Dr. McGuire, who was a representative of the best type of Virginian. He was the medical director on the staff of General Stonewall Jackson and amputated his arm soon after the battle in which he was wounded. Four days later he died; his death being attributed to pneumonia due to the free use of cold water, but Dr. McGuire later told me that, interpreted in the light of modern knowledge, it was undoubtedly due to wound-infection.

Following the Civil War I was for some years an assistant at the Harvard Medical School and gladly sought the opportunity for further instruction by spending 1869 and 1870 in Europe, for the most part in Berlin. I was well trained in anatomy and I thought I knew surgery. Besides I spent a considerable portion of my time as a pupil of the immortal Virchow in the study of pathology. I first met Dr. J. Marion Sims in Paris only a little before the outbreak of the Franco-German war, in which he distinguished himself by inaugurating in the French army the American ambulance service as it had been developed during our Civil

War. Ardent in his southern temperament, he determined that he would not live under the flag of our union. On this account he voluntarily expatriated himself and when abroad wrote his little volume on gynecology which almost at once gave him fame through Europe. Although not the first to operate for biliary obstruction, he was the first American to do the operation which was performed abroad, and, although he never repeated it, he elaborated and published the details of the technic much as used to-day.

In London I was the student of Paget, Ericson and Sir Spencer Wells with much profit. Mr. Paget asked me one day if I was familiar with the administration of ether, saying that he had heard much of its use in Boston, and, if so, he would like to have me etherize a patient for him. He stated that there had recently been six deaths from chloroform in the public service of London, and that he sought a safer anesthetic. I was introduced by him to the several hundred students occupying the amphitheater, while a small, nervous woman was brought in for operation. By good fortune the patient was soon asleep without a struggle, and Mr. Paget stated that, in so far as he knew, it was the first time that ether had been used as an anesthetic in London.

Only a very little later Sir James Simpson, who first used chloroform in surgery and stoutly declared that the only danger from its administration lay in the incompetency of the anesthetizer, had a patient die on the table before the operation was begun. Although a man of enormous physical vigor, he had greatly overtaxed himself and in his weakened condition the shock resulting from this death caused him to take to his bed and four days later he died from angina pectoris. The surgical profession of all Europe mourned his loss as that of a brother, and when, soon after, I visited his grave, the worn turf for a considerable space about his burial-place gave evidence of the crowds of both rich and poor who had sought to honor his memory.

Through the kindness of Dr. Storer it had been arranged that I should spend the summer under this great man. In the fulfilment of my plan I determined to remain in Edinburgh and thought to profit under another of Scotland's great teachers, Professor Syme. Sadly a few days later I attended his funeral. Chief among the mourners a medium-sized man, accompanied by a tall lady, was pointed out to me. It was Mr. Joseph Lister, who had married Professor Syme's daughter and through his influence had come to Edinburgh to be his successor in practice. My informant, a young local physician, said he was full of strange notions and that nobody in Edinburgh wanted him.

A few days later I presented my card and was received most cordially. I shall never forget the morning. His beds were on the first floor of the old infirmary, which was none too clean or attractive. He showed me a number of his patients; among others two or three with resections of the elbow-joint. The little patients were almost without pain or suffering, with only a moderate amount of serous discharge. Convinced by what I saw before the morning ended, I asked to be his special student for the summer; and day by day I learned more and more to admire and wonder at the miracles of modern surgery that I saw. I had heard much of Scotch character and had witnessed what I had deemed the extreme of ill temper exhibited by members of the profession in Boston, but that to which Lister was subjected exceeded all. Men well known in the world of science passed and repassed Mr. Lister in

their rounds of daily duty without a nod of recognition, and this was by no means the limit of disapproval shown.

As Virchow in the former year had supervised the selection of my pathologic equipment, so Mr. Lister kindly aided me in obtaining a generous supply of his surgical material. The large rolls of his carbolic-lae-plaster puzzled our revenue officers in determining under what schedule they should be rated for duty. I was the first American pupil of the then almost unknown Mr. Lister, but in the enthusiasm of youth I thought it an easy matter to convert my brethren, forgetting for the moment that the master himself was the target of the most bitter criticism and that his methods were decried as unscientific and absurd. When I sought to make a practical demonstration in the hospitals of Boston I was frigidly told that when my services were desired I should be notified. Stung to the quick by the cool, bitter criticisms of many whom I had considered friends in the profession, refused a hearing on the subject before the medical societies, I, unwisely, as I now think, refused a professorship in Chicago and determined that Boston should yet recognize the value of the teachings of my master and honor me as his pupil. I opened a private hospital and, regardless of fee, welcomed whoever would come to me. Of course, little by little the results of my operative procedures became known. In a complacent way it was stated that I was lucky and later that I picked my cases. In 1876 I received a royal welcome in the American Medical Association when my beloved Dr. Sims was president.

I established a laboratory for bacteriologic and pathologic research, having the good fortune to secure the able assistance of the late Dr. A. P. Holt and Dr. Samuel Nelson of Cambridge, Mass. This work was continued fifteen years, the chief problem under consideration being the rôle of bacteria in their relation to surgery, then called surgical pathology. The tender sensibilities of women of doubtful age caused complaint of our work and the society of the long name became actively interested in our little colonies of rabbits and guinea-pigs kept in my large garden for experimental research. Thus from year to year, besides communications to many of the journals, I brought the fruitage of our work to the American Medical Association, until now each year since 1876 I have been in unbroken attendance and yearly have contributed the results of my studies. I am sorry to confess that the new teaching made slow progress in its acceptance, and not until after it had met German approval did the leading surgeons of Boston consider favorably its adoption.

I offer this brief chapter of personal history, since, in a way said to be peculiar to Boston, it is now claimed for one of its leading hospitals that antiseptic surgery was there first practiced and its methods introduced by its surgeons into America. Although such experiences are intensely bitter, they may be welcomed, since the better qualities and the higher attainment are the fruitage. At about this period Dr. Sternberg began his bacteriologic research work, and for years we were the pioneers in this field of knowledge so revolutionary in its practical teaching. We first knew each other through our publications. His wise superiors at Washington thought that this young medical officer was wasting his time in such foolish study and he was ordered to service upon an island in the Pacific. Replying to a letter of indignation on my part advising his resignation, he wrote, "Such experiences make the discipline of life. It is a long road that has no turn." The

bestowal of the first honors that the government can confer on a medical officer shows that he was far wiser than I, although in a measure I tried to profit by his philosophic advice.

Little by little the unknown factors of the problem of infection and how to avoid it were slowly mastered, until now we look in wonderment on the revolutionary results of its teaching. Although general surgery has profited as never before, the battle royal of aseptic surgery was fought and won within the realm of the abdominal cavity. It would be almost invidious to single out from the considerable army of modern contributors the names of men still living and comparatively young to whom our great profession owe a debt of gratitude. A coming generation will do them ample honor. As the fruitage of my own work in research, there came almost by inference certain practical deductions.

Although in other publications I have shown that the buried animal ligature is justly accredited to an early generation of American surgeons, its modern use and the reasons of its safe application are the triumph of Lister's genius, who knew nothing of this work so well done by Dr. Jamieson, whose experimental demonstrations were published in 1827. In the days of my pupilage with Mr. Lister, although he ligated arteries with seeming impunity, cutting short the eatgut ligature and closing the wound aseptically, it had never occurred to him to bury sutures. He often called our attention to the interrupted stitch taken through and through, showing that active proliferation under aseptic conditions was not provocative of pus, but that the most active cell change took place in the deeper layer of the skin, where, if permitted to remain sufficiently long, the suture material separated, leaving the deeper portion to be absorbed. To me it seemed a simple corollary that the entire stitch could be buried and that like parts in well-vitalized tissues could be rejoined.

The first practical outcome of this reasoning was in 1870 in the cure of hernia, the cases being published in 1871. The keynote of the reasoning, the reconstruction of the parts to their normal anatomic condition, simple as it seemed, has proved the solution of the "thousand-year-old problem of surgery" and is in daily practice in all parts of the civilized world. It followed that every variety of hernia could be easily and simply cured. The causes of ventral hernia after operative interference were easily shown to be a maladjustment of the like structures of the abdominal wall, necessarily incident to the joining of the parts by the through-and-through interrupted stitch. This was easily obviated by the careful reunion of like structures by layers of continuous absorbable sutures. Such was the outcome that in the last 2,000 cases of laparotomy with primary union, in which the sundered structures were rejoined in layers with buried kangaroo tendon continuous sutures, I am not aware of a single case of hernia following operation.

The greater victories, however, have been won within the abdominal cavity. Very naturally the largest factor of success in the treatment of pathologic conditions here found result in an earlier recognition and surgical intervention. Ovarian and uterine tumors are rarely permitted to develop into the conditions in which they were commonly found by the earlier operators: a most important factor when comparing the statistical tables that is often overlooked. Tumors without adhesions leave the peritoneum as a rule uninjured. The intestines are disturbed only by displacement. Modern technique permits an easy inspection of the pelvic cavity and

bleeding vessels are readily secured. The vexed question of the pedicle, so long a stumbling-block to our fathers, is easily solved. It early appeared to me to be very important to cover in, so far as possible, all excised and denuded surfaces with healthy peritoneum, first the pedicle of the ovarian growth; and in 1880 I first put in practice the infraperitoneal treatment of the cervical pedicle in the removal of myomatous growths.

"In 1880, assisted by my distinguished teacher, Dr. Gilman Kimball, of Lowell, I removed the uterus for the first time, for a large multiple myoma, where I adopted a modification of Schroeder's method, embodying all that is at present considered essential. Commencing on one side, I sutured the broad ligament with a double continuous tendon suture, extended so as to include the cervix. The broad ligaments were divided, the peritoneum reflected from either side, the stump cut down conically and covered over by an intrafolding of the peritoneum with a continuous sero-serous animal suture. The suture thus taken intrafolded the peritoneum evenly, while it was itself buried beneath it, leaving no line of infraction of the pelvic peritoneum. Thus the stump, dropped within the abdomen, was itself extraperitoneal. This method seemed to me so important an improvement on that of Schroeder that I reported it in a paper read at the International Medical Congress¹ held in London in 1881. I incorporated it in further detail in my address on "Fibroid Tumors of the Uterus" as president of the Section on Obstetrics and Diseases of Women of the American Medical Association in 1882. In 1887 I reported still further my experiences with this method and emphasized its value. I also pointed out the importance of dealing with the larger number of uterine myomata, which developed in such a way as to have really no pedicle. My last special contribution upon this subject was a paper entitled "The Surgical Treatment of Non-Pedunculated Tumors," read at the American Medical Association in May, 1890. Up to that period, in common with nearly every other abdominal surgeon, I had considered hemorrhage the greatest of all dangers; and in order to lessen this, I devised and used the so-called rubber-dam, a thin sheet of rubber with a central reinforced opening which was stretched over the tumor and crowded down as far as possible to the base, around which was placed a constricting rubber ligature. The suggestion of its use occurred to me from noting the admirable service rendered the dentist by the constricting rubber placed around the root of a carious tooth. It served the double purpose of controlling hemorrhage and keeping the abdominal cavity entirely free from surgical contact. This was applicable, however, only to moveable tumors with a more or less distinct pedicle.

An aseptic operation thus carefully performed leaves a comparatively uninjured peritoneal cavity without points for subsequent adhesion, and convalescence speedily follows on the restoration of intestinal function.

The removal of the appendix, now a daily operation, is practically without danger when the operation is performed before the appendix ruptures and peritonitis sets in. In my entire series of several hundred cases I have not seen a patient seemingly approach the danger-line. It happens that I was the first operator in the world to remove the appendix in the so-called periods between the attacks. The credit of this interference was due to the insistence of the patient, a wise physician,

who had concluded that this was the period of special safety. So important was the operation considered then that a number of leading surgeons came over from New York to witness it. This was in November, 1886.

The surgery of the biliary tract is so recent that it requires only reference. In 1880 Lawson Tait enthusiastically told me of his long series of operations, then numbering nearly forty. I have already referred to the case of Dr. Sims, and most know that Dr. Dobs of Indiana was the first surgeon in the world to operate successfully on the gall bladder. This was due, however, to accident rather than design, since the gall bladder was so distended with fluid that it was believed to be an ovarian cyst. I happen to be the first surgeon in America to operate successfully for biliary obstruction, the patient being a physician, aged about 70. This was in July, 1887. In October, 1889, I removed a gall-stone from the common bile duct (the patient visited me only recently), and this proved to be the first patient operated on in the world for the removal of a stone lodged in the common duct. Now these operations, only so little ago declared by the leading authorities beyond the realm of surgery, are of such frequent occurrence that they cause little comment. Operation on the intestinal tract, on the kidney, on the bladder within the abdominal cavity, and even on the spleen and liver are by no means of rare occurrence.

The drainage of wounds, so long considered absolutely necessary, is the decided exception and should be almost never resorted to in aseptic conditions.

Thus closes a brief summary of the most brilliant achievements of modern surgery; and the contribution of the most important factors has been the work of American surgeons. There is good reason for believing that this was due in large degree to the openmindedness of her students. In the early part of this generation Germany claimed the rôle of honor in her teaching and would learn little from Great Britain and less from France. Great Britain, smarting under the loss of her recent prestige, refused to accept the teaching of either Germany or France; and France, in turn, which had claimed the banner for a century, would profit nothing from Germany or England. The American student without prejudice sought profit from all and earned the award so generously given by Virchow in his introductory address as President of the International Medical Congress in Berlin in 1890 when he said "America leads the world in surgery."

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LUETIC LYMPHOMA IN LATE SYPHILIS *

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AND

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Gigantic steadily advancing enlargement of the lymphatic nodules in the neck of an otherwise healthy adult, not accounted for by any pyogenic or epitheliomatous focus in the tonsils or elsewhere, leads one almost inevitably to the diagnosis of lymphosarcoma, with the desperate alternative of an almost hopeless operation. In such an enlargement, tuberculosis also must be considered. Some of these cases are, however, due to syphilis and are amenable to vigorous antisiphilitic treatment, of which the following is an instance:

1. Mancy, Henry O.: The Surgical Treatment of Uterine Myomata, Tr. Internat. Med. Cong., 1881, ii, 233.

* Read before the California Academy of Medicine, Nov. 23, 1909.

Patient.—On Jan. 6, 1909, a man, aged 36, came into the office presenting a marked swelling in the right side of the neck. His family history was negative. He had acquired a venereal sore in 1902 which cleared up, as he remembered, without other symptoms. For the past four years he had had numerous boils and carbuncles on the back of the neck.

Examination.—The patient was a large man, in robust health, and said, as he came in, that he was suffering from the effect of boils, and that he had a swelled neck. There was indeed a large swelling of the right side of the neck that bulged out over the collar. The greater part of this swelling was along the posterior border of the right sternomastoid muscle. The hollows under the ear and back of the neck were obliterated, and the skin was tense. On removing the collar the swelling seemed to fill the whole of the right side of the neck. The entire mass was firm, and at its posterior border there was an extension of the induration that was so hard as to feel woody. There was a distinct impression of tense fluctuation in the central portion of the main mass, and the skin overlying this was congested. An area larger than the mass was completely denuded of hair, owing to previous treatment with *x*-rays. There was an almond-sized, hard lymphatic nodule in the right side of the suprasternal notch, and a number of smaller palpable hard nodules in both the right anterior and posterior cervical chains. The patient felt fullness in the neck, with a consciousness of some discomfort deep within the throat.

Diagnosis.—The first disease thought of was lymphosarcoma, as the affection appeared in a classic situation for this tumor, and evidently was extending rapidly downward along the lymphatic chain. The decided hardness of one of the tumors, and the lack of mobility in this one, and also in the main mass, strengthened this impression. Pyogenic processes in the mouth or tonsils would not produce such large tumors, and, besides, the posterior chain of glands would not be involved to such an extent. The patient did not give at all the impression of being either scrofulous or tuberculous, and the process was too rapid for either. There was no enlargement of the liver or of the attainable lymphatic nodules of other regions of the body, and the blood had been carefully examined previous to his coming to us with negative findings, so that the enlargement was evidently not due to leukemia. The facts that the man gave practically a negative history of lues, and that his memory was not made keener by the suggestion of the necessity of an extensive operation, were not considered strong enough to exclude the possibility of a former spirochetal infection. A test for a Wassermann reaction was not made. A positive complement fixation might have been of some assistance. The diagnosis therefore narrowed down to either late enlargement of the lymph nodes in syphilis or to lymphosarcoma, with the great probability of its being the latter.

Treatment.—The very bad prognosis incident to operative procedures in such cases induced us, however, even at the risk of losing time, to try first a vigorous antisymphilitic treatment. The patient was given the neutral salicylate of mercury, 10 per cent. solution in petrolatum liquidum by intramuscular injection into the buttocks. A dose of seventeen minims of the solution was injected the first day, and twenty minims thereafter at intervals of eight days. Ten such injections were given. Potassium iodid in ten-drop doses of the saturated solution was ordered three times a day at the beginning, increased to fifteen drops on January 8, and to twenty drops on January 14, and continued at that from then on. Three days after the injection the swelling in the neck felt softer. On January 14 the enlargement was much reduced. On January 22 there was still greater reduction, and there was a more natural sensation on palpation. There was a constant decrease in size and hardness up to March 12, when there was no enlargement by palpation, and no enlarged lymph-nodes were demonstrable. Compared with the left, the right side of the neck was but slightly more prominent. On April 26 the neck was apparently normal. The entire treatment lasted about ten weeks.

A later point in the history, and a most interesting feature of the case, came to our knowledge through an answer to a letter written to the dermatologist who had first treated the patient. He told us that the man did have a faint roseola

following a sore in 1902, and was treated internally for a long time. He also said that he had been, as we were, much puzzled over the condition of the man's neck. The blood had been examined several times with negative findings. Mercury in pill form and iodids had been given for a while after the appearance of the glandular enlargement in the neck without much benefit. Interesting to relate, the use of the *x*-rays was followed by a reduction in the size of the glands. Later the patient took rather large doses of the syrup of the iodid of iron.

In a case of enlargement of the superficial lymphatic nodules, not dependent on recent syphilis or any of the acute fevers, we have to consider:

1. Actinomyces.
2. Blastomycosis.
3. Granuloma coccidioides.
4. Leucemia.
5. Endothelioma.
6. Pyogenic infection.
7. Carcinoma.
8. Tuberculosis.
9. Lymphosarcoma (Hodgkin's disease).
10. Syphilis.

In regard to actinomycosis, blastomycosis and granuloma coccidioides, the difficulties in diagnosis would be greatly lessened by concomitant symptoms, and could be made positive by the microscope and by culture growths. The blood-picture, including an enlarged spleen, would assist in a diagnosis of leukemia. Endothelioma is generally undiagnosed without a microscopic section. It is a single tumor; it may fluctuate and have grumous contents. As to pyogenic infection, it is our experience that enlarged lymph-nodes due to such a cause are dependent on an active and not an attenuated virus, and are associated with some quite recent or concomitant focus. This last is particularly interesting in its bearing on the present case, as the man had had furuncles some months previously, and the possibility of his condition being due to the locking up of an attenuated virus in the lymph-glands of the neck was suggested by the dermatologist who formerly had charge of the patient.

Primary carcinoma of the lymph-glands is exceedingly rare, and most cases supposed to be of that character have proved to be endothelioma. Little difficulty would arise if a carcinoma which drained into the affected glands was present.

Consideration of the possibility of metastasis from more remote locations might be puzzling, however, as in an interesting case reported by Dr. H. Brouser,¹ in which hematuria occurred four years subsequent to a syphilitic infection. The hematuria lasted three weeks and recurred several times, lasting two or three days each time. Specific treatment had not influenced the condition. Two years later a cystoscopic examination showed a cherry-stone-sized papillomatous structure at the right ureteral opening, and recurrent hematuria was frequent. A year later the patient presented an oval, large, hen-egg-sized solid tumor at the posterior border of the right sternomastoid muscle, not sharply limited, and not so closely adherent at the base as to the skin. Fluctuation and redness were present, but other symptoms of inflammation were absent. Brouser stated that the appearance was in favor of a gumma, but the situation spoke more for a lymphosarcoma, and there was the possibility of its being a metastasis from the bladder condition. Specific treatment cleared up the swelling in a few weeks, and the bladder condition remained

1. Brouser, H.: Berl. klin. Wehnschr., Jan. 20, 1908

unchanged until two years later when it cleared spontaneously.

As an illustration of the condition mimicking tuberculosis we have a case reported by Lacapère and Ravaud,² in which the symptoms seemed to indicate plainly that the enlargement was tuberculous. The patient's husband was tuberculous, and she herself had recently fallen away in flesh. Three years before, the patient had contracted syphilis, accompanied by the usual symptoms, and had been treated during an entire year with injections of soluble mercurial salts. Six months before, there had appeared a little tumor in the right submaxillary region, which was incised by her doctor, but had never healed; the fistula remaining even under specific treatment. Two months after this the right preauricular ganglion enlarged. That was incised, and became fungous and fistulous also. When the patient consulted Lacapère and Ravaud there was, in the latter region, three little ulcers from 3 to 4 mm. in diameter of unmistakable gummatous nature. The presence of the typical gummatous ulcerations allowed a positive diagnosis of syphilis, and, besides this, there was the history and the rapidity of evolution of the malady; and, furthermore, there was a subcutaneous gumma of the internal surface of the left arm. After three weeks' treatment with iodine and mercury the fungous fistulas were cicatrizing nicely and the gumma of the arm had diminished one-half.

More important than all the rest is the likeness these late enlarged lymph-nodes in syphilis have to lymphosarcoma, particularly when it is the only condition found, as in our own case.

In a case reported by one of us³ in 1891, the mimicry of lymphosarcoma was characteristic, but not so striking as in the case that forms the subject of the present paper. The patient had had a sore ten years before. Five years later there were swellings in both sides of the neck, which disappeared in two weeks under anti-syphilitic treatment. There were swellings in both armpits two years later, which were successfully treated in the same manner. He came for treatment because of swellings in the neck, which had started five months previously. All the tumors were freely movable, except a very large one on the left side of the neck extending down over the chest. All were firm. The only painful tumor was one above the right clavicle. There were some hyperemic patches on the skin. In no instance was the skin attached to the tumor beneath. Urine and blood were normal. There was no indication of enlargement of the deep glands either of the abdomen or thorax. The patient made a complete recovery under antisiphilitic treatment.

Here we may mention a case reported by Kreibich,⁴ of great interest because of a mistake in the diagnosis. The patient, 36 years old, had partial ankylosis of many of the joints due to a gonorrheal infection. Although the patient was thin and weak, there was no cough and no family history of tuberculosis. The lymph glands of the left side of the neck began to enlarge and were removed. Later enlarged glands on the right side were removed, and a second operation on the left side was necessary because of a recurrence. Following this, other glands in the neck enlarged, with infiltration of the overlying skin, extending backward on the neck and upward on the cheek. The patient was then transferred from the surgical to the dermatologic clinic. Ulcers,

characteristic of lues, had by this time appeared and a tendency to marked scar formation on spontaneous healing was observed. The whole skin of the left side of the neck was dark red, firmly thickened and bound down. The occurrence of the characteristic ulcers made the diagnosis less difficult. There was a history of a small sore on the penis fourteen years previously, which had healed in eight days under treatment. The ulcers healed, the infiltrations disappeared and the swelling of the lymph-glands receded rapidly under general and local mercurial treatment. The joint conditions due to the gonorrhea remained unchanged.

In a personal communication, Dr. Charles N. Dowd, of New York, states that he has seen many cases of enlarged lymph-nodes which were benefited by anti-syphilitic treatment, and he believes that they are double infections, syphilis and tuberculosis, or syphilis in combination with one of the milder infections. He has not seen nodes greatly enlarged, which he believed to be of purely syphilitic origin.

But even viewing it in this light, one cannot conceive of any other infection clearing up as did our own case under the medication. If it had been, as was suggested, an attenuated pyogenic infection, it would have unavoidably broken down in the center of the large mass. No combination of infections can be imagined as marching along to complete resolution as did the tumors in this case. If syphilis and tuberculosis had been associated, the syphilis would have cleared up, and tuberculosis would have remained.

As to the rarity of the condition, a repetition of the statement made by Kreibich is to the point. Golod found it once in 573 cases. Fournier did not see it at all in 3,429 cases. Dr. Sigmund Lustgarten reported three similar cases in a most able article,⁵ which thoroughly covers the literature up to 1890. He states that but 20 cases of glands affected in an isolated manner had been reported, the number including his own cases. He makes three divisions of luetic lymphomas:

1. Luetic lymphomas concomitant with or subsequent to other syphilitic lesions.
2. Luetic lymphomas with visceral affections in a predisposed individual subsequent to surgical or other traumas; or in glands which a previous disease has rendered less resistant.
3. Luetic lymphomas as a single manifestation of the disease.

The attitude to assume in a case of this kind would seem to us to be as follows: The possibility of syphilis must be considered and a Wassermann test carried out. To save any waste of time a vigorous course of anti-syphilitic treatment should be immediately begun, preferably with injections carried out as strictly and with the same carefulness as an operative procedure in surgery; or with a course of injections of mercury, either of gray oil, or of an insoluble salt, such as the neutral salicylate of mercury. At the same time iodid of potash should be given, beginning with 10 grains three times a day and running up to 50 grains if necessary.

Psychoses in Pellagra.—S. Zsako has recently reported in the *Orrosi Hetilap* 27 cases of pellagra insanity among the inmates of the Klausenburg (Kolozsvar) asylum. He regards the prognosis of the pellagra psychosis as bad, the condition tending more and more to the manic-depressive type, accompanied by distressing hallucinations and dread with frequent paralyses. Klausenburg is in eastern Hungary, about as far north as Switzerland.

5. Lustgarten, S.: New York Med. Rec., Jan. 11, 1890.

2. Lacapère and Ravaud: Bull. Soc. franc. de dermat. et de Syph., December, 1908, p. 332.

3. Montgomery, D. W.: Pacific Med. Jour., Feb. 18, 1891.

4. Kreibich, C.: Med. Klin., Dec. 29, 1907.

GENERAL THERAPEUTICS AND SURGERY IN
DENTISTRY *

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The title of my paper is somewhat misleading, as it is my object to dwell on the sad fact that therapeutics, general medicine and surgery have hardly any place in dentistry as practiced to-day by the vast majority of dentists. It is my intention to make this paper the first of a series on the subject.

What are the duties of a dentist? Nothing short of the preservation where possible, otherwise the restoration, of the buccal cavity, with its teeth and adjacent tissues, to its highest degree of normal physiologic proficiency. This, of course, includes the care, when necessary, of the mouth and all that concerns it, prior to the eruption of the deciduous teeth, the care of the deciduous teeth and the pre-eruptive stages of the permanent set, together with the latter; it also calls for any manipulative or other interference—substitution and so on—required in order to obtain the above result. To accomplish this end, the ideal dentist should employ all possible agencies—mechanics, surgery, general medicine, therapeutics, materia medica—and should have a thorough knowledge of each.

It is agreed by all, I think, that the mechanical end of the profession of dentistry, which has been the prime factor in placing dentistry largely in the category of a trade, has been well cared for. Marvelous results have been reached in this sphere. As a mechanic the average dentist excels, but as a scientific student and follower of surgery and general medicine applicable to dentistry, he fails. Yet it is through knowledge of these important branches that he will do his best work, deserve and receive the due recognition from the community and enter into the enjoyment of the higher and more enviable social standing of the medical man. Neglect and ignorance of the great fields of surgery—general medicine, pathology and therapeutics—have been the great factors in branding the dentist a mechanic. Ignorance primarily on the part of the dentist of things medical and ignorance secondarily on the part of the medical man of things dental have much to answer for.

Much has been said and done of late years to rescue the dental profession from the hands of the mechanic, pure and simple, and to entrust it to its rightful guardian and more trustworthy follower, the scientific man, the stomatologist, orthodontist or oral surgeon; but much yet remains to be said and done before the calling will enjoy the proper and exalted position it should hold in the eyes of the community at large and the scientific world in particular. In this progressive age there is no such thing as standing still; it is either retrogression or progress, and we must ever be on the watch for the signs of either.

While the dentist does not enjoy the social recognition in England that he does in the United States, the scientific training of the English dentist does not fall short of that of his confrère in the United States. Yet it has been but recently a question in Parliament as to whether the dentist should be prohibited from administering anesthetics (Dr. W. Hewitt's bill). On this side we have postgraduate schools of anesthetics for dentists, be it said to the shame of our dental colleges. To quote Dr. E. Talbot, "dental teachers are decades behind the

progress made in other directions in medicine"—is to put it mildly, I fear. The most important branches that should be the foundation-stones of our calling—pathology, physiology, surgery, anatomy, therapeutics and others—are shamefully slighted in our dental colleges in order to pamper to this commercial age by short-cut inducements to students. Along these lines were the bitterest fights between the best and worst elements at the faculty meetings of one of the most progressive dental schools in Pennsylvania of which I had the honor of being a member.

As long as the human race possesses teeth, so long will the mechanical aspect of the dental profession endure; but each year will bring fresh proof that much of this mechanical labor can be obviated by the proper use of the fruits of scientific research work in the fields of preventive and curative medicine and surgery.

What branch of medicine does not directly or indirectly concern the oral cavity? Against the many defects of the oral cavity, as cleft palate, protrusions, retractions, malocclusions and absence of teeth, the whole range of medicine is, in turn, called into play. The medical profession is not only being made to realize the extent and importance of the field of dentistry, but is being compelled to feel its ignorance of this unexplored region. Happy will be the day for the patient when the dentist knows what he should know about things medical and the medical man knows what he should know about things dental.

Many will say that as soon as dentists begin to prescribe general remedies or resort to surgical means the medical world will accense them of trespassing. It is the fault of the dental profession that such impertinent interference has been and is tolerated, for we, its members, have been so ignorant of these medical fields that we have felt ourselves to be strangers, and as strangers in a strange land we have too often allowed ourselves to be turned away from our own. But our ignorance is, as I have already said before, equaled by the ignorance of the medical man of things and conditions dental.

The majority of the medical fraternity who take on themselves the burden of regulating the duties of the dental practitioner are, as a rule, men who would stumble at writing a prescription for a dose of castor-oil, and yet would criticize a humble dental practitioner for administering a diuretic, or any other drug, should he deem such necessary to regulate a condition manifesting itself in the mouth.

It is the gardener's duty to produce flowers and vegetables. Were we to confine his efforts to the flowers, leaves and branches, and forbid his touching the soil, we could not honestly expect him to get results; nor can we expect the dentist to do his best work in the dark shades of ignorance of everything but the mechanical side of his profession, his efforts being confined to the teeth and their roots. The rhinologist does not call in the services of the surgeon or medical man whenever he deems it necessary to operate on a deflected septum, nor does the laryngologist or the otologist require a special dispensation to give general or surgical aid to tuberculous or other conditions invading their fields of activity. Why should the dentist, alone of all specialists, be subject to such restrictions? Can it be that the mouth only calls for the services of a specialized plumber or "tooth carpenter," while the nose, ear, stomach or rectum must be attended to by the scientific, medical specialist?

Sir Frederick Treves asserts that "more care about the mouth means less care about the diet." Another

* Read in the Section on Stomatology of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

noted writer states that "the great sanitary reform of the world is not the abolition of the tubercle bacillus, but lies in the stupendous task of revolutionizing the insanitary and infectious condition of the mouth." Still another writer says: "It is a well-known fact that dental treatment early in life prevents more disease in after-life than any other measure taken by governments, not even excepting vaccination."

What is more to be dreaded than a fulminant septicemia or attack of meningitis caused by an apical abscess? Who wants an uglier picture than that of a severe case of Ludwig's angina? Many oral infections are dangerous; some may prove fatal. Antral infections are especially frequent and have been most shamefully slighted, though they are very dangerous. The failure of the untrained eye of the dentist to recognize specific conditions often means the carrying of the worst of all ailments to innocent members of the community. The victims of such ignorance soon lose faith in the dental practitioner and look to the more trusted and esteemed medical man.

And now, after so much has been said about these defects, wherein lies the remedy? The present is far from the happy day when dental education will require at least five or six years to obtain; notwithstanding, herein is the answer to the question; no possible solution exists elsewhere.

After all, the great blame of our short-coming lies at the door of the avaricious commercialism of the age. Commercial reasons alone blocked the four-year course in dentistry. I shall remember to my shame and regret the day I cast my vote against a four-year course in a meeting of a dental faculty of one of the best institutions of Pennsylvania. Other institutions could not stand the strain of seeing their students flock into the three-year schools and so they, too, dropped back to a three-year course, shamefully retreating, knowing full well that the public was being sacrificed on the altar of the almighty dollar. As soon as the public is awakened to the fact that it is the victim of wicked injustice and is moved to insist on better qualifications, a brighter day will dawn, but not till then. There will then be no weak link in the chain of dental educational institutions, for all will have to reach the high standard. Legislative enactment can and must settle the question. All praise to Virginia and other progressive states that to-day are seriously considering the question.

It is realized to-day that a great mistake was made in 1839, when application, made to certain medical colleges to establish dental departments in the regular medical course, was rejected on the ground that dentistry was not of sufficient importance to justify its recognition by the medical world. But, after all, it is an ill wind that blows nobody any good, and perhaps the separation is a good one. It is easier to break the shackles of ignorance than it might have been to gain liberty from the red tape of medical domination. The field as it stands to-day is ours. We can blame ourselves and not roll the responsibility on medicine. We can always change and mend our ways without let or hindrance from without.

Our dental colleges of to-day, as has been truly said, are but schools of mechanics; there is no reason why they should not be colleges of scientific medical dentistry, turning out men worthy of taking full charge of the human frame in general and the human mouth and adjacent tissues in particular. As I said before, unless the dentist is satisfied to be perpetually looked on as a

mechanic, he must make a radical change in his preparation for his life-work. A thorough general medical and surgical training along special lines pertaining to general medical and surgical dentistry, together with scientific research work in the same fields, are crying needs of to-day.

A properly equipped "medico-dental college" would give to the world men able to pick up the missing links between kidney lesions and pyorrhea alveolaris, able to stimulate or depress catabolic and metabolic phenomena, salivary or other glandular activities, able to lay bare secrets of agonizing neuralgia and to give relief to sufferers from it, to cope scientifically with malformations, defects and injuries with crises without calling in the aid of the medical man, who is usually as ignorant of the important dental phases of such questions as the dentist is of the medical side.

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ABSTRACT OF DISCUSSION

DR. M. L. RHEIN, New York: The unfortunate condition of affairs which, in my opinion, has not been sufficiently emphasized by the essayist, is the ignorance of the general practitioner in regard to this aspect of the case. After a careful consideration of this subject for thirty years I am convinced that the solution of this problem lies with the medical practitioner more than it does with the dentist at large. There is a well-known principle that the demand for anything in this world is supplied, and if there is a demand for the properly educated dentist the material will be forthcoming to supply that demand; the demand is insufficient because of the ignorance of the medical man in not being able to discriminate primarily between the dentist who is properly educated, or has educated himself—it is immaterial—in the tenets of this specialty of medicine and the imperfectly educated man. It was because of this belief that I have presented a number of papers, some of them before this Section, trying to inculcate the point that the medical curriculum is mostly at fault in this subject. We all agree that the student when he graduates in medicine is ignorant of things about the mouth, and whatever information the physician obtains in his practice he gets by association and practice directly with the stomatologist. Unfortunately, my experience is that of the profession at large, that the medical man is unable to discriminate intelligently as to whether the mouth is being properly cared for or not. Now, that must necessarily be the province of the family practitioner. The patient places himself in his hands. His advice is followed, and he is the man who is at fault by means of the lack in his primary education. I believe that if this Section is to be successful in accomplishing this evolutionary work in the near future—and there has never been a shadow of a doubt in my mind that in the progress of events it is bound to come—our work should begin with the general practitioner. I do not believe we have been active enough in placing this point of view forcibly enough before the medical profession at large.

Within the past few years the American Medical Association has had as a part of its working force a Council on Medical Education, which to a certain extent has a governing influence over the medical curriculum of the medical colleges of this country, and I do not know of any way in which we can further this work more than by directing our attention at this time toward this Council which has charge of the medical curriculum of the country. I do not, as I said, advocate the teaching of the practice of dentistry in medical schools, but if students were taught the principles of dentistry, if they were taught what the normal physiologic mouth was and the pathologic significance of the changes found therein, they would not be in the position they are to-day—unable to appreciate the difference between a scientific and intelligent stomatologist and an ignorant mechanic. This is bound to be the crucial point of this question. No man with any self-respect is going to tell a physician of his acquaintance that a man practicing

dentistry in his immediate neighborhood, who is the dentist of this physician, is incompetent to practice. Not only that, but it would transgress every principle of ordinary ethics, it would contaminate every sense of self-respect.

I speak with much feeling on this subject, because I believe that if this Section would get to work officially, either by means of a committee or of resolutions sent to the Council on Medical Education of the American Medical Association requesting it to investigate the needs of incorporating such a course of study in the medical curriculum, more would be accomplished than we have been able to do in this direction in the past.

Last week the first step was taken toward remedying this evil; there was started the organization of the university dental department in Philadelphia, and enough universities have started this association to insure its success; and it is the divorce of the university dental schools from the proprietary dental schools which has been so much needed. Another point is that we are apt to be a little strong in our condemnation of the schools for the course that they have pursued, but a school cannot pursue its curriculum without students, and therefore if the demand exists for properly educated dentists the supply will be forthcoming.

DR. W. E. FISHER, New York: The essayist stated that there is a bill before the British Parliament to deny dentists the right to administer anesthetics. I do not know anything about the bill, but I think it is nothing against the dentist of Great Britain. In England, Scotland and Ireland the administration of anesthetics is a licensed profession itself, and it is for the protection of this profession that the bill is proposed and not to discriminate against the dentist. The surgeon there practically never administers an anesthetic; neither does the physician. Furthermore, the dental student of Great Britain has a better opportunity of gathering knowledge of things medical than the average dental student in any college, as a general thing, in America. Not that he is required to, but he has the opportunity. There is not a dental college in the United States that teaches general surgery. Every dental student in the United Kingdom must take a course in general surgery and general medicine, and it runs for six months, which is the usual course, and he takes his lectures side by side with the medical man. My knowledge is from experience as a student there.

DR. J. E. POWERS, Providence, R. I.: The issues presented by the essayist are not debatable. Every dentist knows only too well that all that has been said is true. The dental profession as a whole has accomplished wonderful results. The mechanical skill shown by dentists is in itself remarkable. Even had we done nothing else, the results accomplished along these particular lines are worthy of the highest praise. If we wish to make our profession equal to that of medicine, we must first make it a part of medicine. We cannot attempt to specialize intelligently without understanding the whole. Dr. Dray spoke of the aurist not requiring the services of a physician nor of a general surgeon when he performs a mastoid operation. This may be explained by the fact that he studies the whole subject of medicine before he specializes in the treatment of a part. I believe that before we can honestly regard our profession as an equal of medicine, we must first have a complete medical education. Whether or not we have a medical degree does not matter. A medical degree may mean everything or it may mean absolutely nothing. Unfortunately, there are dentists holding diplomas in medicine which are not worth the rags which were used to make the parchment on which their names are written. Politics, subterfuge, and commercialism are responsible for the conditions which permit a man to buy a diploma in the same manner in which he would buy so much merchandise. I know of one who is holding a diploma from a medical school who, if requested to answer twenty-five questions of his own selection embracing the subject of medicine, would fail absolutely. Therefore, what we need is not a parchment, which contains lies, but instead a proper knowledge of medicine. This alone will place dentistry on an equal footing with medicine. Following the kindly advice of Dr. Talbot, Dr. Brown and some others here, I commenced to study for the medical degree. I have finished the second year, and I shall always regret that I did not commence earlier. We need

better instruction in the dental schools. I came from perhaps the best dental college in the country, yet when I came to study medicine I found I knew practically nothing of the general fundamental principles of pathology. Pathology is the foundation of both dental and medical practice, but it is not taught as it should be in the dental schools. I heard a dental educator say recently, "We cannot teach that subject as we would like to because we cannot interest the students in it." Therefore it all comes back to that great question of commercialism. I am glad that this paper is but one of a series. I believe that this series of papers is bound to bring good results and that it will be read by physicians throughout the world, and I am sure will be of great value in determining the factors which the essayist rightly says mould the future of dentistry.

DR. M. L. RHEIN, New York: I want to correct Dr. Powers. I trust I did not make myself so badly understood. I meant that this method is the one we have been pursuing for years, but it is work that has shown very poor results. The publication of paper after paper along this line in THE JOURNAL of the American Medical Association does not show the results we hoped for, and the only way to get such a result is to see that the curriculum of the medical college is amended.

DR. CARROLL W. ALLEN, New Orleans: It was my feeling of cooperation with the dentists that brought me from the Section on Surgery. I feel, too, that greater cooperation between the medical profession and the dentists is the thing we need.

DR. A. R. DRAY, Philadelphia: Ignorance of matters dental on the part of the medical man I thought had been conceded. I wish to make myself a little more explicit if I may, by way of showing the consequent evils of such shortcomings of medical practitioners. At present, in the neighborhood of Philadelphia, I believe there is a valuable life passing away owing to a condition that was very gravely aggravated by shameful neglect of the patient's mouth. It is a case in the hands of an eminent medical practitioner. About three years ago I was asked to see in a dental capacity the patient, who was a nervous wreck under the care of the said medical man. I did so and gave some advice that I thought was necessary. The condition of the patient's mouth then was an average condition. The patient is to-day dentureless. Every one of the teeth in that patient's mouth has since decayed away. The general condition has been terribly burdened by inability to masticate food, to say nothing of being slowly poisoned by a mouthful of diseased teeth, etc. The medical man has seen this patient time after time, and has virtually told me to stand aside "until he (the patient) feels better;" that the patient is too ill to have any dental work attended to. As a medical man I know that this patient is and has been all along too ill to have his dental work neglected and should have had it attended to; his oral condition is as grave as any other pathologic condition from which he may be suffering. Many other similar cases come under the observation of us all.

In reference to the point brought up regarding the new law in Great Britain regulating the qualifications required of those administering general anesthetics, I want to say that a discrimination was made directly against the dentist of Great Britain, only the medical practitioner being allowed to administer anesthetics. The question of dentistry being the equal of medicine never entered my head. I do not like it put that way—I referred to the question of making dentistry a branch of medicine. It should have that honor and as such have the support of the community at large and of the scientific world in particular; and dentistry should be recognized as a branch of medicine. But it should be insisted that those who practice it should qualify as members of the medical profession.

Child Study.—Prof. Karl Pearson, at the instance of the child study society (*Nature*, Dec. 2, 1909), has drafted a schedule for studying the factors influencing the social life of the child, to be filled in by heads of families of teachers intimate with the families. The schedules are being distributed by the society which appeals to members of learned societies and professional men and women in general to aid in the work by applying for schedules and filling in the particulars. The number of the family need not be large but particulars of father and mother and at least two children are desired.

NEISSER BACTERIN IN CHRONIC GONORRHEAL URETHRITIS *

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When any method of treatment is advocated by the research workers, and particularly when the new ideas advanced are no less than revolutionary, it becomes the duty of every clinical observer who puts these new ideas to practical test to report his findings, whether favorable or adverse, and thereby add to the sum of fact on which alone a sound conclusion may rest. This is my reason for presenting a single case of this kind.

History.—The patient, a robust young laboring man, 23 years old, single, rather loose in his habits, came under my care in May, 1907. He gave the following history of his present trouble. He contracted his first case of gonorrhea in July, 1905, and, on the advice of experienced friends, took a course of self-treatment for about six months, after which time the discharge ceased for the time. He was free from trouble for about six months; then he noticed the gradual reestablishment of a gleet discharge. He then sought medical advice, and was treated for several months with no effect on the local condition. He has had more or less discharge ever since.

Examination.—This showed a young man whose only physical abnormality appeared to be a slight gleet discharge from the penis. Palpation of the prostate, per rectum, showed that organ to be enlarged, boggy and tender, and pressure on it caused the appearance of several drops of milky fluid at the meatus. This fluid, on microscopic examination, revealed many gonococci and pus cells.

Treatment and Course of Disease.—I gave the man a very doubtful prognosis as to cure, and put him on classical treatment for chronic gonorrhea with prostatic involvement, including local and general measures and prostatic massage, under which the clinical symptoms improved markedly. Early in December the patient indulged in some rather unusual dissipations, which resulted in a very slight augmentation of the discharge, which, while unchanged in character, still showed, seven months after beginning treatment, numerous intracellular and extracellular gonococci. I then resolved to test the efficacy of the opsonic treatment, and procured a supply of stock Neisser bacterin. The first three injections were of 15,000,000 killed bacteria each; the second three of 25,000,000 each, and the last three of 40,000,000, 60,000,000 and 75,000,000 respectively. All injections were made in the thighs, using the right and left alternately, and were given at intervals of one week for the first six and of ten days for the last three.

Microscopic Examination.—The specimens, a report of which follows, were taken just before giving the injection of the same number. The microscopic examinations were made by Dr. Helene Knabe, of Indianapolis, to whom I am indebted for this valuable assistance and for permission to use her results.

Specimen No. 1 showed numerous gonococci.

Nos. 2 and 3 showed a very small number of bacteria, a few of which were intracellular.

No. 4 showed a slight increase in the total number, but never more than two pairs within a single pus cell.

No. 5 showed a marked increase in the number of bacteria, particularly within the cells, looking like a new reaction.

No. 6 showed a slight diminution in the number of specific cocci, and in No. 7 the number present was still smaller.

No. 8 contained multitudes of gonococci, largely intracellular. In one field there were sixteen cells containing from 2 to 25 bacteria per cell.

No. 9 was the worst slide of gonorrheal pus I have ever seen, looking as if all the dead bacteria injected had come to life in the discharge although, at this time, the clinical symptoms were the same as they had been.

No. 10, taken one week after the last injection of vaccine, showed very few cocci, never more than two to a cell.

General and local treatment was now resumed, and while the clinical picture remained constant, the microscopic findings varied greatly from time to time. Two or three specimens were reported as having so few gonococci that they were hardly to be found, and then followed one showing cells which contained from 50 to 100 bacteria apiece, these phagocytes occurring in groups, and containing practically all the gonococci in the specimen.

In June, 1908, with conditions in about the same status as at first, the case passed out of my observation.

In this case the Neisser bacterin clearly demonstrated its ability to increase phagocytosis, but did not appear to produce any favorable effect on the course of the disease. There were, however, no untoward effects from its use—no pain or soreness at the site of injection and no symptoms of any kind.

The pronounced increase in the number of bacteria in the discharge after beginning the vaccine treatment is a condition I have never seen reported, although one or two other clinical observers have told me that they had seen results similar to mine.

SUPPURATIVE PERIGASTRITIS

A CASE WITH TUMOR FORMATION FOLLOWING PERFORATED GASTRIC ULCER OF THE GREATER CURVATURE

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This case seems to be worth publication on account of the rarity of the condition and the difficulty of the diagnosis.

History.—B. F., aged 45, was first seen by me in my office, June 15, 1906. Up to the summer of 1902 the patient had never suffered from stomach or bowel trouble. At that time he began to complain of constipation and hemorrhoids, for the former of which he had been under treatment several times. None of the ordinary cathartics were so promptly effectual as Epsom salts. The patient often experienced a sensation of fullness of the stomach and suffered from severe headaches. These symptoms, however, disappeared as soon as the cathartics were taken. The patient also complained of acid eructations after eating. His appetite was always very good and he had never vomited or had any abdominal pain. On two occasions he observed bright blood in the stools, which he ascribed to the hemorrhoids. The patient could not remember having had any of the usual diseases of childhood. At the age of 18 he had a "chancre" for which he was treated by a physician for four weeks. He had never noticed any rash on the skin. Two years before I saw him the patient had had a severe attack of facial erysipelas, on account of which he was confined to bed for six weeks.

First Examination.—Physical examination, June 15, 1906: Strong, robust-looking man. Teeth and gums in poor condition. Tongue moist and slightly coated. Lungs; anteriorly, slight evidence of emphysema; posteriorly, clear. Heart sounds, clear, no murmurs. Abdomen: any tenderness or resistance to be elicited either by superficial or by deep palpation. Liver: not enlarged. Spleen: not felt. In the anal region several hemorrhoidal tumors to be seen. Patellar reflexes: lively. In the urine neither sugar nor albumin could be demonstrated. Examination of gastric secretion and motility, June 16 and 18, 1906: The filtrate of the material expressed from the stomach after Ewald test-breakfast showed (two examinations): free hydrochloric acid, 38 and 36; total acidity, 70 and 76. Starch digested to amidulin (shown by bluish color after addition of Lugol's solution). The morning after a Boas test supper no macroscopic nor microscopic evidence of stasis could be found in the 12 c.c. of gastric juice expressed from the fasting

* Condensed from a Paper Read before the Twelfth Conncillor District (Ind.) Medical Society, at Fort Wayne, November, 1909.

stomach. A diagnosis of secondary (reflex) hyperchlorhydria was made and operation for hemorrhoids was advised.

On May 22, 1907, the patient again consulted me. He then said that while the constipation was less after the operation he was occasionally obliged to have recourse to Epsom salts. He complained of some epigastric pain, beginning one to three hours after meals. The pain was, however, worse when the stomach was empty and the patient was often forced to take food in order to get relief. This pain, beginning after meals, seemed to depend but little on the character of the food and to a greater extent on the quantity taken. Lately even milk and soup had been poorly borne.

Second Examination.—No abdominal rigidity or tenderness could be elicited even at that time. Examination of the gastric contents on the three following days showed well-digested chyme. The free hydrochloric acid was 36 and 40, the total acidity 80 and 80.

A dietary suitable to the patient's hyperacidity was ordered: sodium citrate and burnt magnesia each 0.6 gm. (grs. x) three times a day was prescribed, and the stomach was washed out three times a week with silver nitrate solution (1 in 10,000). After six washings the patient felt well. The pain after eating had quite gone, though there was still barely perceptible tenderness over the empty stomach. On July 2, 1909, the patient consulted me for the third time. Until June 18 he had felt comparatively well. On that day, five hours after the usual supper-time, as he was about to retire, he was suddenly seized with a severe, cramp-like pain, just above the umbilicus. The attack lasted about three hours. A hypodermic injection of morphin had no effect on the pain, but after a high enema the attack terminated. Attacks of cramp-like pain, though not of the same intensity and duration, were, however, repeated, at first, every day; later, every second or third day. The pains were for the most part just above the umbilicus; occasionally they radiated to the right hypochondrium, but never to the left. The patient's physician, who saw him during one of the attacks, thought that he was suffering from gall-stones. The attacks were in no way connected with the ingestion of food.

Third Examination.—July 2, 1909: This revealed marked sensitiveness midway between the ensiform and the umbilicus. There was some tenderness one finger's breadth above the navel in the right parasternal line. Neither the characteristic dorsal pain point for ulcer (to the left of the spine), nor for gall-stones (to the right) could be elicited, nor despite most careful palpation of the entire abdomen could any rigidity be appreciated. The patellar reflexes were present but not exaggerated. Four examinations for occult blood in the stool with guaiac and benzidin were negative. Since the patient had had a chancre of doubtful nature the Wassermann reaction was tried for me by Dr. Kaliski on August 3, but it was negative.

Course of Disease.—The attacks of cramp-like pain continued intermittently until August 20. Atropin sulphate in 1/100 grain doses four times a day shortened the attacks but did not afford complete relief. The patient next began to complain of continuous distress, especially when walking or sitting. This regularly disappeared on lying down. On August 22 this condition was the same as on July 2. No abdominal rigidity was demonstrable. From August 24 to September 12 the patient had no attacks of colic but the continuous pain, present when walking or sitting, persisted, though there was no pain when reclining. The patient thought he would feel quite well if he could lie down all day. On the evening of the 12th he had a chill. He feared cancer because he had lost eight pounds in weight during the last week; this was the first time he had mentioned wasting.

Fourth Examination.—This revealed a solid mass (indefinite because of the rigidity) to the right of the mid-line and just above the navel. Distinct tenderness was elicited by pressure over the tumor; coughing and laughing were painful. Pressure from before backward over the liver caused no pain. Examination of the gastric juice on the following day showed a marked diminution in the hyperchlorhydria; free hydrochloric acid 12 and 10; total acidity 40 and 40; lactic acid negative; starch digested to maltose.

Operation.—On September 22 laparotomy (excision of inflammatory mass containing multiple abscesses adherent to the free edge of the liver and the greater curvature of the stomach) was performed by Dr. A. A. Berg at the Mount Sinai Hospital. A three-inch incision was made over the gall-bladder region. The gall-bladder was found to be perfectly normal. To the left of the latter and entirely separate from it was a mass the size of an orange, adherent to the free edge of the liver, the abdominal parietes and the greater curvature of the stomach, where an opening the size of a pin-hole was noted. The pylorus was patent. The mass was first separated from the liver. In doing this several small abscesses were opened and their contents evacuated. The adherent mass was then excised in sections. The stomach, together with the transverse colon, was lifted upward and the upper part of the jejunum was located with a view to doing a posterior gastro-enterostomy. As the patient was taking a very poor anesthetic the latter operation was not performed, and the abdominal incision, which had been lengthened to about six inches, was closed.

Pathologic Report.—The specimen consists of several small sections which together are about the size of a small orange. The surface of the mass is slightly roughened and the interior very hard, resembling scar tissue with some areas of necrosis and small abscess cavities. The mass appeared to be composed of omentum with inflammatory changes. Microscopic examination revealed acute and chronic inflammation. Culture from the pus showed Gram-positive cocci in the smears from one flask and no growth in the media in the second.

Three weeks after the operation the patient was discharged well.

In 1895 Hofmeister reported a case of ulcer ventriculi adherent to the anterior abdominal parietes which, causing perigastritis and infiltration of the anterior abdominal wall, gave rise to a tumor. Up to that time only two similar cases had been described, one from Billroth's and one from Mikulicz's clinic. But in neither was the diagnosis made before operation. Hofmeister considered the following symptom-complex as typical of these cases:

Some time after the beginning of long-continued indigestion of greater or less severity, a tumor, very gradually increasing in size, develops in the left epigastrium. During the later years of the malady pain becomes pronounced. This is very severe and is confined to the vicinity of the tumor. It takes the form of attacks, especially after the ingestion of food. Vomiting was observed in all three cases. Hematemesis once. Finally the nutrition is impaired to a marked degree, and the patient may become greatly emaciated.¹

My case does not coincide with Hofmeister's description in all respects. The tumor arose in the right epigastrium. The attacks of colic bore no relation to the ingestion of food. Vomiting was never a pronounced symptom. Possibly the nutrition would have been markedly impaired had the tumor not been demonstrated so early. Hofmeister says nothing at all about suppuration in the tumor tissue. He probably had in mind cases of adhesive perigastritis, concerning which all authors remark on the difficulty or impossibility of the diagnosis. Rosenheim² says that one should always think of perigastritis as the cause of pain whenever internal medication (especially large doses of bismuth or silver nitrate) fails in the treatment of any very chronic ulcer, and whenever mechanical treatment, e. g., lavage (if it be indicated by motor disturbances) systematically carried out is without avail. As already mentioned, treatment with silver nitrate was not without benefit in our case, nor was there any disturbance of motility, and the pylorus was quite patent. Neither is much of Rosenheim's description applicable to our case.

1. Hirschfeld: Ueber peritonealen Adhäsionen durch Ulcus ventriculi, Grenzgeb. der Med. und Chir., vi.

2. Rosenheim: Deutsch med. Wchnschr., 1895, No. 3.

According to Boas,³ perigastric adhesions as such are only exceptionally recognizable. In his opinion, one can in most cases hardly ever arrive at a position beyond probability or supposition.

In my opinion, the chief point lies not in recognizing the perigastritis or the character of the tumor, but in diagnosing the latent gastric ulcer which leads to these complications. Duplant⁴ rightly says that symptoms of perigastritis are commonly seen in dyspeptics in whom an ulcer has been suspected for a long time. According to this author, the only symptom of value is the palpation of an indurated mass corresponding to the affected part. In an analysis of 17 cases he considers that cases of ulcer with perigastritis do not often lead to scar formation. This opinion is in complete accord with the observations in our case.

During the operation a small opening was found in the greater curvature, but there was no sign of cicatrization. Possibly the perforation occurred on that evening when, five hours after his supper, the patient felt the severe pain just above the navel. The perforation was not fatal, because the stomach was nearly or quite empty; because the perforation itself was small, and because it was in some way closed by the omentum, thus producing only a local suppurative process with consequent tumor formation.

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CALCIUM IN TUBERCULOSIS

A NOTE ON ITS EFFECT ON THE TEMPERATURE CURVE

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The following observations on the effect of calcium administration on the temperature curve in tuberculosis were suggested by Croftan's summary of the work done in calcium metabolism in tuberculosis.¹ It was stated by this writer that the preliminary results from the administration of calcium salts, "by mouth or other routes," had given suggestive figures as to the modification of the temperature movements in tuberculized animals. The preliminary work which led up to the question of the effect of calcium on the temperature had its origin in the investigation of the urinary calcium excretion in tuberculosis. It was shown by Senator in 1877 and by Ott in 1901 that there is an abnormal amount of calcium excreted in the urine of tuberculous patients. Croftan tuberculized five dogs with a pure culture of the tubercle bacillus injected directly into the jugular vein. Each animal showed a progressive increase in the amount of calcium excreted in the urine. The same investigator stated that advanced tuberculous subjects with destruction of lung tissue show an increase in calcium excretion from the normal amount (0.2 to 0.3 gm.) to as high as 0.47 gm. He states further that there is a selective affinity between calcium and one of the protein substances occurring in the bodies of the tubercle bacillus. This latter substance, deuterio-albumose, has been isolated also from culture-media in which tubercle bacilli were growing, from Koch's old tuberculin, from tubercu-

lous urine and sputum, and from tuberculous lymph glands and pulmonary foci.

It has been shown by Kühne that deuterio-albumose will produce a rise in temperature analogous to a tuberculin reaction if injected into tuberculized animals. If, however, the affinity of deuterio-albumose for calcium be saturated, this proteid when injected into animals loses in large part its fever-producing properties. Croftan experimented with tuberculous cattle and artificially tuberculized dogs and rabbits and concluded that he was justified, apparently, in stating that the addition of calcium to the probable chief pyretogenic principle of the tubercle bacillus robs it of its fever-producing power. It is stated further that it is exceedingly difficult to procure deuterio-albumose free from calcium, and the two can be separated only by chemical means. It is to be inferred, therefore, that the selective affinity of the deuterio-albumose contained in the tubercle bacilli and other body tissues and fluids have been saturated. Although it has been shown that the calcium excretion has been increased in tuberculosis, it has not been shown that not enough calcium has been retained to satisfy the selective affinity of the body or bacillary proteids.

In consideration of the long-standing use of hypophosphites, glycerophosphates and other calcium-containing preparations, it was not confidently expected that the administration of calcium salts would cause any decided effect on the temperature curve in tuberculosis. However, thirty tuberculous patients, all showing a more or less continuous elevation of temperature, were selected mainly from the Lucas County Hospital. The temperature of these patients had been recorded previously, so comparisons could be instituted. Each patient was given calcium lactate, 0.3 gm., every four hours. This was continued four weeks without any particular change in the former treatment received by each patient. This had been variable in the individual case, but included sleeping on the porch, forced feeding within certain limitations, injections of tuberculin (B.E.) and mercury succinimide, tonics and other measures symptomatically rendered necessary. Most of the cases were sleeping on the tuberculosis porch. Only those cases were given calcium that had been showing a more or less continuous rise in temperature. It has not been my custom to administer specific temperature-lowering drugs, such as the coal-tar preparations, to pyretic tuberculous patients, relying more on the outdoor life and other hygienic conditions to lower the fever. For this reason whatever virtue might be inherent in the calcium probably would be observed. No attempt was made to select cases in particular stages of the disease. They have varied from several months' duration to long-standing, chronic cases of several years' duration, but practically all of the lung cases showed advanced involvement of one or both lungs. The youngest patient was a child of 5 years, the oldest were a man and woman, each 63 years. Nine patients were females, twenty-one males. Four patients only were under treatment for forms of tuberculosis other than of the lungs. These were cases, respectively, of peritoneal tuberculosis, tuberculous abscess of thigh, renal tuberculosis and tuberculosis of hip joint. Three of the pulmonary cases died shortly after the observations herein recorded were concluded. Three patients showed a noticeable alteration in the temperature curve. One was a white boy of 8 whose tuberculous hip was rendered immovable by plaster dressings. The second was a white girl of 19 under

3. Boas: Diagnostik und Therapie der Magenkrankheiten, Ed. 4, 1897.

4. Duplant: Rev. de méd., 1903; Arch. f. Verdauungsk., x, 97.

1. Transactions of the Sixth International Congress on Tuberculosis.

treatment before admission to the hospital in whom the disease was more or less arrested. The third was a patient not in the hospital but under careful observation and treatment. The remaining cases, more or less advanced, as stated above, showed little alteration. The time of administration was short (four weeks), but, so far as I could observe, the result was *nil*.

The conclusion which reasonably may be drawn is that pyretic tuberculous patients in various stages show no response, in so far as the temperature is concerned, to the administration by mouth of calcium salts.

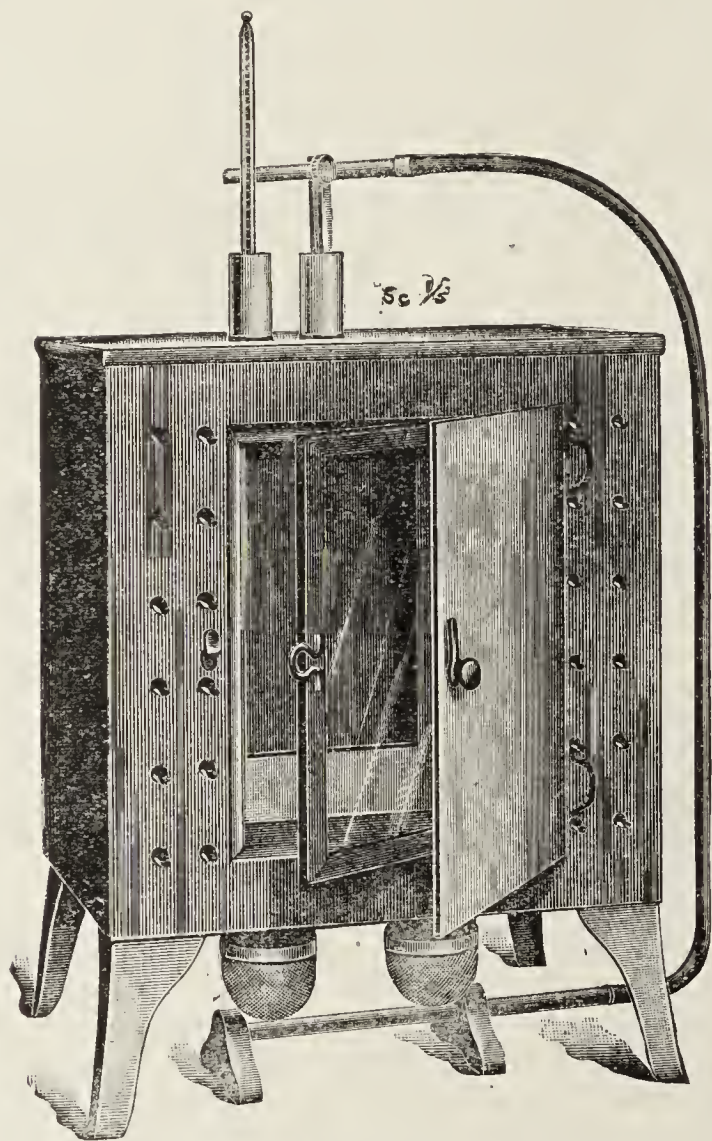
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COMBINED OPSONIZER AND INCUBATOR

F. J. CLEMENGER, M.D.

ASHEVILLE, N. C.

The rapid increase in the use of the opsonic index and vaccine therapy in the hands of private workers has necessitated a simplification of the apparatus required. The combination of an opsonizer and incubator large enough for the needs of a single individual has been



Combined opsonizer and incubator.

brought about in the design illustrated here, which explains itself. The apparatus, devised by me, has been in use for the past year in the inoculation department of St. Mary's Hospital, London, where I have been an assistant under Sir Almroth Wright, and has been found to be satisfactory in every respect. The temperature is maintained practically constant by using a Reichert regulator, and with a single fire one has constantly ready an opsonizer as well as an incubator.

The full-sized model is only 12 inches square, and yet will hold in the incubating chamber 36 vaccine tubes, and on either side of the incubating chamber are situated openings for 24 opsonic pipettes. It is beautifully finished in copper and makes a very neat piece of laboratory equipment. Maw, Son & Sons, London, have placed the apparatus on the market.

PELLAGRA

J. F. PATTERSON, M.D.

NEW BERN, N. C.

Believing that a case of pellagra in which the etiology appears to be clear would be of interest, I wish to report the following case:

History.—Mr. R., white, aged 54, farmer by occupation, consulted me in October, 1909, complaining of vertigo, intense gastric pain, nausea and frequent emesis. On examination he was seen to have an advanced and marked case of pellagra, the integumentary, nervous, and gastrointestinal symptoms being typical and differing in no way from those seen in the usual case of pellagra. The first symptoms of the present illness were noticed in July, 1909, when the patient began to suffer with a stomatitis, and the dorsal surface of his hands became inflamed—sunburned, he thought. When questioned in regard to the amount of meal used in his diet he stated that in May, 1909, he began to eat meal in the raw state, each day eating several large handfuls of it; in fact, his diet consisted largely of raw meal. The meal was always obtained from the same dealer and was western meal.

Another interesting point is that the horse that was fed on the same meal developed "blind staggers" and died. This, of course, may only be a coincidence, but it recalls the theory advanced by Dr. R. H. Bellamy of Wilmington, N. C., in regard to the probability of pellagra and "blind staggers" being due to the same cause.

Therapeutics

CHILBLAIN

Chilblain is an affection which has been sadly neglected in most text-books, by many practitioners, and by not a few patients. The fact that, although it causes considerable discomfort, it is not usually followed by serious results, is in part at least accountable for this neglect.

The conditions favoring chilblain are impaired and weak circulation. Hence it is seen chiefly in the lower extremities, especially in the feet, but may affect also the fingers, ears, nose and cheeks, parts especially exposed to the cold.

It occurs in individuals whose power of resistance is not great, and is, therefore, observed with special frequency among the young in whom this power has not become fully developed, and in the old, in whom resistance has become enfeebled. It also occurs in adults of middle life who have become debilitated. Finally, robust individuals sometimes suffer from it after severe exposure.

The chief recognized cause is exposure to extremes of temperature, and especially to dry or wet cold after the parts have been warmed, and particularly after they have been subjected to artificial heat, as happens when the feet have become overheated in front of a stove or over a register through which heat is coming from a furnace.

The principal manifestations of the disorder are a burning heat, with itching and redness. These symptoms are usually worse at night.

Rapid change of temperature or prolonged exposure to cold, and especially to cold combined with dampness and moisture, undoubtedly produces slight histologic changes, of an inflammatory character, in the cutaneous structures. These have been designated by some writers as chronic erythematous dermatitis.

Careful prophylaxis should always be observed. The hands and feet should be kept warm and dry, and the coverings of these parts should not be irritating or too tight. When the extremities have been chilled, they should not be warmed too rapidly.

Some patients need constitutional treatment to combat general debility and to improve the circulation.

Relief is sometimes obtained by painting the affected part with tincture of iodine, or with equal parts of tincture of iodine and tincture of opium. Oil of peppermint diluted with from one to six parts of glycerin has been recommended as affording relief.

F. Gardiner, M.D., of Edinburgh (*Practitioner*, February, 1908), recommends ichthyol, which may be used in the form of a 10 or 20 per cent. ointment with lanolin (*adeps lanae hydrosus*). This should be spread thickly on linen, and applied for several successive nights. It relieves the congestion, inflammation, burning and itching.

Gardiner also recommends formalin, which, however, should be used with care if there are abrasions on the skin, on account of the intense smarting which follows its application to abraded surfaces. Formalin, Gardiner states, may be used in the form of a 10 to 50 per cent. ointment, but it must not be continued too long on account of its astringent action, which may result in hardening and cracking of the horny layer of the skin. Comparing the two drugs, he thinks that formalin is more effective, more lasting in its results, but harsher in its action, and therefore better adapted for use in men; while ichthyol is more soothing, more simple in application, and consequently better adapted for delicate skins. He has also used with benefit the faradic and high-frequency currents and the x-ray.

If the chilblain undergoes ulceration, the same author recommends the following ointment:

R.	gm. or c.c.	
Hydrargyri ammoniati	30	gr. v
Ichthyol (ammonii sulphoichthyolatis) ..	60	m. x
Amyli	8	or
Zinci oxidi	8	āā. 3ii
Petrolati	15	3ss

M. et Sig.: Spread on linen and apply to part.

When the inflammation proves resistant to treatment, the possibility that the affection is something more serious than chilblain, perhaps either lupus erythematosus or Reynand's disease, must be considered.

C. Ritter (*Münch. med. Wchnschr.*, May 7, 1907) reports 150 cases treated by Bier's method of artificial hyperemia. He finds that this acts best in acute cases and in chronic cases occurring in fairly healthy persons. The action is always beneficial.

Hot air he finds to be most useful when the condition is of long standing.

FROSTBITE

If chilblain is regarded as a chronic affection generally due to the action of cold, frostbite may be regarded as an acute affection due to the action of cold. When a por-

tion of the body not properly protected is exposed to intense or extreme cold the tissues become affected, and if the cold is sufficiently intense and the exposure is sufficiently prolonged the part becomes frozen. Individuals in whom the circulation is weak, and particularly the young, the old and the debilitated, are especially likely to suffer from intense cold. Likewise those parts in which the circulation is least active, and which are least protected by clothing, as the ears, hands and feet, are prone to suffer.

Different degrees of frostbite are recognized. In the slighter forms, the smaller arteries become contracted, the circulation becomes slow, and there is venous stasis. This is accompanied by a change in the various structures, and also in the blood contained in the vessels, of the affected part.

If the cold is more intense or the exposure is more prolonged, vesicles and blisters or blebs, containing often sanguinolent fluid, form.

Finally, if the exposure is sufficiently severe and sufficiently prolonged, the entire part becomes congealed, and freezing and gangrene result.

Locally the part becomes cold, pale, or bluish, shrunken or wrinkled, and there is loss of sensation and diminution, or entire loss, of the power of motion.

Constitutional symptoms vary with the condition of the individual and the extent of the lesion. Loss of energy, fatigue and weakness are early symptoms. These may be followed by indisposition to continued exertion, difficulty of speech, delirium, coma, and death.

When a small part of the body is affected to a moderate degree the disturbed circulation must be restored gradually. The patient should lie down in a cold room, but should be well covered to protect him from further effects of cold. He should be given hot tea and coffee. The affected part should be rubbed with snow or cloths wrung out of cold water. If the part is warmed too rapidly there is believed to be danger from the too rapid restoration of the altered blood corpuscles to the general circulation.

If there are blisters, great care should be taken to treat them with the most minute attention to the details of aseptic and antiseptic procedures, in order to prevent infection and inflammation, which find in these cases all conditions favorable to their occurrence.

When gangrene develops, amputation is necessary; it should be delayed, however, until reaction has occurred, but should not be postponed until secondary debility has made the result of an operation doubtful.

If grave constitutional symptoms with actual or threatening coma are present when the patient is first seen, he should be kept in the recumbent position, wrapped in dry blankets, in a cold room. Warm, stimulating drinks, particularly tea or coffee, should be administered. The parts of the body affected should be rubbed gently and continuously with snow or with cold, damp cloths. Artificial respiration should be employed if needed, and the efforts at resuscitation and restoration should be continued for a long time, if necessary.

After recovery from the most severe forms, care should be taken to avoid fatigue, over-exertion, and exposure.

After a part has been restored from a condition of frostbite, its susceptibility to the action of cold is greatly increased, and caution should be exercised to avoid its becoming affected again by protecting it from exposure to cold, or by applying frequent brisk friction to it, if it is allowed to go unprotected.

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[For other information see second page following reading matter]

SATURDAY, FEBRUARY 19, 1910

A PEPTID-SPLITTING FERMENT IN THE GASTRIC JUICE IN CARCINOMA OF THE STOMACH

That carcinoma of the stomach is, at present, practically a hopeless malady, is borne out by medical and surgical statistics. The cause of this appalling fatality is not difficult to discover and is found in the fact that, with very few exceptions, a positive diagnosis can be made only after all hope of a permanent operative cure has vanished. When the disease has advanced to the stage pictured in the text-books as typical—characterized by anacidity, with the presence of lactic acid and Boas-Oppler bacilli, by coffee-ground vomitus, and perhaps by a palpable mass in the abdomen—the possibility of lasting relief from excision is gone because of the almost certain existence of metastases. Any new diagnostic aid, therefore, is more than welcome.

Fischer¹ has shown recently that protein digestion in carcinoma of the stomach is carried beyond the usual stage characteristic of the stomach, in that mono-amino and di-amino acids are formed. Their presence accounts for the hydrochloric acid deficit so often encountered; the hydrochloric acid combines with the amino groups, while the free carboxyl raises the total acidity. Such hydrolysis might result from the presence of pancreatic juice or blood, both of which contain ferments capable of splitting proteins into amino-acids. But amino-acids were found in the gastric contents in carcinoma in the absence of trypsin or blood, and it was probable, therefore, that a special ferment, the product of cancerous tissue, was present and that it carried the cleavage of the polypeptids to the amino-acid stage.

Neubauer and Fischer² have attempted to demonstrate the presence of such a peptid-splitting ferment in the stomach contents of patients suffering from gastric carcinoma. For their experiments they used an artificially prepared polypeptid, glycyltryptophan, which yields tryptophan on hydrolysis. They first examined carcinomata and sarcomata from various parts of the body and found that these malignant tumors contained a ferment capable of splitting glycyltryptophan much more rapidly than that present in normal tissues and in benign growths. The pepsin-hydrochloric acid from normal men and dogs failed completely to hydrolyze

glycyltryptophan. Their attention was next directed to gastric contents obtained from one-half to three-quarters of an hour after a test breakfast. Obviously, pancreatic juice and blood and the preexistence of tryptophan in the stomach contents had to be excluded. These conditions being fulfilled, the specimen is suitable for the examination, which is simple; a small quantity of glycyltryptophan is placed in a test-tube with about 10 c.c. of the filtered gastric contents, to which toluol is added to prevent bacterial growth. After four hours in the incubator, a small quantity of the fluid is removed with a pipette and tested with bromin water for tryptophan. In four normal individuals, in ten with peptic ulcer, in twelve with gastric diseases other than carcinoma, in four suspected of carcinoma, and in the vomitus from two cancerous patients, the test was negative, while in the seventeen cases of undoubted gastric carcinoma and in six suspicious cases a positive result was found.

The experience with the test is too limited, as yet, to determine how early in the course of the disease this ferment may be found in the stomach contents. That it is of diagnostic significance seems assured. Whether it will be of value in making an early diagnosis—at a stage of the disease when a surgical cure is possible—remains to be demonstrated.

THE PHAGOCYtic ACTIVITY OF THE LIVER

Many observations have emphasized from time to time the important part performed by the liver in protecting the body from soluble poisons reaching the blood through the digestive tract, until this function of the liver is now generally appreciated. That the liver has an equally highly developed capacity to remove bacteria, and foreign bodies generally, from the circulating blood is perhaps not so well known. For the purpose of performing this function it has developed a specialized cellular organization, which would seem, according to recent studies, to exceed in phagocytic activity all other fixed tissue cells and at least to equal the leucocytes in this respect. As the other great phagocytic system, the lymphatic glands, has specialized endothelial cells with highly developed phagocytic power, whose particular function is to take up bacteria and foreign particles coming to the glands in the lymph, so, too, in the liver specialized cells of endothelial origin have been set aside for the purpose of ridding the blood of similar obnoxious bodies, thus leaving the liver cells free for their multitudinous chemical operations. These stellate cells, commonly known as Kupffer cells, after the anatomist who first described them, lie in intimate relation with the blood-channels of the liver, on the one hand, and the liver-cells themselves, on the other, and their endothelial origin and functional specialization are now generally recognized by pathologists.

1. Deutsch. Arch. f. klin. Med., April, 1908, xciii, 98.

2. Deutsch. Arch. f. klin. Med., 1909, xcvi, 499; abstr. in THE JOURNAL, Jan. 1, 1910, p. 86.

It has long been known that these cells have a striking tendency to take up pigment from the blood in diseases with much hemolysis, and bacteria and fat droplets have often been observed in them. Their great importance in the defensive mechanism of the body was first made prominent by the experiments of Cohn, in 1905, who found that if a watery suspension of colloidal silver was injected into the ear vein of a rabbit the Kupffer cells became packed with the silver particles within a few minutes, while no other cells in the body could be found to take up the particles in any considerable amount. Since the blood from the systemic veins reaches the liver less directly than almost any other part of the body, it is evident that the Kupffer cells must be actively phagocytic to a high degree, at least for colloidal silver.

More recent studies have demonstrated that the assumption is warranted that these cells represent a most important and highly developed means of defense, not only against colloidal silver, but also against bacteria as well as mineral poisons.¹ Even harmless particles, as fat droplets, are taken out of the blood with great rapidity by the stellate cells of Kupffer. Schilling² has made an especially extensive study of these cells and finds that not all forms of bacteria are taken up with equal facility by them, pus cocci being more readily engulfed than tubercle bacilli, while other observers have noted a special avidity for colon bacilli. In case tubercle bacilli infect the liver, it is the stellate cells in which they lodge and which form the chief cells of the tubercle. This has been demonstrated in a series of ingenious experiments by Oppenheimer,³ who stained the Kupffer cells with colloidal silver, as Cohn had done, and then injected tubercle bacilli; in the forming tubercles in the liver it could be seen that the silvered Kupffer cells formed the "epithelioid" cells and the giant cells, thus establishing the disputed point that these characteristic cells of the tubercle may be of endothelial origin. These experiments also establish that Kupffer cells have proliferative as well as phagocytic activity which may be used as a means of defense, and Nathan,⁴ observing their great activity under the influence of bacterial toxins, believes that these cells also play an important part in serum immunity as well as in cellular defense. It would seem probable that the endothelium of the liver, because of its incessant subjection to the influence of bacteria and poisons of all kinds coming from the digestive tract, has acquired a greater power of reaction than any other cells in the body, so that, even when the bacteria or poisons are first disseminated through the systemic rather than through the portal circulation, the specialized defensive hepatic endothelium, the stellate cells of Kupffer, are found to play the leading part in phagocytosis and defense.

ALCOHOLISM AND THE GERMINATIVE CELLS

Recently we commented in these columns on the observations made by Fahr concerning the anatomic changes resulting from chronic alcoholism, which were found to be much less marked in regard to renal and vascular lesions than has been believed by most of us; although fatty changes in the liver and chronic meningeal thickening were found very frequently in the bodies of hard drinkers. An interesting supplement to the above observations is furnished by E. Bertholet¹ of Lausanne, who has systematically examined the testicles of alcoholics coming to autopsy.

It has long been believed, on the basis of clinical experience and statistical evidence, that paternal alcoholism may have a considerable and deleterious influence on the offspring, Forel in particular having contended that alcoholism injures the germinative cells; he supported this view with statistics from asylums for the insane and epileptic, and gave to the alteration in the germinative cells the title of "*blastophlorie*." Not only are nervous and mental defects attributed to paternal alcoholism, but also the collected histories of congenital cardiovascular anomalies show the presence of this influence to a degree that cannot well be dismissed as fortuitous. Even with experimental animals it has been found that chronic alcohol intoxication of the male leads to the production of defective offspring, according to several observers.

Until now, however, the influence of alcoholism on the germ cells has had little consideration from the standpoint of pathologic anatomy, although in 1898 Simmonds of Hamburg reported that in 60 per cent. of chronic alcoholics azoospermia was present. Bertholet examined the testicles of seventy-five men whose history as to alcohol was known, of whom thirty-nine were habitual users of alcohol in large amounts, and most of whom died before the fiftieth year. In all but two of these thirty-nine alcoholics a more or less marked atrophy of the parenchymatous elements and an increase in the interstitial connective tissue were found, these changes differing from the ordinary senile involution. Especially marked were the changes in the testicles of men who died of alcoholic cirrhosis; this coincidence of hepatic and testicular fibrosis has been observed previously by others, who, however, did not connect the changes in the testicles with the alcoholism. In proportion to the degree of atrophy present the process of spermatogenesis is defective, often with total absence of spermatozoa, or with abnormalities in the changes leading up to the formation of the spermatozoa. While chronic diseases, especially cancer cachexia, may cause similar changes, yet the frequency and advanced degree of testicular atrophy is characteristic of alcoholism. The relation of these microscopic changes to the recognized influence of paternal alcoholism on the offspring is evident.

1. Brötz: Frankfurt. Ztschr. f. Path., 1909, Hl. 931.

2. Schilling: Virchows Arch. f. path. Anat., 1909, cxvii, 1.

3. Oppenheimer: Virchows Arch. f. path. Anat., 1909, cxv (Beihft.), 254.

4. Nathan: La cellule de Kupffer, Paris, 1908.

1. Bertholet, Ed.: Centr. f. allg. Pathol., 1909, xx, 1962.

HARMONY AND HONESTY

In the Correspondence Department of this issue is a letter that every physician and pharmacist should "read, mark, learn and inwardly digest." Coming from the chairman of the Committee on Revision of the U. S. Pharmacopeia, its very source would command attention, even if the excellence of the suggestions it contains did not do so. As Professor Remington says, the nostrum evil—that *bête noire* of both professions—"is being controlled to an extent that few physicians realize." The medical profession probably fails to appreciate the very great changes that have taken place in the nostrum world within the past half-decade. Coincident with a changed attitude on the part of the majority of pharmacists toward "patent medicines" has been as great a change on the part of physicians toward the "ethical proprietaries." Such changes augur well for the future of pharmacy and medicine. We may look hopefully forward to the time when the physician shall no longer be a prescriber of ready-made mixtures, but a writer of *real* prescriptions and when the druggist shall cease being a retailer of "patent medicines" and become a scientific compounder of official drugs. This professional millennium, however, will not be reached by ignoring the "patent medicine" and "proprietary" evil, which, like a festering sore in the pharmaceutical-medical body, causes both local irritation and systemic weakness. Each profession must attack the problem squarely and openly, and, recognizing the seriousness of the disease, be willing to apply heroic treatment. By all means, let physicians and pharmacists work together in harmony and good fellowship, and let it be the harmony that comes from a unity and honesty of purpose and a common desire to render greater service to those who are dependent on both professions—the sick and suffering public.

THE POWER OF PUBLIC OPINION

For some time the better class of metropolitan newspapers, with but few exceptions, have excluded the advertisements of the notorious quacks that infest the larger cities of the country. One of the exceptions was the *New York World*—possibly the greatest paper which continued to carry that class of advertising. Now we learn that the *World* has closed its columns to the quacks, and the reason for this step is given by *Printer's Ink*: "The *World* had no fine-spun moral motives in crowding several of the 'old doctors' out in the cold; it appreciated to the full the \$30,000 a year which this publicity brought to its till. Yet the manager had had occasion to observe quite frequently that the 'big' advertisers of established character and clean reputation disliked being put into the company of the 'doctors' copy." In view of this attitude on the part of the decent advertiser, those in control of the *World* "have wondered whether they might not actually make money by passing up this \$30,000." They have evidently decided they might. The effect of this changed policy on newspapers in general is discussed by *Printer's Ink*: "When a powerful and matter-of-fact journal like the *World* . . . decides that it's *poor business* to harbor the 'doctors' longer, other newspapers are likely to ask themselves

similar questions and wonder whether they might not actually make more money if they should follow suit." To attempt to moralize on this matter would be fatal. Enough that a step—a big step—toward decency has been made. We can at least congratulate ourselves that an enlightened public opinion has brought about a state of affairs where newspapers find that it actually pays—pays in hard, cold cash—to reject indecent and fraudulent advertising. Even the most pessimistic must acknowledge that conditions are improving.

AUTOMOBILE DATA

In connection with the fourth Automobile Number of *THE JOURNAL*, that of April 9 next, a list of questions will be found on advertising page 47 of this issue. We hope that physicians, both those who use horses and those who use automobiles, will reply in sufficient numbers to make it possible to draw deductions of practical value from the answers. The length of time the automobile has been in use justifies the attempt to compare its *real cost* with that of the horse and to deduce from the experience of many some definite conclusions in regard to the worth of the automobile as equipment, as well as its value as a luxury. It is to ascertain "real cost" and not temporary expense that Questions 17 and 18 have been framed. Answers will be of value somewhat in proportion to the years covered by the figures. The fault with too many statements of expense is that they cover only running expenses and repairs and lose sight of the fact that the car may endure only one or two more years of service. A considerable portion of the original cost, therefore, has to be added to such an expense account. With other cars, however, the outlay for repair and correction of defects has been heavy in the first year, and then the machine is good for several years' excellent service with little necessity for renewal. In such a case it would be unfair to make so high an allowance for depreciation. All these things must be duly considered if dependable deductions are to be made. The information in regard to the yearly income, mileage, etc., is necessary as a basis for comparison, since what one man can afford is no guide to another unless the circumstances of the two be compared. On request these answers will be considered confidential and, if a tabulation is published, the name and address will be omitted. We shall appreciate the cooperation of our readers and we hope that many of them will fill out the blank and mail it to us at once. This is requested for the information of the profession, and the results will be of value in proportion as the response is general.

A Noted Japanese Physician.—The recent death of Dr. I. Ogata, at Osaka, Japan, at the age of 67, removes one of Japan's most eminent men, a Christian statesman of much influence, and a pioneer among Japanese students of Western medicine. He was one of the first to go abroad, studying medicine in Holland. He was appointed court physician by the new imperial government on its accession, and together with his father, who was also a physician, was the founder of the medical department of the Japanese army. He founded a medical college and hospital at Osaka, was one of the founders of the Japanese Red Cross Society, and was active in other directions in the larger affairs of Japan.

Medical News

ALABAMA

Society Meeting.—At the annual meeting of Jefferson County Medical Society in Birmingham, the following officers were elected: President, Dr. George W. Brown, Pratt City; vice-president, Dr. Edgeworth S. Casey; secretary-treasurer, Dr. Charles E. Downman, and censor, Dr. Thomas D. Parke (reelected), all of Birmingham.

Personal.—Dr. Philip Van B. Speir, Furman, has been elected health officer of Wilcox county, vice Dr. Raphael O. Semmes, Rock West, Camden, deceased.—Dr. Thomas R. Barnes, Russellville, physician to the Foster-Craighton Gould Company at Rockwood, has resigned and Dr. Walter A. Gresham, Russellville, has succeeded him.—Dr. Walter H. Bell, Birmingham, has been made medical director, and Dr. Edmond Prince, assistant surgeon of the Iron Ore Accident and Health Insurance Company.

ARKANSAS

State Society Meeting.—The thirty-third annual session of the Arkansas Medical Society will be held in Little Rock, May 3-6, 1910, under the presidency of Dr. James H. Lenow, Little Rock. The general headquarters will be at the Marion Hotel.

State Board Will Appeal.—Chancellor Martineau, on February 5, is said to have made permanent the temporary injunction which he had issued against the State Board of Medical Examiners, preventing the board from revoking the license of Dr. A. S. McCrary, Little Rock, because he had publicly advertised that he would treat chronic diseases and cancer. The decision declares that part of act 219, passed by the last legislature, is unconstitutional and void. The case will be appealed to the supreme court for a correct decision.

CALIFORNIA

Fined Doctors Appeal.—Drs. Daniel E. Osborn, Frank C. Newton, and J. H. O'Connor, physicians of St. Helena, who refused to pay the new town license tax of \$3 a quarter for the right to practice their profession and were fined \$10 in each case with the alternative of five days' imprisonment, have been granted a stay of execution to permit the filing of the necessary motions for appeal.

Personal.—Dr. Luther M. Powers has been unanimously reappointed health officer of Los Angeles.—Dr. Guy E. Manning has been reappointed a member of the San Francisco Board of Health.—Dr. Herbert C. Moffitt has been appointed vice-president; and Dr. William C. Vorsanger, secretary, and Drs. Harry M. Sherman and George H. Evans have been elected members of the executive committee of the San Francisco Association for the Study and Prevention of Tuberculosis.

Staff Elected.—At the annual meeting of the Children's Hospital, San Francisco, the following staff was elected: Visiting staff—Drs. Lucy M. F. Wanzer, Harry M. Sherman, Emma Merritt, William E. Hopkins, Charles A. von Hoffman, Beverly MacMonagle, William B. Lewitt, William Kerr, Adelaide Brown, Frances R. Sprague, Edward K. Hopkins, Samuel J. Hunkin, Alice M. Woods, Howard Morrow, and R. Leona Ash; assistant visiting staff—Drs. James T. Watkins, George J. McChesney, Emma K. Willits, Tracy G. Russell, August J. Lartigau, and Frederick Lewitt; anesthetist, Dr. Mary E. Botsford, and assistant anesthetist, Dr. Mary Murphy.

At Variance with the Law.—The State Board of Medical Examiners, through its attorney, has taken a hand in the prosecution of a Chinese doctor, who was arrested two months ago for practicing without a state license and was convicted and fined \$100. Appeal was taken. He was again arrested, January 27, charged with having practiced since conviction, and the following morning was arrested for the third time. The defendant claims that he does not practice medicine but merely sells herbs.—John Kellett, Oakland, is said to have been found guilty, February 2, of violating a state law by selling a medicinal preparation, containing more than two grains of opium to the ounce, and fined \$100. He was released on bonds, pending an appeal of the case.

Hospital Notes.—The directors of the Southern Pacific Railroad have appropriated \$150,000 for a west wing to the company's hospital. The new wing will provide 100 additional beds, and the fourth floor will be devoted to private rooms.—The St. Francis Hospital Company, Eureka, has transferred its business and building to the Sequoia Hospital Company, and the patients have already been moved to their new quarters.

—At the annual meeting of Fabiola Hospital Association, Oakland, February 4, it was reported that 1,590 patients had been treated during the year, 1,400 of whom were admitted to the hospital. The total receipts for the year were \$93,903.48 and the disbursements were \$93,877.13, leaving a balance on hand of \$26.86.—Ramona Hospital, San Bernardino, was opened February 1, with Dr. Henry W. Mills as chief of staff.

GEORGIA

Personal.—A patient crazed with liquor attempted to kill Dr. Garnett W. Quillian, an ambulance surgeon of Atlanta, January 29. Dr. Quillian escaped uninjured.—Dr. James M. Guess, Centerville, is reported to be seriously ill.—Dr. R. B. Durrett has been elected physician to the Atlanta city prison, vice Dr. M. C. Martin, who declined to serve.

Fire at Sanitarium.—The bravery of nurses in Park View Sanitarium, a private hospital in Savannah, probably prevented serious casualty February 7. A wing of the hospital caught fire, the 18 patients were removed, and after their removal the nurses fought the fire with the apparatus in the hospital until the arrival of the fire department.

IOWA

Visiting Nurse for Dubuque.—A Visiting Nurse Association was organized at Dubuque, January 27. Dr. James R. Guthrie presided at the meeting, and the address was delivered by Miss Harriett Fulmer, head of the Visiting Nurses Association of Chicago.

Buchanan County Physicians Elect.—The annual meeting of Buchanan County Medical Society was held in Independence, February 3, and the following officers were elected: Dr. George W. Tapper, Rowley, president; Dr. Hiram H. Hunt, Hazleton, vice-president; Dr. Benjamin B. Sells, Independence, secretary-treasurer, and Dr. Joseph C. Ohlmacher, Independence, censor (reelected).

Personal.—Dr. George W. Coit, Missouri Valley, is seriously ill with pneumonia.—Dr. Jennie G. Christ, Ames, and Dr. and Mrs. David W. Smouse, Des Moines, sailed from San Francisco, February 5, on a trip around the world.—Dr. Henry J. Prentiss has been appointed a member of the Greater University Committee of the State University, Iowa City.—Dr. George E. Crawford, Cedar Rapids, who was operated on last month, is reported to be convalescent.—Dr. Norman E. Mighell, Marshalltown, who has been seriously ill with septicemia, due to an operation wound, is reported to be convalescent.—Dr. Everett E. Richardson, Webster City, has been appointed a member of the State Board of Health, vice Dr. Alexander M. Linn, Des Moines.—Dr. Joseph J. Flannery, Des Moines, is reported to be seriously ill with nephritis in Mercy Hospital.—Dr. Charles C. Shope, Des Moines, has been appointed physician of Polk county.—Dr. Charles L. Marston, Mason City, representative from Cerro Gordo county, while making a professional call near Plymouth in a severe snow storm, was almost overcome with the cold. One foot was severely frozen.—Dr. Edward L. Martindale has been appointed postmaster of Clinton, and will assume the duties of his office April 1.—Dr. Mamie A. Coveny, Clinton, is reported to be ill with appendicitis in Maryville, Mo.—Dr. Louis A. Thomas, formerly secretary of the State Board of Health, was made acting secretary of the Des Moines Board of Health, February 4.—Dr. Mathew N. Voldeng, superintendent of the State Hospital, Cherokee, was designated by the board of control for another term of four years, February 5.

MARYLAND

Registration of Midwives.—Dr. Thomas A. Ashby has introduced a bill in the House of Delegates providing for the registration of midwives, which has been approved by a committee of the Medical and Chirurgical Faculty of Maryland.

Work for the Insane.—Patients at the Shepherd and Enoch Pratt Hospital for the Insane have made a motor boat which is ready for launching. The patients are also instructed in weaving, basket, metal and leather work, bookbinding, needlework and drawing. Several patients have shown distinct mental improvement under the stimulus of occupation.

Personal.—Dr. John H. Wade, Boonsboro, has been nominated as fish commissioner of the western shore.—Dr. Frank T. Turner, Black Horse, has been ill for several weeks with rheumatism.—Dr. George Wells, Annapolis, clerk of the Anne Arundel County Circuit Court, who has been ill for a month, has recovered.—Dr. Thomas Z. Offutt, Granite, is said to be ill with pneumonia.

Optometry Board.—Dr. Thomas A. Ashby has introduced in the house of delegates a bill to create a state board of examination in optometry. It provides for a board of five to be appointed by the governor, and authorized, after examination, to issue certificates to practice optometry. The board has power to revoke licenses on conviction of crime, habitual drunkenness and incompetency.

To Improve Sanitary Conditions.—A bill has been prepared by the Confederated Improvement Associations of Baltimore county, designed to better sanitary conditions in the state. By it all residents are required to keep their premises in sanitary condition, especially with reference to the contamination of streams. Sanitary officers will be provided to enforce the law, and failure to comply with their orders will render the offender liable to a fine of from \$10 to \$50.

State Sanatorium.—Many members of the state legislature visited the Maryland State Tuberculosis Sanatorium, Sabillasville, to inspect the condition and needs of the institution. The legislature will be asked to appropriate \$100,000 for maintenance of the institution and \$100,000 for buildings. There are now 200 patients. The cost of maintenance of patients in the institution is 95 cents per day each, or \$6.65 per week, which compares favorably with the average, \$10.47.

State Care of the Insane.—A meeting was held in the chamber of the House of Delegates, February 9, to discuss state care of the insane. The governor presided. The discussion was opened by Dr. Hugh H. Young, president of the lunacy commission. Dr. Albert W. Ferris of the New York Lunacy Commission, spoke on "Economics in the State Care of the Insane;" Mr. William L. Barbury, Baltimore, on the "State Care from the Viewpoint of the Taxpayer;" Dr. Joshua W. Hering, Westminster, comptroller of the state, on "Financial Questions Involved in State Care;" Dr. Edward M. Brush, superintendent of the Shepherd and Enoch Pratt Hospital on the "Great Possibilities of Scientific Treatment Under State Care," and Attorney General Isaac L. Straus on the "Duty of the State to Provide for the Dependent Insane."

Baltimore

Violators of Pure Food Law Fined.—Two drug firms were found guilty on January 29 of violating the pure food and drug law by sending out misbranded laudanum and headache tablets, and fined.

Concert for Widows and Orphans.—Concerts were given by the Ladies Auxiliary of the Medical and Chirurgical Faculty of Maryland, February 2 and 3, in Medical Hall, for the benefit of the widows and orphans of physicians.

Personal.—Dr. George L. Brown has been appointed assistant research worker of the Phipps Tuberculosis Dispensary. —Dr. Max Kunstler, accused of selling cocaine in violation of the ordinance was acquitted in the criminal court, February 2.

Ask Further Appropriation.—The State Board of Health has decided to ask the hygiene commission to recommend an increase in the appropriation for the relief of tuberculosis from \$5,000 to \$10,000, and also to ask the legislature to make provision for the publication of a monthly bulletin.

Book and Journal Club Meet.—The annual meeting of the Book and Journal Club of the Medical and Chirurgical Faculty of Maryland was held February 10. There are 83 members, each of whom pays \$5 dues, this money being used to increase the library. The subscriptions and balance amount to \$518. Historical work is to be fostered by the club; three meetings have been arranged for this season.

Report of the Eudowood Hospital.—The annual report of the Eudowood Hospital for Consumptives shows that 237 patients were under treatment during the year, and that the cost of each patient was 84 1/10 cents per day. The expenses were \$31,000, or \$10,000 in excess of the receipts. Of the 160 patients discharged from the hospital during the year, 66 per cent. are reported well with full earning capacity, and 77 per cent. well and doing work of some sort.

The Crusade Against Consumption.—A billboard crusade has been commenced against consumption by the Maryland Association for the Prevention and Relief of Tuberculosis. Two hundred and fifty posters, seven by nine feet are to be placed around the city in conspicuous places. These are illustrated, and contain the following admonition:

Bad air, overwork, late hours, intemperance, and other excesses lead to consumption.
Fresh air, good food, sunshine and life in the country cure it.
Phthisis can be prevented.
A careless consumptive is dangerous to his family.

Hospital News.—The Hospital for the Women of Maryland was reopened February 12, with a public reception. It has been completely remodeled and enlarged at a cost of \$80,000, and now has provision for 75 patients.—Performances were given in two theaters in Baltimore, February 7, one for the benefit of the Eye, Ear and Throat Charity Hospital, and the other for the benefit of the Mercy Hospital, connected with the College of Physicians and Surgeons.—At the annual meeting of the trustees of Johns Hopkins Hospital, February 8, the superintendent reported that during the year 4,782 patients were admitted to the hospital, and 4,776 were discharged. There were 309 patients in the hospital Feb. 1, 1910. The average mortality for the year was 5.62 per cent. of the cases treated, and during the previous year, it was 5.35 per cent.—A campaign has been started to raise a fund of \$100,000 for buildings for the South Baltimore General Hospital, to be erected on the site of the South Baltimore Eye, Ear, Nose and Throat Hospital.—Dr. Philip Morrill reports that the Sydenham City Hospital for Contagious Diseases is unable to handle all cases requiring treatment there. Only 28 patients can be accommodated, and provision is made for only diphtheria and scarlet fever.—By the will of the late Mrs. Gilman, widow of the late president emeritus of Johns Hopkins University, \$5,000 is left in trust to the university for the erection of a memorial to her husband.

MASSACHUSETTS

Meeting of Boards of Health.—At the annual meeting of the Massachusetts Association of Boards of Health, held in Boston, January 27, the following officers were reelected: Dr. Henry P. Walcott, Cambridge, president; Dr. Samuel H. Durgin, Boston, and C. B. Chapin, Providence, vice-presidents; Dr. James C. Coffee, Worcester, secretary, and J. B. Field, Lowell, treasurer. Dr. David D. Brough advocated registration for the purpose of control of laryngeal and pulmonary tuberculosis. Dr. Mark W. Richardson read a paper on "Ophthalmia Neonatorum," and Simon C. Keith, Jr., gave an address on an improved form of bubbling drinking fountains.

Money for Charities.—By the will of Mrs. H. M. Smith, Somerville, \$5,000 is bequeathed to the Eliot Hospital, Manchester, N. H.; \$20,000 to the same institution to build a nurses' home, and the income of \$15,000 for the support of free beds.—By the distribution of the residue of the estate of George William Boyd, Boston, the Boston Floating Hospital receives \$5,000; the Boston Dispensary, \$1,000; Carney Hospital, South Boston, \$5,000; the Free Hospital for Women, \$1,000; Infants' Hospital, \$1,000; Massachusetts Charitable Eye and Ear Infirmary, \$5,000; Massachusetts General Hospital, \$2,000, and the New England Deaconess' Association, for the maintenance of a free bed in the hospital, \$5,000.—Boston Floating Hospital receives a bequest of \$1,000 from the estate of Marion F. Lord, Wells, Maine, and the Newton Hospital receives a similar amount.

MINNESOTA

Personal.—The Minneapolis, St. Paul and Sault Ste. Marie Railway, which has recently taken over the Wisconsin Central Railroad, has reorganized its surgical department and has placed in charge Dr. John H. Rishmiller, Minneapolis, as chief surgeon.—Dr. Henry M. Bracken, St. Paul, has been reappointed a member of the State Board of Health, and the board has reelected him its secretary.

Medical Society Elections.—At the annual meeting of Washington County Medical Society, Dr. Wade R. Humphrey, Stillwater, was elected president; Drs. George H. Burfield, Afton, and Demeter Kalinoff, Stillwater, vice-presidents; Dr. Frank G. Landeen, Stillwater, secretary-treasurer; Dr. Thomas C. Clark, Stillwater, censor; and Dr. Ernest E. Wells, Stillwater, delegate to the state society.—At the annual meeting of Blue Earth County Medical Society, Dr. Edward W. Benham, Mankato, was elected president; Dr. Henry B. Grimes, Lake Crystal, vice-president; Dr. Thomas C. Kelly, Mankato, secretary; Dr. Lida Osborn, Mankato, treasurer; Dr. John H. James, Mankato, delegate to the state society, and Dr. John Williams, Lake Crystal, alternate.—St. Louis County Medical Society, at its annual meeting in Duluth, elected the following officers: President, Dr. Robert Graham, Duluth; Drs. Nicholas L. Linneman, Duluth, and Charles W. Bray, Biwabik, vice-presidents; Dr. Frank A. Grawn, Duluth, secretary-treasurer; Drs. Samuel H. Boyer, Frank A. Grawn, and Charles F. McComb, all of Duluth, delegates to the state society, and Drs. John B. Weston, Asher C. Taylor, and Edward L. Tuohy, all of Duluth, alternates, and Drs. Theodore L. Chapman, Charles A. Stewart,

and William H. Magie, all of Duluth, censors.—At the thirtieth annual meeting of the Minnesota Valley Medical Association, held in Mankato, the following officers were elected: President, Dr. John W. Andrews; vice-presidents, Drs. Lida Osborn and Carl J. Holman; secretary, Dr. Adolph G. Liedloff (reelected), all of Mankato, and treasurer, Dr. George F. Merritt, St. Peter.—At the annual meeting of the Red River Valley Medical Association, held in Crookston, the following officers were elected: President, Dr. Theodore Bratrud, Warren; vice president, Dr. George A. Morley, Crookston; secretary-treasurer, Dr. Henry E. Nelson, Crookston; censors, Drs. Henry C. Stahr, Argyle; Jacob S. Kjelland, Crookston, and Ole H. Olson, Erskine; delegate to the state society, Dr. Charles E. Dampier, Crookston, and alternate, Dr. George S. Wattam, Warren.

MISSOURI

St. Louis

Donation to Endowment Fund.—The St. Louis Surgical Society has donated \$1,000 to the Elisha Hall Gregory Endowment Fund of the St. Louis Library Association.

Chiropractic Acquitted.—W. J. Wundracek, charged with practicing medicine without a license and prosecuted by the State Board of Health, is said to have been acquitted January 20, the successful contention of the defense being that chiropractors use no medicine and therefore do not come within the Missouri statutes regarding unlicensed physicians.

NEBRASKA

Change Date of State Society Meeting.—The trustees of the Nebraska State Medical Association have changed the date of the meeting to May 10-12.

Medical Corps Banquet.—The Lincoln Hospital Corps, Nebraska National Guard, gave a banquet, January 27, at which the governor and adjutant general were guests of honor.

Consumption Camp Moves.—By order of the State Board of Health, The Double Red Cross Consumption Camp (designated state sanatorium), Lincoln, of which Dr. Julius H. Tyndale is medical director, has been moved to grounds adjoining Sunlight Sanatorium to the north on Garfield street.

Personal.—Dr. Henry J. Lehmhoff, Lincoln, has sailed for Europe.—Dr. Claude C. Sackett, Laurel, was operated on in Sioux City, Iowa, for appendicitis, recently.—Drs. Henry B. Lemere, Frederick W. Lake and Frank E. Coulter, the medical advisory board of Douglas County Hospital, Omaha, have resigned.—Dr. Harold Gifford has been persuaded to give up his intention of resigning as associate dean of the College of Medicine of the University of Nebraska.

Medical Societies.—Elkhorn Valley Medical Association, at its fourteenth annual meeting, held in Norfolk, January 19, elected the following officers: President, Dr. Armenag B. Tashjean, Norfolk; vice-presidents, Drs. Czar C. Johnson, Creighton, and William R. Peters, Stanton; secretary, Dr. J. H. Mackay, Norfolk, and treasurer, Dr. Walter H. Pilger, Norfolk.—Madison County Medical Association, at its annual meeting in Norfolk, elected the following officers: Dr. W. H. Hagey, Norfolk, president; Dr. Walter H. Pilger, Norfolk, secretary-treasurer; Dr. J. H. Mackay, Norfolk, delegate to the state association, and Drs. Francis A. Long, Madison, Francis A. Bryant, Norfolk, and Frank L. Frink, Newman Grove, censors.—Clay County Medical Association, at its annual meeting, held in Clay Center, January 14, elected Dr. J. Oscar Latta, Clay Center, president; Dr. Peter G. Grimm, Edgar, vice-president, and Dr. Adam R. Ray, Fairfield, secretary-treasurer.

NEW YORK

Medical Societies.—On January 20, the Lyons Medical Society was organized with the following officers: President, Dr. Myron E. Carner; vice-president, Dr. Andrew F. Sheldon; secretary, Dr. D. DeForest Cole, and treasurer, Dr. Major A. Veeder.—At the annual meeting of the Associated Physicians of Long Island, January 29, the following officers were elected: President, Dr. Thomas R. French, Brooklyn; vice-presidents, Drs. Frank Overton, Patchogue; William B. Brinsmade, Brooklyn, and George K. Meynen, Jamaica; secretary, Dr. James C. Hancock, Brooklyn, and treasurer, Dr. Charles B. Bacon, Blackwell's Island.

Death Rate Decreases.—Dr. Eugene H. Porter, State Commissioner of Health, reports that during the year 1909 there were 139,783 deaths; based on an estimated population of 8,699,643 this shows the rate per thousand of population to have been 16.1 as compared with 16.3 for 1908. There were

200,865 births reported which is 2,294 less than the number reported during 1908. The drop in the birth rate is attributed to the decrease in the number of marriages; there were only about 80,000 as compared with 92,421 for 1908. The decrease in the number of marriages is attributed to the new marriage license law which went into effect in 1909.

To Prevent Lunacy.—An amendment to the Greater New York Charter has been introduced into the Legislature in relation to the treatment of public intoxication and inebriety. Dr. Albert W. Ferris, president of the State Commission in Lunacy, states that next to heredity, alcoholic intoxicants are the most potent cause of insanity. Rosanoff has shown that in the State of New York 28.9 per cent. of the male patients owe their insanity to alcohol. In a study of 961 cases of insanity Dr. Mahon of the Manhattan State Hospital found that alcohol alone was the cause of mental impairment in 40 per cent. of the men and in more than 25 per cent. of the women. This made it obvious that the state, or at least large cities, should make special efforts to provide institutions for the treatment of inebriety. Such institutions would become the centers for the dissemination of truths regarding the great dangers of alcoholism.

Regulation of Medical Expert Testimony.—This bill was drawn up by joint committees of the New York State Bar Association, the Medical Society of the State of New York, the Homeopathic Medical Society of the State, the New York Academy of Medicine and the Society of Medical Jurisprudence. It provides that the judges of the appellate division shall appoint not less than 10 nor more than 120 physicians in each judicial district, any of whom may be called as medical or surgical witnesses by the trial court or by any party to any civil or criminal action in any of the courts of this state, and when so called shall testify and be subject to full examination and cross-examination as are other witnesses. Such examination is to include an examination as to their competency. Any designation may at any time be revoked without notice or cause shown, and any vacancy may at any time be filled by the judges sitting in the appellate division. When so directed by the trial court, witnesses thus called shall receive for their services and attendance only such sums as the trial judge may allow, to be at once paid by the treasurer or other fiscal officer of the county in which the trial is had. The act declares that it shall not be construed as limiting the rights of parties to call other medical expert witnesses as heretofore.

New York City

To Prevent Crime.—A plan has been worked out to erect a hospital where children from the Children's Court may be examined for mental and physical defects and treated either medically or surgically as the case demands. This institution is the result of the belief that many mental and moral infirmities are the result of physical defects and an expert investigation will be made of all cases of children under 16 years of age who come before the Children's Court. The cost it is said will amount to \$1,000,000 and Mrs. W. K. Vanderbilt will contribute nearly the entire amount.

Decision in Favor of Pharmacy Board.—An action was recently brought against a department store to collect penalties of \$25,000 each for the sale of iodine, camphor and arnica, which were sold to a representative of the State Board of Pharmacy by a clerk in the absence of the registered pharmacist in charge. The court has ruled that the drugs in question are medicines within the meaning of the pharmacy law prohibiting the sale of medicines or poisons except under the supervision of a licensed pharmacist. The court also holds that the right of the state to regulate the sale of drugs and medicines is not confined to poisons but even covers household remedies, which are harmless if properly prepared.

Staff for New Dispensary.—The new dispensary of the German Hospital, Brooklyn, was opened January 12. The following is the medical staff of the dispensary: Dr. George Burkard, gynecology; Dr. Otto Niedner, medicine; Drs. Carl Fulda and Russell S. Fowler, surgery; Dr. Robert L. Moorhead, ear, nose and throat; Dr. George Mueller, eye; and Drs. Henry F. Adams and Henry E. B. Meyer, x-ray examinations.

Plan Hungarian Hospital.—A meeting of the Hungarian Hospital Association was held recently where it was decided to collect funds all over the country for the purpose of erecting a modern hospital in this city. Among the officers of the association are Dr. Arpad G. Gerster and Prof. M. E. Pupin of Columbia University.

The Year at Stony Wold.—At the annual meeting of the trustees of Stony Wold Sanatorium it was announced that the institution had just completed its most successful year.

Not only was the highest percentage of cures attained but the maintenance of each patient was reduced 16 cents a day. Bequests amounting to \$20,000 were announced, \$5,000 from the estate of Miss Martha Potter, \$5,000 from the estate of Mrs. Frederick R. Halsey, and \$10,000 left by Mrs. Gardner Wetherbee. The completion of the \$75,000 chapel, the gift of Miss Blanche Potter, was announced. The auxiliaries increased the annual income by \$26,200. An open-air school has been established for girls ranging from twelve to fifteen years of age and for boys under ten.

Gifts to Hospitals.—Mount Sinai Hospital has refused to accede to the conditions of the will of Louis A. Heinsheimer which was filed in January, 1909, and will not be a beneficiary of the bequest of \$1,000,000 left to Hebrew Charities. The object of the testator was that six or more of the Hebrew Charities should form a consolidation for the collection and distribution of funds. The Hebrew Orphan Asylum also refused to combine with the other institutions.—Mrs. Anna Woerishoffer has given \$100,000 to the German Hospital and Dispensary for a children's division on condition that it shall be begun within two years and shall be named after Dr. Abraham Jacobi.—In honor of his seventieth birthday August Zinsser has received \$5,000 from ten men and one woman with which to endow a bed in the hospital to bear his name.—The will of John Stemme includes the following bequests: German Hospital and Dispensary, \$10,000; and St. Mark's Hospital, St. Francis Hospital, Montefiore Home, Mount Sinai Hospital, German Poliklinik, Isabella Home, and German Hospital Society of Brooklyn, \$5,000 each.—The will of Maria C. Tailer bequeathes \$25,000 to the New York University as a memorial endowment fund to William H. Tailer for the benefit of the dispensary and medical college. This is the first gift received for the endowment of the free clinic. An endowment of \$100,000 is needed in order to give an income sufficient to supply the drugs given to the patients.—Seney Hospital is twenty-two years old and 1909 was its most prosperous year, 10,610 patients having been cared for. Of the 51,580 days of treatment given in the wards and rooms 31,800 were free. Of the patients 238 died. From all sources the hospital received during the year \$115,351.95, an increase of \$12,648.15 over 1908. The endowment fund was increased by \$48,276.65, bringing it up to a total of \$814,241.01.

NEW HAMPSHIRE

Personal.—Dr. Wallis D. Walker, Portsmouth, has been appointed medical referee of Rockingham county, vice Dr. Arthur J. Lance, Portsmouth, resigned.

Society Meeting.—The Portsmouth Medical Society held its annual meeting, February 4, and elected the following officers: President, Dr. Herbert L. Taylor; secretary, Dr. John H. Neal; treasurer, Dr. Mark E. Scott; and executive committee, Drs. John J. Berry, Fred S. Towle and Arthur C. Heffenger.

Sanatorium Staff Reorganized.—The staff of Pembroke Sanatorium for the Treatment of Tuberculosis was reorganized by the appointment of the following members: Drs. Frank W. Grafton, Oscar B. Gilbert, Ralph E. Gallinger, Pearl T. Haskell, Sibley G. Morrill, William R. Varick, Arthur K. Day, Marion L. Bugbee, Charles P. Bancroft, Charles H. Cook, Chauncey Adams, W. Preston Beauclerk, Robert J. Graves and Henry H. Amsden, all of Concord, and Clarence E. Butterfield, Suncook. The sanatorium has recently received a donation of \$2,300.

NORTH CAROLINA

Antituberculosis Association Organized.—The Mecklenburg County Antituberculosis Association was organized at Charlotte February 1. The meeting was presided over by Dr. Andrew J. Crowell, Charlotte, and Dr. Charles A. Julian, Thomasville, secretary of the state organization, made an address. Dr. Isaac W. Faison, Charlotte, was elected president; Mr. C. W. Tillett, vice-president, and John Q. Myers, Charlotte, secretary-treasurer.

Personal.—Dr. William W. McKenzie, Salisbury, was thrown from his carriage in a runaway accident February 1, fracturing his leg.—Dr. Lewis B. McBrayer, Asheville, has been elected city physician and a member of the city board of health, vice Dr. Carl V. Reynolds, resigned.—Dr. Francis J. Clemenger, Asheville, who has recently returned from abroad, and Dr. William L. Dunn have been elected members of the Asheville Board of Health.

Hospital Notes.—Dr. Robert S. Carroll has made a contract for a new fifty-room building as an addition to his sanatorium at Asheville.—The trustees of the State Normal College for

Women, Greensboro, have let the contract for the new infirmary authorized by the last legislature, which appropriated \$50,000 for this purpose.—Maxton Hospital has been incorporated at Maxton by Drs. Arthur B. Croom, James D. Croom, and Arthur B. Croom, Jr., with a capital stock of \$50,000.

State Sanatorium.—The State Sanatorium for Tuberculosis, at Montrose, which has been closed for several months on account of making additions, has again been opened for the reception of patients. The institution, for which an appropriation of \$30,000 and a grant of 1,000 acres of land was made, is situated on a long sandhill amid the pines, and with the new building, sewage system, water works, etc., is in excellent condition for the work. A charge of one dollar a day is made for each patient. This covers the expense of nursing, board, medicine and lodging.

OHIO

Hospital to be Reopened.—The Good Samaritan Hospital, Sandusky, which was closed in 1893, is now being overhauled, and will be ready for occupancy about March 1.

State Sanatorium Established.—The Mount Vernon State Tuberculosis Hospital was formally taken over by the state authorities, January 8. At present the institution can accommodate about fifty.

Infant Asylum Annex Dedicated.—The new addition to St. Ann's Infant Asylum and Maternity Hospital, Cleveland, was dedicated with appropriate ceremonies by Bishop Farrelly, February 1. The building, which cost \$50,000 and doubles the capacity of the institution, was thrown open to the public all day. In the afternoon a formal reception was held.

For Tuberculosis Exhibit.—Dr. Charles O. Probst, secretary of the Ohio State Board of Health, has prepared a bill which will shortly be brought before the general assembly asking for an appropriation of \$10,000 to defray the expenses of a traveling antituberculosis exhibit. The board intends to send the exhibit from town to town accompanied by experts. Only those cities and towns will be visited that have not permanent exhibits.

Personal.—Dr. John W. Clemmer has been elected health officer of Columbus.—Dr. Thomas M. Sabin has been elected president, and Dr. Frederick K. Smith, secretary of the staff of the Warren City Hospital.—Dr. Henry C. Evans has been appointed physician at the Carnegie Steel Company in the Youngstown district, vice Dr. George S. Peck, resigned.—Dr. Joseph D. Ely, Toledo, announces that he will retire from general practice, April 21. After a period of rest he expects to take up special work.

Coming State Association Meeting.—The Academy of Medicine of Toledo and Lucas County has appointed the following committee to make the arrangements for the coming meeting of the Ohio State Medical Association: Drs. Charles N. Smith, George L. Chapman, Jeremiah Metzger, William W. Coldham, Homer H. Heath, Clarence D. Selby, John A. Wright and George M. Todd.—The Business Men's Club of Toledo will keep open house for the benefit of all physicians in attendance at the meeting of the association, which will be held in that city in May.

Cincinnati

Personal.—Dr. Robert W. Stewart has been elected chairman of the board of trustees of the University of Cincinnati.—Dr. Charles S. Rockhill has been appointed physician to the Branch Hospital for Consumptives, vice Dr. Benjamin F. Lyle.—Dr. Frances M. Hollingshead has been appointed clinical assistant in pediatrics in the Medical Department of the University of Cincinnati, vice Dr. Alfred Friedlander, resigned, and Dr. Jesse Southgate has been appointed clinical assistant in ophthalmology.

OKLAHOMA

Central Society Meets.—At the fifteenth annual meeting of the Central Oklahoma Medical Association, held in Enid, January 18, the following officers were elected: President, Dr. Arthur B. Cullum, Hennessey; vice-presidents, Drs. Fred H. Clark, El Reno, and Mahlon A. Kelso, Enid; and secretary-treasurer, Dr. Edwin D. Ebright, Enid.

Antituberculosis Association Organized.—The Oklahoma State Association for the Prevention and Cure of Tuberculosis, with headquarters at Enid, was granted a state charter, January 11. The directors are Dr. Franklyn P. Davis, Enid, secretary of the State Board of Medical Examiners, H. B. Shields, Chester Harper, and A. E. Sale, all of Enid. At the meeting for organization, the following officers were elected:

Dr. Joseph M. Postelle, Oklahoma, president; Drs. Eugene O. Barker, Guthrie; M. D. Read, Weatherford; George M. Ransom, Muskogee; G. W. Phillips, Paul's Valley, and W. G. Bradford, Mangum, vice-presidents; and Mrs. M. F. Jones, Chickasha, secretary-treasurer.

PENNSYLVANIA

Annual Elections.—At the annual meeting of the Philadelphia Academy of Surgery, the following officers were elected: President, Dr. Robert G. LeConte; vice-presidents, Drs. Gwilym G. Davis and John H. Gibbon; secretary, Dr. Charles F. Mitchell; treasurer, Dr. James P. Hutchison; and recorder, Dr. John H. Jopson.—At the annual meeting of the Philadelphia Obstetrical Society, the following officers were elected to serve for 1910: President, Dr. Edward P. Davis; vice-presidents, Drs. William R. Nicholson and John H. Girvin; secretary, Dr. Frank C. Hammond; treasurer, Dr. Charles S. Barnes; and curator, Dr. Charles C. Norris.—At the quarterly meeting and dinner of the Philadelphia Medico-Legal Society, January 24, the following officers were elected: President, Dr. Samuel P. Gerhard; vice-presidents, Drs. Lambert Ott and Clarence Loeb; secretary, Dr. William T. Hamilton; treasurer, Dr. George M. D. Peltz; censors, Drs. Francis J. Kelly, James Wolfe and Dr. Louis D. Bauer.

Philadelphia

New Chair at the University.—A gift of \$100,000 has been made to the university to endow a chair in the medical school. The name of the donor and the nature of the chair endowed will be announced on University Day, February 22.

Public Lectures at the College of Physicians.—The College of Physicians announces a series of public lectures on Great Doctors and Achievements in Medical Research. The first lecture on "The Life and Times of William Harvey, the Discoverer of the Circulation of the Blood," was given by Dr. S. Weir Mitchell, in the College Building, February 16.

Antituberculosis Society.—The directors of the Pennsylvania Society for the Prevention of Tuberculosis, February 9, arranged for the immediate publication of *The Fresh-Air Magazine*. Dr. Howard S. Anders, chairman of the legislative committee, read a report on street cleaning which placed Philadelphia in a very unfavorable light. The data of this report were collected from twelve cities.

Colleagues Honor Dr. Flick.—Dr. Lawrence F. Flick, who has resigned from the Phipps Institute, was the guest of honor at a dinner at the University Club, February 2. The dinner was attended by all the members of the staff of the institute and by officers of the new and old régime. Dr. Flick was presented with a massive silver loving-cup, bearing the engraved autographs of the members of the staff.

New Southeast Branch.—Physicians of the southeastern section of the city have for several years been striving to enroll into the County Medical Society every eligible practitioner, and the outcome of their efforts is announced in the first meeting and the election of the following officers: Chairman, Dr. Max Staller; clerk, Dr. Maurice B. Cooperman, and associate vice-president of the County Medical Society, Dr. Aaron Brav.

New Milk Law.—February 5, Dr. Joseph S. Neff, director of Health and Charities, notified the milk trade that the milk act passed by the last legislature for the greater purity of the city's milk supply goes into effect February 7, and that dealers must at once take out licenses issued by the bureau of health. The penalty of dealing in milk without obtaining a license is a fine of \$50, or imprisonment of not more than 60 days.

Gift to College of Physicians.—The College of Physicians' new building has been relieved of debt by the gift of \$75,000 from an unknown donor through Dr. S. Weir Mitchell. This announcement was made at the meeting of the college, February 2, and the following letter read from the donor: "I have the great pleasure of giving to the College of Physicians of Philadelphia \$75,000 to relieve it from debt and to leave it free to its honorable usefulness."

Elections of Officers.—At the January meeting of the Lebanon Hospital Medical Society, the following officers were elected: President, Dr. Alfred Heineberg; vice-president, Dr. Benjamin L. Singer; secretary, Dr. Abraham D. Halpern; treasurer, Dr. Moris V. Leof, and librarian, Dr. E. J. Goldring.—At the annual meeting of the Samaritan Medical Society, January 29, the following officers were elected: President, Dr. G. Morton Illman; vice-presidents, Drs. Charles S. Barnes and

John Leedom; and secretary and treasurer, Dr. Jesse O. Arnold.

Meeting of State's Society Committee of Inquiry.—The committee appointed by the Pennsylvania State Society, at its last meeting to inquire into the charges of mismanagement of hospitals receiving state aid, met February 4, at the College of Physicians to receive suggestions from physicians and others of the best means to correct the abuse, of which complaint was made. Dr. William L. Estes, South Bethlehem, chairman of the meeting, was called away at the beginning of the session, and Dr. H. G. McCormick, Williamsport, presided. The other members of the committee were: Drs. John B. Roberts, Philadelphia; William T. Sharpless, West Chester, and Thomas D. Davis, Pittsburg. There was a long discussion, but no definite conclusion was reached.

New Location for Free Library.—Negotiations have been closed for the leasing to the Central Branch of the Free Library, of the old building of the College of Physicians. The lease is for five years, with the privilege of annual renewal until the great central edifice of the city's Free Library System, to be erected on the Parkway between City Hall and Fairmount, is ready for occupancy. The importance of the foregoing statement to general practitioners in the outlying districts of the city is in the legal agreement just made between the Philadelphia County Medical Society and the trustees of the Free Library System by which the old College of Physicians' building ultimately becomes the starting and distributing center for a medical reference section for all physicians in the city through the forty or more branch libraries.

SOUTH DAKOTA

Societies Elect Officers.—At the annual meeting of Aberdeen Medical Society, held January 25, Dr. Daniel Geib, Groton, was elected president; Dr. Burton A. Adams, Bristol, vice-president; Dr. Jesse B. Whiteside, Aberdeen, secretary; Dr. Herman R. Gundermann, Selby, treasurer; and Dr. James D. Jones, Groton, censor (reelected).—At the annual meeting of the Yankton District Medical Association, held in Yankton, January 7, the following officers were elected: President, Dr. James L. Stewart, Spearfish; vice-president, Dr. Edward T. Anderson, Platte; secretary-treasurer, Dr. Leon F. Beall, Irene; censor, Dr. Herman J. G. Koobs, Scotland; and delegates to the state association, Drs. F. Arthur Swezey, Wakonda, and Silas M. Hohf, Yankton.

TENNESSEE

Hospital News.—The organization of the Boyd Tuberculosis Sanatorium Association of Knoxville was perfected January 8. Dr. Henry P. Coile was elected president, and among the incorporators are Drs. William R. Cochran and Henry T. Fisher.—The Armstrong Hospital, Bristol, has been sold to Drs. William R. Rodgers, Nathan H. Reeve, James H. Delaney and Joseph S. Bachman. The institution will accommodate thirty patients.

Societies Elects Officers.—At the annual meeting of the Memphis and Shelby County Medical Society, held December 21, Dr. Ernest C. Blackburn was elected president; Dr. J. Wesley Price, vice-president, and Dr. Buford N. Dunavant, secretary-treasurer, all of Memphis.—At the annual meeting of Knox County Medical Society, held in Knoxville, the following officers were elected: President, Dr. John P. Tillery; vice-president, Dr. William Bowen; secretary-treasurer, Dr. Leon L. Sheddan, and censors, Drs. Samuel D. Aenff and William S. Austin, all of Knoxville.—Hamilton County Medical Society, at its annual meeting in Chattanooga, elected Dr. William A. Duncan, president; Dr. James H. Atlee, vice-president (reelected), and Dr. Hiller P. Larimore, secretary-treasurer, all of Chattanooga.

Personal.—Dr. Walter J. Miller, Johnson City, has gone to Rochester, Minn., for operation and treatment.—Dr. Henry P. Dulancy, Blountville, has been appointed assistant surgeon of the Mountain Branch of the National Soldiers' Home, Johnson City.—Dr. W. Frank Glenn has been elected chairman of the Nashville Board of Health.—Dr. James B. Murfree, Murfreesboro, is reported to be seriously ill.—Dr. W. Battle Malone, Memphis, has been appointed one of the trustees of the proposed new city hospital for the care of communicable diseases.—Dr. Henry A. Smith has been reelected city physician of Knoxville.—Dr. Philander D. Sims has been reappointed city physician of Chattanooga.—Dr. Max Goltman has succeeded Dr. James L. Andrews as president of the Memphis Board of Health.

TEXAS

Gifts to Texas Charities.—Mrs. Russell Sage has given \$25,000 to a hospital in El Paso, \$25,000 to a tuberculosis sanatorium near Brackettville, \$10,000 to a sanatorium at Boerne, and \$15,000 for a hospital for consumptives at Pecos.

Favor Postgraduate Work.—At a meeting of physicians of Dallas, January 1, a plan was outlined for the establishment of a postgraduate medical course. The committee in charge is composed of Drs. Joseph H. Reuss, John M. Neel, Oscar M. Marchman, Mathew M. Smith and Samuel E. Milliken.

Sanitary Code in Force.—The State Sanitary Health Code, recently promulgated by the State Board of Health, became operative February 1. The code provides for the proper registration and record of births and deaths, and the violation of any of the provisions is punishable by a fine of not less than \$10 nor more than \$1,000.

Personal.—Dr. Thomas A. Pope, postmaster of Cameron, was run down by an automobile, January 11, and painfully injured.—Dr. Robert J. Rowe has resigned as one of the assistant physicians of the North Texas Hospital for the Insane, Terrell, and Dr. Paul Shepherd, McCulloch, has been elected his successor.—Dr. Philip O. Erwin, Big Sandy, was stricken with cerebral hemorrhage, January 9.—Dr. William C. Baird, Beaumont, charged with practicing medicine without first having obtained a certificate, is said to have been found not guilty by a jury, February 2.

Medical Society Meetings.—At the recent meeting of the Bexar County Medical Society, held in San Antonio, the following officers were elected: President, Dr. William E. Luter; vice-president, Dr. James P. Oldham; secretary, Dr. Lewis Krams Beck (reelected); treasurer, Dr. Evarts V. De Pew (reelected), and delegates to the state association, Drs. John H. Burlison and Franklin E. Young, all of San Antonio.—Port Arthur Medical Society was organized February 2, Dr. Charles F. Seafers being elected president; Dr. William S. Winter, vice-president, and Dr. L. F. Bland, secretary-treasurer.—Tarrant County Medical Society, at its annual meeting, Dec. 6, 1909, elected the following officers: President, Dr. William Rounds, Fort Worth; vice-president, Dr. William H. Davis, Arlington; secretary, Dr. Harold L. Warwick, Fort Worth; treasurer, Dr. William R. Thompson, Fort Worth; censor, Dr. L. Arnold Withers, Fort Worth; delegate to the state association and alternates, Drs. Willis G. Cook and K. Herberden Beall, both of Fort Worth.—Central Texas District Medical Society held its annual meeting in Waco, January 11 and 12, and elected Dr. John L. Burgess, Waco, president; Dr. Olin F. Gober, Temple, secretary-treasurer. The newly elected president announced the following appointments: Dr. Thomas P. Weaver, DeLeon, chairman of the section on practice of medicine, Dr. Marcens P. Smartt, Eddy, secretary; Dr. James M. Woodson, Temple, chairman of the section on diseases of the eye, ear, nose and throat, Dr. Walter R. Washburn, Cleburne, secretary; Dr. William A. Wood, Hubbard, chairman of the section on gynecology and obstetrics, Dr. Richard McCormick, South Bosque, secretary; Dr. James W. Hale, Waco, chairman of the section on surgery, and Dr. Ambrose B. Crain, Belton, secretary.—The medical directors of the life-insurance companies of Texas met in conference in Waco, January 11, perfected the organization of the State Medical Directors' Association, and elected Dr. John H. Florence, Houston, president; Dr. A. Manson Curtis, Waco, vice-president, and Dr. Mathew M. Smith, Dallas, secretary-treasurer.—Galveston County Medical Society, at its annual meeting held in Galveston, January 7, reelected Dr. David H. Lawrence, president; Dr. H. O. Sappington, vice-president; Dr. James J. Terrill, secretary; and elected Dr. Ashley W. Fly, delegate to the state association, and Drs. Howard R. Dudgeon and William S. Carter, censors, all of Galveston.

WEST VIRGINIA

Personal.—Dr. Hugh H. Carr, Fairmont, has sailed for Europe.—Dr. Irene B. Bullard, Charleston, has been elected corresponding secretary; Dr. W. Holmes Yeakley, Keyser, assistant recording secretary, and Dr. William W. Golden, Elkins, recording secretary, of the West Virginia Antituberculosis League.

Tuberculosis Dispensary Located.—On January 27, Dr. Harriet B. Jones, Wheeling, and Rabbi Harry Levy, the state committee of the Antituberculosis League to select a dispensary and sanatorium location, completed arrangements whereby the temporary quarters of the Young Men's Christian Association will be secured for the dispensary as soon as the association moves into its new building.

Society Meetings.—Mannington Medical Society, at its annual meeting, January 13, elected Dr. William J. Leahy, president; Dr. Millard F. Hamilton, vice-president; Dr. W. R. Andrews, secretary; Dr. Phoebe G. Moore, treasurer, and Dr. Uriah H. Debendorfer, censor.—At the annual meeting of Brooke County Medical Society, held in Wellsburg, January 14, Dr. William T. Booher, Bethany, was elected president; Dr. Thomas H. Weirich, Wellsburg, vice-president; Dr. Joseph B. Palmer, Wellsburg, secretary, and Dr. Karl C. Brashear, Wellsburg, treasurer.—At the meeting of the Eastern Panhandle Medical Association, held recently at Harpers Ferry, Dr. Briscoe B. Ranson was elected president and Dr. Joseph Howard Hodges, secretary.—At the annual meeting of Marion County Medical Society, Dr. James W. McDonald, Fairmont, was elected president; Dr. James A. Reidy, Monongah, vice-president; Dr. Henry R. Johnson, Fairmont, secretary, and Dr. William H. Sands, Fairmont, treasurer.—Taylor County Medical Association, at its annual meeting in Keyser, elected Dr. J. S. Whitescarver, Grafton, president; Dr. W. J. Cherry, vice-president; Dr. John H. Doyle, Grafton, secretary; Dr. Charles A. Sinsel, Grafton, treasurer; Dr. Dorsey C. Peck, Grafton, censor, and Dr. Jay F. Chenoweth, Simpson, delegate to the state association.—Kanawha Medical Society, at its annual meeting, held in Charleston, elected Dr. Charles O. Grady, president; Dr. Hugh G. Nicholson, Charleston, vice-president; Dr. Henry L. Robertson, Charleston, secretary, and Dr. Benjamin S. Preston, Charleston, treasurer.

UTAH

Personal.—Dr. Anna F. Ries has been appointed city physician of Ogden.—Dr. Albert L. Castleman and George L. Smart have been elected members of the staff of St. Mark's Hospital, Salt Lake City.—Dr. Vonando G. Logan has been appointed city physician and a member of the board of health of Tooele, and Dr. Francis M. Davis has been elected a member of the board.—Dr. Samuel G. Paul has been elected health commissioner and Dr. Hugh B. Spragne, assistant health commissioner of Salt Lake City.

Society Meetings.—At the annual meeting of San Pete Medical Association, in Mount Pleasant, January 20, Dr. John J. Steiner, Richfield, was elected president; Dr. William P. Winters, Mount Pleasant, vice-president; and Thomas R. Gledhill, Richfield, secretary.—Ogden Medical Association, at its annual meeting, January 19, elected Dr. Robert S. Joyce, president; Dr. Edward I. Rich, vice-president; Dr. Joseph R. Morrell, secretary, and Dr. George W. Green, treasurer.—Utah County Medical Society held its annual meeting in connection with the Third Councilor District Medical Association at Lehi, January 8, and elected Dr. Albert G. Stoddard, Spanish Fork, president; Dr. Heber E. Robinson, American Fork, vice-president, and Dr. Frederick Clift, Provo, secretary-treasurer.

VERMONT

Home from Abroad.—Dr. Louis A. Heidel, Rutland, has returned after a trip abroad.—Dr. Bingham H. Stone, Burlington, director of the State Laboratory of Hygiene, has returned after three months spent in London and Vienna.

Doctors' Club Meets.—Rockingham Medical Club met in Bellows Falls, January 3, for its annual meeting, and elected Dr. A. Lawrence Miner, president; Dr. Edward Kirkland, secretary, and Dr. James S. Hill, treasurer, all of Bellows Falls.

Dispensary Not Needed.—At a meeting of physicians of Rutland, held in the office of Dr. James M. Hamilton, January 12, to organize and mature plans to provide a modern medical dispensary for the deserving poor of the city, Drs. William Stickney, George Rustedt, and M. J. Mangan, who were appointed a committee to investigate the matter, reported, after careful investigation, that a dispensary was not needed in the city at that time.

Sanatorium Report.—At the annual meeting of the Vermont Sanatorium, Pittsford, recently, the biennial report for the period ended Dec. 31, 1909, was made, showing that 191 patients had been admitted, of whom 81 were in the first stages, 88 in the second stage, and 20 in the third stage of tuberculosis. The only death which occurred during the period was from miliary tuberculosis in which meningitis developed. Two cases were diagnosed as non-tuberculous and 155 patients were discharged. Of this number 32, or 20.65 per cent., were apparently cured; in 73 cases, or 47.1 per cent., the disease was arrested; in 29, or 18.7 per cent., the patients were improved; in 21, or 13.55 per cent., no improvement or progress was made.

VIRGINIA

Open-Air School for Tuberculosis.—Ironville Sanatorium for Tuberculosis, Roanoke, is to be converted into an open-air school for the prevention of tuberculosis, and for the attainment and preservation of the physical development of the pupils. Dr. Lester L. Schwab, Roanoke, is president of the institution.

State Board of Health Meeting.—At the annual meeting of the State Board of Health, January 5, Dr. Samuel P. Latane, Winchester, member from the Seventh District, was elected secretary of the board to take the place of Dr. Charles R. Grandy, Norfolk, resigned. Dr. Rawley W. Martin, Lynchburg, remains president of the board.

Medical Colleges Merged.—As a result of the fire which recently destroyed the building of the University College of Medicine, Richmond, a merger has been brought about between that school and the Medical College of Virginia. It is understood, since the older of the two schools is the Medical College of Virginia, that that name will be retained following the merger. The agreement calls for the resignation of all the professors of both faculties, so that for the new college the best teachers may be selected.

Medical Society Meetings.—About fifteen physicians of Prince Edward, Cumberland, Nottoway, and Buckingham counties, and territory in adjacent counties not occupied by other county societies, met at Farmville, January 21, and organized the Mettauer Medical Society with the following officers: President, Dr. Peter Winston, Farmville; vice-presidents, Drs. Waller M. Holladay, Hampden Sidney, Prince Edward county; William E. Brown, Shephards, Buckingham; Dr. Carter Weisgar, Cumberland, Cumberland county; James B. Abbitt, Appomattox, Appomattox county; Thomas M. Baird, Crewe, Nottoway county, and William E. Anderson, Farmville, at large; and secretary-treasurer, Dr. William J. Gills, Farmville. The next meeting is to be held in Farmville, April 19, with obstetrics and tuberculosis as the chief topics of discussion.—Patrick-Henry County Medical Society, at its annual meeting in Martinsville, January 8, elected the following officers: President, Dr. J. Russell Perkins, Spencer; vice-presidents, Drs. Leonidas C. Dickerson, Stuart, and Louis E. Fuller, Sandy River; secretary-treasurer, Dr. Jesse M. Shackelford, Martinsville.

WASHINGTON

Increases List of Reportable Diseases.—The State Board of Health has revised its rules regarding reportable diseases and has added to the list cerebrospinal meningitis, hookworm, pellagra and anterior poliomyelitis.

Spokane Secures Sane Ordinance.—The Spokane City Council passed an ordinance at its meeting February 8, prohibiting the firing or discharge of toy cannons, cannon crackers, giant firecrackers, bombs, and blank cartridges within the city of Spokane at any time of the year.

Medical Corps Organized.—The National Guard of Washington has organized a medical department with an auxiliary hospital corps on similar lines of that of the regular establishment. The following officers have been commissioned: Dr. Elmer M. Brown, Tacoma, as colonel and surgeon-general; Dr. John S. Culp, Major Medical Corps, U. S. Army, retired, as lieutenant colonel; Dr. Dudley L. Munsen, Seattle, major; Dr. Frank M. Carroll, Seattle, captain, and Drs. James A. LaGasa, Tacoma, and James A. Durrent, Snohomish, lieutenants.

Against Tuberculosis.—As the result of meetings held last month in Tacoma, an antituberculosis society for Pierce county is to be organized.—The pulmonary hospital near Riverton was opened last month. It is known as the "Pulmonary Hospital of the City of Seattle," and is located on a site on the heights west of Riverton, on a tract of forty-two acres, purchased at a cost of \$25,000. A central building has already been constructed, and with eleven open-air cottages, garbage incinerator and disinfectant house, hot water system, electric lights, a system of sewage collection and disposal, the institution will at present accommodate 20 patients.—The executive committee of the Antituberculosis League of King county has voted \$5,000 for the construction of a sanatorium for tuberculosis to accommodate 50 patients.

Annual Elections.—At the annual meeting of Skagit County Medical Association, held in Anacortes, January 28, the following officers were elected: President, Dr. Hiram E. Cleveland, Burlington; vice-president, Dr. Winston Appleby, Anacortes; secretary-treasurer, Dr. Wilbur N. Hunt, Burlington; and censors, Drs. James F. Mills, Sedro Wooley, Adolph J. Osterman, Mount Vernon, and Robert L. Maloney, Anacortes.—Pierce County Medical Society, at its annual meeting, held in

Tacoma, the following officers were elected: President, Dr. John B. McNerthney; vice-presidents, Drs. John R. Brown and Wilmot D. Read; secretary, Dr. Edward O. Sutton; and treasurer, Dr. Royal A. Gove, all of Tacoma.—At the annual meeting of Spokane County Medical Society, held in Spokane, January 6, the following officers were elected: President, Dr. Henry B. Luhm; vice-presidents, Drs. Matthew B. Grieve and George T. Penn; secretary, Dr. Carroll L. Smith; corresponding secretary, Dr. Clarence A. Veasey; treasurer, Dr. Charles M. Doland, and censors, Drs. Harold H. McCarthy, Wilson Johnston and Frank Rose, all of Spokane.—King County Medical Society, at its annual meeting, held in Seattle, January 3, elected Dr. Park W. Willis, president; Dr. H. Eugene Allen, vice-president; Dr. John W. Hunt, secretary; and Dr. Philip V. Von Puhl, treasurer, all of Seattle.—Chelan County Medical Society held its annual meeting in Aberdeen, January 4, and elected Dr. Arthur S. Austin, president; Dr. James A. McNiven, vice-president; and Dr. Clayton E. Bartlett, secretary-treasurer, all of Aberdeen.

GENERAL NEWS AND COMMENT

New Navy Hospital.—A new navy hospital is to be erected at Guam at a cost of \$6,000, on the recommendation of the commandant and medical officers at that station.

Milk Commission Council Meeting.—The judicial council of the American Association of Medical Milk Commissions, of which Dr. Henry E. Tuley, Louisville, is chairman, will hold its annual meeting in St. Louis, June 6, the day before the meeting of the American Medical Association. The meeting will probably be held in the Southern Hotel.

Congress of Alimentary Hygiene.—The second International Congress of Alimentary Hygiene and of the Rational Feeding of Man will be held in Brussels, Belgium, October 4-8, under the patronage of the Belgian government. The business of the congress is to be considered in seven sections namely: Biologic Physics and Energies; Physiology and Physiologic Chemistry—Rational Nutrition-regimen and Dietary; Hygiene of Nutrition—Bacteriology—Parasitology and Alimentary Intoxication; Composition of Foods—Analyses of Foods—Adulteration of Foods, with subsections on different kinds of foods and dairy products; Potable Waters; Legislation—Repression of Frauds—Inspection—Statistics; and inspection of a popular character concerning rational feeding and alimentary hygiene—cooperative societies, food administration, the food of charitable institutions, and food in different sociologic relations. The problems to be discussed are of far-reaching interest and the authorities of the congress have asked the organization of an American committee. Dr. Harvey W. Wiley, Washington, is in charge of the organization for the United States. The membership fee is \$4 and associate membership fee \$2.

Society Meetings.—At the annual meeting of the Kansas City Academy of Medicine, composed of physicians of Kansas City, Mo., and Kansas City, Kan., held January 8, Dr. George M. Gray, Kansas City, Kan., was elected president; Dr. Paul V. Wooley, Kansas City, Mo., secretary; Dr. Charles B. Hardin, Kansas City, Mo., treasurer, and Dr. Peter T. Bohan, Kansas City, Mo., censor.—At the annual meeting of the Chattahoochee Valley Medical Association, held in West Point, Ga., January 11 and 12, the following officers were elected: President, Dr. Joseph S. Horsley, West Point, Ga.; secretary-treasurer, Dr. William J. Love, Opelika, Ala. (reelected), and counselor, Dr. Henry B. Disharoon, Roanoke, Ala. The next meeting is to be held in Roanoke, Ala.—Fox River Valley Medical Society, at its annual meeting, held in Oshkosh, January 18, elected the following officers: President, Dr. Robert A. Walker, Menominee, Mich.; vice-presidents, Drs. Henry W. Abraham, Appleton, Wis., and S. Gordon Todd, Neenah, Wis.; and secretary-treasurer, Dr. William W. Kelly, Green Bay. A surgical clinic was held for the Association at St. Mary's Hospital, conducted by Dr. Charles W. Oviatt, Oshkosh.—At the seventeenth annual meeting of the Medical Club of Philadelphia, whose membership is made up of medical men of eastern Pennsylvania, southern New Jersey and Delaware, the following officers were elected: President, Dr. James B. Walker, Philadelphia; vice-presidents, Drs. William L. Rodman and S. Lewis Ziegler; governor, Dr. George A. Knowles; and directors, Drs. Ross V. Patterson, Frank C. Hammond, McCluney Radcliffe, James T. Rugh, and Charles A. E. Codman, all of Philadelphia.

The Conference on Medical Education and Legislation.—This joint conference will be held at the Congress Hotel (Annex), Chicago, February 28, March 1 and 2. On the first day will be held the Sixth Annual Conference of the Council on Medical Education at which, besides the reports of the chairman,

secretary and a special committee on practical tests at state license examinations, will be given the following addresses:

"Standards in Medical Education as Related to Standards in General Education," Hon. Elmer Ellsworth Brown, United States Commissioner of Education, Washington, D. C.

"The Obligations of the University to Medical Education," President Henry S. Pritchett of the Carnegie Foundation for the Advancement of Teaching, New York City.

"The Relation of the University to the Medical School," President J. G. Schurman of Cornell University, Ithaca, N. Y.

"Some of the Functions of a University Medical School," Dr. Victor C. Vaughan, Dean, University of Michigan College of Medicine and Surgery, Ann Arbor.

On the second day, at the morning session, will be held a joint conference of the Council on Medical Education and the Committee on Medical Legislation, to discuss a model medical practice act. At the afternoon session, the following addresses will be given:

"Some of the Constitutional Aspects of Medical Licensure," Professor Ernest Freund, Professor of Jurisprudence and Public Law, University of Chicago.

"The Value of Uniform State Laws Regulating the Practice of Medicine," Professor Roscoe Pound, University of Chicago.

"Importance to the Public of the Proper Enforcement of Medical License Laws," Hon. Henry Olson, Chief Justice, Municipal Court, Chicago.

"The Attitude of the Medical Profession Regarding Medical Practice Laws," Dr. Henry B. Favill, Chicago.

On the third day the Committee on Medical Legislation will hold its fifth annual conference, at which, besides the routine business and the reports of the various reference committees, there will be reports from the following special committees:

(a) Report of the Carroll Fund Committee, Major M. W. Ireland, U. S. A., chairman.

(b) Report of the Committee on Optometry, George W. Gay, Massachusetts, chairman.

(c) Report of the Special Committee on Expert Testimony, L. M. Halsey, New Jersey, chairman.

This is the first time that the conferences of the Council on Medical Education and the Committee on Medical Legislation have been held at the same time and place. In the discussion of medical education and the model practice act as well as of a number of the pure-food and other public-health topics, the state boards of medical examiners and the state boards of health are interested, and a large attendance from those boards is expected. There is also the assurance that a large number of university presidents, particularly those connected with institutions having medical departments, will be in attendance. This promises to be a very interesting conference and it is very encouraging as well as significant to note the interest being taken in it by so large a number of distinguished and influential laymen.

FOREIGN

Scandinavian Congress for Internal Medicine.—The seventh Northern Congress for Internal Medicine will meet at Bergen in July, 1911. The topics announced for discussion are "Per- nicious Anemia," with addresses by Tallquist of Helsingfors and Ellermann of Copenhagen, and "Cardiac Arrhythmia," with addresses by Frieberger of Upsala and Rubow of Copenhagen.

Memorial to Professor Jentzer of Geneva.—Subscriptions were collected and a bronze bust of the late Prof. A. Jentzer was recently installed at the entrance to the new model maternity at Geneva, Switzerland. The institution owes its inception and organization mainly to his efforts. Enough funds remained in the hands of the committee in charge of the subscription to found an annual prize in gynecology, to be known by his name.

Gold Medal Prizes Offered at Buenos Ayres.—The national Academy of Medicine at Buenos Ayres, in order to stimulate scientific research and also do honor to the approaching centennial of the Argentine Republic offers three prizes for the best work in some branch of internal medicine, surgery or the biologic sciences. The prizes will be awarded soon after the conclusion of the International American Medical Congress to convene there May 25, as already mentioned in these columns.

Recent Deaths Abroad.—In addition to the deaths of eminent medical men chronicled in our foreign correspondence of late, the profession has lost the following: Dr. H. Adler, of Vienna, editor of the *Wiener med. Wochenschrift*.—Dr. J. H. Baas, of Worms, a well-known ophthalmologist and author of works on the historical development of the medical profession and of the medical sciences.—Dr. J. Nicolaysen, until last year professor of surgery at the university of Christiania.—Dr. E. J. Widmark, professor of ophthalmology at the university of Stockholm and editor of an ophthalmologic

annals.—Dr. J. M. Mariani, of Madrid, of the national board of health and president of the *Academia Medico-Quirugica Espanola* for many terms.—Dr. S. Iglesias, formerly professor of therapeutics at Madrid.—Dr. P. Lesshaft, professor of anatomy at the university of St. Petersburg.—Dr. L. Schweiger, of Vienna, known for his writings on neurology.—Dr. A. Spediacci, professor of pathology at the university of Siena.—Dr. Opitz, an orthopedist of Stettin, Germany, who died from a Roentgen burn, and Dr. O. Happel, of Marburg, from professional infection.—Dr. O. Kölpin, of Bonn, killed in a railroad accident.—The following deaths of eminent medical men of Great Britain have recently occurred: Dr. W. Page May, lecturer on physiology of the nervous system in University College, London, who died January 19, aged 46.—Stanley Bean Atkinson, M.B.; barrister at law; justice of peace; formerly honorary secretary of the Medico-legal society, and the editor of its transactions, who died January 18, aged 36.—Dr. George Skene Keith, author of "Fads of An Old Physician;" and an apostle of the simple regimen.—Major J. C. Weir, R.A.M.C.; sanitary officer of the Lucknow command, who died suddenly from cholera, December 20, on board ship while en route to Calcutta.

LONDON LETTER

(From Our Regular Correspondent)

LONDON, Feb. 5, 1910.

A Question of Color Blindness: Expert's Evidence Set Aside

A curious case of color blindness has recently occupied the attention of government officials. A man began a seafaring life as an ordinary seaman and worked himself up so that six years ago he passed the examination for a second mate's certificate. No question of color blindness arose until eighteen months later when he was examined for a first mate's certificate. He was rejected in the color test and asked to surrender his certificate as second mate. He appealed and was submitted for examination to Sir William Abney, F.R.S., an eminent physicist and the foremost authority on color vision in Great Britain. Sir William Abney found that the man was red blind; both colored lights and wools were used in the tests. He was then put to practical tests by two independent men, of whom neither was a color expert. The man was taken down the Thames in a steamer at night when the weather was fine but hazy to see how he could pick up lights and name their color. So accurate did his vision prove for red that he was able to distinguish red rays in the Nore light. The red-dish color in the planet Mars was at once seen by him though he was unaware of the planet's identity. Both examiners declared that he had unusually good sight and never made a mistake in determining the color of any light. The man has therefore been declared by the board not to be color blind and as competent to discharge his duties as mate. This result points to the conclusion that the color tests of the board of trade, which have been adopted under the advice of the Royal Society, the leading scientific body in Great Britain, are fallacious.

A Commission on Pellagra

A commission consisting of Sir Patrick Manson, Sir Lauder Brunton, Sir Clifford Allbutt, Sir William Leishman, Professors Osler, Ross, Simpson, Minchin and others has been formed for the investigation of pellagra. It is proposed to send Dr. Sambon and some others to the pellagrous districts of Italy. Dr. Sambon is a well-known opponent of the infected-maize theory and has endeavored to prove that the disease is due to some protozoon. He proposes to examine the relation of the various midges or sand flies to the distribution of cases. A study of their topographic, geographic and seasonal distribution has shown, he declares, a marked correspondence to that of pellagra.

The Appointment of Medical Women to Resident Posts in Hospitals

The question of the appointment of medical women to resident posts in general hospitals has proved a vexed one. Those who advocate women's rights to the extent of the removal of all sex disqualifications insist that women should be eligible for the same posts as men. On the other hand, the obvious objections to women physicians dealing with certain emergency cases, such as retention of urine in the male from stricture, have been urged against their appointment to general hospitals. Viewing the question from the moral standpoint, the reply is made that if nothing immoral is involved in the treatment of women by men for sexual ailments there is nothing immoral in the treatment of men by women for the same

complaints. But there is the further argument that male patients would object to treatment by women. The controversy has reached an acute form at the Manchester Royal Infirmary, the board of which decided not to appoint women physicians to resident posts. As the infirmary is the clinical school of the Victoria University, the question then came before the convocation of this body. A resolution was proposed that, having regard to the interests of women students, the convocation should request the university court to ask the board of the infirmary to reconsider its decision. It was pointed out that as these resident posts are really an extension of the student's career, and are analogous to scholarships and fellowships, they ought to be considered part of the course, through which all medical students might hope to pass after they entered the university. It is one of the features of the university to make no distinction between men and women students. In opposition to the resolution, it was stated that the infirmary had never held out hopes or expectations to women medical students that they should be appointed to resident posts. It was also pointed out that, assuming the province of medical women was to treat women and children, they should seek hospital experience in hospitals specially set apart for women and children and not in general hospitals where it is extremely difficult to employ them satisfactorily. The resolution was carried by a large majority.

PARIS LETTER

(From Our Regular Correspondent)

PARIS, Feb. 4, 1910.

The Floods and the Paris Hospitals

The floods, which have created so much havoc in Paris, have unfortunately not spared the hospitals. From the first, the Hospital of Ivry was inundated, and it was impossible to supply it with provisions. With the greatest difficulty, the patients were removed to the Salpêtrière. The Boucicaut Hospital, which was in particular danger, has been evacuated, the patients being distributed among the Beaulieu, Necker and Laennec Hospitals. The situation in some of the hospitals is lamentable. The basements are flooded at the Hôtel-Dieu, at St. Antoine, and at the Charité. The furnaces and the electric light plants are out, the patients have no more linen, the hospital laundries cannot work, and food supplies can hardly be obtained. The situation of the patients is pitiable, in spite of the best efforts of the hospital staff.

The Sanitation of Paris After the Flood

The Prefect of the Seine has just ordered that, as soon as the water shall have receded, the owners of property shall have the premises cleaned and disinfected within twenty-four hours. In case the owners do not comply, the work will be done at their expense and risk.

Election of Sir Patrick Manson to the Academy of Sciences

During its session of January 31, the Academy of Sciences elected Sir Patrick Manson of London foreign correspondent for the section of medicine and surgery.

Literary Critics of the Medical Profession

Since the time of Molière, who in comedies overwhelmed the physicians of his time with ridicule, there have always been in France literary men inclined to exercise their wit at the expense of the medical profession and of physicians. In the present generation certain of these critics, among them Octave Mirbeau and Henry Maret, have been extremely violent in their strictures on physicians. A few years ago Léon Daudet, son of the celebrated novelist, Alphonse Daudet, and himself a writer of talent, published a pamphlet in which he criticized physicians violently, calling them *morticoles*, that is to say, cultivators of death. This pamphlet created quite a sensation, especially because its author had studied medicine, although he did not graduate. Recently Dr. G. Pasquier, devoting his inaugural thesis to "The Enemies of the Medical Profession," asked certain writers, especially those who have often attacked physicians, to express their sincere opinion in regard to the medical profession and its representatives. The replies which he received show that literary men in general hold the medical profession in high esteem. Except Henry Maret, who went so far as to declare that therapeutics had not made the least progress since Hippocrates and Galen, inasmuch as more people die than ever, all the writers render justice to the knowledge and the devotion of the medical profession. Thus Octave Mirbeau writes, "I have no enmity against physicians. If I have sometimes directed some sallies against them it is because the medical profession, like all

other professions, is open to criticism and satire—more than the others perhaps, for the higher the standing of a profession the more merciless satire should be against those who fail to recognize their social rôle and their great duties toward humanity. I have on the contrary a very lively sympathy, rising to a very lively admiration, for physicians, by whom I mean, of course, properly educated, hardworking, conscientious physicians. There is no profession which I find finer, more elevated and more noble in its ideals. There is none which demands more disinterestedness, more real renunciation, more self-sacrifice. I speak, be it understood, of practitioners, not of those teaching bonzes who despise medicine, consider therapeutics a low charlatanism and whose whole life is devoted to the chatter of congresses and to the intrigues of salons and academies."

Alfred Capus, the most popular of our dramatic writers, the most spirited painter of French contemporary manners and society, declares that he is certain that if physicians had not a very delicate sense of their responsibilities they would deserve all the attacks made on them; but, he says, this failure to recognize their responsibilities is very rare, or, indeed, altogether exceptional among them. "The moral and philosophic education of the physician is carried to a very high point; it cannot be carried too far. The physician ought to know the social man as well as the physiologic man. There is no profession which, in order to be nobly practiced, demands more general ideas apart from its technique. This kind of education naturally cannot be given at school and depends on personal initiative and conscience."

A few years ago in connection with the publication of the French translation of the celebrated memoirs of the Russian writer and physician, Veressaïev, the poet Jean Carrère said, "Placed before suffering and infinitely varied humanity, it is necessary that physicians should scrutinize the soul and the mind as well as the lungs and the heart, and thus they are forced to be psychologists as well as physiologists, comforters of souls as well as healers of bodies." Abel Faivre, the celebrated painter and humanist, whose caricatures on the medical profession always have a great success, writes, "I am the son of a physician, my brother is a physician and I have too many illustrious friends in the medical profession to be suspected of enmity toward it; but from the point of view of humor and of human characteristics the medical profession offers rich material." He adds that, if asked, he would have expressed his admiration for medical virtues and his high opinion of physicians in general.

Crema-tion in Paris and in Foreign Countries

M. Ranvier, who officially reports funerals to the municipal council, has reported the number of cremations made in Paris during the last year. There were 403 cremations made at the request of families; 2,653 cremations of bodies from the amphitheaters of the hospitals, from the *Ecole pratique* of the college of medicine, and from the military hospital of Val-de-Grace; and 3,512 cremations of embryos; altogether 6,568 cremations. M. Ranvier states that, while in Paris and in the provinces (Rouen, Rheims and Marseilles have crematories) the situation is stationary, the principal foreign cities constantly make more and more cremations. Germany is at the head with 17 crematories; last year 4,050 cremations were made there, in place of 2,977 the preceding year. In Italy 27 cities practice cremation, and there was a total there of about 400 cremations last year. Great Britain has 13 crematories, and has had 795 cremations. Without dwelling at length on the conditions which have made the progress of cremation slower in France than in Germany, M. Ranvier indicates, nevertheless, that reforms are indispensable. The process requires too much time, and the Society for the Encouragement of Cremation is seeking a process which will reduce the duration by about half. M. Barrier, member of the Academy of Medicine and director of the veterinary school at Alfort was recently elected president of this society in place of Dr. Bourneville, deceased.

BERLIN LETTER

(From Our Regular Correspondent)

BERLIN, Jan. 26, 1910.

Transactions of the Medical Council for Berlin and the Province of Brandenburg

In a recent session of the medical council (*Ärztckammer*) for this district, the question of the establishment of wards for the middle classes in the municipal hospitals of Berlin was taken up. As I have previously told you, the municipal

hospitals of this city provide for only one class of patients—those belonging to the lower class, especially the members of the sick benefit societies and the poor. The rates are 75 cents (3 marks) a day. As the charges for care in the private hospitals for patients of the middle class are relatively high and the fees for medical care must be added to them, the city administration has been requested to make provision for middle-class pay patients in the municipal hospitals. There is a difference of opinion among physicians and in the city government regarding the necessity of this step. In the public hospitals of a denominational but not municipal character there are 414 beds available and in private institutions 844, at a price of from \$1.50 to \$2.50 (6 to 10 marks) per day. It was recognized in the medical council that actual competition between the private clinics and the city is not to be expected, in consequence of establishments of wards for the middle classes, as the city in consideration of the actual cost could not go under \$1.75 (7 marks). The existing dissatisfaction with the private hospitals is not unjustified, as it is often the case that very high prices are demanded from patients not well able to pay. The medical council passed a resolution to the effect that if a second class is established in the Berlin municipal hospitals the fees for medical service in case of patients able to pay shall correspond to those usually received by physicians in the locality. Accordingly, the council regards it as reasonable that a fee of \$1 (4 marks) per patient per day shall be required, and that operations shall be charged in accordance with the financial ability of the patient.

From the report of the council's treasurer for 1909, we learn that the regular income from the taxes on physicians (which are legally established and for this council amount to 5 per cent. of the state taxes, in addition to an initial fee of \$2.50) (10 marks) amounted to \$23,000 (96,000 marks). As expenses for 1910, \$33,000 was appropriated, of which \$15,000 is for the physicians' relief bureau. This bureau had last year at its disposal \$22,000, and paid out for relief \$11,000; \$2,500 was devoted to the founding of a loan fund for physicians, with the provision that physicians of the council district who have the right to vote may be permitted to borrow at most \$125 (500 marks) for one year at 3 per cent. interest. An instance of sectarian intolerance has aroused natural indignation. It seems that a recently graduated medical student had reported to the hospital at Britz (in the neighborhood of Berlin) for his year of practice (which, as you understand, must be served, after the state examination, in a public hospital or scientific institution before the physician can obtain his license), but he received from the head of the hospital the following announcement: "I fail to find in your credentials (*curriculum vitae*) a statement of your religious faith; as the physicians employed here at present will not associate with Jewish colleagues when off duty, I regret to say that I cannot accept you as a 'praktikant' in case you are a Jew." Naturally, the medical profession has severely condemned this narrow position, and the council passed resolutions to the effect that the executive committee suggest to the imperial chancellor and the minister of education that the district hospital in Britz be forbidden to receive medical "praktikants" under its present administration, and that the executive committee request the imperial chancellor to publish officially a decree that no one shall refuse on sectarian grounds the application of a "praktikant" for his year of service in a hospital.

Report of the Berlin Medical School Inspectors

According to the report of the management of the Berlin school physicians, just published, there were in the last year 44 medical school inspectors for 228,455 pupils. Each physician had from 3,234 to 6,297 children under his supervision. Of the pupils reporting at school, 10 per cent. were rejected, chiefly on account of anemia, rachitis and intellectual inferiority. About one-fifth of the school children had to be kept under special supervision; 456 children were placed in the special classes for the weak-minded and 25 in an idiot asylum. Only 0.7 per cent. of school pupils suffered from tuberculosis. Only a few classes needed to be suspended for a short time on account of epidemics. The municipal laboratory was able to show in some cases that the infectious germs could be removed from the school room only by very thorough disinfection. One-fourth of all the children showed curvature of the spine. The city spent \$20,000 (83,500 marks) for meals at school, providing 835,000 lunches in the children's diet kitchen. Hereafter lunches are to be provided in summer, for which \$24,000 has been appropriated.

New Affair at the Rudolph Virchow Hospital

Serious complaints have again been made of the Rudolph Virchow Hospital, which, as I have told you in former letters,

has repeatedly been the subject of unpleasant discussion. Some nurses had appropriated for themselves most of the extra diet ordered for certain patients. As a consequence, three of the assistant nurses were immediately dismissed and the nurse in charge received a reprimand on account of insufficient supervision. The latter nurse poisoned herself two days after with morphin. Not only was this sad occurrence attributed to the management by the daily press, but also other arrangements of the hospital were unfavorably criticized, especially the overworking of the nurses and inadequate provisions for them. Investigation showed that the nurses had acted contrary to orders, and that the reprimand of the manager was justified in its content and form, and that the suicide of the nurse depended on an accumulation of causes, slight in themselves, especially on the influence of excitement due to menstruation. The management of the hospital should be exonerated from all blame in this matter.

Care of Infants in Greater Berlin

The existing hygienic stations for the care of infants in Berlin received 15,000 infants in 1907, while the number of births this year was about 51,000. In Charlottenburg these institutions were visited by 3,000 infants, 41 per cent. of all the children born during the year. In Rixdorf 1,300 of the 6,000 infants born in 1908 were taken to the stations; in Schöneberg 480 out of 3,200. The Charlottenburg stations distributed in 1908 208,000 half liters of pasteurized milk and 2,200 liters of raw milk for infants. Of this, 71,000 liters were given free of charge to the poor. The entire cost of the infant hygienic stations in Charlottenburg, including the assistance to nursing mothers and the non-nurseries of pregnant women before delivery and the care of infants in the children's convalescence stations in 1908, amounted to \$25,000 (104,000 marks).

Free Choice of Physicians

The head of the association for protecting the interests of the German trades sickness insurance societies, lately stated in a newspaper that the societies opposed the free choice of physicians, as by this arrangement their chance of existence would be diminished. On the other hand, the mayor of the Westphalian industrial city Hagen makes the statement in a Cologne paper that in Hagen 38 societies with about 25,000 members have adopted the free choice of physicians, and that both physicians and insured are very well satisfied. He has not the impression that the interests of the 25,000 insured and their employers are subordinated to the one-sided economic interest of the Hagen physicians, but rather he believes that the contracts entered into provide equally for the interests of both sides. It is to be hoped that this statement of an experienced mayor will receive attention in the revision of the new imperial insurance law, which is still being actively carried on in the federal council.

VIENNA LETTER

(From Our Regular Correspondent)

VIENNA, Jan. 30, 1910.

Laws on Hours of Labor in Austria

A memorandum drawn up by the sociologic committee of the Vienna Medical Society sets forth present conditions of labor in Austrian factories, with the object of inducing the government to hear suggestions from medical experts before formulating the much-needed reform of our public health act dealing with the conditions of labor. Most of the regulations now in force date from some time between 1896 and 1869; only a few imperatively demanded orders were promulgated a year or two ago. The ministry of commerce has power to regulate the length of the working day in some occupations which are liable to seasonal and trade fluctuations (in some instances a fourteen-hour working day may be permitted for certain weeks), but may not take action to protect the worker's health. The length of the working day in various trades is so long as to involve a deterioration of the health of a large proportion of the working population. The memorandum of the committee to the government suggests that the ministry of commerce be empowered to limit hours of work, after consulting the chief board of health (*Oberste Sanitätsrath*), in all instances in which the health of the laborers is injuriously affected; and that the number of trade-inspectors be increased, chiefly by the appointment of qualified medical men.

Cremation Not Officially Favored in Austria

In Prague, a society called "Flame," desiring to promote cremation, was refused permission, not merely to erect a crematory, but also to make its object known through popular

lectures. Needless to say, religious motives were behind the refusal. There are, however, two crematories in this country, one in Graz and one in Vienna; but bureaucratic difficulties are often interposed, so that generally the cremation of an Austrian takes place outside the frontiers, in Gotha, Germany. Although the society for the promotion of popular education (*Volkshilfsverein*) has held demonstrations and lectures on the subject in Vienna and other large cities, religious prejudices are much too strong in the minds of our conservative bureaucrats to permit them to see the advantages of cremation.

Pharmacology

THE AMERICAN DRUGGISTS SYNDICATE

Its New Propaganda of Personal Abuse and Professional Dissension

There is a saying current in the legal world regarding the attitude taken by a certain class of lawyers: "No case? Abuse opponent's attorney!" The American Druggists Syndicate finds itself in this predicament.

It being impossible to refute the statements made in *THE JOURNAL*, the officers evidently concluded to "reply" by making a general *personal* attack. They have secured for that purpose the material that has been used so liberally during the past year by those who, to satisfy personal animosity and to aid certain proprietary interests whose frauds *THE JOURNAL* has exposed, have striven to bring about a return to the old, "let-us-alone" days.

The A. D. S. publishes a house-organ called the *Voice of the Retail Druggist*—a title, by the way, that is an unwarranted slander on the decent pharmacists of the country. In the January issue of the *Voice*, in an attempt to offset the charges made in *THE JOURNAL*, the real issues are carefully befogged while pages are devoted to villifying the editor of *THE JOURNAL*. This specimen of journalistic mud-slinging has evidently been given wide circulation.

Nor is this the only method by which the officers of the A. D. S. attempt to create a breach between pharmacists and physicians; circular letters are being sent broadcast to pharmacists with the same object in view, and with the further hope of causing dissension within the ranks of the medical profession itself. The following is one example of this new propaganda of destruction:

AMERICAN DRUGGISTS SYNDICATE

GREATER NEW YORK, Feb. 8, 1910.

Gentlemen:—You have no doubt read in the January *Voice* our reply to the vicious and lying attacks made upon the A. D. S. by Dr. G. H. Simmons in *THE JOURNAL* of the American Medical Association, of which he is editor. We trust you have familiarized yourself with the data covered by the *Voice* articles on Simmons and are prepared to present them in a cogent manner to physicians and others who may be interested in the controversy provoked by Simmons' onslaught.

We believe that the great majority of physicians belonging to the A. M. A. will condemn Simmons' course when they understand the true character of the man and the unworthy motives that govern his attitude toward the A. D. S. The medical council of Chicago, where Simmons is well known, has already condemned Simmons' general policy and has taken steps to oust him from the position of editor and secretary of the A. M. A. [Reference is here made to the resolutions adopted at the January meeting of the Council of the Chicago Medical Society, and rescinded at the February meeting. —Ed.]

We rely on you as one of the most loyal and enthusiastic A. D. S. members to see that this matter is presented by some friendly physician at the next meeting of your county medical association. It will be an easy matter for a physician to become indignant and demand that the charges made by the *Voice* be investigated. That is all that will be necessary, no matter what action is taken by the county medical society. It will have the same effect on Simmons.

By acting promptly in this matter you will do yourself and all the A. D. S. members a valuable service. Please keep us informed as to the results of your action.

Very truly yours,

THE VOICE OF THE RETAIL DRUGGIST, . . .
WALTER LINGENFELDER, Editor.

Thus we have another phase of the "patent medicine" interests urging reforms (?) in the American Medical Association.

[CONTRIBUTION FROM THE CHEMICAL LABORATORY OF THE
AMERICAN MEDICAL ASSOCIATION]

PHARMACEUTICAL IMPOSSIBILITIES—CONIIN OR CICUTIN

W. A. Puckner and L. E. Warren

Some time ago¹ a contribution from the chemical laboratory showed that pharmaceutical manufacturers often attempt that which is, if not impossible, at least impracticable. The present article illustrates this point still further.

An advertisement was offered to *THE JOURNAL* recently, in which among other products reference was made to cicutin granules. Since advertisements for medicinal articles are accepted for *THE JOURNAL* only when the preparations are to be found in the United States Pharmacopeia, the National Formulary, or New and Nonofficial Remedies, and since cicutin is to be found in none of these, reference to cicutin granules was omitted from the advertisement. In view of this request, however, for the privilege of advertising an unofficial article not contained in N. N. R., the Council on Pharmacy and Chemistry decided to consider cicutin with a view to its eligibility for inclusion with N. N. R., and the laboratory at the request of the Council took up the examination of cicutin granules.

Cicutin is the practically obsolete name of the volatile, liquid alkaloid better known as coniin or coniin, to which conium owes most of its medicinal effects. The free alkaloid—being a volatile liquid and having a disagreeable mouse-like odor—is not given as such but is used in the form of one of its salts, as for instance coniin hydrobromid, which is stable and odorless.

From the above it will be realized that it would be a difficult task to prepare tablets, pills or granules containing the free alkaloid, yet one manufacturing house was foolish enough to offer for sale granules said to contain 0.0005 gm. (1-134 grain) of cicutin. Having in mind the results of the examination of the tablets of bismuth, opium and phenol (which demonstrated that phenol could not be put up successfully in tablet form) the laboratory decided to determine to what extent the manufacturer had been successful in his attempt to prepare granules containing a volatile liquid.

A specimen of cicutin granules was purchased in the open market and examined with especial reference to its content of free alkaloid. As was to be expected from the volatile nature of the alkaloid no free coniin was found. Combined alkaloid, however, was present in amounts equivalent to about 53 per cent. of the amount claimed to be present in the free state. If calculated to hydrobromid the quantity found would amount to about 85 per cent. of the dosage stated on the label. From this it seemed probable that the manufacturer had used a salt of coniin in place of the free alkaloid and had carelessly permitted the label to mislead. But when informed that the granules did not contain the free base as claimed, the reply of the manufacturer indicated that the attempt had actually been made to produce granules containing the free alkaloid in definite quantities. Apparently no effort had been made to determine to what extent the attempt to put a volatile liquid into granules on a commercial scale had been successful, i. e., no laboratory control seemed to have been exercised over the finished product. In fact, the indications were that the retention in the product of any part of the alkaloid used was due to the presence of traces of acid, present as an impurity in the excipient, which had combined with a portion of the alkaloid to form a non-volatile salt.

As a check a specimen received directly from the manufacturer was examined. The examination of this specimen showed that free alkaloid was absent and that combined alkaloid was present in amounts equivalent to about 50 per cent. of the amount claimed to be present in the free state—results

1. Puckner, W. A., and Clark, A. H.: Examination of Tablets of Bismuth, Opium and Phenol, *THE JOURNAL A. M. A.*, July 25, 1908.

agreeing substantially with those obtained in the examination of the first specimen.

The results of the second examination having been submitted to the manufacturer and their correctness admitted, the company stated that it had deleted the article from its price list, had stopped supplying it, and had called in, so far as possible, whatever stock of the product there was outstanding. In view, too, of the criticism of the use of the practically obsolete word *cicutin* the company will give the better known term *coniin* as a synonym and cross-reference.

COMMENT. The results just given again emphasize the need of such investigations by the Council of Pharmacy and Chemistry and the Association laboratory, especially of unofficial drugs that have no standard of purity and which are therefore peculiarly liable to adulteration or variations in strength. Physicians will do well to confine their prescribing so far as possible to standard, official drugs and to those contained in New and Nonofficial Remedies. The enforcement of the Food and Drugs Act and the keenness of competition have sufficed to make many standard chemicals used in medicine now available in a high degree of purity. Even proprietary drugs, largely through the efforts of the Council, have been made more reliable. On the other hand there are on the market an immense number of unofficial, non-proprietary drugs which are practically uncontrolled. Because of their large number and relative unimportance and because there are no standards of purity for them, and because there is little or no competition in their manufacture they are peculiarly likely to be impure and unreliable and it is highly desirable that physicians avoid their use so far as possible.

As for the drug *coniin* and its alkaloid *coniin* (one time respectively known as *cicuta* and *cicutin*) it or both probably belong to the very large class of drugs that "never would be missed!" If, however, the physician wishes to obtain the effect of *coniin* he should give preference to one of its well-defined and stable salts.

Amendments to the Constitution of the Pharmacopeial Convention

To the Medical and Pharmaceutical Press: At a regular meeting of the Board of Trustees of the United States Pharmacopeial Convention, held at Columbus, Ohio, Jan. 28 and 29, 1910, it was resolved, five members of the Board of Trustees assenting thereto, to submit to the next meeting of the United States Pharmacopeial Convention (incorporated) the following propositions to amend the constitution of the convention in the following particulars:

1. To amend Section 2, Article II, relating to membership, by inserting after the title "the Surgeon-General of the United States Public Health and Marine-Hospital Service," the following: "The Secretary of Agriculture, the Secretary of Commerce and Labor, the Association of Official Agricultural Chemists, the Association of State and National Food and Dairy Department, the National Wholesale Druggists' Association and the National Dental Association."

2. Also to amend said Section 2, Article II, by changing the words "three delegates" in line eleven (page seven of the reprint of the Constitution and By-Laws of 1909) to "one delegate;" the effect of this change being to reduce the representation of each organized body and department to one delegate each.

3. Also to amend Article IV, concerning "Committees and Trustees," by changing the title "Committee on Revision," to that of "General Committee on Revision" (Ibid. last line).

The constitution does not require notice to be given of proposed changes in the by-laws of the convention, but to make clear the purpose of the change proposed in the present title of the Committee on Revision, it is hereby announced that the Board of Trustees will submit to the convention propositions to amend the by-laws as follows: To increase the number of members on the Committee on Revision, hereafter to be known as the "General Committee on Revision" from twenty-five to fifty, said General Committee on Revision to create from its own membership an Executive Committee on Revision of fifteen members, to have immediate charge of the work of revision, and also giving to said General Committee on Revision certain advisory and supervisory powers over the work of the Executive Committee on Revision.

MURRAY GALT MOTTER, Secretary.

SANATOGEN

"Will you please give me the composition of Sanatogen, exploited by the Bauer Chemical Co., New York? I wish the information to answer a question that has been referred to me."

B. F. B., Lincoln, Neb.

According to the manufacturers, this patented medicine—or food—is composed of 95 per cent. casein and 5 per cent. sodium glycerophosphate. The preparation is advertised very extensively to both physicians and the laity, on both sides of the Atlantic. In Great Britain it is a "tonic food," in this country a "food tonic;" whether this is a distinction with or without a difference, it is hard to say. The public is told that sanatogen is "a muscle builder and a nerve and brain food;" the medical profession, that "it should not be regarded as a food preparation in the ordinary sense of the term and it is not offered as such to the medical profession. . . ." Many of the claims made for this combination of milk-curd and glycerophosphates are exaggerated and absurd. The following are taken from advertisements, appearing both in this country and abroad

"The Re-Creator of Lost Health."

"Sanatogen is . . . a rebuilding food."

" . . . revitalizes the overworked nervous system."

"Specific nerve tonic action."

"Most reliable and scientific of all nutrients."

" . . . in certain diseases it exerts a *specific action* which renders it a valuable adjunct to other curative measures."

In one of the form letters sent to physicians, the makers of sanatogen opine that "you have likely noticed" an article that appeared "in the May issue" of a certain medical journal. The ingenuousness of this intimation becomes apparent when it is known that a few days previous to receiving the letters, the physicians had been the recipients of pamphlet reprints of said article—"With Author's Compliments."

That milk curd has a food value no one will deny; that the glycerophosphates of soda have a place in medicine may be admitted; but that a combination of these two products should become at once the summum bonum of medicinal foods is a proposition that will not appeal to the thinking physician.

Correspondence

Physicians and Pharmacy—A Plea for Harmony¹

To the Editor:—The nostrum evil continues to be a serious menace to the spirit of harmony which has been growing rapidly within the last few years. The National Association of Retail Druggists has been doing splendid work in what is known as the propaganda movement for the extension of the use of non-secret, ethical preparations of the United States Pharmacopeia and National Formulary. It has also labored hard to bring about a better and more harmonious spirit between physicians and druggists. The American Medical Association has accomplished an enormous amount of good through its Council on Pharmacy and Chemistry in giving the medical profession more comprehensive and detailed descriptions of the medicines which are unofficial but are used largely in actual practice.

The coming convention which meets in May in the City of Washington for the revision of the Pharmacopeia should be made up of delegates who will meet with one purpose, that of improving the present Pharmacopeia on the broadest, most scientific and practical lines. If the deliberations of this body are to be marred by even a touch of the old style rancor, crimination and recrimination between the members of the associations representing medicine and pharmacy, then there may be expected a repetition of the disastrous results which have kept back progress so long during the last thirty years. Why cannot the national associations representing medicine and pharmacy recognize the best work done by those members who are really working along the same lines for the elimination of all that is bad, and particularly the nostrum evil? Unfortunately, if one is looking for inconsistencies in the rank and file of the members of any of our national medical or pharmaceutical organizations, they can be found without the aid of Diogenes' lantern.

1. See editorial comment in this issue.

The druggist points to his prescription file and shows how many proprietary medicines are being prescribed by the physicians of his locality. The physician points the finger of scorn at the advertising cards in the druggists' windows of patent or proprietary medicines, kidney cures, catarrh remedies, headache powders, etc., and the druggist again points to the physician, who he believes has robbed him of his business by dispensing ready-made remedies to his patients, and the physician retorts that when the druggist stops prescribing over the counter he will stop dispensing, and so the angel of peace ceases to hover over the warring factions and silently departs until a more convenient season arrives.

The spirit of the "get-together" meetings which have been held throughout the United States where the druggist and the physician can discuss means of working together and fighting the common enemy, has been productive of a vast amount of good, and why cannot the old issues, which have never brought anything but strife and stagnation, be permitted to die, and in its stead let the new order of things with its spirit of harmony and cooperation prevail? This would mean a mutual respect. If this be done the medical practitioner, nauseated by the confusion arising from the trial of so many proprietary preparations, can be brought to a realization that he can be more successful in his practice if he employs at least 75 per cent. of official, non-secret substances, and the pharmacist will come back to his own by compounding prescriptions written by the physician to suit the particular stage of the disease from which the patient is suffering at the time. For the prescription should be changed from time to time as the condition changes, and the pharmacist realizes that it is his duty, and also to his interest, to advise his customers that proprietary and ready-made preparations when continued for any length of time often cause delay in alleviating disease, and, indeed, do a vast amount of harm, because the contents of the bottle remain the same, and if fitted for the onset of an attack is totally unfit for the convalescent or inflammatory stage.

Let us reason together and press forward the new order of things. The nostrum evil, which has existed for centuries, cannot be exterminated in a year nor probably a decade, maybe never; but it can be and is being controlled to an extent which few physicians realize. As an illustration, a large manufacturer of glassware stated six months ago that his business had been greatly curtailed. The question was asked, "Has the growth of prohibition in the states decreased the demand for whisky?" "Yes," he replied, "particularly in the South and West, but our business has fallen off nearly 50 per cent. in the making of proprietary medicine bottles and jars." Education through the public press and through our magazines is going on apace, and the day is probably not far off when legislation will make it a penal offense for using lying and misleading advertisements to the public, which have for so long been the principal asset of quack medicines.

JOSEPH P. REMINGTON, Philadelphia.

An Appreciation from Professor Politzer

To the Editor:—In reference to the anniversary of attainment of the degree of doctor of medicine at the University of Vienna, my American pupils and friends have given so many evidences of friendship and attachment, that I am only able in this way to thank them all.

If American specialists visiting Vienna will call on me, it will be a source of great pleasure to me to show them my collection of pathologic and anatomic specimens which, through years of careful selection, contains many instructive objects.

PROF. DR. A. POLITZER, Vienna.

Human Hair Used for Sutures Long Ago

To the Editor:—I have been much interested in reading the article by Drs. Guthrie on the "Suture of Blood Vessels with Human Hair," in *THE JOURNAL*, Jan. 29, 1910. I have had no experience with suture of blood vessels, but as a suture material for places requiring very delicate threads, especially the face, mucous membrane of the lips, and the conjunctiva,

I have used human hair repeatedly—probably a hundred times or more from 1880, when I first began practice, onward, and always with excellent results; though not much sterilizing of sutures was done in the early days. Wounds so sutured did not suppurate, and the resulting scar was reduced to a minimum. The hair was just plucked as wanted from the head of any woman convenient, passed through a weak phenol solution, or more frequently not even that, and used at once. I never saw a bad result. I received the "tip" from a brother practitioner, like myself then in general practice, who referred to it as being well, though not sufficiently widely known. From the phrase, "we decided to test a material universally distributed, namely, human hair," I gather that the authors of the article consider the use of hair novel, not merely for this special purpose only, but for any suturing at all.

KENNETH W. MILLICAN, St. Louis.

Scopolamin-Morphin Anesthesia

To the Editor:—In *THE JOURNAL* of February 12, I notice an error in the editorial on scopolamin-morphin anesthesia in labor which might lead to serious trouble. You state, "In obstetrics the usual initial dose is 0.0003 gram (about 1/100 grain) of hydrobromid of scopolamin." This should read 0.0003 (about 1/200 grain) of scopolamin. My own experience with scopolamin in surgical cases covers a period of three years, and I can state that I have seen no bad effects following its use. I always inject two doses, the first 1/200 gr. of scopolamin and 1/6 gr. of morphin one hour before, and the second immediately before the administration of spinal anesthesia or ether. So far, I have not used the drug in obstetrics, but would favor its use in suitable cases.

ARTHUR J. PULS, M.D., Milwaukee.

The Maguire Dropper for Saline Solution

To the Editor:—About four years ago I saw the growing need of some apparatus whereby saline solution could be administered by the drop method. After four years' work and an expense of over \$500 (paid in experimenting), I perfected what is now known as the "Maguire dropper," and described it in the *Journal of the Michigan State Medical Society*, July, 1908. As it was against professional ethics to have this apparatus patented, I turned it over to the profession, and I notice in the last few months, since it has been placed on the market, that three imitations have appeared. One man has been so professional as to take the credit of getting it up himself and has applied for a patent on it, giving himself the credit of being the inventor of my dropper. This I do not care so much for, but each one has designed it wrongly and if these droppers are used they will only throw discredit on my apparatus and place me in a position similar to Dr. Murphy's with his button, when men undertook to modify what he had made perfect from his long experience.

I claim priority and the rights to patent on the "Maguire dropper," but for reasons above stated have turned my apparatus over to a surgical instrument house to manufacture for the benefit of the medical profession.

F. J. W. MAGUIRE, Detroit.

The Paris Floods

PARIS, Feb. 1, 1910.

To the Editor:—For the past week Paris has been struggling with a rising flood, unlike anything recorded during the last 300 years. The Seine has risen about 24 feet above its customary level, and is fortunately now subsiding, but leaving some of the most important parts of Paris and the most fashionable quarters in a pitiable state. The causes of this flood are not so clear as one would suppose. I have spent the last two weeks in Paris, and no extraordinary rainfall has been recorded here during that time. The weather has been mild; the grass is green everywhere; very little snow has fallen in France. Indeed, the complaint has been in France and parts of Switzerland that the scant snow has prevented the customary winter sports. The floods, nevertheless, are a very

serious reality and are due, doubtless, to persistent but not violent rainfall in the watershed of the Seine, and owing to mild weather and lack of proper percolation, the waters rush with unusual violence to the sea.

The worst feature of the flood is not so much the devastation along the river front, but the great damage done to the sewers of the city, and the consequent flooding of residential and business districts with sewage. These far-famed sewers of Paris are unable to discharge their contents in the ordinary way into the Seine. The rising river has caused a back-pressure in the sewers, and as the pressure is augmented by the accumulated flow from above, they have given way and have filled the streets and many thousand cellars and lower floors with their contents. More than this, the six lines of the metropolitan underground railway have had a hard struggle with the water, and service is entirely abolished on some of the principal lines as they are flooded. It will take months to empty the subways and the cellars and to render them sanitary and fit for travel. The whole military force, the Red Cross organization and the national government are actively at work and will take the most energetic and advanced measures for disinfection. The board of health is already issuing instructions to the public, and backed up by military authority, it is probable that within a month Paris will have purified itself and anxiety as to the future will have ceased.

All the Parisian papers, and the British papers as well, have pictured Paris in the most abject misery, and there has been widespread alarm for the safety of Americans sojourning in Paris, but this is quite unnecessary. In the fashionable quarter, near the *Arc de Triomphe*, one would scarcely know Paris was suffering in any way. To be sure, Longchamps is under water and resembles a beautiful lake, but the *Bois* is as gay as ever, and I believe that by the time this letter is in print everything will be fairly safe and charming in Paris.

The rising Seine has closed several hospitals: chief among these is the famous *Salpêtrière*, with 1,500 patients. Situated near the Seine and the *Jardin des Plantes*, it was soon invaded, but all the patients were successfully removed to *Bicêtre* and other hospitals. I saw the bears in the *Jardin des Plantes* up to their necks in water as I returned from Professor Raymond's clinic at the *Salpêtrière*.

The Boucicaut Hospital became flooded and 400 patients were successfully removed by boats to waiting automobiles, which took them, wrapped in their bed clothes, to points of safety. It took two and a half hours to remove the 400 patients, and credit is due M. Lépine for accomplishing this feat successfully.

The American ambassador, Mr. Robert Bacon, has been forced from his residence on the Rue François Ier. The newly completed American Hospital, in a suburban part of Paris, Boulevard du Château, Neuilly, is flooded. This model hospital cost \$200,000, and was just ready to be opened, and has suffered thousands of dollars of damage. It is a gem of modern hospital construction, with free wards and private rooms at moderate prices. The medical board, consisting of Dr. A. J. Magnin, Dr. E. E. Gros and Dr. Crosby Whitman, has reason to be proud of this institution, and it will in due time be ready for use. Every American resident in Paris will feel safer in the mere knowledge that such an institution exists. The president, Mr. John H. Harges, the vice-president, Mr. J. J. Hoff, and such well-known governors as Mr. J. P. Morgan, are very earnest in working for the success of the American hospital.

An American visiting continental hospitals cannot fail to note the wide contrast between their nurses and those in British, Canadian or American hospitals. One object lesson which the American Hospital in Paris will afford will be its force of nurses, and Parisians will do well if they could introduce into their famous hospitals an up-to-date system of nursing. The trouble is that on the continent nursing has not risen to the dignity of a profession.

After a rapid tour through Italy, Switzerland and France, I retain my high opinion of the American hospital, the American nurses and the American system of medical education.

GUY HINSDALE.

Miscellany

CLIPPINGS FROM LAY EXCHANGES

OLECTOMY

J. J. A—— has just undergone an operation . . . for what is known as "grease leg," a very uncommon and very painful disease. This was caused by a sprain in his right knee. The oil that lubricates the system gathered there, and some six ounces of oil of a reddish color were extracted.—El Paso (Tex.) *Herald*.

THE TUMOR WERE REMOVED

Last week Drs. ———, . . . , performed one of the most delicate and difficult surgical operations that the medical fraternity are seldom called on to perform. For some time Miss ——— has had a tumorous growth in the stomach that has been carefully noted by Dr. ———, and when he deemed the right time for a surgical operation to be performed informed Miss ——— that only a most dangerous and difficult operation could save her life. The time arrived last week and the young lady bravely consented that the work might go on. Drs. ——— and ——— were called and a large tumor removed.—Scottville (Mich.) *Enterprise*, Dec. 16, 1909.

A HORRIBLE FIERY SWELLING SPRED

Last Thursday evening . . . W. D. F. ——— noticed a slight sore on the second finger of his right hand, . . . , it gradually grew worse until by Friday evening his hand was badly swollen and was gradually swelling up the arm. The red danger signal of blood poison began to show and a strip an inch and a half wide and of a fiery inflamed color pushed its horrible course to the shoulder, while numerous small branches began to shoot from it. Billy was suffering greatly and his fever ran up to 103. Dr. ——— was summoned and his skill soon arrested the spread of the poison, and he soon began to feel easier and by Sunday morning he was able to be out of bed.—Standard (Neb.) *Guage*, April 22, 1909.

MADE HIM ILL TO BE THREATENED

Dr. ——— is quite ill of a threatened attack of fever.—Pikeville news, Ashland (Ky.) *Independent*, June 9, 1909.

State Antimalaria Campaign in Italy.—The antimalaria legislation adopted in Italy during the last ten years provides for the free distribution of quinin by the state to those suffering from malaria who are unable to secure it otherwise. For patients able to pay, quinin is sold at a nominal price at convenient places, *e. g.*, at every postoffice in the country. A table showing the sale of quinin by the state and the mortality from malaria for successive years appears in the *Revista de Medicina y Cirurgia* of Havana for November, copied from the *Revue d'Hygiène et de Police Sanitaire* of Paris. The article is by Bertarelli of Parma and is entitled "Ten Years of Antimalaria Legislation in Italy." In 1900, before the passage of the law providing for state distribution of quinin, the total mortality from malaria was 15,865. In 1901, it was 13,388. In 1902, the antimalaria law went into effect. In 1902-1903, 2,242 kilograms of quinin were sold or distributed gratuitously by the state. The effect on the malaria mortality was immediate, the number of deaths dropping to 9,908 in 1902 and to 8,519 in 1903. The sale of quinin gradually increased with each year, amounting to 24,351 kilograms in 1907-1908, and the mortality was proportionately lowered, being only 4,160 in 1907; or little more than one-fourth of the mortality seven years ago. The profits to the state from the sale of quinin in 1902 were 34,000 lire (\$6,800); in 1908, 600,000 lire (\$120,000). While much of the reduction in the death-rate is due to the state distribution of quinin, part of it may be attributed to the rigid laws enacted for the extermination of the mosquito and protection against it. The laws of 1901 and 1904 require that all dwelling-houses and especially all sleeping-rooms in definitely designated endemic zones must be screened from June to December. An interesting feature of this law is the provision requiring the screening of the tops of chimneys, as well as of doors and windows. Wire netting is

required and the screening of doors is so arranged as to provide for a small entrance vestibule with double doors, something after the style of an air-lock in a cofferdam. Patients suffering from malaria must be kept in separate sleeping-rooms, which must be carefully screened from the rest of the house. Rigid regulations for the extermination of mosquitoes by draining or filling in stagnant pools, etc., are provided. These regulations apply not only to householders but to manufacturers and landed proprietors as well, and premiums up to \$200 are allowed where precautions are taken on a large scale. Attempts at similar antimalaria suppression on the part of the state have also been made in Greece, Bulgaria and Dalmatia.

Rural Hospitals.—The advantage of the hospital to the city dweller has been long recognized; it is a benefit to both the physician and patient. One great advantage is the fact that it enables the physician to make use of modern methods of diagnosis which otherwise would be inaccessible to him. These advantages are to a large extent denied to the country practitioner, who must spend so much time in getting to his patient and in actual bedside observation that he has no time for the laboratory methods of diagnosis. Harris A. Houghton, in the *International Hospital Record*, Oct. 15, 1909, outlines a plan by which he believes these advantages of the city could be secured in country towns as well. He proposes that hospitals shall be erected by stock companies. The county medical society or an association of physicians could assume the management of such an institution. Houghton refers to the Bayside Infirmary at Bayside, Long Island, which was organized with a capital of \$20,000. The hospital should not be made primarily a charitable institution, but should aim to make profit enough from well-to-do patients so that it could afford opportunities for the charitable societies and individuals of the community to care for needy patients at cost. It could thus enter into contracts with the poor authorities and with churches and lodges that would be mutually beneficial. One bacteriologist could serve both the hospital and the health department. Aside from the advantages of such a hospital to the physician there are several ways in which it would be of distinct service to the community: It would tend to overcome popular prejudice against hospitals. The patients would get the benefit of laboratory methods of diagnosis, better facilities for treatment and better nursing, and the opportunity given to young women to acquire training in the care of the sick, not so much for the purpose of enabling them to earn money as to render them capable housewives, would in a few years have a remarkably beneficial effect on the general welfare of the community.

Women and Hours of Labor.—*The Survey* for January in discussing the subject of overwork in connection with the recent decision of the Illinois court declaring unconstitutional the law limiting to ten hours the working day for women in factories and other industrial establishments, says: Expenditure of energy of any kind manufactures in the body certain poisonous products which are eliminated during rest. When the expenditure of energy is excessive or the period of rest is insufficient the fatigue poisons are not entirely eliminated. The periods of rest should therefore bear such a relation to the periods of labor that the fatigue of each day is completely repaired before the work of the next day begins. If this relation is not maintained evil consequences follow. The general vitality is lowered and susceptibility to general diseases and infections is greater. But the most serious danger is the tendency to exhaust the central nervous system, which controls all the vital functions. Overwork increases the danger from industrial accidents. The faculty of attention is weakened and an undue proportion of accidents occur. With relation to women, excessive hours and overwork, especially in occupations requiring continuous standing, are a cause of many deformities and diseased conditions of the pelvic organs which affect unfavorably their child-bearing function, and children born to exhausted women are at birth below the normal in size and weight and the mortality among them is abnormally high. Women are fundamentally weaker than men and are therefore more seriously affected by the strain of modern industry. Between the ages of 15 and 50 they lose much more time from work on account of sickness than men, even deducting the time lost on account of child-birth. Finally,

women more urgently need the protection of the state from long hours and overwork because they are to be the mothers of the next generation. The problem of finding out at what point normal fatigue becomes pathologic fatigue when applied to the whole body of workers and the limitation of the hours of work is not an easy one.

Diagnostic Methods Among the Ancients.—The old statement that there is nothing new under the sun seems again to be verified in the statement that Laennec, to whom is attributed the discovery of the method of physical diagnosis, inspection, palpation, percussion and auscultation, was not the originator of these methods, but only perfected their use as an art. Cordell (*Bull. Johns Hopkins Hosp.*, December, 1909) calls attention to the fact that Aretaeus, the Cappadocian, a successor of Hippocrates, and a student of his works, and a contemporary of Galen, in the second century of the Christian era practiced all these methods. Aretaeus, as disclosed in his writings, was a very acute observer, and by inspection of his patients noted the character of the respiration, posture, decubitus, color, heat and swelling of the surface, the condition of the veins, tongue, pulse, nails, sputum, etc. He likewise resorted to palpation in enlargement of the liver and spleen, and notes the change in the position of ascitic fluid with change in posture of the patient, and by percussion noted tympanites, saying that the abdomen when tapped sounded like a drum. Hippocrates describes râles in diseases of the lungs, such as pneumonia, phthisis, empyema, etc., and they are also referred to by Caelius Aurelianus in the fifth century A. D., and by Paul of Aegina in the seventh century. The term percussion is used by Aretaeus in describing the symptoms of asthma, a name which evidently embraced other conditions giving rise to dyspnea, besides that to which we limit it. Hippocrates also laid much stress on succussion sounds in empyema. It is a fact of the highest interest that Aretaeus recognized heart murmurs by auscultation, and he seems the only one of the ancient writers who auscultated the heart.

Puncturing the Amniotic Sac as Aid to Delivery.—In the *Gynäkologische Rundschau*, III, 1909, 808, Prof. P. van der Hoeven of Leyden states that in his experience with 1,411 cases delivery was shortened by more than an hour when the amniotic sac was ruptured early. The only condition is that the os must be dilated to at least 3 or 4 cm. before the rupture occurs. This constant observation has impelled him to make a practice of rupturing the sac when the os is dilated to this extent. It permits the head to act more forcibly on the os and delivery is concluded in less time than otherwise. In a primipara with the os open to 5 cm. artificial rupture of the membranes brings expulsion in less than an hour and a half in more than half the cases, while with multiparae the child is born in about an hour. In the Leyden clinic the number of cases in which forceps were required has dropped from 11 to 2 per cent. and for multiparae from 8 to 1 per cent. Elsewhere in the Netherlands, where this is not the practice, forceps are used in 9 or 10 per cent. Only in three-tenths of the Leyden cases was version required as the skull did not present. The necessity for the various obstetric operations has been reduced by 50 per cent. since this procedure has been made the routine practice. Another advantage is that the number of cases of prolapse of the umbilical cord has also been correspondingly reduced. The woman must lie on her side in bed afterward; otherwise prolapse of the cord is still possible. He is collecting material for a monograph on the importance and advantages of opening the sac at a certain stage of labor. He uses his finger, not an instrument.

The Dividends of Decency.—*The Druggists Circular*, whose attitude of uncompromising opposition to quackery and the nostrum evil is well-known, says in a recent issue: "Astonishment at the attitude of the *Circular* toward the nostrum traffic is continually manifesting itself in those quarters in which a rake-off from the heavy profits of this cancerous growth on the drug business is regarded as one of the chief things that make several vocations allied to pharmacy worth following. Just why a publication should act openly and squarely with its readers when there seems to be so much more ready money in patting the nostrum men on the back with one hand and pulling the wool over the eyes of the

retailer with the other, never ceases to cause wonder in the aforementioned quarters. Truly there may seem to be more money in following the policy of letting none of anybody's cash get away, but the success of the *Circular* for considerably more than half a century shows that it is more profitable to pursue a consistent course of right than it is to try to serve any and every master that offers a tempting price."

Christian Science in Ireland.—The *Lancet* states that the estimate of Christian Science which has been arrived at by the Irish people has been formulated in the *Freeman's Journal*. "The Research Defence Society and its able exponent, Mr. Stephen Paget, have rarely been exhibited in a better setting than in an article which bears the title, 'Unchristian Folly.' The text was furnished by the appearance of Mr. Paget's recent work exposing the methods of the pseudo-science that has annexed the name of Christianity as a covering to its callous obstinacy and folly," and the quotation shows that the writer of the article minces no words. He alludes to persons who are 'lacking the sound basis of a training in logic or in the principles of evidence, who because of that lack find in their education their worst enemy. Opened, by what they call their education, to the attraction of intellectual dabbings, anxious to have intellectual sensations, unable to see life as a concrete whole, supremely able to ignore half its facts if only they get a pseudo-intellectual leading towards mystic fancyings, they expose themselves to follies which the uneducated and the well-educated alike reject with loathing. These people, the crudely emotional, the entirely credulous, unbalanced, half-blind, seem to be one of the great unforeseen dangers of modern society.' The view here so forcibly enunciated exposes one of the painfully conspicuous results of education at its present point."

The Alcohol Problem and Its Relation to Life.—The American Association for the Study of Alcohol and Other Narcotics is the first association organized in this country to make a scientific study of the alcohol problem. The papers read at its semiannual meeting in Washington, D. C., March 17-19, 1909 (published as Senate Document No. 48, Sixty-first Congress) give the latest conclusions on this subject, and cover it from almost every angle. There are papers giving conclusions from recent laboratory researches on the action of alcohol on cell and tissue; papers on special causes and conditions favorable to the growth of alcoholic inebriety; on questions of responsibility and the public care of inebriates; papers discussing general and special forms of treatment; and papers relating to the alcoholic problem in its sociologic, physiologic and medical aspects. Among those who have contributed studies are Howard A. Kelly, Winfield S. Hall, H. W. Wiley, J. H. Kellogg, W. B. Parks, T. D. Crothers, Henry O. Marcy and G. Alfred Lawrence. Doctors come into peculiar first-hand relationship with the alcohol question in all its phases, and they should be thoroughly informed on the results of its scientific study. The pamphlet represents the first transactions of a medical society ever published by the government. The pamphlet may be had free on application to senators or representatives.

Sleeping Sickness.—Sir Archibald Geikie in his presidential address at the anniversary meeting of the Royal Society of Great Britain, Nov. 30, 1909, enumerated several papers on sleeping sickness which had been transmitted by Sir David Bruce of the society's commission to investigate sleeping sickness in Uganda. One of these contains an account of an experiment carried out by the commission, confirming the important conclusion of Dr. Kleine that the tsetse fly, *Glossina palpalis*, may retain its infectiveness for a considerable period after it has fed on an infected animal instead of losing it in forty-eight hours, as was previously supposed when it was considered as simply a mechanical carrier of the disease. Sir David Bruce has found that the duration of infectivity may be as long as seventy-five days, thus rendering it necessary to revise the previous ideas in this regard and to modify the measures that have been recommended for the prophylaxis of the disorder.

Custodial Care of Advanced Cases of Inebriety.—A constructive plan for the whole problem of the treatment of public intoxication should include: 1. An adequate system of identi-

fication, to determine whether the man is an occasional or a habitual offender. 2. A graded series of remedies which would aim to treat each grade of offenders in a way best adapted to their needs and which would also serve to separate hardened and confirmed cases from incipient and hopeful cases. 3. Increased probationary oversight in all cases in which hope of improvement is offered thereby. 4. Provision for commitment of chronic drunkards on proper medical certification without the necessity of being arrested and haled before a court. 5. Farm colonies for habitual alcoholism, where the inmates shall be required to work. Such a plan would afford some return to the state in men living in wholesome surroundings, largely self-supporting. The present expenditure is sheer loss. —B. B. Burritt, assistant secretary of State Charities Aid Association, New York, in *Hygiene and Physical Education*.

Association News

THE SCIENTIFIC EXHIBIT

Notice of Awards of Prizes and Plans for St. Louis Exhibit

The Scientific Exhibit for the coming session of the American Medical Association at St. Louis, should be worthy of the occasion and should compare favorably with previous exhibits. It is, of course, incumbent on the Middle West and South to come manfully to its support. Institutions or individuals in the far East or the far West are also urged to send small serial exhibits, or rare individual specimens, such as might be carried in a suit-case.

Besides the usual exhibits relating to anatomy, pathology, physiology, etc., it is desired to encourage exhibits bearing on clinical medicine and surgery, such as hospital records well illuminated by photographs of patients, drawings, etc. Exhibits are also welcome, bearing on hygiene and sanitary science, or on any matter concerning which the public should receive judicious medical instruction. It is further urged that medical teachers present exhibits illustrative of newer methods in teaching or as evidence of superior work done by medical students.

To encourage participation in this department of the Association work, the policy of the past two years will be followed in making awards for superior exhibits.

Certificates of honor will be given to a very limited number of exhibitors.

Medals will be given, a gold medal for best research exhibit relating to some phase of pathology or internal medicine, and a gold medal for best research exhibit with bearing on clinical surgery.

A committee appointed by the President of the Association at the time of the session will have entire power in making the awards and may refuse to grant medals if, in its judgment, the exhibits are not of sufficient merit to be entitled to them.

FRANK B. WYNN, Director, Indianapolis.

The Public Service

Medical Department of the Army

Changes for the week ended Feb. 12, 1910:

McDiarmid, N. L., lieutenant, granted 10 days' leave of absence. Merrick, John N., 1st lieutenant, M. R. C., on arrival at San Francisco, will proceed to Benicia Arsenal, Cal., for duty.

Hughes, M. E., 1st lieutenant, M. R. C., relieved from duty at Benicia Arsenal, Cal., and ordered to Fort Rodman, Mass., for duty.

Ford, Clyde S., major, relieved from duty at Fort Logan, Colo., and ordered to Fort William Henry Harrison, Mont., for duty.

Pierson, Robert H., captain, left Fort William Henry Harrison, Mont., on 30 days' leave.

Adair, George F., 1st lieutenant, M. R. C., resignation accepted Feb. 6, 1910.

Dolley, Gilman C., 1st lieutenant, M. R. C., assignment in the laboratory, Surgeon General's Office, is extended to Feb. 21, 1910.

Brown, Wilmont E., 1st lieutenant, M. R. C., sick leave extended 6 months.

Pillsbury, Henry C., lieutenant, on expiration of leave of absence will proceed to Jefferson Barracks, Mo., for duty.

The following named officers of the Medical Corps and of the Medical Reserve Corps are relieved from duty at stations designated after their respective names, will proceed to San Francisco, and take the

transport to sail from that place about June 5, 1910, for duty in the Philippine Islands: Captain Junius C. Gregory, Medical Corps, Jefferson Barracks, Mo.; Captain Ernest G. Blugham, Medical Corps, Fort Mason, Cal.; Captain Haywood S. Hansell, Medical Corps, Fort Snelling, Minn.; Captain Craig R. Snyder, Medical Corps, Fort McHenry, Md.; Captain William P. Banta, Medical Corps, Fort D. A. Russell, Wyoming; 1st Lieut. Ernest F. Slater, Medical Reserve Corps, Fort Mansfield, R. I.; 1st Lieut. Charles H. Stearns, Medical Reserve Corps, Fort Screven, Ga.; 1st Lieut. Frederick H. Sparrenberger, Medical Reserve Corps, Fort Warren, Mass., and 1st Lieut. William H. Tukey, Medical Reserve Corps, Boise Barracks, Idaho.

The following named officers of the Medical Corps and the Medical Reserve Corps, relieved from duty in the Philippines Division, will proceed from Manila, P. I., about June 15, 1910, to San Francisco, and on arrival will report by telegraph to The Adjutant General of the Army, for orders: Captain Levy M. Hathaway, Medical Corps; Captain William R. Eastman, Medical Corps; Captain Nelson Gaper, Medical Corps; 1st Lieut. William E. Hall, Medical Reserve Corps; 1st Lieut. James B. Pasco, Medical Reserve Corps.

Pierson, Robert H., capt., relieved from duty at Fort William H. Harrison, Mont., and ordered to Vancouver Barracks, Wash., for duty.

Mills, Robert H. D. S., reports for temporary duty at Fort Terry, N. Y.

Griffis, Frank C., 1st Lieut., M. R. C., relieved from duty at Fort Sheridan, Ill., and ordered to Fort D. A. Russell, Wyo., for duty.

Truax, Jesse P., 1st Lieut., M. R. C., relieved from duty at Fort Ward, Wash., and ordered to proceed to San Francisco, and take transport to sail from that place about March 5, 1910, for duty in the Philippine Islands.

Hailey, James C., 1st Lieut., M. R. C., honorably discharged from the service of the United States from this date, his service being no longer required.

Woodson, Robert S., major, ordered to proceed to the Walter Reed General Hospital, Takoma Park, D. C., for observation and treatment.

Robinson, James L., cont. surgeon, ordered to Vancouver Barracks, Wash., for duty.

O'Connor, Roderic P., major, ordered to Fort Huachuca, Ariz., for temporary duty, until May 1, 1910, when he will proceed to Fort Screven, Ga., as heretofore ordered.

Truax, Jesse P., 1st Lieut., M. R. C., granted 20 days' leave of absence.

Whitney, Walter, 1st Lieut., M. R. C., ordered with troops from Fort McPherson, Ga., to Tampa, Fla., for duty during celebration to be held in that city Feb. 12 to 26, commemorating commencement of work on the Panama Canal.

Ames, John R., dental surgeon, reports for temporary duty at Fort Yellowstone, Wyo.

Gunckel, George J., dental surgeon, reports for temporary duty at Fort Morgan, Ala.

Heterick, Robert H., 1st Lieut., M. R. C., orders to the Philippine Islands revoked.

Appel, Aaron H., col., promoted to, with rank from Jan. 28, 1910.

Bradley, Alfred E., lieut. col., promoted to, with rank from Jan. 28, 1910.

Brooke, Roger, Jr., major, promoted to, with rank from Jan. 28, 1910.

Mills, Robert H., dental surgeon, relieved from duty at Fort Adams, R. I., and will proceed to San Francisco, and take the transport to sail from that place about June 5, 1910, for the Philippine Islands, and on arrival at Manila will report to commanding general, Philippines Division, for assignment to duty.

Wolven, F. Homer, dental surgeon, relieved from duty in the Philippines Division and will proceed on the transport to sail from Manila, P. I., on or about June 15, 1910, to San Francisco, and on arrival will report by telegraph to The Adjutant General of the Army for further orders.

Stayer, Morrison C., lieut., ordered to report to medical superintendent, Army Transport Service, San Francisco, for duty as surgeon of the transport *Sherman*, instead of the transport *Thomas*, on its next voyage to the Philippine Islands, about April 5, 1910. On arrival at Manila, to report to the commanding general, Philippines Division, for assignment to duty.

Public Health and Marine-Hospital Service

Changes for the fourteen days ended Feb. 9, 1910:

Carter, H. R., surgeon, granted 1 month's leave of absence from Feb. 5, 1910, on account of sickness.

Wertebaker, C. P., surgeon, detailed to attend the meeting of the Board of Directors of the Virginia State Antituberculosis Association, to be held in Richmond, Va., Feb. 2, 1910.

Oakley, J. H., surgeon, directed to report to the Commanding Officer of the Revenue Cutter *Tahoma* for temporary duty.

Ramus, Carl, P. A. surgeon, granted 4 days' leave of absence from Jan. 25, 1910, under paragraph 191, Service Regulations.

Amesse, J. W., P. A. surgeon, granted 1 month's leave of absence from Feb. 3, 1910.

Long, J. D., P. A. surgeon, directed to proceed to Columbia, S. C., and vicinity, on or about Feb. 15, 1910, on special temporary duty.

Spratt, Robert D., P. A. surgeon, on being relieved by Assistant Surgeon R. A. C. Wollenberg, directed to proceed to Ellis Island, N. Y., and report to the Chief Medical Officer for duty.

Wollenberg, R. A. C., asst.-surgeon, on the expiration of present leave of absence, relieved from duty at San Francisco, and directed to proceed to Brunswick Quarantine Station, Brunswick, Ga., and assume command.

Delgado, J. M., acting asst.-surgeon, granted 13 days' extension of leave from Jan. 14, 1910, on account of sickness.

Mason, Wm. C., acting asst.-surgeon, leave of absence for 3 days from Jan. 26, 1910, revoked.

Wetmore, W. O., acting asst.-surgeon, granted 2 days' extension of leave from Jan. 19, 1910, on account of sickness, and 3 days' extension of leave from Jan. 27, 1910, on account of sickness.

Amesse, J. W., P. A. surgeon, resignation accepted by the President, to take effect March 2, 1910.

Queries and Minor Notes

DATA WANTED ON SURGICAL TREATMENT OF TYPHOID

To the Editor:—I am collecting a list of cases of typhoid fever in which operative procedure has been instituted during its course. I have looked through all the articles that have appeared in *THE JOURNAL* for the last few years, and have practically all the cases recorded in American literature. There must, however, be a number of cases which have not yet been recorded, and I should be glad to hear from any one who has had such cases.

A. C. STOKES, Omaha.

COLORIMETRIC TEST FOR SALICYLIC ACID

To the Editor:—In *THE JOURNAL*, Aug. 21, 1909, page 662, an article by Falk and Tedesco is abstracted. Please describe the colorimetric technic used in testing for salicylic acid in this connection.

W. PORTER, Poughkeepsie, N. Y.

ANSWER.—The sputum, slightly acidified, was thoroughly shaken with five times its volume of 96 per cent. alcohol. The albumin and mucus forming substances precipitated in coarse flakes and could easily be separated by filtration from the alcoholic extract. The residue on the filter when boiled with acid alcohol in a reflux condenser gave scarcely a trace of a reaction for salicylic acid. The clear filtrate was evaporated on the water bath, a weak alkaline reaction being maintained and the residue taken up with water, slightly acidified and decomposed with lead acetate. The precipitate was separated by filtration, washed, and the acid filtrate shaken with ether. The ethereal residue was taken up in 10 c.c. of water and 1 c.c. of a 10 per cent. ferric chlorid solution added to it. Traces of salicylic acid could be recognized by this method. If the reaction was strongly positive dilutions were made so as to facilitate a comparison of the intensity of coloration. The color of the diluted solution should be compared with that given by a dilute standard solution of sodium salicylate very slightly acidulated. Estimates made by the above method while they may suffice for many clinical purposes are mere approximations and are not sufficiently accurate for strict scientific work.

THE CHOLOGEN PREPARATIONS

To the Editor:—What are the chologen preparations, and what is their action supposed to be? A stomach specialist gave a friend of mine chologen No. 1 to take one tablet 1, 2 or 3 times a day, according to the number of daily evacuations. He did so and came to me after two or three weeks in a very depressed condition, gave a history of having had attacks during which he came near fainting, was cold, with cold perspiration, etc.

W. R. HUMPHREY, Stillwater, Minn.

ANSWER.—Chologen tablets are said to consist of a mixture of mercury (calomel), podophyllin, melissa, menthol, camphor and caraway in different proportions and are made in three forms called chologen 1, 2, and 3. In the advertising matter put out by the manufacturers various explanations are given of their action. The remedy is said to alter the nature of the bile and it is intimated that it makes the bile capable of dissolving gall-stones. One writer claims that cholelithiasis is a nervous disease and that chologen is the remedy to regulate the nervous system of the liver. The method of treatment prescribed is objectionable because, while the tablets contain only well-known remedies, the specious claim is made that the special combination gives them a peculiar value. The tablets are put up in such a way and accompanied by such directions as virtually to take away from the physician all control over the treatment and to make him merely the agent of the manufacturer. It is uncertain whether or not the bad effects noted in the above communication were due to the medicine taken, but so long as a physician prescribes a mixture containing unknown substances in unknown quantities he cannot be sure that the symptoms are not due to that mixture.

LITERATURE ON RADIUM—USE OF THE INDEX

To the Editor:—Please furnish me with references to recent articles or abstracts of articles on the uses of radium in medicine and surgery.

G. W.

ANSWER.—*THE JOURNAL* has already printed an elaborate list of references to recent articles and abstracts of articles on this subject. Twice a year, that is, in the concluding number of each volume, is published an Index to Current Medical Literature. For example, in *THE JOURNAL*, Dec. 25, 1909, page 2257, is almost half a column of references to radium. Some of these are original articles in *THE JOURNAL* and some are abstracts, but reference to the page on which the abstracts occur will show the source of the original publications. Subsequent to the publication of this Index we cite the following references:

- Abbe, R.: Radium as a Specific in Giant-Cell Sarcoma, *Med. Rec.*, Jan. 1, 1910; abstr. in *THE JOURNAL*, Jan. 15, 1910, p. 235.
- Turner, D.: Effect and Use of Radium, *Lancet*, London, Dec. 25, 1909; abstr. in *THE JOURNAL*, Jan. 22, 1910, p. 324.
- Chevrier, L.: Radium in Cancer, *Presse méd.*, Dec. 18, 1909.
- Wickham, L.: Is Radium a Cure for Cancer? *Brit. Med. Jour.*, Dec. 18, 1909; abstr. in *THE JOURNAL*, Jan. 15, 1910, p. 241.
- Jordan, A. C.: Use of Radium for Local Applications within the Body, *Lancet*, London, Dec. 11, 1909.
- Dieffenbach, W. H.: Radium Therapy in Inoperable Tumors, *Jour. Advanced Therap.*, December, 1909.
- Cheron, H.: Radium Treatment of Gynecologic Disease, *Obstétrique*, November, 1909.

EXAMINATION OF STOMACH CONTENTS

To the Editor:—The writers on stomach diseases urge a more general employment of the stomach tube as a routine procedure in general examinations. The books on laboratory diagnosis devote many pages to the chemical examination of stomach contents which is necessary to make the use of the stomach tube of value. It is obvious that this involves a laboratory equipment and expenditure of time which cannot be afforded by the busy practitioner, especially if he practices in the country. Is there not some short cut or some method of arriving at a diagnosis without so much trouble?

Enquirer, Cincinnati.

ANSWER.—Stomach specialists and the writers on laboratory diagnosis have unintentionally made the subject of the examination of stomach contents appear much more complicated than it really is. It is a mistake to suppose that the utility of the stomach tube in diagnosis is limited to the obtaining of stomach contents for chemical and microscopic examination. The examination of the contents with the naked eye furnishes much valuable information in a moment. One should note whether there is mucus mixed with the food, indicating gastritis, or blood which may be indicative of gastric ulcer. The presence of remnants of food from previous meals may be manifest at a glance. A very liquid content shows that there is either retention from motor insufficiency or hypersecretion. By noting the presence of a layer of very fine particles of starch, one can be almost certain that free hydrochloric acid is present. On the other hand, if the contents are in lumps and there is very little liquid, it is probable that digestion has not taken place, in consequence of the absence of hydrochloric acid. The time required for the chemical examination necessary for clinical purposes is very small. As a rule the necessary examination can be made in five minutes. The reason for this is that it has been shown that in certain cases we may omit many of the tests because we know either that the substance to be tested for is never present under the conditions already found or we may assume its presence because of one of the tests previously made. Thus, if free hydrochloric acid is found after the Ewald test meal there is no need to test for lactic acid. Indeed, as Cohnheim says, lactic acid should be tested for only in cases in which there is stagnation of the stomach contents. When free hydrochloric acid is present there is no need to test for the ferments. Therefore, in examining a specimen of stomach contents if Congo paper turns blue there is practically no need for any other examination except to determine the amount of free hydrochloric acid.

The equipment necessary for ordinary examinations of stomach contents is very small. Besides the ordinary stomach tube, one needs a 10 c.c. graduated cylinder, a 25 c.c. burette, a beaker, an evaporating dish and some test tubes; a graduated pipette might also be included. Fairly correct decinormal solution can be purchased at small cost. The physician who has no incubator can readily perform experiments for determining the amount of ferment by keeping a large amount of water in an ordinary dish pan at constant temperature by means of a small flame. We do not mean to say that cases may not arise in which more elaborate apparatus and more careful testing will be required, but the above will suffice for the majority of stomach cases and will enable the physician to obtain information by which he can base his treatment on ascertained facts instead of depending merely on symptoms, which are so uncertain as to make the treatment based on them, largely guess work.

Methods designed to facilitate the diagnosis of stomach diseases without the use of the stomach tube have been repeatedly devised, but for the most part have not justified their use in practice as reliable methods. The most recent of these is Sahli's desmoid test, described in *THE JOURNAL*, June 3, 1905, p. 1820, and Sept. 26, 1906, p. 975. This method is convenient, but by many is considered unreliable. At any rate, it cannot give any information as to the amount of free hydrochloric acid, a fact that is often the principal factor in determining the treatment. Much can be learned regarding the condition of the stomach from the examination of the feces but this is more troublesome to the physician than the examination of the stomach contents.

FELLOWSHIPS AND PRIZES IN MEDICINE

To the Editor:—What prizes for medical work, research or clinical, are offered for the competition of American physicians?

J. G. M. B.

ANSWER.—A partial list of prizes and fellowships is given below. More complete information concerning each may be had by looking up *THE JOURNAL* reference given. The prizes given by the French Academy of Medicine are grouped together.

KUSSMAUL PRIZE: awarded every 3 years by Professor Czerny for the best therapeutic achievement, first published in German literature; a medal and \$250 in money. (*THE JOURNAL*, Jan. 6, 1906, p. 50.)

WALKER PRIZE, JACKSONIAN PRIZE, CARTWRIGHT PRIZE: awarded by Hospital P. & S., London, subjects assigned. (*THE JOURNAL* May 12, 1906, p. 1458.)

FLUCKINGER MEDAL: awarded by the German Apothecaries' Union every 5 years for achievements in pharmacology. (*THE JOURNAL*, Oct. 19, 1907, p. 1377.)

ALVARENGA PRIZE (Philadelphia): awarded every year for best essay on any topic in medicine; \$180. (*THE JOURNAL*, Nov. 2, 1907, p. 1536.)

NOBEL PRIZES: (*THE JOURNAL*, Dec. 28, 1907, p. 2161.)

GERMAN COLONIAL SOCIETY PRIZE: for best method of protection of cattle against tsetse fly; \$1,500. (*THE JOURNAL*, March 28, 1908, p. 1051.)

RIBERI PRIZE: \$4,000. Awarded by the Academy of Medicine at Turin, for the best work or discovery made in the field of the medical sciences in the five years ending with 1911. Published work or manuscripts can be entered in competition, but they must be in Italian, French or Latin. Address the Segretario generale della R. Accademia di Medicina, Turin, Italy.

BRESSA PRIZE: awarded every four years by the Academy of Sciences, Turin, for the most important scientific discovery during the interval; \$2,000. (*THE JOURNAL*, April 4, 1908, p. 1132.)

CANIZZARO PRIZE: awarded by the Academy of Sciences, Rome, for the best work on pure and applied chemistry; \$2,000. (*THE JOURNAL*, July 11, 1908.)

SCHAUDINN MEDAL: for achievements in microbiology. (*THE JOURNAL*, July 24, 1909, p. 308.)

CANCER RESEARCH PRIZES: awarded by German Central Committee; \$250, \$125 and \$75. (*THE JOURNAL*, Oct. 23, 1909, p. 1411.)

NATIONAL ACADEMY PRIZES: given by Mexican Government for work in typhus; \$25,000. (*THE JOURNAL*, Nov. 20, 1909, p. 1751.)

COZZOLINO PRIZE: for work in the relief of deafness, to be presented at the International Otology Congress at Boston, 1912; \$200. (*THE JOURNAL*, Nov. 20, 1909, p. 1751.)

GOLDBERGER PRIZE: awarded every 3 years by the Imperial Royal Society of Physicians, Vienna, for research in experimental medicine, 2,000 crowns. (*THE JOURNAL*, Dec. 4, 1909, p. 1922.)

GEORGE CROCKER CANCER RESEARCH FUND: under supervision of Columbia University, New York; for research only; \$1,500,000. (*THE JOURNAL*, Dec. 18, 1909, p. 2108.)

MARY JACOB RESEARCH FUND: awarded by the Women's Medical Association of New York; \$800 fellowship open to women graduates for graduate research work. (*THE JOURNAL*, Jan. 1, 1910, p. 60.)

BEIT MEMORIAL FELLOWSHIPS: to persons of European descent, graduates of British colleges; \$1,250 per year each. (*THE JOURNAL*, Jan. 15, 1910, p. 217.)

BARBIER PRIZE: awarded by Paris Medical School; \$400. (*THE JOURNAL*, Jan. 22, 1910, p. 302.)

JEUNESSE PRIZE: awarded by Paris Medical School; \$300. (*THE JOURNAL*, Jan. 22, 1910, p. 302.)

FRENCH ACADEMY OF MEDICINE PRIZES: Twenty-five prizes are offered by the French National Academy of Medicine for international competition in 1911, representing a total value of about \$8,000, besides the great Audiffred prize of bonds representing an annual income of \$4,800, offered for a sovereign cure or effectual preventive of tuberculosis. Some of the prizes are triennial, so that in 1912 the number is 29, totaling nearly \$9,000. Competing works must be in French or Latin and be received by the secretary of the Academy before March 1 of the year in question. The subjects for 1910 are not given as there is not sufficient time before they are due. The conditions for competition were related at some length in *THE JOURNAL*, Dec. 28, 1907, p. 2161, and the awards at the last distribution were mentioned recently in the Paris letter, Jan. 1, 1910, p. 61. For further particulars address the Secrétariat de l'Académie de Médecine, 16 Rue Bonaparte, Paris, France.

FRENCH SURGICAL SOCIETY PRIZES: The following are to be awarded in 1910. The competing works should be addressed to the Secrétaire général de la Société nationale de chirurgie, 12, rue de la Seine, Paris, France. They must be received before Nov. 1, 1910. Articles offered for the Laborie prize must be anonymous and accompanied by an epigraph reproduced on the outside of an envelope enclosing the candidate's name, address and credentials.

DUBREUIL PRIZE: \$80, for a work on orthopedics.

LABORIE PRIZE: \$600, for an unpublished work on some surgical subject.

Medical Education and State Boards of Registration

COMING EXAMINATIONS

CONNECTICUT: Regular: City Hall, New Haven, March 8-9. Sec., Dr. Charles A. Tuttle. Homeopathic: New Haven, March 8. Sec., Dr. Edwin C. M. Hall, 82 Grand Avenue. Eclectic: 42 Meadow St., New Haven, March 8. Sec., Dr. T. S. Hodge, Torrington.
MAINE: Portland, March 8-9. Sec., Dr. Frank W. Searle, 806 Congress Street.
MASSACHUSETTS: State House, Boston, March 8-10. Sec., Dr. Edwin B. Harvey.

Delaware December Report

Dr. H. W. Briggs, secretary of the Medical Council of Delaware, reports the written examination held at Dover and Wilmington, Dec. 14-16, 1909. The number of subjects examined in was 10; total number of questions asked, 100; percentage required to pass, 75. The total number of candidates examined was 7, of whom 6 passed and 1 failed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Atlantic Medical College.....	(1909)	82	
Baltimore Medical College.....	(1907)	75	
University of Pennsylvania.....	(1908)	92.7	
Jefferson Medical College.....	(1909)	83.4	
University of Pennsylvania.....	(1908)	85.4	
Hahnemann Med. Coll. and Hospital, Philadelphia..	(1908)	88	
FAILED			
Medico-Chirurgical College, Philadelphia.....	(1909)	70.2	

Virginia December Report

Dr. R. S. Martin, secretary of the Medical Examining Board of Virginia, reports the written and oral examination held at Lynchburg, Dec. 14-17, 1909. The number of subjects examined in was 9; total number of questions asked, 100; percentage required to pass, 75. The total number of candidates examined was 43, of whom 22 passed, including one non-graduate, and 21 failed. Eight candidates were licensed through reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Howard University, Washington, D. C.....	(1909)	76	76
Kentucky School of Medicine.....	(1908)	75	76
Johns Hopkins University.....	(1906)*		
Baltimore Medical College.....	(1909)	75	
Woman's Medical College of Baltimore.....	(1908)	83	
University of the City of New York.....	(1894)*		
University of Pennsylvania.....	(1893)*		
Medico-Chirurgical College, Philadelphia.....	(1909)	76	
Chattanooga Medical College.....	(1907)	75	
University of the South.....	(1907)	75	
University College of Med., Richmond..	(1908)	79	75
Medical College of Virginia.....	(1909)	75	78
University of Virginia.....	(1908)	76	75
University of Edinburgh, Scotland.....	(1901)*		
FAILED			
University of Louisville.....	(1909)	64	74
University of Maryland.....	(1909)	72	
Maryland Medical College.....	(1909)	66	71, 73
Med.-Chir. Coll. of Christ's Institution, Baltimore..	(1908)	55	
University of Tennessee.....	(1891)*		
Meharry Medical College.....	(1894)*		
Chattanooga Medical College.....	(1905)	51	
Memphis Hospital Medical College.....	(1909)	68	
University of the South.....	(1908)	58, 74	(1909) 68
University of Virginia.....	(1908)	69.1, 71	(1909) 72, 74
Medical College of Virginia.....	(1908)	74	(1909) 71
Queen's University, Kingston, Ontario.....	(1897)*		

LICENSED THROUGH RECIPROCITY

College	Year Grad.	Reciprocity with
Louisville and Hospital Medical College.....	(1908)	Kentucky
New York Homeopathic Med. Coll. and Hospital..	(1908)	New Hamp.
North Carolina Medical College.....	(1905)	N. Carolina
Univ. of Pennsylvania.....	(1897)	North Carolina
University of Nashville.....	(1907)	Dist. Columbia
University of Virginia.....	(1907)	S. Carolina
University College of Medicine, Richmond.....	(1908)	N. Carolina

* Took oral examination.

Maryland December Report

Dr. J. McP. Scott, secretary of the Maryland Board of Medical Examiners, reports the written examination held at Baltimore, Dec. 14-17, 1909. The number of subjects examined in was 9; percentage required to pass, 75. The total number of candidates examined was 42, of whom 30 passed and 12 failed. Nine candidates were licensed through reciprocity and 2 under exemption clauses and by special examination. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Howard Univ., Washington, D. C.....	(1908)	77	(1909) 79
Johns Hopkins University.....	(1907)*	(1909)	93
University of Maryland.....	(1907)* (1908)* (1908)	77	(1909) 75, 77, 79, 80, 81, 90
Baltimore Medical College.....	(1906)*	(1909)	85
College of Physicians and Surgeons, Baltimore..	(1904)*	(1908)	85, 88; (1909) 83
Maryland Medical College.....	(1906)*		
University of Michigan, College of Medicine.....	(1898)		84
Jefferson Medical College, Philadelphia.....	(1909)	80	82
Temple University, Philadelphia.....	(1909)		77
University of Pennsylvania.....	(1908)	80, 87	(1909)*
University of the South.....	(1909)*		
University of Virginia.....	(1905)		81
McGill University, Montreal, Canada.....	(1909)		82

FAILED

George Washington University.....	(1907)*	
Howard University, Washington, D. C.....	(1908)	70
Louisville Medical College.....	(1908)	60
University of Maryland.....	(1909)*	
Baltimore Medical College.....	(2, 1909)* (1909)	72
Maryland Medical College.....	(1908)* (3, 1909)*	
University of the South.....	(1908)*	

LICENSED THROUGH RECIPROCITY

College	Year Grad.	Reciprocity with
George Washington University.....	(1908)	W. Virginia
Howard University, Washington, D. C.....	(1896)	Dist. Colum.
Maryland Medical College.....	(1904)	Georgia
College of Physicians and Surgeons, Baltimore..	(1904)	W. Virginia
University of Michigan, College of Medicine.....	(1875)	Dist. Colum.
Medical College of Ohio.....	(1895)	Ohio
University of Pennsylvania.....	(1893)	W. Virginia
Vanderbilt University.....	(1881)	Kentucky
Milwaukee Medical College.....	(1900)	Wisconsin

LICENSED UNDER EXEMPTION CLAUSE AND BY SPECIAL EXAMINATION

College	Year of Grad.
University of Maryland.....	(1885)
University of Gratz, Styria, Austria.....	(1900)

* Re-examined.

California December Report

Dr. Charles L. Tisdale, secretary of the Board of Medical Examiners of the State of California, reports the written examination held at Los Angeles, Dec. 7-10, 1909. The number of subjects examined in was 10; total number of questions asked, 100; percentage required to pass, 75. The total number of candidates examined was 97, of whom 66 passed, including 8 osteopaths, and 31 failed, including 8 osteopaths. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
College of Physicians and Surgeons, Los Angeles..	(1909)	81.7	87.3
College of Physicians and Surgeons, San Francisco..	(1906)		76.1
Hahnemann Medical College of the Pacific.....	(1903)	84.1	(1908) 81.4, 82.3
Cooper Medical College.....	(1908)	75.6, 79.6	(1909) 75.4
University of Southern California.....	(1905)	86.7	(1907) 75, 86.2; (1909) 77.1, 80.5, 81.4, 82.9, 87.2
Yale Medical School.....	(1906)		87.6
Denver and Gross College of Medicine.....	(1904)		80.4
Medical College of Georgia.....	(1883)		83.8
Hahnemann Medical College and Hospital, Chicago..	(1886)	87.2	(1891) 82.7; (1898) 80.7; (1901) 78.3
Northwestern University Medical School.....	(1898)	80.5	(1907) 80.3; (1909) 85.4
Rush Medical College.....	(1889)	88.2	(1908) 97.5; (1909) 87.4
College of Physicians and Surgeons, Chicago.....	(1909)	82.1	86.2
State University of Iowa.....	(1885)		85.5
University of Kansas.....	(1909)		85.4
Johns Hopkins University.....	(1908)		85.8
University of Maryland.....	(1903)		81.2
Boston University.....	(1895)		83.9
Harvard Medical School (1891)	81.4	(1898) 75.6	(1902) 75.1
Tufts College Medical School.....	(1907)		81.9
University of Michigan, Coll. of Med.....	(1891)	79	(1902) 81.3
University of Michigan, Homeopathic College.....	(1908)		83.4
Univ. of Minnesota, Coll. of Med.....	(1894)	90.9	(1908) 75
Homeopathic Medical College of Missouri.....	(1898)		80
Marion-Sims College of Medicine.....	(1897)		83.9
Cornell University Medical College.....	(1909)		85.5
New York Homeopathic Med. Coll. and Hospital..	(1905)		75.2
Jefferson Medical College.....	(1893)	80	(1895) 80
Hahnemann Medical College, Philadelphia.....	(1901)		75
Starling Medical College.....	(1902)		80.1
Medico-Chirurgical College, Philadelphia.....	(1901)		80.6
McGill University, Quebec.....	(1905)		76.3
Western University, London, Ontario.....	(1899)		84.4
University of Heidelberg, Germany.....	(1907)		89.6

FAILED

University of Southern California.....	(1908)	71.7
Coll. of Physicians and Surgeons, San Francisco..	(1902)	42.9
(1906) 72.7; (1907) 71; (1909) 66.5		
Cooper Medical College.....	(1908)	71.8; (1909) 68.1
College of Physicians and Surgeons, Chicago.....	(1904)	49.4
Rush Medical College.....	(1895)	67.8
Northwestern University Women's Medical School..	(1890)	73.5
College of Physicians and Surgeon, Keokuk.....	(1880)	43.8
Kentucky School of Medicine.....	(1889)	66.8, 71.2
(1894) 69.7		
University of Maryland.....	(1909)	68.4
Michigan College of Medicine, Detroit.....	(1881)	19.6
University of Michigan, Coll. of Med.....	(1880)	56.8; (1895) 71.5
Kansas City Medical College.....	(1891)	76.2
Jefferson Med. Coll.....	(1890)	73; (1894) 69.4; (1895) 59.6
University of Turin, Italy.....	(1899)	18.7

Marriages

LOUIS A. GREENSFELDER, M.D., to Miss Ethel Grace Rooks, both of Chicago, February 7.

WUNIBALD JOHN PROBST, M.D., to Miss Magdalene Elizabeth Lingenfelter, both of Pittsburg, Pa., February 3.

ALFRED G. FARMER, M.D., Corozal, C. Z., to Miss Minnie L. Cuckler, of Athens, Ohio, at Cristobal, C. Z., January 20.

WILLIAM JOSEPH CIRCE, M.D., Carson City, Nev., to Miss Ella Dudley, of San Francisco, at Reno, Nev., February 1.

GEORGE ELMER KROUT, M.D., Jacobus, Pa., to Miss Beulah Hildebrand, of Loganville, Pa., at Bloomsburg, Pa., January 6.

Deaths

Frederick Wentworth Mercer, M.D. College of Physicians and Surgeons, New York City, 1862; a member of the American Medical Association, British Medical Association, American Microscopical Association; vice-president of the Illinois Microscopical Society; and a fellow of the Royal Microscopical Society of England; major and surgeon of the Twentieth Massachusetts Volunteer Infantry during the Civil War; for some time medical superintendent of the Illinois State Soldiers' Home; assistant physician at the Anna State Hospital from 1873-1879; died at his home in Chicago, February 9, from heart disease, aged 71.

George Edmund Brickett, M.D. Dartmouth Medical School, 1847; assistant surgeon of the Third and surgeon of the Twenty-first Maine Volunteer Infantry during the Civil War; from 1863-1865 surgeon in charge of the Cony United States General Hospital, Augusta, Maine, and from 1864-1892, attending surgeon to the Kennebec arsenal; from 1874-1888, local pension examining surgeon; representative from Kennebec county in the state legislature in 1868 and 1869; died at his home in Augusta, January 28, from cerebral hemorrhage, aged 85.

John Alfred Westlake, M.D. New York University, New York City, 1877; a member of the Medical Society of the State of New York; a veteran of the Civil War; for two years surgeon to the Northern Central Railroad, and later to the Northern Pacific Railroad in St. Paul, Minn.; since 1886 a resident of Elmira, N. Y.; coroner of Chemung county; for about ten years physician in charge of the Westlake Hospital; died at his home, January 31, from uremia, aged 63.

William A. Gordon, M.D. Rush Medical College, Chicago, 1856; surgeon of the Tenth Wisconsin Volunteer Infantry and later brevet major, U. S. Volunteers, during the Civil War; formerly secretary of the U. S. Army Medical Examining Board of the Army of the Cumberland; a specialist in diseases of the eye, ear, nose and throat; died at his home in Mountain View, Cal., January 28, from senile debility, aged 75.

Ira A. Thayer, M.D. Eclectic Medical Institute, Cincinnati, 1866; surgeon in the volunteer service during the Civil War; for twenty-five years pastor of a church in New Castle, Pa.; and later for several years a lecturer for the State Agriculture Department, and city food inspector of New Castle; died at his home, January 24, from uremia, aged 61.

Raphael Owen Semmes, M.D. University of Alabama, Mobile, 1901; formerly a member of the American Medical Association; a member of the Medical Association of the State of Alabama; health officer of Wilcox county; died at his home in Rock West, Camden, January 20, from chronic nephritis, aged 30.

Andrew S. Russell, M.D. University of Pennsylvania, 1892; a member of the American Medical Association; of Duquesne, Ariz.; was shot and instantly killed January 28, at Washington, a mining camp, twenty miles east of Nogales, by a retired army officer who is believed to be insane, aged 45.

Frederick A. Wright, M.D. Bellevue Medical College, 1871; health officer and a member of the Board of Education of Glen Cove, N. Y., for several years, and postmaster of the city since 1898; died at the home of his daughter in Newark, N. J., January 30, from cancer, aged 63.

Samuel Wexlar, M.D. University of Pennsylvania, 1908; chief resident physician of the Mount Sinai Hospital, Philadelphia, and a member of the Southwark Medical Society; died February 1, in the Mount Sinai Hospital, two days after an operation for appendicitis, aged 28.

Francis McConnell Christy, M.D. University of Pennsylvania, 1882; of Altoona, Pa.; a member of the Medical Society of the State of Pennsylvania; for several years surgeon in the National Guard; died at the home of his father-in-law in Lancaster, Pa., January 29, aged 50.

Millson Raleigh Allen, M.D. Hahnemann Medical College, Philadelphia, 1887; formerly president of the Virginia Homeopathic Society, and a member of the State Board of Medical Examiners; died at his home in Norfolk, February 2, from bronchial asthma, aged 48.

William Penn Compton, M.D. Georgetown University, Washington, D. C., 1889; professor of laryngology and rhinology in his alma mater; of Washington, D. C.; died suddenly February 1, from angina pectoris while at the bedside of a patient.

James Castle Patterson, M.D. University of Tennessee, Nashville, 1894; of Wanette, Okla.; a member of the Oklahoma State Medical Association; died in a sanatorium at Silver City, N. M., January 28, from tuberculosis, aged 38.

Ernest H. Plach, M.D. University of Berlin, Germany; formerly of German Valley and Mount Carroll, Ill.; a practitioner of Illinois since 1873; died at the home of his daughter in Mount Carroll, February 3, from dropsy, aged 71.

William H. Blakeley, M.D. Homeopathic Medical College of Missouri, St. Louis, 1866; New York Homeopathic Medical College and Hospital, 1871; died at his home in Bowling Green, Ky., January 25, from acute gastritis, aged 68.

Joseph Theophilus Howard, M.D. Georgetown University, Washington, D. C., 1859; a member of the American Medical Association; died suddenly at his home in Washington, January 30, from pneumonia, aged 77.

William Beall, M.D. Medical Department of Columbian College, Washington, D. C., 1846; from 1872 to 1881, a clergyman of the United Brethren church; died at his home in Rock Gap, W. Va., January 30, aged 88.

Randolph Spalding Kenan, M.D. Atlanta Medical College, 1895; of Savannah; a member of the Medical Association of Georgia; died at the home of his sister in Darien, Ga., February 3, from nephritis, aged 44.

Augustus A. Fahnstock, M.D. Hahnemann Medical College, Chicago, 1865; of Laporte, Ind.; died at the home of his brother in Marion, Ind., February 7, from the effects of a fall down a stairway, aged 76.

William L. White, M.D. University of Oregon, Portland, 1890; of Pullman, Wash.; a member of the Washington State Medical Association; died in Fabiola Hospital, Oakland, Cal., January 26, from tuberculosis.

Rollin B. Gray, M.D. New York Homeopathic Medical College, 1871; of the Borough of Queens, N. Y.; died at the home of his daughter in East Orange, N. J., February 5, from cerebral hemorrhage, aged 69.

Frederick O. Chamberlain, M.D. Yale University, New Haven, 1891; Paris Medical School, 1894; a member of the San Francisco Stock and Exchange Board; died in that city, Dec. 5, 1909, from brain disease.

Thomas A. R. Keech, M.D. University of Maryland, 1856; a member of the Medical Association of the District of Columbia; died at his home in Washington, D. C., January 29, from arteriosclerosis, aged 76.

Thomas M. Graves (license, Ky., 49 years practice, 1893); for more than fifty years a practitioner of Calloway county, Ky.; died at his home in West Murray, January 28, from senile debility, aged 85.

William E. Mattingly, M.D. University of Louisville, 1869; a member of the American Medical Association; died suddenly at his home in Lebanon, February 1, from valvular heart disease, aged 66.

Jeremiah T. Tucker, M.D. Memphis Hospital Medical College, 1892; a member of the Van Zandt County (Texas) Medical Society; died at his home in Wills Point, January 27, from smallpox, aged 47.

Hiram A. Burrows, M.D. Louisville Medical College, 1885; a member of the State Medical Association of Texas; died at his home in New Boston, February 1, from heart disease, aged 45.

Helen Maria Bingham, M.D. Boston University, School of Medicine, 1881; for several years a practitioner of Milwaukee; died at the home of her mother in Monroe, Wis., January 27, aged 65.

Joseph C. Marshall, M.D. University of Pennsylvania, 1870; a member of the Medical Society of the State of New Jersey; died at his home in Tuckahoe, Dec. 1, 1909, from pancreatitis, aged 61.

John H. Fawcett, M.D. Missouri Medical College, St. Louis, 1874; formerly of Grant Park, Ill.; a veteran of the Civil War; died at his home in Ashland, Ore., Feb. 22, 1909, aged 69.

Andrew Harscher, M.D. Marions-Sims Medical College, St. Louis, 1896; a member of the Missouri State Medical Association; died at his home in St. Louis, January 26, aged 43.

William Lawrence Woodruff, M.D. Hahnemann Medical College, Philadelphia, 1882; of Long Beach, Cal.; died at his home February 4, from pulmonary hemorrhage, aged 49.

Weldon Alfred Dickson, M.D. College of Physicians and Surgeons, Baltimore, 1886; died at his home in Salamanca, N. Y., February 3, from rheumatic endocarditis, aged 52.

Laura E. Stockdale, M.D. Chicago Homeopathic Medical College, 1880; one of the early women practitioners of Denver; died at her home in that city, January 27, aged 67.

Arthur A. Browne, M.D. McGill University, Montreal, 1872; for many years a member of the faculty of his alma mater; died at his home in Montreal, January 26, aged 62.

John Adam Fleischer, M.D. University of Virginia, Charlottesville, 1908; died at his home in Meadow Dale, Highland county, W. Va., January 23, aged 29.

Charles B. Davis, M.D. Bennett Medical College, Chicago, 1869; died at the home of his son in Salem, Mo., January 16, from organic heart disease, aged 75.

Henry G. Wheeler (license, Ill., years of practice, 1880); a veteran of the Civil War; died at his home in Breckenridge, Ill., Nov. 21, 1909, aged 67.

Edward W. Day, M.D. University of Maryland, Baltimore, 1853; of Vacaville, Cal.; died in St. Joseph's Hospital, San Francisco, March 25, 1909.

Harry Weston Merrill, M.D. Rush Medical College, 1883; died at his home in Maywood, Ill., February 2, from cerebral hemorrhage, aged 53.

Meade M. Loucks, M.D. University of Pennsylvania, 1895; died in his apartments in Wilkesburg, Pa., February 2, from pneumonia, aged 45.

Robert S. Payne, M.D. Louisville Medical College, 1871; died at his home in Stamping Ground, Ky., February 2, from brain disease, aged 69.

A. C. Hatfield (license, years of practice, Ill., 1878); died at his home in Adair, January 27, from valvular heart disease, aged 64.

O'Connell Fairhurst, M.D. Bellevue Hospital Medical College, 1870; died at his home in Vincennes, Ind., January 24, from heart disease.

Edward I. Hirschfeld, M.D. Illinois Medical College, 1909; died at the North Shore Health Resort, Winnetka, February 6, aged 44.

William C. H. Henkel, M.D. University of Jena, 1852; died at his home in Baltimore, January 30, from senile debility, aged 82.

Medical Economics

THIS DEPARTMENT EMBODIES THE SUBJECTS OF ORGANIZATION, POSTGRADUATE WORK, CONTRACT PRACTICE, INSURANCE FEES, LEGISLATION, ETC.

The Legal Status of the Texas Practice Act

The new Texas medical practice act has been upheld in practically all the legal tests to which it has been subjected, as shown in an editorial in the February issue of the *Texas State Journal of Medicine*. The decision in the case of Collins, an osteopath, upheld its constitutionality and decided that all who treat disease, by whatever method, are included in the definition of a medical practitioner. In the case of Morse the board was upheld in refusing a license for fraud and unprofessional conduct. As a result of the Newman case it was decided that a masseur, if holding himself out to treat disease, must have a medical license. This does not interfere with masseurs, however, in their recognized sphere of labor, but does away with a lot of unqualified practitioners. The case of Wickes-Nease vs. Watts brought a decision that the requirement of registration of physicians was not illegal on the ground that it was "retroactive" and that the holder of a certificate to be a legal practitioner must conform to each succeeding requirement of the legislature. In the case of Ray, the board was upheld in its refusal to raise his grade since fraud or discrimination by the board was not proved.

The suit of Dr. A. C. Bell to compel recognition of the College of Physicians and Surgeons has been allowed to go by without a cost bond.

Although the new practice act is scarcely two years old, the fact that it has already been put through so many tests is in itself evidence that the new board has been carrying out its provisions. It has been a decided power for good in medical registration and has placed Texas among the leading states in the enforcement of fair educational standards for all practitioners regardless of the methods of treatment to be employed.

Legislative Notes

MASSACHUSETTS

The following bills have been introduced into the Massachusetts legislature: *House Bills*: 134, to require practitioners of Eddyism, hypnotism and certain kinds of healing to register; 182, to make communications between physicians and patients privileged; 192, to authorize persons qualified to practice medicine in other states to practice medicine in Massachusetts; 193, to make members of the Board of Registration in Medicine ineligible to reappointment; 295, to appropriate one thousand (\$1,000) for small traveling school tuberculosis exhibits to be used in the public schools throughout the state for instruction in hygiene and the prevention of tuberculosis; 296, to empower city councils to levy a tax for the erection and maintenance of public tuberculosis sanatoria; 386, to extend the duties of the board of education so as to include supervision of medicine, dentistry and pharmacy; 416, to regulate the sale of opium, morphin and other narcotics; 417, to require the State Board of Health to make, free of charge, chemical analyses of preparations suspected of containing cocaine, alpha or beta eucain, or any substance submitted to it by the police authorities or charitable organizations, provided the analysis is to be used for the enforcement of the law; 513, to provide for legislation relative to the practice of healing by unregistered physicians—this bill accompanies the petition of the Massachusetts State Association of Spiritualists on this point; 657, to provide for an investigation as to the increase of criminals, mental defectives, epileptics and degenerates; 660, to provide for the prevention of the dissemination of disease through the improper use of wallpaper; 736, to authorize town boards of health to appoint school physicians; 828, to authorize town and city boards of health to vaccinate school children without charge; 887, to provide for the preparation of a code of medical instruction for use in the public schools.

Dr. M. W. Richardson, secretary of the Massachusetts State Board of Health, has submitted a special report on rabies as House Document 236, in which he reports that in 1904 there were no cases of rabies in Massachusetts. In 1905, there were 103 cases; 1906, 337 cases; 1907, 778 cases; 1908, 557; 1909, up to December 1, 168 cases, of which the following number were human: 1905, 12 cases; 1906, 110 cases; 1907, 184 cases; 1908, 134 cases; 1909 up to October 27, 77 cases. From 1905 to 1909 inclusive, 19 human beings have died in Massachusetts of rabies. Dr. Richardson concludes that the disease and the present epidemic reached its maximum in 1907 and is now decreasing. Most of the patients were treated at the State Alms House at Tewkesbury, at the Boston City Hospital or at the Pasteur Institute in New York. The expense has averaged about \$20 per case. Dr. Richardson estimates that it would cost the state about \$5,000 a year to manufacture and distribute its own serum, while inoculation material could be secured from the United States Public Health and Marine-Hospital Service at an annual expense of about \$2,000 a year.

Dr. Richardson also submits a report on food and drug inspection for the year ending 1909, showing a total of 7,337 examinations of food and drugs during the year which resulted in 296 prosecutions. Of these, 267 resulted in conviction, 14 in acquittal, 2 were *nolle-prossed* and 13 were dismissed on motion of the inspector; 18 cases are at present pending on appeal to the superior court. The fines imposed amounted to \$566.74. Most of the prosecutions were for the sale of milk below the standard.

The Board of Registration in Medicine submitted its annual report under the title of Public Document 56, showing that

during the previous year 293 persons had applied for registration, all of whom had been examined except 12. Of this number 270 were graduates of medical schools and 23 were undergraduates. Two hundred and sixty-one graduates were examined, of which 220 were registered, 201 by first examination and 19 by reexamination; 41 graduates were rejected.

OHIO

Several medical bills have been introduced into the Ohio legislature, among them a bill to exempt from prosecution any woman who shall testify against a physician as having induced an abortion on her; also a bill to provide for sterilization of criminals and defectives. An antivendors bill, to restrict the free distribution of samples of medicine, as well as a bill to restrict medical advertising in newspapers, have also been introduced. One of the most important is a bill to authorize the Ohio State Board of Health to distribute free antitoxin.

MISSISSIPPI

The legislative committee of the Mississippi State Medical Association has secured the introduction of a bill to provide for the collection and recording of vital statistics in all cities and towns in the state having a population of 1,000 or over. Provision is made for a certificate of death of the standard form, to be filed with the local registrar by the undertaker, a burial permit being issued thereon. The bill is entirely satisfactory so far as it goes. It was the judgment of the legislative committee that it was not wise to advocate vital statistics legislation covering the entire state but that it would be well to inaugurate it first in cities of 1,000 and over, and later, if desirable, to extend its operation to the rural districts. It is earnestly hoped that this bill will pass as it will mark the beginning of adequate vital statistics legislation in the Southern states.

POSTGRADUATE COURSE FOR COUNTY SOCIETIES

DR. JOHN H. BLACKBURN, DIRECTOR
BOWLING GREEN, KENTUCKY

[The Director will be glad to furnish further information and literature to any county society desiring to take up the course.]

General Subject for the Month: Tuberculosis

Seventh Month—First Weekly Meeting

DIAGNOSIS OF TUBERCULOSIS

PULMONARY TUBERCULOSIS: Early Symptoms and Signs: Family History.—Heredity, predisposition, opportunity for infection; previous diseases. Clinical History.—Malaise, cough, loss of weight, fever, nervous symptoms, respiration, sputum, increased pulse, gastrointestinal symptoms, hemoptysis, night sweats. Physical Examination: Inspection.—Character of respiration, shape and size of thorax, unilateral irregularities, lagging, cardiovascular changes; pupils, gums, larynx, mucous membranes. Palpation.—Vocal fremitus, normal variations in apices, palpable rhonchi and friction sounds. Percussion.—Normal variations in apices, regional differences, normal resonance, intensity, pitch and quality, changes in resonance, intensity, quality and pitch found in early stage. Auscultation.—Normal breath sounds, voice sounds, regional differences, normal disparity between apices; rough breathing, weak breathing, prolonged expiration, puerile breathing, cogwheel breathing; unilateral rales, pleural sounds.

CASES WITH MODERATE INVOLVEMENT: Clinical history, sputum, changes noted on inspection, on palpation, percussion, auscultation.

ADVANCED CASES: Characteristic clinical picture, physical signs on inspection, palpation, percussion and auscultation.

REFERENCE BOOKS FOR THE SEVENTH MONTH

Klebs: American Treatise on Tuberculosis.
Bonney: Pulmonary Tuberculosis and Its Complications.
Pottenger: Pulmonary Tuberculosis.
Wolff-Eisner: Ophthalmic and Cutaneous Diagnosis of Tuberculosis.
Cornet: Miliary Tuberculosis.
Transactions International Congress on Tuberculosis.
Knopf: Essay on Tuberculosis.
Alburt's System of Medicine.
Nothnagel's Practice; volume on Tuberculosis.

Book Notices

A SYSTEM OF OPERATIVE SURGERY. By Various Authors. Edited by F. F. Burghard, M.S., F.R.C.S., Teacher of Operative Surgery in King's College, London. In Four Volumes. Vols. II and IV. Cloth. Price, per volume, \$10. New York: Oxford University Press, 1909.

The second volume of this system deals with operations for tuberculous affections of the bones and joints; with operations on the lips, face and jaws; with operations on the tongue, tonsils, pharynx and esophagus; and with operations on the stomach and intestines.

The chapter contributed by Stiles on operations for tuberculous affections of bones is well done. He deals with the indications for different types of operation and shows the value of the x-ray in all these conditions, indicating as it does the extent of the operation to be performed. The value of the chapter by Butlin on the surgical procedures on the tongue, tonsils and pharynx is due to the fact that personal experiences are related by a surgeon who undoubtedly has had more experience than any other with the lesions under discussion.

The chapters on the stomach are good, but the surgery of this organ has been discussed so much of late that little which is new can be added. Moynihan describes methods which are commonly employed by American surgeons, the efficacy of which are no longer doubted. It is interesting that he notes the frequency with which the beginning of the jejunum passes downward and to the right—an anatomic position apparently not noted by the majority of American surgeons. He favors a vertical position of the loop in making the anastomosis. It is pleasing to note that the following statement is made early in the paragraphs devoted to gastro-enterostomy. "Gastro-enterostomy must not be done for the relief of symptoms unless there is a demonstrable organic cause for them in the stomach or duodenum. Symptomatic gastro-enterostomy, if one may use the expression, cannot be too strongly condemned."

The chapters dealing with the operative surgery of the intestines are comprehensive. We are sorry the author has not seen fit to emphasize more strongly the advantages of early operation for appendicitis. He mentions certain signs and symptoms which speak for an operation, but fails to mention that in no other disease are the symptoms and signs so fallacious. The reduction of mortality following the early operation is the best indication of its efficacy.

The value of the imbrication operation in hernia is noted in the chapter devoted to this subject, but Andrews does not receive the credit for the introduction of this principle. The Andrews operation as it is generally employed throughout the middle West is certainly the most satisfactory one yet devised.

The fourth and last volume deals with operations on the female genitalia; with ophthalmic operations and operations on the ear; with operations on the larynx and trachea, nose and accessory sinuses. The chapter contributed by Bland-Sutton on operations on the female genital organs is good. The chapter by Hammar on operations on the larynx and trachea demands careful perusal.

This system of operative surgery supplies to the medical profession a long-felt need, as it combines a detailed account of the indications for surgical interference with a clear description of the method to be employed. The list of contributors is sufficient guarantee of the completeness and character of the system. The subjects are dealt with tersely and while, as in all systems, there are some chapters which do not reach the high standard set by others, it is much more evenly written than is generally the case.

A PRACTICAL TREATISE ON RECTAL DISEASES: THEIR DIAGNOSIS AND TREATMENT. By J. D. Albright, M.D. Cloth. Pp. 455, with illustrations. Price, \$4. Philadelphia: J. D. Albright, 1909.

The growing vogue of office or "ambulant" methods of treatment of rectal diseases is largely due to the improvement in technique of local and regional anesthesia, which makes possible the performance of slight operations without confining the patient to bed, or, what appears to be of more importance to-day, without keeping him from business. It would seem that the hitherto well-established belief that rest was beneficial to

patients after surgical operations must give way to the high pressure of modern life.

The author, after lamenting the lack of proper instruction of the medical profession in the matter of diagnosis and treatment of diseases of the rectum, makes roscate claims for the consideration of his specialty by the general practitioner as follows: "There is no specialty in medicine in which the material is so plentiful, the indications for treatment more clearly defined, the results more generally satisfactory, the patients more uniformly grateful and the certainty of proper remuneration more absolute. This, indeed, is the field for the specialist; restricted, yet extensive; exceptionally fertile and copiously fruitful." The commercial idea crops out again on page 170 where business ethics are rated higher than professional ethics. In his description of proctitis, periproctitis, hemorrhoids, pruritis ani and fissure, the author puts forth some startling pathologic views which will certainly need some scientific verification before being generally accepted by the profession. Proctitis and periproctitis as described by him constitute a condition of inflammation which is not confined to the surface of the rectal mucosa but involves the areolar and muscular coats and passes through them into the perirectal tissues. The mucous or seromucous exudate may be superficial enough, he says, to form pouches or sacs which are easily recognized during an examination. Deeper collections of this exudate, after a time, burrow in the direction of the least resistance and form channels in various directions and of considerable length. The irritating character of the exudate in the superficial sacs sets up increased cellular activity, cell proliferation, adventitious tissue formation and increased blood supply until, in due course of time, it becomes a perfectly organized body, known as an internal hemorrhoid. "Mucous exudation, occupying the space between the sphincter muscle and the anal integument, produces edematous thickening of the mucocutaneous folds, between the latter deep, tender and fragile crevices are formed, and, when sufficient dilatation of the anus occurs, it tears at its weakest point" and thus begins fissure. The idea of an acrid mucous exudate passing through the rectal walls and later increasing in quantity by secretion from the perirectal tissues is certainly novel but not proved.

Dr. Albright is an enthusiastic believer in the "official principle" and of it reverently speaks as "one who fully realizes that he has but sipped at the fountain which holds in its immeasurable depths the key to an untold and unanticipated wealth of experimental knowledge." The book is florid in style, frequently ungrammatical, but undoubtedly sets forth the author's methods for the ambulant treatment of diseases of the rectum.

MANUAL OF MILITARY HYGIENE for the Military Services of the United States. By Valery Havard, M.D., Colonel, Medical Corps, United States Army. Cloth. Pp. 481, with illustrations. Price, \$4. New York: William Wood & Co., 1909.

Colonel Havard has well rounded out a life spent in the service of his country, by giving to the military branch of the medical profession a valuable work on military hygiene, condensed and yet comprehensive. Probably no officer of the Medical Corps of the Army has had better opportunities for the study of this subject, and no one could have employed his opportunities to greater advantage. The best evidence of this fact is the volume itself. The dominant feature of the book is that it is practical and original. Authorities have been carefully studied and analyzed, hypotheses and generalities have been excluded and only facts retained; and these facts are presented concisely, in entertaining form, and in excellent English. Havard properly takes up first the question of mortality and morbidity in the military service, as the prevention of disease and death should be the first duty of the military officer. This subject he discusses fully, making use of statistics of various nations, analyzing and comparing them, and drawing valuable deductions. The sanitary service of armies is now universally conceded to be an essential part of their organization, of vital importance as it decreases the depletion of ranks from disease and increases the fighting strength to its utmost. To accomplish this result the cooperation of officers of the line and the soldiers themselves is most necessary, and he urges instruction in hygiene to this end. Not only in the army, but in the organized militia should this

work be carried on. Much space is given to the mosquito and this section is freely illustrated. Infections, parasitic and venereal diseases are briefly but succinctly considered. Next in logical sequence comes the question of the recruit, his selection, physical examination, and then the exercises which he takes, the march, and the various hygienic influences to which he is subjected. The subjects of water purification, food, rations, clothing and equipment, posts, barracks and quarters are thoroughly discussed; the questions of air, ventilation, heating and lighting are considered briefly and yet clearly. Under the heading of the disposal of excreta, garbage, and wastes, the author takes up the various incinerators and crematories which are at present in use and being exploited. He describes under the heading of camps, the various systems of tentage, winter quarters, portable hospitals, pavilions, and the formation of camps and field hospitals and their equipment. Under the conditions imposed on the United States by its recently acquired possessions, service in tropical climates and in the Arctic regions becomes necessary, and these matters are taken up in separate chapter headings by the author who discusses the class of recruits to be sent to hot and cold climates, the modification of dress, uniform, rations, etc., for this service. The closing chapter of the book is on naval and marine hygiene. Taken as a whole Colonel Havard's manual is a most readable book. Although it treats of subjects ordinarily considered uninteresting, he has made it not only valuable but also entertaining. We do not understand why the publishers should have found it necessary to print the entire book on heavy filled paper, thereby greatly increasing its weight, when light paper might as well have been used for the major portion.

PARENTHOOD AND RACE CULTURE: An Outline of Eugenics. By Caleb Williams Saleeby, M.D., Ch.B., F.Z.R., Edin., Fellow of the Royal Society of Edinburgh. Cloth. Pp. 389. Price, \$2.50, net. New York: Moffat Yard and Company, 1909.

Dr. Saleeby's book is dedicated to Francis Galton, whose spirit is omnipresent through the whole work. The first part is devoted to an explanation of the theory of eugenics; the second to the practice of the new science. The book is characterized by a spirit of optimism which is possible only to those who can succeed in persuading themselves that the human race needs only to be shown the right way in order to follow it. According to Dr. Saleeby, it would almost be sufficient to diffuse the knowledge of eugenics in order to stop the propagation of the weak, the feeble-minded and the otherwise unfit. To most students of human nature this assumption will seem unwarranted. Scientists have been preaching for years in vain against prejudices and instincts not nearly so deeply rooted as is the instinct of sex attraction and of procreation. One is inclined to believe that the gospel of eugenics so enthusiastically preached by Dr. Saleeby will reach only those of sensitive conscience and high ideals, while the morally unfit will remain callous to its appeal. The book is written in rather a polemic spirit, but there is much of value and interest in it. The controversy over the inheritance of acquired characteristics is fully discussed and the relation of alcoholism in the parent to degeneracy in the offspring is dealt with in the spirit of Fowl. Two chapters are devoted to the refutation of the generally held view as to the decadence of nations. Dr. Saleeby taking here also an optimistic stand.

MEDICAL GYNECOLOGY. By Samuel Wyllis Bandler, M.D., Fellow of the American Association of Obstetricians and Gynecologists. Second Edition. Cloth. Pp. 684, with illustrations. Price, \$5. Philadelphia: W. B. Saunders Co., 1909.

This book gives in detail many methods of non-surgical treatment. The hints on bacteriologic diagnosis are simplified and comprehensive. The description of palpation of the ureters without previous catheterization is rather misleading, and the author's routine treatment of abortion is hardly abreast with the latest views, while the indiscriminate recommendation of invading the uterus by packing and douches is not unattended with danger. In view of the late theories of involution, the generally accepted fact is that it is probably a chemical rather than a degenerative change, but this does not diminish the author's valuable suggestions on the prevention of subinvolution. The subjects of atmocausis, pelvic massage, abdominal supports, and local and general hydro-

therapy, with their indications, are handled with unusual ability. The positive statements in regard to electrotherapeutics, with definite indications, is convincing and demands the attention of those who are prejudiced against this method of therapeutics. The author's position on the latest views of cancer and fibroids of the uterus, and their radical removal on diagnosis compels respect for his views on other subjects.

PRIMER OF SANITATION. A Simple Work on Disease Germs and How to Fight Them. By John W. Ritchie, Professor of Biology, College of William and Mary, Virginia. Cloth. Pp. 196, with illustrations. Price, 50 cents. Yonkers-on-Hudson, New York: World Book Co., 1909.

The author states in the preface that before this book was published it was submitted in proof form to physicians and health officials representing every state in the union. This primer discusses in simple language suited for school children, the problems of hygiene and sanitation, describes the commoner diseases and the micro-organisms causing them, and goes briefly into methods of preventing contagion and infection. One chapter is given to the enumeration of the benefits of vaccination. The spread of contagion by flies is taken up and considerable space is devoted to the subject of disease germs in water and food. The importance of the education of the public in health matters and in the support of health officials in their work for the public health is emphasized. Each chapter concludes with a list of "Points to be Remembered" in which the most important facts are emphasized. The book is to be commended; it seems eminently suited for the use for which it was written.

SURGICAL DIAGNOSIS. By Edward Martin, M. D., Professor of Clinical Surgery in the University of Pennsylvania. Cloth. Pp. 737, with 445 engravings and 18 plates in colors and monochrome. Price, \$5.50. Philadelphia: Lea & Febiger, 1909.

This is a carefully prepared and satisfactory text-book of an advanced type and original character. Laboratory diagnosis is considered first, followed by chapters on the application of *x*-rays in surgical diagnosis, inflammation, complications and sequels of trauma and tumors. Then come the systems; skin, blood-vessels, lymph-vessels and glands, muscles, tendons and bursae, bones and joints and nervous system. Finally the body is taken up regionally, in the conventional order, starting with the head, face and neck, following with the different regions of the trunk, the extremities, and ending with the genitourinary organs and gynecologic diagnosis.

The illustrations form an important feature of the work and are chosen for their instructiveness rather than for artistic embellishment. They are well reproduced, with the exception of a few *x*-ray half-tones whose teaching is lost in their present indistinctness.

HANDBOOK OF DISEASES OF THE RECTUM. By Louis J. Hirschman, M. D., Detroit, Lecturer on Rectal Surgery and Clinical Professor of Proctology, Detroit College of Medicine. Cloth. Pp. 374, with 147 illustrations. Price, \$4. St. Louis: C. V. Mosby Medical Book Co., 1909.

Dr. Hirschman has fairly hit the mark in his aim to produce a working hand-book discussing only those conditions of rectal disease which are amenable to treatment in office practice. The whole book is eminently practical, being devoid of fanciful theory or dubious pathology. The chapters on symptoms and the examination of patients are specially worthy of commendation. The author has also given a chapter to the consideration of the limitations of office treatment and the indications for other measures. Dr. John L. Jelks has contributed a valuable essay on dysentery and Dr. George W. Wagner a chapter on the clinical examination of the feces. The work is well illustrated and thoroughly to the point, but is marred by clumsy construction of sentences and inefficient proofreading.

TEXT-BOOK OF MEDICAL AND PHARMACEUTICAL CHEMISTRY. By Elias H. Bartley, M.D., Professor of Chemistry, Toxicology, and Pediatrics in Long Island College Hospital. Pp. 734, with illustrations. Cloth. Price, \$3 net. Philadelphia: P. Blakiston's Son & Co., 1909.

This is practically identical with the sixth edition, except that some pages in the chapters on organic and physiologic chemistry have been rewritten—the more complete revision being made in the section on proteids. The nomenclature and the classification of the proteids have been changed to conform to the nomenclature recommended by the American Physiological Society and Society of Biological Chemists.

THE TRAINING OF CHILDREN FROM CRADLE TO SCHOOL. By Mrs. H. C. Cradock. Cloth. Pp. 91. Price, 60 cents. London: George Bell and Sons, 1909.

This book is intended for the guidance and help of young mothers and teachers, and deals with the training of children in a sane and practical way. The qualities necessary in a nurse are discussed, the physical needs of the child are dealt with, and the necessity for plenty of fresh air emphasized. Three chapters are given up to "Moral and Religious Training," and as the author states, there is much in these chapters with which many parents will disagree. All parents, however, might read this book with profit.

Society Proceedings

COMING MEETING

Medical Society of the Missonri Valley, Omaha, March 17-18.

MEDICAL SOCIETY OF THE STATE OF NEW YORK

One Hundred and Fourth Annual Meeting, held at Albany, Jan. 25-26, 1910

(Continued from page 558)

Anemia

DR. CHARLES O. BOSWELL, Rochester: In determining which class of anemia is present, all clinical facts that can be gathered together must be considered, and the patient's previous history and the results of physical examination are just as important as the examination of the blood itself. The type of anemia cannot always be positively differentiated from the blood picture alone. Chlorosis is the least common and fatal type; that it is becoming less common in this country is the opinion of many hematologists. In one of my cases the appearance of the disease followed an attack of tonsillitis, the most important point in the history being the gradual and definite onset in a previously well person nearing middle life. Keeping in mind the marked tendency to remission, the period of seeming recovery must not prejudice the diagnosis. I have one patient under observation whose red count has risen in six months from 1,215,000 to 2,750,000 cells; the hemoglobin varied from 50 per cent. to 70 per cent., so that the index at the last count was 1.1, as against 1.9 at first. About three years is the extreme limit of life in the case of pernicious anemia. As opposed to chlorosis, it is known that pernicious anemia has a fairly definite pathology.

DISCUSSION

DR. EGBERT LEFEVRE, New York: There is a type of pernicious anemia that goes through the stages of secondary anemia, where it passes into the pernicious type, with an ideal blood picture. I recall one patient who came into the hospital, after having gone to other hospitals, with a diagnosis of progressive pernicious anemia. There were certain features about this case of the idiopathic type. Search of the stools, at first, failed to give any light, but remembering that sometimes these cases occur from absorption from the intestinal canal, which is developed through the death and decomposition of the *Bothriocephalus latus*, a search was made for the ova of this worm. This failed at the time, but I introduced into the intestinal canal large doses of binoxid of magnesia, five grains, four times a day, and within two weeks the blood picture changed completely, passing to the secondary anemic type, followed by recovery.

Six months later a man, a private patient, who had traveled extensively, came from abroad with a diagnosis of pernicious anemia; he came home to die. He gave an indefinite history of intestinal irritation, but the symptoms suggested a parasitic condition. Having the other case in mind, I put this man on a similar plan of treatment and had the same reaction, so that in a short time he passed from the pernicious to the simple type of anemia, and recovered.

DR. ABRAHAM JACOBI, New York City: For a long time I prescribed arsenic and iron in these cases, but not the binoxid of magnesia. The proportion of cases of pernicious anemia from chlorosis cannot be determined by the hospital physician.

The remarks of the author of the paper as to the infrequency of chlorosis and pernicious anemia are based on hospital experience. General practitioners see these cases in their offices rather frequently, so that chlorosis is by no means so rare as one would conclude from the remarks of the author of the paper. Patients with chlorosis, as a rule, are not admitted to hospitals, and the hospital physician does not see them. Individuals with pernicious anemia, however, must find refuge in hospitals. The number of cases of pernicious anemia has not been over-estimated when contrasted with chlorosis. There are some cases of chlorosis which will resist all attempts of treatment.

The United States Pharmacopeia: Its Present Status and the Coming Revision

DR. ELI H. LONG, Buffalo: With the last revision the standard character of the book was enhanced in a practical way by including the average dose of each drug and preparation for internal use. The trend of therapeutics along new lines was recognized in the introduction of antidiphtheritic serum and desiccated thyroid and suprarenal glands. These additions indicate that the work of the revisers went just so far in the introduction of new features as the status of our knowledge and experience, tempered by wise conservatism, would permit. In the interest of a simplified materia medica it is important that in the next revision all drugs that are nearly obsolete and those of slight medicinal value should be eliminated. With each past revision, numerous articles have been discarded and others admitted, but too many inferior drugs have been retained. At present, elimination is needed more than addition, though a number of new remedies of approved value should be admitted. In addition to valueless drugs, a number of preparations and unimportant salts can be dispensed with. The list suggested by the committee of the Section on Practice of Medicine of the American Medical Association indicates about what can be properly done in the way of elimination. The practical value of the Pharmacopeia to practitioner and student would further be increased if incompatibles could be mentioned in connection with each substance and preparation. To the same end the chemical tests of substances might possibly be diminished.

Elements of Prognosis in Valvular Diseases of the Heart

DR. R. ABRAHAM, New York: Young people of from twenty to thirty years of age, in whom arterial changes antedate the development of valvular diseases offer a poor prognosis. Young people of from twenty to thirty with valvular disease, who show subsequently arterial changes, are as bad. Patients of this class are greatly on the increase. Young people with valvular disease, but with no sign of arterial changes, can count on a good prognosis. Middle-aged people, those from 30 to 50, with valvular disease will stand well the hardening process of the arteries so long as the vascular apparatus of the kidneys remains unaffected. The prognosis becomes more and more unfavorable in proportion to the changes in the renal blood vessels. People beyond 60 rarely acquire valvular disease through the medium of infection. Their valvular defects are preceded and caused by atheroma. The prognosis in this class of subjects is rather good. I have seen more middle-aged people die of valvular lesions than old people. I have seen many men and women whose age exceeded by ten or twenty the biblical allotment of three score years and ten living comfortably with all sorts of heart murmurs, which, in young and middle-aged people would mean death in a short time.

Articular rheumatism is justly regarded as the nemesis of valvular disease of the heart in the young as well as in the more advanced in years. Influenza is responsible for valvular disease of the heart. Of the common infectious diseases, typhoid fever and diphtheria are factors to be reckoned with in the cause of valvular disease and because of their known tendency to undermine the heart mostly they constitute no mean element in prognosis. Measles and scarlet fever occasionally produce defects of the valves. Pulmonary tuberculosis with its baneful effects must be regarded as a serious element in the prognosis of valvular disease. Emphysema of

the lungs ranks high as an element in the prognosis. Kidney disease, pericarditis, gall-bladder disease and metabolic perversions should be considered in their relation to prognosis. Angina pectoris is a most formidable factor in the prognosis of disease of the valves. I have seen six or seven cases of congenital stenosis of the pulmonary valves. The oldest patient died at the age of 24. One of 20 recently developed tuberculosis and will soon die. The prognosis in this congenital affection is influenced by any extraneous conditions. Correct diagnosis is important as it is the key to the prognosis and treatment.

Dilatation of the Heart

DR. WESLEY T. MULLIGAN, Rochester: The treatment should be preventive. Patients should be taught proper methods of living, and when taken ill, the heart should be examined carefully and often enough to keep one acquainted with its exact condition. The patient should not be allowed to get up from a sickness too rapidly. This cannot be too strongly urged, as no matter how much the physician insists on care, patients will forge ahead too fast for their own good. I find that absolute rest for a period, in young persons, with a little heroin, strychnin and digitalis, one or all, or even none of them, is followed by excellent results. The absolute rest should be kept up according to the condition of the heart. When the heart gets back to its normal size, or nearly so, the patient may begin gradually to get around and exercise. When there is dropsy the old formula of squills, digitalis and calomel is often called into requisition for a time with great benefit, and elastic bandages often give relief to the swollen legs. The abdominal or thoracic cavities sometimes need tapping.

Discussion on Heart Lesions

DR. ALLEN A. JONES, Buffalo: Dr. Abrahams referred to anemia as being an important factor in forecasting the prognosis in valvular disease of the heart, and this is particularly important in patients who are advanced in years. When we find cases of atheroma of the aorta and aortic insufficiency, with possibly a double murmur at the aortic valve, systolic as well as diastolic, with vascular disease and a dilated and hypertrophied left ventricle, or possibly the whole heart associated with a severe grade of anemia, the prognosis is rendered much more serious than is the case with the anemia that so frequently attends valvular disease in younger people. I recall a young woman who came to me seven years ago with mitral disease, with severe chlorotic anemia, with dilated heart, leaking badly at the mitral valve, and the heart action very irregular. The girl was weak and tremulous, but in good flesh, and under rest and iron and appropriate treatment otherwise she improved greatly. In later years she came to me with typical symptoms of hyperthyroidism. She had the tripod—the enlarged thyroid, somewhat prominent eyes, but not markedly so, and tachycardia. At that time her heart had pulled together considerably, although it was large. A mitral murmur was heard. She was anemic again, and that was about two years ago. Recently she returned, having lost all the symptoms of exophthalmic goiter, and presenting herself with a heart in astonishingly good condition. The left border was slightly outside the nipple line. A mitral murmur could be heard only very moderately. The pulse was normal in frequency, and regular, and she was complaining of symptoms entirely remote and different from those she had formerly complained of. Anemia in this case, then, was not a bad prognostic omen. A patient with mitral insufficiency may be carried along for a long time without any serious results apparently. We must consider not only the dilated heart muscle, but the hypertrophy and the ability of that muscle to retain its power of stretching. Under normal conditions the heart muscle is called on to stretch very frequently far beyond the ordinary demand of stretching that is made on it, and as soon as that ability to compensate itself, to increase the intraventricular capacity, is interfered with by myocarditis, or degenerative changes, that heart is never again so good; and this may be the initiation of a condition which finally develops into serious cardiac insufficiency.

(To be continued)

HOOKWORM CONFERENCE

First Southern Health Conference, held in Atlanta, Ga., Jan. 18-19, 1910

(Concluded from page 560)

Difficulties in Diagnosis of Mild Hookworm Infection

DR. C. C. BASS, New Orleans: In well-marked hookworm infection the clinical evidence, blood findings and history of the patient are usually sufficient to direct an observer familiar with the disease, to a correct diagnosis. A simple examination of the feces in such cases settles the diagnosis. When it is appreciated that the number of worms necessary to produce death quickly is usually above 3,000, and when the many circumstances influencing infection are considered, we must recognize that a patient may harbor anywhere from one to several thousand of these parasites; and that in a section of country where a few cases of severe infection exist, there may also be many individuals with only a few worms. A report of Chamberlain on the subject deserves special mention. He found 44 per cent. of 147 soldiers infected. Most of them were Southern-bred men and showed little or no evidence of the disease that could be made out. Recently, 56 students in Tulane Medical College were examined and 21, or 38 per cent., were found infected. In several instances the infected ones appeared as healthy as many of those not infected. It would have been impossible to pick out from appearance the infected men. Careful weighing and measuring showed that the infected averaged 142 pounds; the uninfected 150½ pounds. The infected averaged 5.58 feet in height, the uninfected 5.77 feet. Not only did appearance fail to reveal the presence of anemia in the infected students, but estimation of the hemoglobin of each by five or more men showed an average of 90 per cent. for the infected. All denied having had ground-itch within 7 years and a few of the infected claimed never to have seen it. A differential leucocyte count which usually suggests the possibility of uncinariasis in well-marked cases by an increased eosinophile count fails also to aid in diagnosing the mild cases. Of the 21 cases referred to, a differential leucocyte count of 2,500 cells in each showed only 7 with over 5 per cent. eosinophiles. Of the 35 uninfected individuals 4 had over 5 per cent. eosinophiles. The average of each set was 21 infected 6.3 per cent.; 35 uninfected, 3 per cent.

Examination of the feces for eggs, the finding of which readily makes the diagnosis in all severe cases, fails to locate many of the mild cases if the technic ordinarily followed is practiced. Usually from one to six slides are more or less completely examined, and if no eggs are found the specimen is considered negative. Besides those of which no account was kept, I have record of 496 specimens found negative, 114, or 23 per cent., of which contained eggs that were found on examining centrifuged specimens. In the 21 student cases referred to, 14 per cent. of the cases were missed after several slides of each specimen had been examined by each of 5 different men. After an average of 20 or 25 slides of each were examined, 14 per cent. of the cases were unrecognized until specimens were centrifuged. In another set of 43 specimens from medical students examined by Dr. Gage, who has kindly furnished me these figures, eggs were found in only one specimen with the ordinary technic, but after centrifuging 6 more were found. Of these 43 students, 16 per cent. were infected, and only one case was diagnosed by the ordinary feces examination.

In examining feces for hookworm eggs, the feces are diluted 10 or more times with water centrifuged in an electric centrifuge running at high speed, from 2,500 to 3,500 revolutions a minute, for 6 or 8 seconds. The supernatant fluid is poured off and the sediment shaken with water and centrifuged again just long enough to throw all eggs to the bottom, usually two seconds. This must be determined by trying out the centrifuge on a known specimen. The supernatant fluid is poured off and the process repeated another time or two until the washing gets rid of little or no more debris. The sediment is taken out with a pipette and examined carefully for eggs. Considerable material that cannot be removed with water can be removed with a solution of calcium chlorid having a specific gravity of 1.050. If still better results are desired, it is well to give a purgative followed by milk diet for a day or two. The

feces will not contain usually anything that cannot be removed with the calcium chlorid solution. It is necessary to examine large amounts of feces, using the centrifuge if only a few eggs are present. The presence of male worms or females too old to lay would not be diagnosed even after the most careful feces examination. The fact that the males are less numerous than females in autopsy-collected lots of worms indicates that they probably do not live longer than the females and absence of eggs would indicate their absence also. Whether uncinaria live and continue to menace the patient long after they cease to lay eggs may have an important clinical bearing on the subject, for if they do an explanation would be offered of the cases in which patients fail to regain normal health and blood after treatment or removal from a source of infection. Recently, I dissected a collection of 247 female *Uncinaria americana* and found that 18, or 7 per cent., of the adult worms contained no eggs. Egg-laying animals higher in the scale lay few or no eggs in the last third of their lives, and it is probable that the same thing applies to some extent at least to these worms. Other observers should study available specimens with this point in view and report their observations.

Hookworm in Alabama

DR. H. G. PERRY, Greensboro, Ala.: In more than 100 cases of uncinariasis of which I have records, there is only one mulatto, and not a single pure-blooded negro. All of these cases occurred among those living on sandy soil. The county in which I live is about equally divided into sandy lands and prairies. The population is 31,000; 6,000 are whites, 90 per cent. living on the sandy soil. Of the 25,000 negroes, 90 per cent. live in the prairies. Not one of my cases has come from the prairies. It is my opinion that from 15 to 20 per cent. of the white rural population of my county (Hale) are affected with the disease. Many obscure chronic diseases can be traced to this cause. Many of those affected feel the effects for life. Many, no doubt, under changed hygienic conditions make partial recovery without treatment. However, many more either die or become mentally and physically defective for life. So long as one is in fair health he may withstand a certain degree of infection. As soon, however, as he becomes debilitated by intercurrent disease the hookworm infection becomes apparent.

In order to draw conclusions I have tabulated 100 cases from my records. Of these cases all were whites: 80 males, 20 females. Ages ranged from 4 to 39 years, with average of 16. The hemoglobin was 10 per cent. in lowest, 90 per cent. in the highest, with an average of 40 per cent. Ground-itch was in 75 histories, and doubtful in 25. (However, I believe all had had it.) Heart murmurs were found in 45 cases; "bruite de diable" in 7. Anasarca was present in 15 per cent. Microscopic examination of feces showed eggs of uncinaria in all these cases. Seldom was any other parasite found. After treatment, all symptoms were gradually eliminated. Average increase in weight was 15 per cent. Increase in hemoglobin averaged 40 per cent. Average time of treatment was 3½ months. I always advise continuing treatment till repeated examinations show eggs to be absent from feces, and I have the records of one case in which treatment was continued weekly for a year before a final cure was effected. In another case, treatment has been given at intervals for 5 years, with positive results. In this case there has been entire change in surroundings, and no opportunity of reinfection. In fact, the patient is a trained nurse, and lives in an infirmary. This patient was well advanced in years before treatment was undertaken. It has been my observation that it is much harder to relieve a patient as the age increases. In all patients under 20 years of age, I have noted a marked non-development in height, weight and intellect. In my series no symptoms of pellagra occurred. However, I think it very probable that a person who is weakened by hookworm would be susceptible to pellagra or any other wasting disease.

Young persons respond to treatment much more readily than older individuals, hence the necessity of early diagnosis and treatment; 85 per cent. of my patients were cured, and the others were greatly benefited, and doubtless would have been completely relieved had treatment been persisted in. Improvement can be easily demonstrated by the passage of the worms,

by the certain, gradual rise in the hemoglobin, and by an increase in weight. My treatment is as follows: No supper, a dose of salts at bedtime, no breakfast, from 10 to 40 grains of thymol at 7 a. m., repeated at 9 a. m. Another dose of salts is given at 11 a. m. The feces are strained through thin cloth or sieve to find the worms. This treatment should be repeated two or three times for the first week, unless it weakens patient. In that event, it is repeated once a week. On days when thymol is not being given, some form of iron should be administered. Intercurrent disease or symptoms should have appropriate treatment. No other patients experience more marked relief, as a rule, no others are more grateful.

Preservation of Man

DR. R. M. CUNNINGHAM, Birmingham, Ala., said that the subject of uncinariasis is one of interest to all classes of society and discusses the exciting and predisposing causes of the disease. Inherited predispositions are racial, national, and family. Acquired or accidental causes are environment, climate, altitude, moisture of the air, soil, season, etc., as well as sanitation, hygiene and occupation. Much can be done by society as a whole in modifying the environment of man which predisposes to disease. Much can be done in prevention of disease. Just as the problem of ethics enters when men are related in business or socially, so enters the problem of sanitation in prevention of disease in the community. The most important part is to be played by the medical profession. Physicians are the investigators, the discoverers. No school of scientists, no organization of men is doing more for the human race than is the medical profession.

Biology of the Hookworm

DR. C. W. STILES, Washington, D. C.: It is a general rule in biology that the more closely species of animals are allied the greater the competition, and the greater the amount of trouble. The competition of the individual is extended to the competition of the race. The trouble may be of various kinds. One kind is medico-biologic in its nature. One race will have certain diseases and will transmit them to the other races. In this country we are dealing with four races—the white, black, red and yellow, living in harmony side by side. It is an unnatural condition of affairs. It is a biologic paradox. In 8 of our states we have 833,000 negroes to the whites, and taking the 15 negro states, so to say, 34.34 per cent. of the population is of African origin. The white man has brought to this region certain diseases from Europe, and the black man has brought here certain diseases from Africa. The white man has transmitted his diseases to the negro and the negro has transmitted his diseases to the white.

With reference to soil pollution, during my investigations I have examined something like 20,000 toilet closets, and I want to say that this is a fair representation of the average sanitary conditions to be found on the farms, soil pollution occurring all around, spread by the chickens and the hogs. Over 68 per cent. of the farm houses I have tabulated for North Carolina, South Carolina, Georgia and Alabama, have no toilet of any kind whatsoever. Is it any wonder that we have a high typhoid death-rate, and widespread hookworm disease? Of the negro farms, 79.8 per cent. so far as I have tabulated them, have no toilet, and of the white farm houses, about 46 per cent. have no toilet. These figures may seem astounding. What is the solution of this problem? The institution of the sanitary toilet, with the tub system, and a fluid disinfectant. That will cut the typhoid death-rate of the South in two. It will almost eradicate hookworm disease. It will almost eradicate cochin-china diarrhea, amebic dysentery, and various other intestinal infections.

General Discussion

DR. E. H. MARTIN, Hot Springs, Ark.: What is the exact clinical picture of ground-itch? On the farms there are many cases of different forms of itch among small boys, and it would be interesting to know whether it occurs mostly on the dorsum of the foot, or whether it is an ulceration or a dermatitis.

DR. STILES: So far as I have seen, ground-itch at present covers a multitude of sins. I do not believe that what we call ground-itch in the South to-day is a single entity. So far as

I am aware, no dermatologist has studied the condition thoroughly as yet, and I would rather have a dermatologist study it and analyze it for me, as I am not competent to analyze ground-itch myself.

DR. F. W. SCHNAUSS, Cecil, Ga.: Pellagra has been mentioned in connection with hookworm disease. I have had four cases of pellagra, but I do not think that disease has anything to do with uncinariasis.

DR. STILES: There is as yet no positive evidence as to the possibility for self-reinfection. Some experiments on that line are being contemplated at present. I would not say it is impossible.

DR. B. B. BAGBY, West Point, Va.: I believe that we have as many cases of hookworm disease in Virginia as there are in Georgia. In examining the stools of patients in my district, I do not hesitate to say that fully 80 per cent. of the people who work in the cotton mills in Virginia are infected with hookworm. The class of people we have to treat are peculiar, in that they do not realize they have hookworm. Even when they find out they have it, they do not want to be treated; and some of the more aristocratic people, when told that they have hookworm disease feel insulted. In almost every case of old-fashioned foot-itch I have found hookworms in the intestines.

DR. JERE L. CROOK, Jackson, Tenn.: Many practitioners have not the facilities for making microscopic examinations of the feces to see whether patients are suffering from hookworm disease or not. In many of our towns we have not either a skilled pathologist or a microscopist, and if we wait for the medical profession to equip themselves with microscopes we will delay carrying out the objects for which this conference is called. I would like to ask Dr. Stiles whether it is justifiable in the present light of our knowledge to make an experimental diagnosis and administer thymol on a tentative diagnosis, or whether we must have the microscopic findings before doing so.

DR. STILES: Any physician in the South can forward fecal material to the State Board of Health, or to me at Washington, and it will be examined free of charge, and the physician informed of the results of the examination by return mail. If, for any reason, a microscopic examination is not feasible or not practicable, I, personally, would not hesitate to give experimentally, thymol treatment unless it was contraindicated by the patient's condition. Of course, I would not give it in a case of pregnancy, or in a patient with severe cardiac symptoms. But physicians must not forget that they can have the diagnosis made for them.

DR. CLAUDE A. SMITH, Atlanta, Ga.: When it was my fortune in 1901 to discover the first case of hookworm disease which we had in Georgia, I did not realize the extent of the malady. I immediately began an investigation and through the assistance of Dr. Green I examined twenty convicts, who worked in clay, and we found two additional cases. In the first case, occurring in a mulatto, an autopsy was held. In the two additional cases the infection was mild. I began to investigate the mode of infection, and became convinced that it was through the skin. This was confirmed clinically by many cases. From one man I recovered 1,300 parasites. I demonstrated repeatedly that the disease was contracted by the parasite passing through the skin. Since then my investigations have convinced me more thoroughly than ever that it is the principal mode of infection. In regard to separating the eggs, I found in early investigations that this could be done by centrifugalizing the specimens. While the work of Dr. Bass is very thorough and to be commended, for practical purposes I find that centrifugalization of the specimen is all that is necessary in mild cases.

DR. A. G. FORT, Lumpkin, Ga.: In treatment of hookworm, thymol is the standby; but betanaphthol takes the place of thymol splendidly, and can be given in powder form, while patients do not object to it as they sometimes do to thymol. There is a preparation mentioned in Manson's "Tropical Medicine" containing chloroform, oil of eucalyptus, and castor oil, which I have used a number of times with satisfaction in children, and in those with heart lesions. I find that patients with hookworm disease progress just as favorably without tonics as with them.

DR. EDWARD E. LINDEMAN, Tampa, Fla.: Recently there were sent to the State Board of Health of Florida several specimens of what appeared to be calculi accompanying the pathologic condition of uricaria; but on microscopic examination of the crystals and chemical analysis they proved to be solid masses of thymol. It is evident that thymol will pass through the intestinal tract at times in a solid mass, and therefore, thymol in a solid mass has no therapeutic value. The manner in which thymol acts prompted me to look into the matter a little to see in what form thymol may be administered to the best advantage. It seems that the drug acts on the parasite by the crystals in a fine condition coming in contact with it. Thymol in solution has little or no therapeutic value, although thymol in a finely suspended state has. It is desirable, therefore, that the thymol be given in a finely powdered state, so that it will become widely disseminated and the crystals come in contact with the worms.

Formation of Permanent Organization

A permanent organization was formed and is to be known as "Southern Health Conference."

The following officers were elected: President, Dr. H. F. Harris, Atlanta, Ga.; secretary, Mr. W. G. Cooper, Atlanta, Ga.; vice-presidents—Alabama, Dr. H. G. Perry, Greensboro; Florida, Dr. Hiram Byrd, Jacksonville; Georgia, Mr. Wilmer L. Moore, Atlanta; Kentucky, Dr. J. B. Marvin, Louisville; Tennessee, Dr. J. A. Albright, Nashville; Virginia, Dr. E. G. Williams, Richmond; North Carolina, Dr. R. H. Lewis, Raleigh; Mississippi, Dr. S. H. McLean, Jackson; Arkansas, Dr. E. H. Martin, Hot Springs; South Carolina, Dr. Wm. Weston, Columbia; Texas, Dr. W. M. Brumby, Austin; Louisiana, Dr. George Dock, New Orleans; District of Columbia, Dr. W. C. Woodward, Washington; Oklahoma, Dr. J. L. Shuler, Durant; United States Army, Major B. D. Taylor, Atlanta; United States Navy, Passed Assistant Surgeon J. H. White, Washington; Hawaii, Dr. W. D. Baldwin, Honolulu.

Vital Statistics

The following resolution was adopted:

WHEREAS, It is exceedingly difficult to get accurate information concerning health conditions in the South, except in a few localities; therefore, be it

Resolved: That the executive committee, the president and vice-president and the board of councillors for each state are requested to bring to the attention of all state and municipal legislatures the urgent need for providing some efficient measure for the uniform collection of vital statistics, such as the bill that has been approved by the American Medical Association, and the United States Government.

National Bureau of Health

The following resolutions were adopted:

Resolved: That this conference memorialize Congress and the President of the United States on the subject of a National Bureau of Public Health, and that a special committee be appointed to present this matter at Washington. Be it further

Resolved: That members of the conference in their respective communities, and the vice-president and the board of councillors in each state are requested to use their influence with the members of Congress for the establishment of such a department.

Vote of Thanks to Mr. Rockefeller

DR. W. F. WESTMORELAND, Atlanta, offered the following resolution, which was adopted:

Resolved: That the Southern Health Conference by a rising vote extends to Mr. Rockefeller its sincere thanks and high appreciation of his munificent and humanitarian gift to our people to aid them in the arrest and cure of hookworm disease.

PHILADELPHIA COUNTY MEDICAL SOCIETY

Regular Meeting, held Dec. 8, 1909

The President, DR. FREDERICK P. HENRY, in the Chair

Lithium Waters as Therapeutic Agents

DR. HENRY LEFFMANN: Lithium salts have been therapeutic fetishes for nearly half a century. The emotional enters so largely into the impulses of most persons that it is not improbable that the adaptation of lithia for the treatment of lithiasis was given greater plausibility to many on account of

the similarity in terms. The doctrine of "signatures" contains many quite as strange inferences. I am old enough to recall the earlier years of the effect of Garrod's book. At that time uric acid was a pathologic Frankenstein monster, and the promise of anything that would keep it and its salts in solution was, of course, hailed with delight. As soon as Garrod's views took hold of the profession the methods of administering the lithium salts were canvassed with much vigor. The exploitation of "lithia waters" became a feature of commercial therapeutics. The term is not scientifically accurate. Lithia is, strictly, lithium monoxid, which cannot be present in a natural water, but the expression is well-established and does not seriously mislead. Waters containing but minute amounts of lithium have become established in commerce as "lithia waters." On the result of an analysis of about two score of the so-called mineral waters the Bureau of Chemistry of the Department of Agriculture has recently issued a circular of inquiry the essential features of which I give herewith. It has been found that nearly all "lithia waters" either contain only spectroscopic traces of lithium (unweighable quantities in 2 to 4 liters), or contain less than one part per million (approximately 0.05 grain per gallon) of lithium. All the analyses of the U. S. chemists give the lithium in the form of chlorid which is not likely to have solvent action. If it acts as a diuretic—which is not impossible, it will be largely as an irritant to the secreting tract and the same result could probably be accomplished by increasing slightly the ingestion of common salt. It must not be overlooked, however, that the methods of water analysis rarely enable the chemist to state positively the association of the different ingredients—the so-called ions—and in a report giving such ingredients as lithium chlorid, sodium sulphate and magnesium carbonate as existing in a sample, the data of the laboratory-book will correspond just as well to the arrangement, lithium carbonate, sodium chlorid and magnesium sulphate, or any of the other permutations that can be made of the negative and positive ions respectively. It is true that other tests of the sample, *e. g.*, taste, and behavior on boiling, may suggest special combinations, but in complex waters, as are most of those here considered, the arrangement will be inferential, and the government chemists have, therefore, given the statements as hypothetical form of combination. If their arrangement is accepted, no lithia water, in the sense in which Garrod and his followers have used the term, is offered for sale in this country.

Another important point is that almost all waters rich in lithium salts are so rich in other mineral ingredients that they are not suitable for a regimen. Any attempt to use a water containing an infinitesimal amount of lithium would be on the same basis as the administration of cod-liver oil for the minute amount of iodine in it. Another and even more serious objection is that some waters contain notable amounts of barium salts. Barium compounds are distinctly poisonous. Recent analyses by the Bureau of Chemistry in a special investigation have shown that barium compounds contained in plants have been the cause of serious poisoning of stock on some of the western feeding grounds.

The conclusion of the matter seems to be that it is doubtful if even lithium carbonate is of any real value in the treatment of uric acid lithiasis, and if so, it cannot be introduced by the use of the commercial lithia waters. The only way in which to get the proper dosage is to use the pure salt in tablet form or (probably the best method in practice) to prescribe the liberal use of a distilled water containing definite amounts of pure lithium carbonate. Excellent distilled waters can now be obtained at moderate cost and druggists can easily dissolve a small amount, say five grains, of the pure lithium carbonate in a gallon and the water can be used as desired in place of ordinary drinking water.

The time is now at hand to overthrow the "lithia water" fetish, the only use of which is to extract annually many thousands of dollars from the pockets of real and imaginary sufferers in this country.

Therapy by Bacterins and Tuberculins in Mixed Suppurative Bone and Joint Disease

DR. B. A. THOMAS read this paper. Similar articles by the same author appeared in *THE JOURNAL*, Jan. 22 and 29, 1910, pages 258 and 362.

Malignant Disease of the Sacrum Simulating Sciatica

DR. ALFRED GORDON read this paper, which will appear in full in *THE JOURNAL*.

WESTERN SURGICAL AND GYNECOLOGICAL ASSOCIATION

Nineteenth Annual Meeting, held at Omaha, Dec. 20-21, 1909
(Concluded from page 561)

Scopolamin-Morphin Preliminary to General Anesthesia; A Report Based on 1,100 Cases

DR. CLIFFORD U. COLLINS, Peoria, Ill., read this paper, which will appear in full in *THE JOURNAL*.

Progress in Surgery of Renal Calculi

DR. DANIEL N. EISENDRATH, Chicago: Much of the progress in surgery of the kidney in recent years is due to the improvement in operative technic, as well as to the ability to secure better skiagraphs of the kidney and ureter. Few surgeons are willing to operate for suspected renal calculus, unless the skiagraph shows a shadow indicative of such a calculus. Every picture should include both ureters and both kidneys, since one is likely to overlook the presence of calculi in both kidneys, unless both sides are taken. A long twelfth rib may hide a calculus lying behind it. Calculi lying at the pelvic orifice of the ureter have a peculiar nipple-like downward and inward projection, which is very characteristic. Stones in the parenchyma of the kidney usually give round and small shadows. The stones which lie in hydronephrotic cavities, or in the dilated calices, are large and oval. Some calculi have a coral-like structure, indicating marked dilation of the calices. A shadow scattered over a considerable area usually means destruction of the kidney. If the shadows are at a level below that of the normal kidney, one can exclude ureteral calculi. The best way to prepare a patient for a radiograph is to resort to thorough catharsis and liquid diet eighteen hours before taking the picture. The shadows which are to be excluded are those due to tumors or dilated calices, scybala, calcified glands or centers of ossification in the costal cartilages and tuberculous foci in the kidney. From many cases of my own and of others I find that bilateral calculi occur in 30 per cent. of the cases. Anuria is a frequent complication of bilateral calculi.

I recently made investigations in regard to the presence of accessory renal arteries. It is necessary to know the presence of such multiple arteries in connection with all operations on the kidney, especially nephrotomy and nephrectomy, since severe and perhaps fatal postoperative hemorrhage may occur through such an oversight. Attention is also directed to the variation in the types of renal pelvis. One is accustomed to think of only one type of pelvis in which the pyramids of the kidney open into a large sac. This ampullar type only occurred in about 30 per cent. of cases. In the remaining 70 per cent. the pelvis divided either outside of or soon after entering the kidney into two or three large primary calices, from each of which a number of secondary calices arose. In regard to the best method of removal of calculi from the kidney, if the radiograph shows a single stone at the outlet of the pelvis, and the surgeon is certain that this is the only calculus present, the best method of removal is through an incision into the posterior surface of the pelvis where there are very few vessels, and the extraction of the calculus under these circumstances can be readily done. If, however, there are a number of shadows scattered over the kidney area or one large calculus, it is best to remove it through a nephrotomy incision.

DISCUSSION

DR. M. L. HARRIS, Chicago: The need of knowing the condition of both kidneys is important. The frequency of bilateral kidney stones is little recognized by most physicians and

only by very few surgeons, unfortunately because the frequency with which some accident happens to the patient after the removal of the first kidney is very great. It is impossible to determine the existence of bilateral kidney stone by the symptoms, as frequently the symptoms are limited to one side for at least a long time, and by depending entirely on the symptoms one is led to operate on that side and neglect to examine the opposite side. This was forcibly illustrated to me recently. A patient came to me with a history of renal stone, with repeated attacks of renal colic in the left side, and I sent him to the hospital for the purpose of examining the two kidneys by catheterization. We set an appointment two days ahead. On the morning on which I was expected to make the examination he got to the hospital before I did and was seized with an attack of acute renal colic on the right side. Up to that time he had no symptoms whatever of involvement of the right kidney, yet on the eve practically of doing something for left-sided trouble he suddenly manifested evidence of involvement of the opposite kidney. After he had passed over the colic I catheterized both sides and found both kidneys involved. This case shows that we should invariably examine both kidneys, not only by x-ray but by separating the urine from each kidney in every patient with kidney trouble on whom we expect to operate.

DR. LEONARD FREEMAN, Denver: I should like to speak of one embarrassing complication in operating on kidneys for stone, and that is secondary hemorrhage. It is an extremely unfortunate thing to have operated on a kidney and successfully removed a stone and have the patient go on in the best of condition for a week or ten days and then begin to have a little blood in the urine, a little more the next day, and still more the next day. Such hemorrhages are not infrequently fatal. The only thing to be done under these circumstances is to remove the kidney, and the sooner that is done in the presence of secondary hemorrhages the better it is for the patient. That, again, illustrates Dr. Harris' statement that it is absolutely necessary to know, before we extract a stone from one kidney, whether the patient has another kidney or not, and whether that kidney is doing its duty, because in the face of a severe secondary hemorrhage of this kind it is impossible sometimes to find out the condition of the second kidney. I have had this happen to me twice. Once on the seventh day a hemorrhage began as a slight hemorrhage and the following day a severe one which almost killed the patient; and in the second case the hemorrhage began on the ninth or tenth day, and a very severe hemorrhage did not manifest itself until the twelfth or thirteenth day. In each case I did nephrectomy under desperate circumstances, using salt solution and adrenalin in the vein to resuscitate the patient, and had the satisfaction of seeing these two patients recover. But it was a very close call in each case.

DR. ARTHUR C. STOKES, Omaha: I had a patient with stone in the kidney in whom there were almost no symptoms. Preceding the operation for removal of the kidney the patient was operated on, a diagnosis having been made of floating kidney. An incision was made going straight through the muscles of the back, and in the attempt to tie the kidney up to the back a lot of pus was found. The surgeon was not prepared to remove the kidney. The patient subsequently came under my care and the kidney was removed. This patient had practically no symptoms, yet the kidney was almost entirely destroyed. The parenchyma was almost entirely gone, leaving only fibrous tissue here and there. On the removal of the kidney about a quart of pus came out of its pelvis and around the kidney. The kidney pelvis was practically destroyed. I wish to emphasize the great care that should be taken in the diagnosis of renal stone. There is no symptom or set of symptoms pathognomonic of kidney stone. It has happened to me several times to have made an absolute diagnosis of stone in the kidney, and yet on opening in there no stone was found. That is embarrassing. Now that we have the use of the x-ray in kidney stone work we are able to differentiate a stone in the kidney from pyonephrosis, pyelonephrosis, and so forth.

DR. CHARLES H. MAYO, Rochester, Minn.: There is no major operation which is undertaken with less working out of details than operative procedures on the kidney. Many times we will

see very good surgeons undertake an operation on the kidney just because there is a tumor, when it would only take a little more time to determine the functional capacity of both kidneys and see if any emergency exists. When one becomes advanced in kidney work he feels that he must determine the functional capacity of each kidney, and feeling, above all things, that in some instances he must preserve the kidney after removing the stone. Anomalous blood vessels are encountered in kidney work. These are not uncommon, although it is only lately that we have realized that they are present.

DR. A. W. ABBOTT, Minneapolis: Dr. McArthur of Chicago has reported a case in which the blood supply was from the external iliac; while in a case of my own the supply was from the internal iliac.

Preparation of Patients for Prostatectomy

DR. E. S. JUDD, Rochester, Minn.: The general tendency regarding the preparation of patients for surgical interference is to reduce the details to a minimum, although there are some patients who will do better if they are especially prepared. In reviewing the autopsy findings in cases from the clinic in St. Mary's Hospital which had terminated fatally following operation for the removal of the prostate, it was found that the cause of death in practically every instance was kidney insufficiency and acute nephritis superimposing on an old kidney lesion, usually chronic nephritis. Because of systemic conditions some of these patients are not good subjects for operation; on the other hand, the poorest subject will sometimes endure a difficult prostatectomy with considerable loss of blood and be in good condition in a few days. As the gland increases in size the amount of residual urine increases until the back pressure, coming gradually, becomes a constant factor in the function of the kidney. Continued withdrawal of the pressure will throw the kidneys into a condition of acute congestion, and if they are partially disabled the sudden change may prove very serious, resulting in acute nephritis and suppression. To overcome this difficulty at St. Mary's Hospital we commence by emptying the bladder with a catheter at stated intervals, gradually shortening the intervals until the bladder is emptied every hour. In our experience it has not been satisfactory to leave catheter in the bladder. No particular advantage is to be derived from special diets, therefore, regular diet is maintained up to the morning of the operation. One ounce of castor oil given 48 hours before operation is most satisfactory. Salt solution by rectum soon after operation aids elimination from the kidneys. Looseness of the bowels is most undesirable. The arteries of these patients are hard and inelastic and it is difficult to fill up the circulation; the patients are, therefore, encouraged to take great quantities of fluids for several days before operation. Urotropin (hexamethylenamin) given in doses of from 7 to 10 grains several times each day for a few days before operation will help the condition and tend to better the quality of the urine. The cystoscope is a valuable aid in the determination of the amount and kind of preparatory treatment. An operation should not be attempted during an acute cystitis or epididymitis. It is not advisable to remove the gland in the stage of acute retention.

Lymphangioma with Report of a Case of Macroglossia and a Case of Macrocheilia

DR. A. A. KERR, Salt Lake City, Utah: When practical, the proper treatment of lymphangioma is excision. In macroglossia, if the swelling interferes with mastication, speech, or deglutition, the proper treatment is partial excision. In macrocheilia, partial or complete extirpation is indicated for cosmetic purposes, as well as a prophylactic measure against infection or malignant degeneration. In the case reported, by means of a wedge-shaped excision parallel with the long axis of the lip, the latter was reduced to normal size.

Further Experimental Data on Vasomotor Relations of Shock

DR. M. G. SEELIG, St. Louis, referred to a previous paper, gave details of experiments, and stated that it would seem to be fair to assume that the pressor effects of vasomotor stimulation are due largely to vasomotor constriction, and that

cardiac augmentation, at least in the later stage of shock, is not a primary factor in the rise. In conclusion he stated that it need hardly be emphasized that the results of the research point in every instance against the correctness of the theory that shock is a symptom-complex due to vasomotor exhaustion.

Osteomyelitis

DR. JAMES E. MOORE, Minneapolis: Bone diseases are very common, but the literature is comparatively scant. Until a comparatively recent date most inflammations of bone were diagnosed as periostitis, but with the exception of cases in which the periosteum is directly injured and infected, or when the infection extends from the overlying soft parts, periostitis is a rare disease. Many lives and limbs have been sacrificed because the surgeon was content with a diagnosis of periostitis and an incision through the periosteum when the original seat of the disease was in the medulla. Inflammation of bone is due to infection just as it is in any other tissue, the added symptoms and dangers being entirely due to the density of the structure. Contusion of bone is the most common exciting cause of osteomyelitis, but underlying causes are back of that, because all contusions of bone are not followed by infection, and many so-called idiopathic cases occur with no history of contusion whatever. In very young children diagnosis is not easy because of the absence of subjective symptoms, and because infection not infrequently occurs in the epiphysis instead of in the usual seat near the end of the diaphysis. Early invasion of the joint in cases of epiphysitis is also liable to be misleading. Exceptionally acute tuberculosis of the epiphysis bears a strong resemblance to septic epiphysitis, but the pain is seldom so severe, the temperature rarely goes above 102 F., and leucocytosis is low or absent.

In some cases, the differential diagnosis between osteomyelitis and typhoid fever is not easy, for the patient suffering from osteomyelitis is in the so-called typhoid condition. Early treatment of acute osteomyelitis is as much of a surgical emergency as treatment of acute appendicitis. The diagnosis should be made early and followed promptly by operation. There is no medical treatment and poultices and other local applications only lead to waste of valuable time. An incision through the periosteum may relieve pain, but is insufficient because it fails to stop the ravages of the disease. By a prompt opening into the center of the bone drainage is established and pressure relieved, and when made early enough will stop the separation of the periosteum and destruction of the endosteum, thus preventing or limiting necrosis. In very early operation no pus may be found, but the medulla is greatly congested and protrudes into the wound. Under these conditions the trephine opening need not be enlarged. When acute osteomyelitis begins in the epiphysis, as it sometimes does, especially in young children, the infection is liable to be from the streptococcus, and in addition to the danger to life is the danger to the neighboring joint. An opening should be made into the center of the epiphysis before the joint becomes involved, being careful always to preserve the epiphyseal line. Chronic osteomyelitis may be the result of an acute attack or may be subacute from the first, when it is liable to be mistaken for tuberculosis. In cases following an acute attack an operation should be performed for the removal of the sequestrum as soon as it is separated, which is anywhere from six weeks to four months. The cavity should be thoroughly ennetted, washed, and disinfected by heat or 95 per cent. phenol, the latter being much more convenient, and in my experience eminently satisfactory. The acid should be left in the cavity for 3 to 5 minutes, when it should be wiped out and the cavity thoroughly washed with alcohol, after which it should be dried and filled with Moorhof's bone wax in a liquid state. The wax quickly hardens at the temperature of the body, after which the periosteum and soft parts are closed in layers by means of chromicized catgut. A dry surgical dressing should then be applied, the bandage being quite snug, and finally the tourniquet should be removed. In most of my patients the wound has healed promptly, and the results have been satisfactory. My experience with the bone wax is such that I can consciously recommend it, for when I have temporarily failed I am confident that the fault was in my technique and not in the method.

Medicolegal

Liability for Communication of Gonorrhea by Instruments Used

The Supreme Court of Washington says that the case of *Helland vs. Bridenstine* (104 Pac. R. 626) was brought against a physician to recover for alleged malpractice consisting of the use in and on the plaintiff's genital organs of unclean and unsterilized instruments, whereby the loathsome disease of gonorrhea was communicated to her.

The evidence on the part of the plaintiff tended to show that she had been suffering for a number of years with some nervous affliction. That after the defendant had prescribed for her, and she had experienced only temporary relief, he stated that her symptoms indicated some derangement of the genital organs, and that if she would call at his office he would examine her. That she called as requested about February 1, when the defendant proceeded to examine her, using a speculum and probe, which he took from a nearby drawer and which were wrapped in a towel, and which were used as they were taken from the towel. That between 5 and 10 days thereafter she began to be troubled with inflammation and pain in the parts affected, accompanied by a discharge, which gradually became more severe, causing her to take to her bed. That the defendant was called in and treated her until August 15, when he quit treating her, and another physician was called in who pronounced her disease to be gonorrhea and treated her for some three months thereafter, finally pronouncing her substantially cured. The plaintiff also testified that her husband had died on January 11 of that year, and that she had not had sexual intercourse with him for some weeks preceding his death. She was not asked, and did not testify directly, that she had not had sexual intercourse with any other man, but did state that her husband had no venereal diseases, and that there was no other way than from the defendant's instruments by which she could have obtained the disease. The physician who treated her last also testified that when she called on him in August for treatment she was suffering from chronic gonorrhea, which he ascertained not only from diagnostic symptoms but by finding in the discharge from her genital organs the specific microbe of the disease. He testified also as an expert that she could acquire the disease from an infected speculum used on her in the manner she testified this one was used.

The defendant testified that in making the examination in question he used a speculum, a probe, and a forceps; that these instruments were kept on top of a medicine case in his office; that they were never kept in a drawer, and that after using them he always washed them in a mercuric iodine solution and soap and hot water, and immediately before using them he sterilized them by boiling them in hot water in a receptacle on a gas stove in the back part of his office, and that it was in this manner that these instruments had been cleansed and sterilized before use on the plaintiff; that the last time he had used the instruments prior to January 25, the date he used them on the plaintiff, was on January 19, on a woman suffering from chronic uterine trouble, not gonorrhea, and not infectious, and that he had not treated a case of gonorrhea in a female for many months prior to the time he treated the plaintiff. He further testified that his office was heated by a steam heater operated only in the daytime; that at night the office would become cold, running down to a temperature of from 50 to 55 degrees Fahrenheit. He also called a number of expert witnesses, who testified in substance that gonococci, the specific microbe of gonorrhea, could not survive in a temperature as low as 50 or 55 degrees Fahrenheit for any length of time, certainly not as long as four days, especially on a nickel-plated instrument such as a speculum; and each of them testified that under the circumstances testified to by the defendant it was impossible that the plaintiff could have obtained gonorrhea from his treatment.

In rebuttal two witnesses testified that the defendant had made an examination on them similar to the one made on the plaintiff, the one in the following April, and the other in June, and that in neither case did he sterilize the instruments before using them; that he took them from a drawer where they were

kept wrapped in a towel, and used them without cleansing or sterilizing them in any manner.

The court thinks that there was here sufficient evidence on the question of the defendant's negligence, the question whether the plaintiff had actually become infected with gonorrhea, and the question whether the disease was communicated to her by means of the instruments the defendant had used on her person, to require their submission to the jury. The plaintiff was not required to prove her case beyond a reasonable doubt, nor by direct and positive evidence. It was only necessary that she show a chain of circumstances from which the ultimate fact required to be established was reasonably and naturally inferable. If it was true (and whether or not it was true was for the jury) that the plaintiff went to the defendant's office free from gonorrhea; that the defendant introduced into her vagina a speculum, which he used on other patients, without cleansing or sterilizing it, and that within the time thereafter usual for such a disease to generate she became afflicted with the disease, and there was no other known source of infection, it was a reasonable inference that she caught the disease from the instrument used on her by the defendant, and that the disease was negligently communicated to her. Nor was the inference so far overcome by the evidence of the expert witnesses as to require the court to take the question from the jury. None of them purported to testify how long the microbe gonococcus would live on a speculum which was wrapped in a towel and placed in a drawer in the temperature of the defendant's office. Moreover, the opinion of experts are taken to aid the jury in arriving at the ultimate fact, and no matter how positive may be their conclusions drawn from a given state of facts, it is still a question for the jury whether or not the facts recited on which the conclusion is based are the facts proven by the evidence, and whether or not the conclusion is correctly drawn.

The court, however, considers that a verdict for \$4,000 in the plaintiff's favor was excessive, and gives her a choice between accepting \$2,000 and a new trial. She had fully recovered from the disease, and no permanent disability or injury resulted therefrom. Her losses because of inability to perform her ordinary duties while afflicted were but little more than nominal, and her expenditures for medicines and medical fees did not exceed at the utmost \$200. For her pain and suffering, both physical and mental, she was of course entitled to full compensation, but this was the extent of her rights. Nothing should be awarded her as smart money, or for the purpose of punishing the defendant.

Illegal Practice of Medicine for Ten Years Does Not Entitle to License

The Supreme Court of Colorado says that the plaintiff in the case of *Higgins vs. State Board of Medical Examiners* (104 Pac. R. 953), not a graduate in medicine, having applied to the board for a license to practice medicine and surgery without examination, and the board having denied his application, brought this action to compel the board, by mandamus, to issue the license. He claimed that, as he had made the practice of medicine and surgery his profession continuously for a period of more than 10 years prior to Feb. 2, 1905, the date of his application, he was entitled to a license under section 4 of the law of 1881, the concluding sentence of which reads: "All persons who have made the practice of medicine and surgery their profession or business continuously, for the period of ten (10) years, within this state, and can furnish satisfactory evidence thereof to the State Board of Medical Examiners, shall receive from said board a license to continue practice in the state of Colorado."

The plaintiff insisted that the practicing of medicine and surgery for any continuous period of 10 years, whether before or after the passage of the statute mentioned, although in defiance of law, entitled him to a license. The board, on the other hand, contended that no person is entitled to a license from it unless: (1) He proves that he is a graduate of a legally chartered medical school of good standing. (2) He passes a satisfactory examination. (3) He proves that he has made the practice of medicine and surgery his profession or business continuously for the period of 10 years prior to the passage of the act.

Section 12 of the act provides that the person who practices medicine in the state of Colorado without a license from the Board of Medical Examiners shall, on conviction, be punished by fine or imprisonment, or both; and to adopt the plaintiff's construction would be to reward, not punish, those who elude prosecution for the period of 10 years. The law should not be so construed, and the court holds that the contention of the board is correct, and that those only who have practiced for 10 years prior to the passage of the law of 1881 are exempted from the provisions of the statute requiring examination and proof of graduation. In the case of *State vs. Wilson*, reported in 61 Kan., at page 791, that court said: "Can it be that the Legislature intended that a person might qualify himself for the practice by that which the act prohibited? Is the direct and persistent violation of the law to be deemed the equivalent of character, education, experience, and skill which the statute requires for the protection of life and health?" These identical questions are presented to this court, and it does not hesitate to answer them in the negative.

A judgment of nonsuit is affirmed.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

New York Medical Journal

February 5

- 1 Present Status of the Tuberculosis Campaign and the Essentials for Thorough and Prompt Success. L. F. Flick, Philadelphia.
- 2 *Study of Vasomotor and Trophic Disturbances in Hysteria. A. Gordon, Philadelphia.
- 3 *Malignant Leiomyoma. M. Ballin and J. W. Vaughan, Detroit.
- 4 Polycystic Kidneys. R. C. Newton, Montclair, N. J.
- 5 The Ounce of Prevention. S. W. Newmayer, Philadelphia.
- 6 *Enuresis. F. L. Wachenheim, New York.
- 7 Unusual Otic Sinus Thrombosis; Operation; Recovery. H. B. Blackwell, New York.
- 8 Diagnosis and Treatment of Stricture in the Male Urethra. T. L. Deavor, Syracuse, N. Y.
- 9 *Case Illustrating the Arrest of Early Paresis. T. A. Williams, Washington, D. C.

2. **Hysteria.**—Gordon reports one case in proof of his contention made in 1907 showing the possibility of occurrence of vasomotor and trophic disturbance in hysteria and caused by hysteria.

3. **Malignant Leiomyoma.**—Ballin and Vaughan add one case to the thirteen already recorded showing that non-striated muscle cells may assume malignant rôles. In this particular case, the muscle cells were so little altered in the metastatic locations that it rendered their derivation absolutely certain. The patient, unmarried, aged 28, was referred for operation because of a uterine tumor which had been discovered by her physician eleven months before. She complained of profuse and painful menstruation, which occurred every two and a half weeks, together with pressure pains in the lower extremities. The latter had been present for six months. Examination revealed a mass the size of a child's head in the lower abdomen. The mass moved with the cervix and could not be distinguished from the uterus. Its contour was rough and uneven, so that a diagnosis of multiple fibroids was made. Operation was advised and accepted.

A median celiotomy was performed. The uterus was hard, firm, irregular, and the size of a child's head. The omentum was studded with enlarged lymph glands. The irregularity in shape of the uterus was caused by the presence of many hard white nodules which varied in size from that of a pea to that of a tangerine orange. Enlarged lymph glands were also found along the iliac artery and the tip of the appendix, as well as one at the base of its mesentery. The probable diagnosis of sarcoma was made, and because of the impossibility of removing all the involved glands, the less radical operation of supravaginal hysterectomy was deemed best. Both tubes and ovaries, the retroperitoneal glands and the appendix with its accompanying glands were removed, as was also a piece of the omentum (5x5 inches), which contained the greatest number of enlarged glands. Microscopic examination disclosed a leiomyoma. Seven months after the

operation, the patient was still in fairly good health, although all the malignant tissue was not removed at the operation.

6. **Enuresis.**—That enuresis must be classed as a "habit" is the point made by Wachenheim. He says that the more we analyze it, the more does the entire clinical picture give the impression of being essentially a developed habit, and a concomitant stuttering or *tic convulsif*, not infrequently present, does not tend to abate this impression. If, now, we attempt to explain enuresis by including it among the ties or habit spasms, we shall find a number of features that link it closely to this well defined group. First, of course, is the undeniable element of habituation. Second, it reveals itself as a tic in being almost continuous; the bladder tends to empty itself whenever a small quantity of urine has accumulated. The predominance of nocturnal incontinence is due to the absence of distracting influences during sleep, for it is well known that a habit spasm is temporarily suspended when the patient's attention is directed thereto. During the day, the victim of enuresis is powerfully restrained by the force of public opinion and ridicule, though he may forget himself and lose control under some special strain or excitement. Third, there is the frequent association of enuresis with such unquestionable habit spasms as stuttering. Fourth, the age of onset agrees precisely with that of the other habit spasms; the ages of maximum frequency also correspond. Its lesser tendency to persist into adult life is due to its involving the genitourinary tract, which undergoes such radical anatomic and physiologic changes at puberty. Furthermore, some cases of enuresis, especially in females, do persist into adult life, and then become exceedingly difficult to cure, as also happens with other ties.

The rational and, incidentally, most successful treatment of ties consists in making the patient perform voluntarily, under his own or some other person's control, the movement which has been so frequently repeated subconsciously. In carrying out this plan the child is compelled to urinate at regular hours during the day, and is awakened at regular intervals during the night, the intervals being timed so as to anticipate the involuntary act, if possible. Thus, in a moderately severe case, micturition might be enforced on rising, at nine, noon, three, six, at bedtime, an hour after bedtime, and two hours after bedtime, bad cases may require a two-hour interval during the day, and more rousings at night. The essential matter is the accurate observance of the exact hour day by day. Often the training cure, by itself, proves ineffective; a common complaint being that the child is found to be wet every time it is roused, the tie being fully developed and practically continuous during sleep. Here we may aid by cutting off all fluids during the later afternoon and evening, thus reducing the secretion of urine to a minimum by keeping the bladder as nearly empty as possible. Wachenheim always anticipates by including the deprivation of fluids in the plan of treatment, and, in addition, restricts the bulk of the evening meal, even in cases that seem relatively mild.

As to further auxiliaries atropin has a certain adjuvant value, and may be given rather liberally, for small doses are useless. When the tie is, as often happens, associated with a general run-down condition tonic treatment is indicated. When adenoid vegetations or greatly hypertrophied tonsils are present, their removal is indicated, but a conspicuous effect on the enuresis need not be expected, save that the operative shock or the anesthesia may check it, as it may any habit spasm. It is wise to continue the training for a considerable time, at least two months, after the incontinence has ceased; the nocturnal rousings may be omitted after about a month, but the strict observance of the diurnal evacuations should be continued at least a month longer.

9. **Arrest of Early Paresis.**—The principal points in Williams' paper are (1) the necessity of early diagnosis; (2) the need of regulation of metabolism during a mercurial course; (3) the need for careful choice of the manner in which mercury should be administered. Williams uses the injection method, because inunction is inconvenient, uncertain in ordinary practice, and, he believes, less controllable than the injection method.

Medical Record, New York

February 5

- 10 Pathologic Prodromes of Taboparesis. T. A. Williams, Washington, D. C.
- 11 Local Anesthesia in General Surgery. W. S. Schley, New York.
- 12 *Skin Lesions of Pellagra. H. Fox, New York.
- 13 *Rectal Examination as a Routine Measure. F. C. Yeomans, New York.
- 14 Serodiagnostics of Syphilis. J. DeLisle, New York.
- 15 *Thrombosis of the Left Iliac Vein. C. S. Aitkin and J. A. Jackson, New York.
- 16 Tapping the Pleural Cavity. E. M. Foote, New York.

12. **Skin Lesions of Pellagra.**—Fox claims that the skin lesion of pellagra is rather a dermatosis than an erythema, since desquamation is a marked factor in the lesion. It contrasts with eczema in lacking the element of itching. It is not peculiar to the portions of the body which are exposed to the sun, and naked children show it only in the characteristic locations.

13. **Rectal Examination.**—Yeomans urges that examination of the rectum should be a routine measure in cases of painful affections of the pelvis and abdomen. The examination is made in the Sims position, and should cause little pain. The anus is inspected; then pressure is made around it with the index finger for tender spots, the patient bears down and the mucosa is gently teased out around it. The index finger, lubricated, is introduced into the rectum where it can reach up four and a half inches. The condition of the rectal walls may be appreciated and the genital organs examined at the same time by touch. Neoplasms will be felt, abscesses and fistulas found, hemorrhoids examined, and many other conditions brought to light. After this the proctoscope may be used and the interior of the sigmoid seen.

15. **Thrombosis of the Left Iliac Vein.**—Aitken and Jackson report the case of an insane female patient who made no complaints of the bladder, but showed swelling of both lower extremities three weeks before death. It was found that she had an overdistended bladder, which by pressure on the iliac vein had caused thrombosis in the left iliac vein, in both pelvis and thigh. At the post-mortem there was found a suppurative cystitis and acute urethritis of the left side, with inflammation of the pelvis of the kidney.

Boston Medical and Surgical Journal

February 3

- 17 The Work of the Committee on Milk and Baby Hygiene in Behalf of Babies. J. M. Connolly, Boston.
- 18 Diagnosis and Treatment of Intussusception. A. R. Kimpton, Boston.
- 19 Clinical Significance of Curds in Infant's Feces. F. B. Talbot, Boston.
- 20 Unsuspected Diabetes; Cause of Rapidly Fatal Coma. W. W. Miner, Ware, Mass.

Lancet-Clinic, Cincinnati

January 22

- 21 Specific Diagnosis and Treatment in Pulmonary Tuberculosis. S. Von Ruck, Asheville, N. C.
- 22 History of Hygiene. A. G. Drury, Cincinnati.
- 23 Therapeutic Renaissance. R. A. Bate, Louisville.

January 29

- 24 Atony and Tonics. N. Rosewater, Cleveland, Ohio.
- 25 The Question of Change of Climate for the Tuberculous. E. W. Mitchell, Cincinnati.
- 26 Chorea Insaniens; Acidosis. G. A. Staples, Dubuque, Ia.
- 27 Rural Sanitation. B. Stanton, Cincinnati.

Medical Fortnightly, St. Louis

January 10

- 28 The Fear of the Cold. B. Holmes, Chicago.
- 29 Diffuse Infiltrating Carcinoma of Stomach. J. M. Bell, St. Joseph, Mo.

Journal Michigan State Medical Society, Detroit

January

- 30 *Foreign Bodies in the Esophagus and Lower Air Passages. P. M. Hickey, Detroit.
- 31 Indications for Treatment of Calculus of the Kidney, Ureter, and Urinary Bladder. B. Holmes, Chicago.
- 32 Crime of Neglecting Cases of Uterine Cancer. J. H. Carstens, Detroit.
- 33 Cervical Rib; Case in which Resection was Performed. A. M. Campbell, Grand Rapids.
- 34 Treatment of Gastric Ulcer. J. T. Watkins, Detroit.
- 35 Medical Practice in Bengal, India. A. L. Kennan, Detroit.

30. **Foreign Bodies in Esophagus and Lower Air Passages.**—The clinical history of Hickey's cases shows the great value of the Roentgen ray as a diagnostic agent, and the superiority of operations through the mouth to external manipula-

tions, especially when the esophagoscope and bronchoscope are used. He says that the first requisite is an operative technic which can best be obtained by practice on the lower animals. Trained assistants are of the utmost value, as on proper anesthesia and proper rigidity of the head and neck during the passage of the tube depends much of the ease with which it can be accomplished.

Bulletin Johns Hopkins Hospital, Baltimore

January

- 36 Michael Servetus. W. Osler, London, Eng.
- 37 The Dedication of the New Hall of the College of Physicians of Philadelphia. W. S. Thayer, Baltimore.
- 38 The Method of Zsigmondy in Medicine. M. G. Seelig, St. Louis.
- 39 Dr. Lemuel Hopkins, One of the Celebrated Hartford Wits, and a Forgotten Distinguished American Student of Tuberculosis. W. R. Steiner, Hartford, Conn.

Military Surgeon, Washington, D. C.

January

- 40 Principles of Training. H. G. Beyer, U. S. Navy.
- 41 Care and Removal of Sick and Wounded on Shipboard During and After an Action. H. G. Beyer, U. S. Navy.
- 42 Organization of Medical Department and Sanitary Service of the Fleet under Present Conditions; What Organization will best meet the Requirements of the Fleet in View of Future Expansion and Render the Most Efficient Service, both in Peace and War? L. W. Curtis, U. S. Navy.
- 43 What should constitute Best Training for Medical Officers Intended for Positions of Fleet and Squadron Surgeons, what Principles should determine their Selection for the Positions; Their Duties and Responsibilities in Relation to Fleet Sanitary Efficiency? H. G. Beyer, U. S. Navy.
- 44 *What should constitute, in Principle and Practice, the most Efficient Organization of Medical Department of a Ship During Action, including Provisions for and Methods of Rendering First Aid to Wounded? J. C. Wise, U. S. Navy.
- 45 *Precise Functions of a Hospital Ship in Time of Peace and in Time of War and its Relation to the Fleet. G. Pickrell, U. S. Navy.
- 46 The Hospital Ship as an aid to the Efficiency of the Fleet. C. F. Stokes, U. S. Navy.
- 47 *Most Effective Methods of Keeping Ships of War free from Infective Diseases: The Reception and Housing of Recruits at Barracks and on Receiving Ships. R. C. Holcomb, U. S. Navy.
- 48 Idem: The Reception and Care of Recruits Received on Board Ship. M. F. Gates, U. S. Navy.
- 49 Idem: Care of the Crew of a Ship Undergoing Extensive Repairs at Navy Yards. C. N. Fiske, U. S. Navy.
- 50 Idem: Care and Protection of Crews of Ships in Infected Ports. D. N. Carpenter, U. S. Navy.

44, 45. Abstracted in THE JOURNAL, Nov. 20, 1909, p. 1769.

47. Abstracted in THE JOURNAL, Nov. 27, 1909, p. 1846.

J

Archives of Internal Medicine, Chicago

January

- 51 *Chronic Passive Congestion of the Liver. C. Frothingham, Boston.
- 52 Chronic Aleucemic Enlargement of the Lymphatic Glands. C. W. Duval, New Orleans, and C. P. Howard, Montreal.
- 53 *Various Forms of Experimental Arterial Disease in the Rabbit. M. C. Hill, New York.
- 54 *Addison's Disease: One Case with Adrenal Transplantation. F. C. Busch and T. Wright, Buffalo, N. Y.
- 55 *Total Energy Requirement in Diabetes Mellitus. E. F. Dubois, New York, and B. S. Veeder, Philadelphia.
- 56 *Syphilis of the Thyroid. C. F. Davis, Chicago.
- 57 *Peculiarities of Nitrogenous Metabolism in Pernicious Vomiting of Pregnancy. F. P. Underhill and R. F. Raud, New Haven, Conn.

51. **Chronic Passive Congestion of the Liver.**—The object of Frothingham's work has been to study the clinical history in a series of cases, in order to see if the clinical picture would support the view that an uncomplicated chronic passive congestion would not show any disappearance of liver cells. A series of cases was examined in which the patients had been treated at the Boston City Hospital, and which eventually came to autopsy. It soon became apparent that in the majority of cardiac cases of long standing with broken compensation the liver presented the picture of loss of liver cells around the hepatic veins. Frothingham says that uncomplicated chronic passive congestion of the liver, even in long-standing cases, does not necessarily lead to atrophy and disappearance of liver cells. It is possible, therefore, to imagine their disappearance in other cases as due to something else than long-continued congestion. Hemorrhagic necrosis of the liver is a frequent complication of chronic passive congestion of the liver. This form of liver necrosis probably occurs only in cases with some degree of cardiac insufficiency.

53. **Experimental Arterial Disease in the Rabbit.**—In the course of his investigation, 210 presumably normal animals were examined by Hill and spontaneous lesions were found

in 15 per cent. The lesions occurred in young (small) rabbits almost as frequently as in old rabbits. Hill says that histologically, the common type of spontaneous lesions cannot be distinguished from that due to adrenalin. Macroscopically, however, it differs from the diffuse lesion of adrenalin by being usually limited to a few foci occurring at the origin of the aorta. The peculiar spontaneous lesion described by Ophüls was not seen by Hill. He claims that the prolonged administration of barium by the mouth does not cause, as has been suggested, the appearance of spontaneous lesions. These spontaneous lesions apparently explain the results previously ascribed to single injections of adrenalin, for a repetition of the "single injection" experiments has given negative results. Likewise, in some groups of experiments, the long-continued administration of adrenalin in fairly large doses has led to the production of the diffuse lesion, considered characteristic of adrenalin, in a comparatively small percentage of animals.

Direct chemical injury, such as painting the vessel with silver nitrate, causes a fibrous thickening of the adventitia and outer portion of the media with calcification of the latter. Direct mechanical injury, as crushing by measured pressure with forceps, leads to atrophy of the media without calcification and to definite proliferation of the intima. The latter type resembles somewhat certain late stages of the adrenalin lesion with intimal proliferation, but neither can be considered analogous to either the spontaneous or adrenalin lesions. Attempts to produce vascular lesions through increasing the blood-pressure by mechanical means, as in the suspension experiments of Klotz, have given Hill negative results.

54. Addison's Disease.—One of the cases studied by Busch and Wright gave a typical picture of Addison's disease. The other two presented features which would tend to confuse the observer and increase the difficulty of diagnosis. In one of the cases they made an adrenal transplantation, the patient surviving the operation two and one-half weeks. All three cases terminated fatally.

55. Energy Requirement in Diabetes Mellitus.—A carefully conducted series of experiments convinced Dubois and Veeder that the total energy requirement of diabetic patients does not vary from the normal. They say, however, that in addition to the 31-35 calories required for the normal individual at rest, the diabetic should be given enough extra calories to cover the loss of sugar in the urine. If this is not done there is a breaking down of the body protein and fat.

56. Syphilis of the Thyroid.—Davis claims that his is the first case of tertiary syphilis of the thyroid—the diagnosis being confirmed by the anatomic findings—to be reported in American literature; the third reported in the English language, and the eleventh in the entire medical literature.

Twenty cases of gumma of the thyroid have been described. Eight of these were diagnosed only clinically without any definite anatomic proof of their syphilitic origin; 3 cases were diagnosed both clinically and histologically, 8 cases were diagnosed histologically. The remaining case was probably diagnosed clinically—it is specifically stated that histologic examination was not made.

Davis' patient complained of hoarseness, great inspiratory dyspnea and pain on swallowing. The trouble had appeared four months previously, when the patient developed the above symptoms. This condition was constant and was subject to exacerbations at rather frequent intervals, in which the dyspnea was so great that the patient became cyanosed. Hoarseness was marked. There was history of syphilis five years previously; the patient had never suffered from any other serious illness. Examination of the larynx disclosed a paralysis of the adductor muscles. The neck was somewhat tender in the region of the thyroid cartilage; otherwise examination of the neck was negative. Tracheotomy was performed under local anesthesia, and a tube inserted with no relief to the patient; death followed about twelve hours later.

57. Pernicious Vomiting of Pregnancy.—Underhill and Rand found that the composition of the urine in pernicious vomiting is strikingly similar to that which obtains in the urine eliminated during inanition. In both instances the charac-

istic perversions are changed relations in the excretion of urea and ammonia and at times in the output of creatinin and creatin. Other changes previously reported in the nitrogen output have not been firmly established. The determination of nitrogen, ammonia, creatinin and creatin in pernicious vomiting is believed to be of greater value than the more elaborate plan suggested by others, inasmuch as the methods to be employed are accurate.

It is suggested that the changes observed in the urine in pernicious vomiting of pregnancy are induced by accompanying inanition. Evidence tending to substantiate this view is furnished by the observation that the perverted urinary nitrogen relations rapidly resume the normal on administration of food without necessarily exerting any influence on the pathologic state of the patient. In pernicious vomiting of pregnancy in which inanition is a significant factor, the administration of energy-yielding foodstuffs is of greater value than the giving of foods rich in nitrogen. The body is capable of furnishing the small quantity of nitrogen requisite for nutritional rhythm, but, in the absence of carbohydrate, energy-yielding substances present in the body are difficult of utilization. It is, therefore, suggested that the employment of enemas of dextrose solutions by the Murphy drop method is a more rational proceeding in this and related conditions than attempts to administer the usual albumin solution, which in all probability is not absorbed and for which the body has relatively little need. Carbohydrate supply is apparently the factor determining the relative output of urea and ammonia, since in pernicious vomiting of pregnancy as in inanition, the administration of this substance by mouth or by rectal enemas is followed by a distinct tendency toward a resumption of the normal elimination of these compounds.

Chicago Medical Recorder

January

- 58 Water Supply and Sewage of Lake Shore Towns of Lake County. W. C. Bouton, Waukegan, Ill.
- 59 Oral Prophylaxis. M. W. Dunn, Chicago.
- 60 Mercury and Locomotor Ataxia. C. E. Rogers, New York.
- 61 *The Nation and the Tropics. W. Osler, Oxford, Eng.

61. Published in the *Lancet*, Nov. 13, 1909.

Ohio State Medical Journal, Columbus

January

- 62 Diagnosis and Treatment of Extrauterine Pregnancy. H. Robb, Cleveland.
- 63 Absence of Vagina; Embryology, Pathogenesis and Treatment. L. G. Bowers, Dayton.
- 64 Diagnostic Significance of Liver Palpation. H. W. Bettman, Cincinnati.
- 65 *Mind and Medicine. J. S. Rardin, Portsmouth.
- 66 *Method of Opening the Mastoid Antrum through the External Auditory Meatus as the First Step in the Mastoid Operation. S. Iglauer, Cincinnati.
- 67 The Rectal Colonic Tube: Its Uses and Abuses. U. S. G. Deaton, Toledo.
- 68 Ophthalmia Neonatorum from the Standpoint of the Obstetrician. W. Gillespie, Cincinnati.

65. Abstracted in THE JOURNAL, May 29, 1909, p. 1783.

66. Method of Opening the Mastoid Antrum.—As a result of experience gained from experiments on the temporal bone and the cases reported, the following advantages are claimed by Iglauer for the operation of opening the antrum through the meatus as the initial step in the mastoid operation: 1. The procedure is justified on anatomic grounds, since the anterior inferior wall of the antrum is very thin, and no important structures intervene between the meatus and the antrum. 2. The antrum may be readily and rapidly opened through the meatus, no matter what its depth from the surface, and the burr is kept in full view throughout the operation. 3. The exposure of the antral cavity early in the operation gives valuable information concerning the condition of the mastoid bone. 4. With the antrum fully exposed to view, the remaining steps of the mastoid operation are much simplified. 5. In cases complicated with a forward-lying sinus, it often becomes imperative to work from within outward, and the direct method through the meatus does away with the necessity of introducing instruments into the middle ear, a procedure not unattended with danger. 6. In cases in which the simple operation has been performed, the healing process may be hastened if a portion of the posterior bony meatus is removed at the time of operation. 7. The

electric burr is a safe instrument in mastoid surgery, since it is not apt to penetrate the dura mater and stimulates the facial nerve before endangering its integrity.

Long Island Medical Journal, Brooklyn

January

- 69 Progress of Medicine for 1909. H. G. Webster, Brooklyn.
- 70 Progress of Surgery. W. A. Sherwood, Brooklyn.
- 71 Progress in Dermatology and Syphilology. J. M. Winfield, Brooklyn.
- 72 Progress in Ophthalmology. J. C. Hancock, Brooklyn.
- 73 Progress in the Sciences of Ear, Nose and Throat Surgery. W. C. Braislén, Brooklyn.

Bulletin Lying-in-Hospital of City of New York

March, 1909

- 74 *Abdominal Pregnancy; Operation and Recovery. A. B. Davis, New York.
- 75 Nephritis in the New-Born Infant. G. W. Kosmak, New York.
- 76 Two Cases of Cavernous Angioma in Infants. A. B. Davis, New York.
- 77 *Possible Danger Connected with Intrauterine Irrigations. G. W. Kosmak, New York.
- 78 Significance of Posture in Obstetrics. A. F. A. King, New York.
- 79 Excessive Transitory Hypertrichosis Due to Pregnancy. C. F. Jellinghaus, New York.

June, 1909

- 80 Pyelitis in Pregnancy and its Complications. F. E. Sondern, New York.
- 81 Effect of Hemorrhage on the Condition of the Blood. E. C. Smith, New York.
- 82 *Pathology of Eclampsia and Toxemia of Pregnancy. J. E. Welch, New York.

74. **Abdominal Pregnancy.**—The abdomen in this case was flat, except in the right lower quadrant, wholly to the right of the median line and extending up from the pelvis midway to the umbilicus, where a large tender elastic rounded mass could be felt. It was not freely movable. Complete chloroform anesthesia was induced and the examination continued. The perineum was intact and the vaginal mucous membrane cyanosed. The cervix was high, centrally located, intact, partially softened and the canal closed. Bimanually, the uterus was found to be slightly enlarged, in a median and anteverted position. The mass above mentioned was found extending directly from the uterus to the right and posteriorly and restricting its mobility. The left side of the pelvis and iliac fossa were found to be clear and free.

The abdomen was opened in the median line by a 12 cm. long incision, well down toward the pubes. The peritoneum was found to be unusually thick, and on opening it a quantity of thin black fluid blood appeared free in the abdominal cavity. The uterus was found practically as described in the bimanual examination, only it was more pushed forward and over toward the left. There was also a smooth, rounded, blue, ovoid cyst extending up from the pelvis half way to the level of the umbilicus. This cyst was ruptured in attempting to lift it up through the abdominal opening. About 800 c.c. of amniotic fluid escaped and floated a well-formed dead fetus of about four-months' growth into view. There was a well-formed placenta attached to the right broad ligament, the posterior wall of the uterus and the right side of the cul-de-sac. The placenta was readily removed, leaving a dirty, yellowish-brown surface with clots, but no fresh bleeding. Long clamps were applied so as to include the right tube and ovary and a triangular portion of the broad ligament; the artery was ligated outside the clamps and the tissue between them cut away and the clamps removed. The raw edges were brought together with a continuous catgut suture. A considerable cavity was thus formed, and about half the length of the appendix was found overhanging the upper edge of this cavity. It was lifted up and found to be surrounded largely with old adhesions. These were broken up and an appendectomy done, the stump cauterized and closed over with peritoneum. The posterior vaginal vault was opened from above with blunt scissors. A strip of iodoform gauze was passed out into the vagina, and all about the placental site was packed with the same material. The abdominal wall was closed in three layers and a sterile dressing and a binder applied. The patient made a perfect recovery.

77. **Danger Connected with Intrauterine Irrigations.**—Kosmak calls attention to the possibility of forcing more or less of the irrigating fluid used to wash out the cavity of the uterus after curettage, through the Fallopian tubes into the

general peritoneal cavity. Kosmak reports a case in which, after curettage, the uterine cavity was irrigated in the usual and customary manner, with hot, sterile normal salt solution. A return flow irrigating tube was employed, and although the cervix shut down on it, the heat, no doubt, having stimulated the muscle to contraction, the fluid was apparently all returned. The abdomen was then opened by a median incision for the purpose of doing a ventral suspension operation. Much to Kosmak's surprise, on entering the peritoneal cavity, he found a considerable amount of thin, slightly blood-stained fluid, as to the origin of which he was very much in doubt. There had been no previous evidence of ascites, and the fluid did not appear like the fluid encountered in this condition. He finally came to the conclusion that it must have been the irrigating fluid which had found its way out through the tubes into the general peritoneal cavity.

Within the first twenty-four hours after operation the abdomen had become very much distended and the pain was extremely severe. The face had an anxious look; the tongue was coated; the pulse ranged from 120 to 140; the abdomen was distended and very tender. No flatus was passed, even after the introduction of a rectal tube. The administration of calomel and salts, followed by an enema, did not give the desired result, nor was the paralysis of the intestine relieved by hypodermic injections of eserine sulphate. By the end of the second day the woman's condition seemed serious, she was vomiting almost constantly a greenish fluid, which sometimes had a fecal odor, the tongue was coated, there was considerable dyspnea, the abdominal tension and tenderness were very much increased.

The necessity of securing immediate relief from the condition of intestinal paresis, prompted the administration of croton oil, and two drops mixed with bread crumbs were accordingly administered. The result was excellent, and the patient passed a great quantity of gas and some fecal matter within a few hours. Although some abdominal pain remained, the general condition improved rapidly and nothing further occurred to disturb recovery. The woman was discharged from the hospital at the end of three weeks. For some months afterward she had more or less abdominal pain, particularly if there was any accumulation of gas or if the bowels had not moved sufficiently for several days, giving one the impression as if these disturbances were due to the presence of intestinal adhesions of slight degree.

82. Published in THE JOURNAL, Oct. 23, 1909, p. 1358.

Journal Delaware State Medical Society, Wilmington

January

- 83 Plea for Early Diagnosis of Gall-Stones. J. P. Wales, Wilmington.
- 84 Urgent Need of Early Diagnosis in Gynecologic Disease. H. M. Thompson, Wilmington.
- 85 Progress in Medicine. H. J. Stubbs, Wilmington.

Providence Medical Journal

January

- 86 Treatment of Tuberculosis. J. Perkins, Providence.
- 87 Clean Milk Supply for the State Sanatorium. F. P. Gorham, Providence.
- 88 The State's Insane. A. H. Harrington, Howard, R. I.
- 89 State Commitment of the Insane in Rhode Island: A Barbaric Survival. J. E. Doney, Providence.

Journal South Carolina Medical Association, Florence

December

- 90 Cholecystitis. C. F. Ross, Anderson.
- 91 *Expeditions Method for Submucous Resection of the Triangular Cartilage of the Nose. W. P. Porcher, Charleston.
- 92 Significance of Angiosclerosis in the Eye. C. W. Kolloch, Charleston.
- 93 Retropharyngeal Abscess. E. W. Carpenter, Greenville.
- 94 Pathologic Significance of Diseased Tonsils. J. F. Townsend, Charleston.
- 95 Appendicectomy for the Relief of Mucous Colitis and Chronic Diarrhea. H. R. Black, Spartanburg.
- 96 Recent Discoveries Pertaining to Digestion and Intestinal Disorders. F. Moore, Aiken.
- 97 Visceral Syphilis. J. B. Sosnowski, Charleston.
- 98 The Social Evil. D. W. Richardson, Greens.

91. **Submucous Resection of Triangular Cartilage of Nose.**—In Porcher's case, the triangular cartilage was found to be dislocated on the right side, causing considerable flattening of the end of the nose and almost complete occlusion of that nostril. After dissecting up the mucous membrane over the dislocated portion of the cartilage, Porcher decided to use the electric trephine instead of the knife or forceps because the

cartilage proved to be very tough and situated somewhat further back in the nose than usual. With a rather long Curtis trephine two large cones of cartilage were drilled away, the trephine passing through the mucous membrane in the rear. The projecting ends of the cartilage having been removed, the septum resumed its erect position. The mucous membrane was allowed to fall back into position and a compress of cotton was used to hold it so until union took place, which was by first intention.

Porcher asserts that an excellent feature of this operation is that perforation rarely occurs. Unless the angle of deflection of the septum is extremely acute, it is almost impossible to produce a perforation. In a straight septum, the trephine would have to be held at right angles to the partition to penetrate through it, and therefore this accident would only be likely to happen in proportion to the acuteness of the angle or the amount of deflection present.

Archives of Ophthalmology, New York

January

- 99 After-Effects of Escape of the Vitreous. A. E. J. Lister, London.
- 100 One Hundred and Twenty-one Cases of Extraction of Cataract in the Capsule, by the Method of Major Henry Smith, Jullundur, India. C. F. Clark, Columbus, Ohio.
- 101 Case of Cyst of the Iris. D. Webster, New York, and E. L. Oatman, Brooklyn.
- 102 Dilatation of the Pupil due to Bellflower, "*Datura Arborea*." J. S. Fernández, Havana, Cuba.
- 103 Spectrographic Studies Concerning the Limits of Absorption of our Protective Glasses. O. Hallauer, Basle, Switzerland.

West Virginia Medical Journal, Wheeling

January

- 104 The Public and the Physician. C. S. Hoffman, Keyser.
- 105 Enlargement of the Prostate. R. C. Bryan, Richmond, Va.
- 106 Arithmetic of Milk Modification. J. T. Thornton, Wheeling.
- 107 End-Results in Fractures of the Long Bones. S. M. Mason, Clarksburg.
- 108 The Essential Character of Hysteria. T. A. Williams, Washington, D. C.

Journal of Cutaneous Diseases, New York

January

- 109 Dermatitis Exfoliativa with Fatal Ending in Five Cases. J. T. Bowen, Boston.
- 110 Treatment of Alopecia Areata and Dermatitis Exfoliativa. G. T. Jackson, New York.
- 111 *Two Important Parasites of the Skin. E. Costa, Padua, Italy.
- 112 Certain Diseases of the Skin Observed in the Far East. L. D. Bulkley, New York.
- 113 Pellagra in Massachusetts. C. P. Fitzgerald, Worcester, Mass.

111. **Parasites of the Skin.**—Costa describes two cases of skin invasion by animal parasites, one the *Dermatobia noxialis* found in some tumefactions on the head, the other the *Sarcopsylla penetrans* found in ulcerations in the region of the nails of the feet.

Detroit Medical Journal

January

- 114 Medical Defense. E. B. Tibbals, Detroit.
- 115 Suggestion as a Therapeutic Factor. C. F. Kuhn, Detroit.
- 116 The Internal Secretion of the Testes. W. M. Donald, Detroit.
- 117 Early Symptoms of Cancer of the Rectum. L. J. Hirschman, Detroit.

Quarterly Bulletin Northwestern University Medical School, Chicago

December

- 118 *Food Preservatives and the Benzoate Question. J. H. Long, Chicago.
- 119 Principles of Treatment of Wounds. J. F. Churchill, Chicago.
- 120 *Transplantation of Spinal Ganglion into Brain. S. W. Ranson, Chicago.
- 121 Observations on Sahli's Desmoid Reaction. A. A. Goldsmith, Chicago.
- 122 Occurrence of *Bacillus Fusiformis* in Membranous Affections of the Throat—Vincent's Angina. M. L. Holm, Lansing, Mich.
- 123 Nasal Cauterization. O. H. Maclay, Chicago.
- 124 *The Long Incubation Periods of Syphilis. F. E. Simpson, Chicago.
- 125 Forthcoming Revision of the Pharmacopeia. J. H. Long, Chicago.

118. **Food Preservatives and the Benzoate Question.**—The simplest thing to add to prevent fermentation, says Long, is an excess of cane sugar, but the very great sweetness which results is an objection to many, and the custom therefore prevails of using in place of part of the sugar a considerable amount of spice, generally cloves and cinnamon. This is in every way legitimate, but these substances are preservatives, and it is for this and not alone for flavor, that they are needed. The bulk of the spice is cellulose or related material,

and absolutely inert so far as preserving or flavoring action is concerned, but with the cellulose there are certain essential oils present which are the valuable and active constituents. These active principles are called "natural" substances, but they are "chemicals" at the same time, and they may be made by laboratory methods from substances foreign to the spices and with the same properties found in the spice extractives. If there is no objection to the spice products, why should there be, asks Long, to the same active principle made in an artificial way? Any one, Long continues, who is familiar with the advances of modern synthetic organic chemistry must be able to recognize that there should be no inherent difficulty in thus replacing the active principles of the aromatics with compounds no more harmful than they are, but without marked taste or odor.

In the Northwestern University laboratories six men were under Long's observation, through a period of four months, on a diet far richer in benzoate than they could find in any of the foods on the market which the consumer would be likely to reach. From these experiments and through subsequent studies Long has become convinced of the relative harmlessness of the sodium benzoate as used in the condimental foods. That is, he believes that it is less harmful than the other acid and aromatic bodies used for the same purposes. The experimental work was painstaking, and was carried out through a period long enough to satisfy any reasonable demand. The peculiar conditions described in the "poison squad" bulletin of the Bureau of Chemistry were not observed, and Long believes under proper methods of experimentation they should not be in any case. The men were not fed with capsules, they were not told that they were eating poison, or that they were engaged in a very dangerous experiment. The "poison squad" notion was not kept constantly before them. Long is willing to believe that with the probable psychic disturbances from the causes suggested always present, these men, also, might have become ill occasionally, perhaps frequently. The psychic factor is very important in such work, and he is inclined to think that it may have played a very prominent part in the Bureau of Chemistry results.

Chemically, sodium benzoate is a mild substance and in its ultimate behavior and fate not unlike the aromatic principles of cinnamon and cloves. Indeed, cinnamic aldehyde seems to follow exactly the same course in metabolism, and both are doubtless much weaker physiologically than is the eugenol of cloves. A great deal, continues Long, has been said about the activity of the "interests" in favoring sodium benzoate. It should be apparent to any one who can read, that other and certainly much noisier "interests" are violently fighting it. Medical men should not, he says, be fooled by the situation, or influenced by the silly assertion that the members of the Referee Board are prejudiced, or that they are working in favor of any interest except that of scientific truth.

120. **Transplantation of Spinal Ganglion into Brain.**—Ranson used white rats, two for each experiment. The animal to receive the graft was a month old. Its head was prepared and a small strip of bone removed parallel to the great longitudinal sinus and an incision made in the cerebral cortex in line with the bone defect. A warm pack was then placed over the wound and the second cervical ganglion removed from the neck of a rat one week old. The ganglion was grasped with fine forceps by the short stretch of attached nerve and inserted into the brain wound in such a way that the nerve was deepest in the wound, and the ganglion just beneath the cortex.

Two animals were allowed to live ten days and one two months. The brains from the first two animals were examined for the site of the graft, and this with a piece of the surrounding cortex was excised. Paraffin sections from these were stained with toluidin blue and erythrosin. The third brain was prepared by the Pal-Weigert method and counterstained with Upson's carmin. The sections from the brain of Rat I containing a graft of ten days' standing shows the spinal ganglion imbedded in the substantia alba just dorsal to the radiations of the corpus callosum. It was easily recognized by the abundance of connective tissue and by the

presence of the round or polygonal cells characteristic of the spinal ganglion. These were arranged in the shape of a horseshoe, two or three cells deep, around the periphery of the ganglion on the side toward the corpus callosum. All nerve cells had disappeared from the interior of the ganglion. The surviving cells were in various stages of chromatolysis, but the majority of the cells showed only partial solution of the tigroid masses. These cells were much swollen and their nuclei were excentric. No small nerve cells could be seen. These were more susceptible to injury than the larger cells and rapidly disappeared from the transplanted ganglia. Substantially the same conditions were to be seen in Rat II, also representing a tea-day graft.

The spinal ganglion which was allowed to remain in the brain for two months was not as deeply placed as the others, but was imbedded in the cortex near the great longitudinal fissure and covered over by a proliferation of the pia mater. The ganglion was much decreased in size and surrounded by scar tissue. It contained only a small fraction of the number of cells to be found in the normal ganglion but these few cells were of normal appearance, so far as could be ascertained by the carmine stain. The shape and size of the cell body, the position, size and contour of the nucleus and the absence of any proliferation of the nuclei or their capsules justify one in assuming that these cells did not undergo degeneration but survived the transplantation and would continue to exist indefinitely in their new position. A few medullated nerve fibers could be seen in the ganglion. These were gathered together in a bundle which could be traced for some distance in the scar when a series of these sections were studied.

124. Long Incubation Period of Syphilis.—In Simpson's case the onset of the characteristic symptom of "the secondaries"—the roseola—was 142 days after the infection. The length of the first incubation period was ten days and of the second incubation period 132 days.

St. Louis Medical Review

December

- 126 Gonorrhea in the Male, and its Treatment from the View-point of the Present. H. J. Scherck, St. Louis.
- 127 Metastasis in Carcinoma. G. McConnell, St. Louis.
- 128 Civilization: Yesterday—To-day—To-morrow. B. M. Ricketts, St. Louis.

American Journal of Public Hygiene, Boston

November

- 129 Sanitary Supervision of Communicable Diseases by the Department of Public Health. R. G. Brodick, San Francisco.
- 130 *Results of Federal Control of the Manufacture of Viruses, Serums, Toxins, and Analogous Products. J. F. Anderson, Washington, D. C.
- 131 *Scope of Public Health work in the Prevention of Dependence. H. Folks, New York.
- 132 Care of Phthisis in Children Through the Out-Door School. C. Floyd, Boston.
- 133 Day Camp Treatment for Tuberculosis. D. Townsend, Boston.
- 134 Educational Measures for the Prevention of Tuberculosis. A. M. Wilson, Boston.
- 135 Home Management of Consumptives. S. F. Cox, Boston.
- 136 Veterinary Hygiene. W. L. Beebe, St. Paul.
- 137 Municipal Sanitation. C. V. Chapin, Providence, R. I.
- 138 Sanitary Engineering Notes. R. S. Weston.
- 139 Chemical Laboratory Notes. F. C. Robinson, Brunswick, Me.
- 140 Biologic Laboratory Notes. F. P. Gorham, Providence.
- 141 Public Health Legislation, News and Notes. F. H. Slack, Boston.

130, 131. Abstracted in THE JOURNAL, Nov. 27, 1909, pp. 1843, 1845.

Journal of Abnormal Psychology, Boston

January

- 142 Personal Impressions of Sigmund Freud and His Work. J. J. Putnam, Boston.
- 143 The Dyschiria Syndrome. E. Jones, Toronto.

Journal of Pharmacology and Experimental Therapeutics, Baltimore

January

- 144 *Action of Urea and of Hypertonic Solutions on the Heart and Circulation. J. A. E. Eyster and A. G. Wilde, Charlottesville, Va.
- 145 *The Gastrointestinal Absorption of Drugs: Action of Phenol on Absorption. T. Sollmann, P. J. Hanzlik and J. D. Pilcher, Cleveland, Ohio.
- 146 Toxicity of Dextro-Camphor, Lævo-Camphor, and Inactive Camphor. W. E. Grove, Madison, Wis.
- 147 Apparatus for Recording the Outflow of Liquids. W. R. Williams, New York.

144. Action of Urea and Hypertonic Solutions.—The experiments described by Eyster and Wilde confirm the earlier

results of Lambert concerning the effects of urea on the frog's heart. Urea produces stimulation of the frog's and terrapin's heart. Similar stimulation results from the action of hypertonic solutions of sodium chlorid and of glucose. Urea is effective, however, in isotonic solution, and, the author claims, the action must be regarded therefore as a specific one of urea. In the mammal, hypertonic solutions of urea, sodium chlorid or glucose produce in moderate doses intravenously a transitory marked increase in cardiac output, vasodilation and fall of blood pressure. With larger doses, the cardiac output is decreased and the fall of blood pressure is greater. These immediate effects are followed by an increase in cardiac output and dilatation of the kidney and intestines which develops gradually and continues for a long period. The experiments leave undecided the relative quantitative action of these different substances in the above effects. All that can be said is that there is no striking difference evident and the effects of sodium chlorid and glucose would seem to be approximately equal to those produced by a solution of urea of equal concentration. The increased cardiac output would seem to be a factor in the diuresis caused by the injection of urea or salt solutions, in that it maintains a normal pressure notwithstanding the vascular dilatation in the kidney and intestines. The immediate increase in cardiac output and vasodilation produced by the injection of urea, sodium chlorid and glucose in hypertonic solutions, would seem to be independent of the production of hydremia and to be referable to a specific effect of these substances. Hydremia may, however, be the partial or sole explanation in the permanent effects on the cardiac output and caliber of the blood vessels described above.

145. Action of Phenol on Absorption.—From carefully conducted and extensive experiments the authors conclude that when phenol is placed in the alimentary canal, the absorption is at first very rapid, but is quickly checked and soon practically arrested. The absorption curve varies for different individuals, but the general phenomena are constant, and the average figures for several series agree well. When phenol is placed in the stomach, only traces pass into the intestine; a large proportion could be removed by gastric lavage, even several hours after the phenol was taken. Only traces of phenol are excreted into the alimentary tract. The prolonged presence of phenol, therefore, is not due to re-excretion.

Phenol also checks the absorption of iodid and of alcohol. The retention of phenol is not due to corrosion, for (a) the absorption is delayed rather than favored by dilution; (b) the presence of food probably also hinders the absorption; (c) alcohol hinders the absorption; (d) irritation by formaldehyd favors the absorption; (e) injury of the intestinal epithelium by sodium fluorid does not check absorption; (f) a variable amount of phenol may be absorbed after death. Phenol checks absorption even without local contact—for example, when it is inclosed in a ligated loop of intestine. The degree of absorption is not influenced by the length of the intestinal surface to which the phenol is applied. The interference with further absorption is proportional to the amount of phenol which has been absorbed into the circulation; and not to the amount which is present in the alimentary tract. On the other hand, local changes in the intestinal circulation have the most conspicuous effect on the absorption, generally in the sense that local vasoconstriction diminishes absorption, while local vasodilation increases absorption. Irritation may act in either direction, according to its grade. A large proportion of the unabsorbed phenol exists in the gastric or intestinal wall in such a way that washing removes it only very slowly and imperfectly. This obtains whether the phenol is administered during life or after death. By measuring the circulation time, it could be demonstrated that absorbed phenol slows the intestinal circulation in a specific manner, quite independently of the changes in carotid pressure. The direct local action of the phenol tends to increase the intestinal circulation, but this tendency is quickly overcome by the systemic action when the phenol is absorbed. It appears, therefore, that the inhibitory effect of phenol on absorption is not due to toxic action on the epithelium, but to a specific slowing of the intestinal circulation.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

Lancet, London

January 22

- 1 Problems Relating to Evolution of the Brain. G. E. Smith.
- 2 Congenital Acholic So-called Hemolytic Jaundice in One Family. F. P. Weber and G. Dorner.
- 3 *Simple Method of Fixation of Complement in Syphilis. J. Sabrazes and K. Eckenstein.
- 4 Glare, Its Causes and Effects. J. H. Parsons.
- 5 Pyopneumothorax Due to an Inhaled Tooth or to a Perforation of a Gastric Ulcer; Drainage; Recovery. W. G. Nash.
- 6 Nephrolithotomy; Use of the Ureter Catheter. J. Clay.
- 7 Acute Cerebrospinal Meningitis with Severe Choreiform Movements. J. P. Johnson.
- 8 *Twelve Successive Perforations of Stomach or Duodenum; Eleven Recoveries. T. Carwardine.
- 9 The Circulatory System (continued.) H. Campbell.

3. **Fixation of Complement in Syphilis.**—The method which Sabrazes and Eckenstein use is practically that of Hecht. The following materials are required: (1) Alcoholic extract of heart muscle (antigen); (2) sheep's blood corpuscles; (3) saline solution (9 per 1,000); and (4) serum to be examined. The tubes are arranged in three rows. The unit generally used is 100 cubic millimeters. The following solutions are added: To Tube 1: One unit of serum, 1 unit of saline solution, 1 unit of antigen. To Tube 2: One unit of serum, 2 units of antigen. To Tube 3: One unit of serum, 2 units of salt solution. The last tube acts as a control. The tubes are incubated at 37 C. for about one and one-half hours. One unit of sheep's corpuscles is added to each tube, and the whole returned to the incubator until hemolysis has taken place in the control tubes. This generally occurs in from ten to thirty minutes. The tubes are then placed in the ice chest until sedimentation of the non-hemolysed corpuscles has taken place. It would seem that the best time to perform the reaction is from six to twelve hours after the blood has been withdrawn, as this interval allows the clot to retract firmly and furnishes a clear serum.

A positive result is obtained when there is no hemolysis in the first and second tube, but hemolysis in the third tube; a negative result when hemolysis takes place in all three tubes. A trace of hemolysis in the first tube, provided that the second remains clear, may be taken to indicate a positive result. In cases which have been followed from the commencement of treatment, the authors have noticed that the reaction begins to disappear in this way. Should there be complete hemolysis in the first tube and no hemolysis in the second, they regard the result as being negative. Twenty cases have given this result. Of these, 13 were controls, 2 were persons married to syphilitics, but apparently themselves not affected by the disease, 3 were individuals with long-standing syphilis which had been very well treated; the other 2 were hereditary syphilitics and a suspect. Moreover, with a subject certainly non-syphilitic, and whose reaction has been tested on nine different occasions during a period of six months, the above result was obtained twice.

8. **Perforation of Stomach or Duodenum.**—Carwardine attaches great importance to rapid operation, the avoidance of irrigation of the peritoneum, and free drainage, followed by elevation of the patient's body, early feeding by the mouth, and the administration of continuous saline solution by rectum immediately after operation. Inasmuch as subphrenic abscess and empyema are frequent remote causes of death, Carwardine declares that it should be the rule to drain the right and left subphrenic regions in every case of perforated gastric or duodenal ulcer with extravasation, as well as the suprapubic region.

British Medical Journal, London

January 22

- 10 Gynecologic Difficulties of the General Practitioner. G. E. Herman.
- 11 Antiferment Treatment of Acute Suppuration. D. MacEwan.
- 12 *Vaccine Treatment of a Series of Staphylococcus Infections. A. C. Begg.
- 13 Ulceration of Face and Fauces Treated by Bacterial Vaccines. J. C. MacWatters.
- 14 *Vaccine Treatment of Pyelonephritis in Pregnancy. C. F. Routh.
- 15 *Treatment of Gonorrheal and Mixed Infections of Female Genital Tract by Lactic Acid Bacilli. D. Watson.
- 16 Early Symptoms of General Paralysis; Recovery Under Soamin. R. Prichard.

- 17 Intravenous Injections of Soamin in Cerebrospinal Meningitis. T. A. Johnston.
- 18 Treatment of Sleeping Sickness. R. Van Someren.
- 19 Treatment of Phthisis and Other Conditions by Arylarsonates. R. A. Lundie and R. H. Blaikie.
- 20 *Pemphigus Neonatorum Occurring in Practice of a Midwife. M. M. Smith.

12. **Vaccine Treatment of Staphylococcus Infections.**—Begg is convinced of the efficacy of vaccine treatment in most staphylococcus infections. Staphylococcus skin lesions, however chronic, are curable by its means; in many cases estimation of the opsonic index is unnecessary. The best results are only obtained by the use of autogenous vaccines.

14. **Vaccine Treatment of Pyelonephritis.**—A young married woman, aged 30, with one child aged 7, had suffered from the age of 14 from chronic constipation and an "irritable bladder," with frequent micturition. For many years also she had been unable to lie on the left side for any length of time, as that position always caused pain in the right loin sufficiently severe to awaken her if asleep. In June, 1907, she suffered from an attack of acute pain running up from the right iliac region toward the right kidney, with tenderness over the appendix, which lasted some days. She enjoyed good health until June, 1908, early in which month she became pregnant. On October 1 she had another attack of pain, similar to the first, lasting several days and accompanied by fever. This was also looked on as a mild attack of appendicitis. On Jan. 2, 1909, she had a severe rigor, followed by acute pain in the right iliac joint. This was followed on January 4 by vomiting. January 6 she was evidently acutely ill: temperature 103 F.; pulse 120; constant vomiting and great abdominal tenderness, especially over the appendix; and pain running from the ascending colon to beneath the liver. Micturition was frequent and painful, and there were severe rigors followed by profuse perspiration and great exhaustion. On Jan. 9, 1909, pus was found in the urine, which was acid and free from smell.

It became evident that the trouble was due to some lesion in the right kidney. A pure culture of *B. coli* was obtained from the urine, and from this a vaccine was prepared. The opsonic index was 1.8. The first injection was given on January 12, and within six hours the temperature fell from 104 F. to normal, and the pulse which had varied from 120 to 160, fell to 104. Five days after the injection the opsonic index was 2.5. From this date to January 24, the pulse never rose above 104, nor the temperature above 100 F., though all other symptoms remained as acute. On January 24 two rigors occurred, and the temperature rose to 102 F., only to fall to subnormal the next day, at which point it remained. The patient was kept in bed on light diet, and gradually increasing doses of vaccine were given every eighth day until six had been administered. On February 28, a healthy female child was born, the labor being perfectly normal. The patient made an uninterrupted recovery, and three weeks later the urine was free from pus and *B. coli*.

15. **Treatment of Gonorrheal Infections of Female Genital Tract.**—After a thorough disinfection of the parts (including ennetting when necessary), all excess of disinfectant is removed and the lactic fluid introduced into the vagina. The first effect of the treatment, says Watson, may be an increase in the amount of discharge, which, however, is completely altered in character. The purulent appearance ceases, and the discharge is white and thin. This is removed daily by gentle swabbing with dry wool through a speculum. In the most favorable cases the secretions are normal in a few days. In other cases the treatment is repeated weekly until cure is complete, usually in from two to three weeks. Even patients in whom the tubes are involved seem to benefit by the treatment and can be discharged from hospital earlier than used to obtain.

20. **Pemphigus Neonatorum.**—A malignant outbreak took place in the practice of a midwife. There were 4 cases, 3 of which were fatal. The midwife attended 7 other lying-in-women during this time, none of whose children developed the disease. In all the cases the mothers did well, and there was no history of sepsis. There was no infection of other members of the household. The original source could not be traced. So far as could be ascertained syphilis did not play any part in the disease, and no information was obtainable

that the midwife had any septic illness. The organism found was *Staphylococcus pyogenes aureus*; it did not differ appreciably from the ordinary variety.

Medical Press and Circular, London

January 12

- 21 Symptomatology of Dilatation of the Stomach. R. Bonsquier.
- 22 *Simple Operation for Hammer-Toe. W. I. de C. Wheeler.
- 23 Syphilis and Marriage. C. W. MacGillivray.
- 24 Flies and Fleas as Factors in Dissemination of Disease: Effect of Petroleum as an Insecticide. J. S. Purdy.
- 25 Pyorrhea Alveolaris and Other Conditions Causing Septic Mouths. W. H. Dolamore.

January 19

- 26 Significance of Involuntary Muscular Contractions and Behavior with Atropin as Regards Pathology, and Treatment of Gonorrhea in the Male. C. Schindler.
- 27 Roentgen-Ray Treatment of Nervous Itching of the Skin. H. W. Schmidt.
- 28 Why Have We English "Members" and Scotch "Licentiates?" J. C. McWalter.

22. Operation for Hammer-Toe.—The hammer-toe is encircled by rubber tubing held in position by an artery forceps on the dorsum of the foot. This tubing is applied prior to the injection of a local anesthetic. An elliptical incision is made which freely exposes the joint, when the skin bearing the corn is removed. The tubing prevents diffusion of the local anesthetic. This incision gives free access to the affected joint, and at the completion of the operation the suturing of the margins of the wound brings the toe into a straight position without the aid of any splint. The central strip of the extensor tendon is divided and the head of the first phalanx protruded through the lateral portions. The head is now removed freely with a bone forceps or fine saw, and the toe brought into position by the approximation of the widely separated skin edges. A collodion dressing is applied, and over it a strip of adhesive strapping. It is laid over the wound and proximal phalanx, with the adhesive surface uppermost; the ends are then passed under the adjoining toes, to which they become fixed. This counteracts any tendency to hyperextension of the affected digit. The patient from the first is allowed to walk about in an easy shoe, and after a fortnight all dressings are discarded.

Australasian Medical Gazette, Sydney

December

- 29 *Case of Botryomycosis in Man. A. G. Butler and D. A. Welsh.
- 30 Artificial Feeding in Infants. E. E. Bourne.
- 31 Cerebrospinal Meningitis Treated by Vaccine. J. F. Flashman and F. H. Furnival.
- 32 Points in Isolation of Organisms in Cases of Food Poisoning. B. Bradley.
- 33 Tidswell's Researches on Australian Venoms. R. Palleine.
- 34 Clinical Aspects of Acetamin. H. J. Ritchie.
- 35 Decompression in Treatment of Fracture of the Base of the Skull. A. M. Cudmore.

29. Botryomycosis in Man.—The patient, a healthy boy of 4 years, had had for nearly a year a swelling outside the left orbit. The swelling was over the left temporal bone, and there was apparent softening of the bone outside the left orbit and swelling of the eyelid. There was also marked proptosis. Clinical examination pointed to sarcoma as a possible diagnosis. The swelling was incised; it was found to be caused by suppuration of a somewhat unusual nature in that the pus was scanty and contained numerous small yellow granules. The pus was regarded as being clinically characteristic of actinomycosis. The subsequent history of the case is that a fistulous sinus formed and fresh pockets of pus were discovered which required further operation. After thorough opening and scraping of these, and ordinary surgical treatment, they healed, the proptosis disappeared, and the child was discharged. Potassium iodid had been given under the impression that the case was one of actinomycosis.

Examination of the pus failed to reveal the expected actinomycotic fungus, and this was reported to the surgeon. The result was received by him with some scepticism, and further investigation was urged. Cultural and experimental tests are still in progress. Butler and Welsh suggest that there is sufficient evidence to make it probable that the case described, and possibly others not recognized, represent conditions of botryomycosis occurring in man. They have seen a few cases in which the clinical features of the lesion, and the naked eye appearance of the pus were regarded as characteristic of actinomycosis and yet the most careful microscopic and cultural examination failed to reveal any streptothrix.

Dublin Journal of Medical Science

January

- 36 Physiology of the Pylorus. W. H. Thompson.
- 37 Trachoma. A. H. Benson.

Glasgow Medical Journal

January

- 38 Symptoms and Diagnosis of Duodenal Ulcer. A. E. Maylard.
- 39 *Acute Hemorrhagic Leucemia. W. K. Hunter.
- 40 Advances in Gynecology in Recent Years. J. M. M. Kerr.
- 41 *Rupture of Vessels of the Neck into the Pharynx in Scarlet Fever. J. H. Griffiths and D. F. Riddell.
- 42 Formation and Early Days of the St. Andrew's Ambulance Association. Sir G. T. Beatson.

39. Acute Hemorrhagic Leucemia.—The patient, a young woman, aged 22, dated her illness from a bleeding of the gums she had four weeks before Hunter saw her. A fortnight later there appeared blood in the urine, and this persisted. The temperature was 100 F.; pulse 120. The skin and mucous membranes were pale, and blood was exuding from the gums and clotting round the roots of the teeth; the breath had a most offensive odor. There were no purpuric spots in the skin, but a few bluish markings like slight bruising. The urine presented the appearance of blood-stained serum. There was no enlargement of the liver, spleen or lymphatic glands to be made out.

The red corpuscles numbered 2,680,000 per c.mm.; the white corpuscles 59,375 per c.mm.; and the hemoglobin registered 45 per cent. There was little poikilocytosis. There was a considerable proportion of nucleated red cells—about two to the hundred white cells. The vast majority of the white corpuscles were medium-sized mononuclear cells, with fairly well-stained nucleus, and the surrounding plasma less deeply stained. In a proportion of the cells this plasma (with Leishman's stain) had a rather leaden tint, while in others there were granules staining the same tint as the nucleus of the cell. In films stained with methylene blue only, these granules stained blue. No typical "large lymphocytes," i. e., cells with large pale nucleus and rim of darker stained plasma, were to be seen, and only an occasional neutrophil marrow cell was present. The patient lived eight days after this blood count, the whole duration of illness, so far as could be determined, being about five weeks.

41. Rupture of Vessels of Neck Into Pharynx in Scarlet Fever.—A boy, aged 9½ years, had a typical mild attack of scarlet fever, which ran a normal course with no complications till the twenty-third day of the disease when the temperature rose to 101.4 F., and the boy complained of pain in the right side of the neck. The next day the glands on the right side of the neck were enlarged and tender. This condition continued. On the twenty-eighth day the swelling in the throat presented the appearance of suppurative tonsillitis; a swelling could just be felt behind the right tonsil. The external swelling was excised; no pus. On the next day the swelling behind the tonsil was soft, and the wall broke down under slight pressure of the finger, the tip of which passed into a cavity about the size of a hazel-nut, and this was followed by a rush of dark-colored blood. The hemorrhage was profuse and uncontrollable, and the patient died in about a minute. A post-mortem examination was held. There was no ulceration of the fauces. Both tonsils were clean; right side of palate was edematous and right tonsil swollen. Behind the right tonsil was an irregular-shaped cavity, about the size of a hazel nut, the inner wall of which was broken down. This cavity was lined with laminated blood clot, about one-eighth of an inch thick, easily detachable, and forming a complete inner shell. Some loose blood clot was found inside. The internal jugular vein was connected with the outer wall of the cavity. Three large glands, about the size of a walnut each, were found between the right jaw and sternomastoid. The trachea was full of blood. All other organs appeared normal.

In the second case, rupture of the internal carotid occurred suddenly. The child was sitting propped up in bed taking some rice pudding, when he gave a sudden cough, which was followed by profuse arterial hemorrhage from the mouth, completely saturating the bedclothes. He died almost immediately. On dissection of the right side of the neck two enlarged glands, about half the size of a small walnut each, were found. These were just breaking down. The large vessels were dissected out as far as possible, and on the inner

side, at about the level of the angle of the jaw and just behind the pharyngeal wall, a small cavity, large enough to contain a small hazel nut, was found with some blood clot. The walls of this cavity were ulcerated, and at the upper part the internal carotid was found to be involved in the ulceration. A rupture of the wall of the artery was found. On the opposite side of the cavity a corresponding tear was found in the posterior pharyngeal wall. There was no evidence of ulceration internally in the pharynx, the mucous membrane of which was found to be intact, except at site of rupture. Both tonsils showed slight superficial ulceration, which seemed to be healing.

Annales de l'Institut Pasteur, Paris

December, XXIII, No. 12, pp. 937-1044

- 43 *Lack of Intestinal Flora in Bats. (Roussettes et microbes.) E. Metchnikoff and Others.
- 44 Histophysiologic Research on Aseptic Autolysis of the Liver. (Autolyse aseptique du foie.) L. Launoy.
- 45 Epidemic of Yellow Fever at Martinique. (Etude de l'épidémiologie amarile.) Simond, Aubert and Noc. Commenced in preceding number.

43. **Digestion Without Intestinal Flora in Bats.**—Metchnikoff and his assistants have made a special study of the large fruit-eating bat of the tropics, the connecting link between birds and mammals. It has no cecum and the large intestine is very short so that the food residue is rapidly expelled, as in birds. This animal shows that digestion can occur without the aid of microbes in the intestine. Digestion proceeds by the digestive juices alone. This bat expels its dejecta very rapidly, and thus mechanically sweeps out any microbes ingested, so that the intestine contains scarcely any. The facts observed with very young animals, chickens and tadpoles should not be regarded, Metchnikoff says, as contradictory, as in them the digestive power is still incompletely developed, and the aid of microbes may be of great importance for digestion in their case. The absence of intestinal flora in the bat explains the lack of aromatic substances in the excreta, such as indol, skatol and the phenols, and this finding confirms the assumption that these substances are not produced by the animal organism, but by the microorganisms inhabiting the intestines. He thinks that the same statement applies to urobilin, the bacterial origin of which is more generally accepted. Another point brought out in this research is that as the digestion in the bat is done exclusively by the digestive juices, these must also be responsible for the digestion of cellulose. It has not proved possible to isolate the ferments which perform this work, but the good digestion in the bat of fruit rich in cellulose shows that microbes are not necessary for the digestion of the latter.

Archives Générales de Chirurgie, Paris

December, III, No. 12, pp. 1211-1320

- 46 Anatomic Type of Fracture of the Calcaneum. A. Binet and Trench.
- 47 Inflammation of Anterior Tubercle of the Tibia. (Apophysite tibiale.) D. Zesas.
- 48 Simultaneous Diverticulitis and Appendicitis. Maclaure and Douay.

Archives Générales de Médecine, Paris

December, LXXXIX, No. 12, pp. 869-906

- 49 *Pulmonary Edema During Pregnancy and Parturition. (Oedème aigu du poulmon dans l'état puerpéral.) L. Pouliot.
- 50 Crossed Cultivation of *Bacillus perfringens* and *Bacillus* of Acute Articular Rheumatism. G. Rosenthal and P. C. Wetzel.
- 51 Radioactive Mud in Treatment of Acute Exacerbations of Gonorrhea in Women. (Les boues radio-actives dans le traitement des poussées inflammatoires aiguës, d'origine gonococcique chez la femme.) S. Fabre and P. Lutaud.

49. **Edema of the Lungs in Pregnancy and the Puerperium.**—Pouliot discusses the origin, means of prevention and treatment. He has found 10 cases on record in which the edema developed in the lung in consequence of some heart lesion, with only 3 survivals; 6 cases in which the edema was the result of the toxemia of pregnancy, with 3 survivals, and 12 cases in which the edema followed administration of pilocarpin given to relieve albuminuria or eclampsia. Six of the women in this group recovered. He tabulates the details of the various cases, and calls attention to the necessity for distinguishing between passive and active edema. The former is generally from a chronic tendency to edema, while the active form is due to congestion, vasodilatation of the

arterioles and capillaries in the lungs. This vasodilatation may be a nervous vasomotor phenomenon of reflex origin or the result of the action of toxins on the nerve centers. Edema of the lungs is one of the gravest complications of parturition, both for mother and child. As the maternal blood suffers from lack of oxygen, it draws on the reserve oxygen in the blood of the fetus, so that, as a rule, the fetus is asphyxiated before the mother succumbs. In prevention he advises against marriage and pregnancy for girls with adherent pericardium, mitral lesion complicated with albuminuria, pulmonary tuberculosis or scoliosis, and, if pregnancy occurs, it should be supervised with extreme care to ward off retention of salt and arterial hypertension. With failing compensation, he warns against inducing abortion in case of any of the above complications. If labor has commenced, it must be borne in mind that this frequently gives the final stroke to an already overworked heart and thus starts the pulmonary edema, consequently all should be in readiness to hasten delivery with instrumental dilatation, version or forceps. Delivery and the first hours thereafter are the most critical from the standpoint of edema of the lungs. The possibility of edema should be borne in mind, and heart tonics given to women with pneumonia, influenza or rheumatism, restricting to the minimum the intoxication from the food, and especially reducing the intake of salt in those showing the least tendency to albuminuria. No harsh measures should be used, or injection of salt solution; if the latter is deemed necessary, it should be given only in fractionated doses and subcutaneously, not intravenously. Asphyxia is best combated by immediate venesection, withdrawing at least 500 gm. of blood. The danger from loss of so much blood when the woman has already lost a considerable amount is much less than the danger from the acute edema of the lung. After the venesection, subcutaneous injection of apomorphin may aid in promoting expectoration of the fluid while reducing the pressure in the circulation through the lungs. Inhalation of amyl nitrite in this condition has proved disappointing. The heart should be sustained in the meanwhile with the usual tonics; camphorated oil is not only a vigorous tonic for the heart, but it has a sedative action on the respiratory spasm, while it is comparatively harmless. He advises injecting up to 10 c.c. of a 10 per cent. solution. Inhalation of oxygen is also a useful adjuvant. One case at least is on record in which Cesarean section twenty minutes after death delivered a viable child.

Presse Médicale, Paris

January 8, XVIII, No. 3, pp. 17-24.

- 52 Cytology of the Urethra in Chronic Urethritis. (Diagnostic des séquelles inflammatoires des urétrites chroniques.) J. Baur.
- 53 Phototherapy and Radiotherapy of Acne and Acneiform Lesions. H. Bordier.
- 54 Fracture of Terminal Phalanx of Finger. (Désinsertion phalangettienne du tendon extenseur.) R. Bonneau.

January 12, No. 4, pp. 25-32

- 55 Ultraviolet Rays. (La lumière ultra-violette.) A. Troller. (Les propriétés physiques des rayons ultra-violets.) Matout. (Les rayons ultra-violets et leurs applications à la stérilisation.) V. Henri and G. Stodel.
- 56 Primary Tumor of the Liver. (L'hépatome: tumeur primitive du foie.) L. Rénon, E. Géraudel and R. Monnier-Vinard.

January 15, No. 5, pp. 33-40

- 57 Present Status of Bronchoscopy. P. Scibileau and F. Lemaître.
- 58 Adherent Inguinal Hernia of the Cecum. G. Lardennois and J. Okinczye.

Semaine Médicale, Paris

January 19, XXX, No. 3, pp. 25-36

- 59 Phenomena of Reaction to Softening of the Brain, Aseptic or Inflammatory. (Les phénomènes réactionnels du ramollissement cérébral aseptique, leurs caractères différentiels d'avec l'encéphalite compliquée de ramollissement.) J. Lhermitte and H. Schaeffer.

Beiträge zur Klinik der Tuberkulose, Würzburg

XIV, No. 4, pp. 359-476. Last indexed Dec. 25, p. 2180.

- 60 *Tuberculin Treatment of Pulmonary Tuberculosis. G. Schröder.
- 61 Experimental Attempts to Immobilize the Lung by Plastic Operations on the Thorax. (Versuche zur Lungenkollapstherapie durch Thorakoplastik.) R. Eden.
- 62 Differential Diagnosis Between Extremely Large Cavities in the Lung and Pneumothorax. L. Brauer and W. A. Gekler.
- 63 Experimental Research on Origin of Pulmonary Emphysema. (Entstehung des Lungenemphysems.) H. Schall.
- 64 *Technic of and Dangers to Avoid in Surgical Pneumothorax to Immobilize the Lung. (Erfahrungen und Ueberlegungen zur Lungenkollapstherapie. II.) L. Brauer and L. Spengler. First part in Vol. XII, No. 1.

60. Improved Technic in Tuberculin Treatment. This article was read at the annual meeting of the medical directors of the German sanatoriums for lung disease last October. Schröder reviews his experience with 25 cases in which tuberculin treatment had been systematically given by other physicians according to the generally approved technic, and the patients had been discharged as practically cured. They came to Schröder's sanatorium, however, not long after with severe recurrence of symptoms and acute spread of the tuberculous process. In each case the tuberculin had been given with gradually increasing doses until it was tolerated without any reaction. But not long after the course of treatment a tuberculous process developed in the larynx in 4 cases, in the intestines in 2, once each in the kidney, meninges, testicles and epididymis, middle ear, knee, hip and tonsil, and in 8 cases there was serious breaking down of lung tissue and in 6 the onset of galloping phthisis. He suggests the possibility that the tuberculin may have rendered more active already existing but occult foci. In some of the cases the process was finally arrested, but in the majority the disease progressed to a speedily fatal termination. This group of cases demonstrates, he affirms, that tuberculin treatment continued until it induces no further reaction, that is, until the patient is "toxin-fast," does not protect against the spread of the tuberculosis and may even favor it. He insists that the effort to render the organism artificially toxin-proof is based on a mistaken conception of what is needed, as he explains in detail. The true principle of effectual tuberculin treatment is with the most minute doses, Wright's and others' research having demonstrated that even the smallest doses of a specific vaccine seem to be able to stimulate the production of antibodies. Autoreinfection from the patient's own focus during physical exercise may answer this purpose to a certain extent. On this basis Schröder has applied tuberculin in treatment of 60 tuberculous patients in the last few years, using in 45 cases "bacillus emulsion" and in 15 "Perlsucht old tuberculin." The doses were from 0.00005 mg. to 5-8/10000 mg. of the former and from 1/1000 to 1-2/100 mg. of the latter, allowing 10 or 14 days between each injection and reducing the size of the dose if anything indicating a general or local reaction was detected. In this group of patients 12 were in the first, 30 in the second and 18 in the third stage of tuberculosis. Tubercle bacilli vanished from the sputum in 21 of the 42 patients with open lesions. The results on the whole, he declares are better than have been realized elsewhere in Germany with the same class of patients. In 50 cases the patients had fever and normal temperature was permanently restored in 41. He claims that this method of treating tuberculosis with the most minute doses of a specific antigen, relinquishing all attempts to render the patients non-sensitive to the toxin, is a great improvement over the usual methods of administration and, while perfectly harmless, is proving a most valuable adjuvant to hygienic-dietetic measures by stimulating the production of antibodies in the most harmless way. A local reaction in the focus was frequently detected, which he assumed to be an inflammatory reaction, and he always kept the patients entirely quiet thereafter for a day or so to prevent further injury. To attempt to magnify this local reaction by physical exercise or work is both useless and dangerous, he affirms. The aim of administration of these minute doses of the specific antigen is to promote the cheesy degeneration, softening and throwing off of morbid products while refraining from favoring the spread of the disease to the surrounding sound tissue or driving out the tubercle bacilli and their toxins to flood the organism. Under all conditions, he adds, this treatment with the specific antigen requires that the patient should be kept under permanent clinical control. Ambulant treatment he denounces as dangerous.

64. Surgical Pneumothorax in Treatment of Pulmonary Tuberculosis.—This extensive article is a discussion of the technic, the dangers and the results of immobilization of the lung as practiced by Braner and Spengler. They also review 5 fatalities which have occurred in connection with surgical pneumothorax, and show the blunders in technic which permitted them. Air embolism is the chief danger, and an incision is necessary for the first insufflation; ignorance as to where the tip of the needle is going is too hazardous. Some

of the cases of air embolism from injury by this means have been reported as reflex spasm or eclampsia of the pleura, a conception without analogy under other conditions.

Berliner klinische Wochenschrift, Berlin

January 3, XLVII, No. 1, pp. 1-44

- 65 *Points In Physiology of the Brain Learned from Operative Experience. F. Krause.
- 66 *Surgery of Blood-Vessels. (Gefässchirurgie.) S. Hadda.
- 67 Cesarean Section for Placenta Praevia. (Kaiserschnitt bei Placenta praevia.) B. Krönig.
- 68 Milk Albumin in Infant Feeding. (Milcheiweissfrage in der Säuglingsernährung.) A. Bickel and H. Roeder.
- 69 Normal Decline in Weight After Birth. (Die "physiologische Gewichtsabnahme" der Neugeborenen.) J. Hirsch.
- 70 Seroreaction with Echinococcus Cysts. H. Lippmann.
- 71 Atypical Reaction to Roentgen-Ray Exposures. (Atypische und weniger bekannte Folgeerscheinungen nach Röntgenbestrahlung.) A. Zehden.
- 72 Angina and Chronic Recurring Parotitis. W. Lublinski.

65. Physiologic Data in Regard to the Brain Learned from Operative Experience.—Krause has had success in a number of cases of operative treatment of epilepsy; but he never excises more than an area of 24 x 30 mm., 5 or 8 mm. thick. The disturbances after the excision are startling, but they usually subside in a few days or weeks. He describes them in detail as also the motor disturbances in speech which he has observed in several cases after excision of the cortex and which his experience has more definitely localized. The surgeon undertaking operations on the brain should master the technic of electric stimulation of the cortex, although never forgetting that he is working not for physiologic but for therapeutic purposes. The visual disturbances are further described; in one case a tumor in the occipital lobe was diagnosed mainly by the hemianopsia. After the operation in one case there were peculiar visual hallucinations for a week, but finally even the hemianopsia subsided and the patient has been well during nearly four years since. In a case of sarcoma in the vicinity of the optic nerve there was no hemianopsia, but this developed afterward, probably from the tamponing necessary, and it has persisted to date. The remarkable rise in temperature and pulse after operations on the brain was observed in several cases, but with no other signs of fever in most cases; in one the temperature continued for three months. In one case a chill and vomiting accompanied the recurring high temperature during three months, but the patient is now in good health after an interval of three years.

66. Suture of Vessels.—Hadda describes the technic with which he has been able to suture the femoral artery and vein to induce anastomosis between them without checking the flow of blood at any time. His experiments were made on dogs, and 7 of the 11 operations were entirely successful. His technic excludes seizing the vessels with forceps; he uses an instrument consisting of two fine knife-blades, tapering to a point, with which the vessels are cut after they have been sutured, not before. He says it is interesting to see the arterial blood pour at once into the vein without interruption at any time of its flow.

Deutsche medizinische Wochenschrift, Berlin

January 13, XXVI, No. 2, pp. 57-104

- 73 *Chronic Cystic Cerebral Meningitis. (Zur Meningitis chronica serosa circumscripta des Gehirns.) H. Oppenheim and M. Borchardt.
- 74 The Camidge Reaction. O. Hess.
- 75 Actions of Combinations of Hypnotics. (Wirkung von Narcotica-Kombinationen.) E. Bürgi. Commenced in No. 1.
- 76 Treatment of Meningococcus Carriers. (Zur Behandlung der Meningokokkenträger.) H. Bethge.
- 77 Serous Expectorations. P. Hampeln.
- 78 Paratyphoid Bacilli and Meat Poisoning. (Paratyphusbazillen und Fleischvergiftungen.) E. Hübener.

73. Circumscribed Chronic Serous Cerebral Meningitis.—Oppenheim reports a case which demonstrates that a circumscribed serous meningitis may develop in the posterior cranial fossa, consecutive to various causes, the symptoms of which resemble those of a brain tumor in nearly every respect. The prognosis, however, is good with early surgical interference. When signs of meningeal irritation are particularly pronounced in dubious cases and the syndrome shows marked exacerbations with long remissions, the possibility of serous meningitis should be borne in mind. Under certain conditions a pulsating vascular murmur may be heard, similar to that

of aneurism of the basal arteries. If the disturbances do not subside under iodine and mercury, operative intervention should be considered. This proved entirely successful in a case reported in detail, except that the vision had been lost in one eye and was much impaired in the other before the parents consented to operation. The danger to vision should hasten the decision in such cases. Lumbar puncture alone seemed to aggravate the condition, although only 2 c.c. of fluid was withdrawn. Borchardt completes the report by adding the surgical details. The patient was a girl of 9.

Fortschritte der Medizin, Leipsic

January, XXVIII, No. 1, pp. 1-32

- 79 Principles of Immunization Against Bacterial Toxins. H. Much.
- 80 Advantages of Physical Measures in Treatment of Heart Disease. E. Plate.

Medizinische Klinik, Berlin

January 9, VI, No. 2, pp. 45-84

- 81 *Cystoscopic Diagnosis of Tuberculosis of the Kidney in Boys. (Zystoskopische Diagnostik der Nierentuberkulose beim Knaben.) E. Portner.
- 82 History, Anatomy and Technic of "Spinal Anesthesia." (Rückenmarksanästhesie.) H. Sellheim.
- 83 *Indications and Contraindications for Rectal Injections and Enemas. (Dickdarmeinläufe und Klistiere.) I. Boas.
- 84 Osmotic Concentration of Mixtures of Milk for Infant Feeding and Its Practical Importance. (Die osmotische Konzentration der Säuglingsmilchmischungen und ihre praktische Bedeutung.) Engelmann and Kock.
- 85 Urobilinuria. Huber.
- 86 Thirty-five Cases of Tonsillitis with Sepsis. L. Liebl.
- 87 The Permeability of the Meninges. V. Kafka.

81. Cystoscopic Diagnosis of Renal Tuberculosis in Boys.—

Portner remarks that cystoscopy in girls, even only a year old, is no more difficult than in adults, but that in boys the small caliber of the urethra interferes with the introduction of the cystoscope. The possibility of renal tuberculosis should always be borne in mind in a case presenting the three symptoms of abnormally frequent micturition, pain in the bladder and pyuria; and the kidney functioning should always be tested to determine the condition of the other kidney. Inoculation of animals should be the routine practice in every case of pyuria which does not show a prompt turn for the better soon, especially in children. Every tuberculous process in the urinary organs has one stage in which it is strictly localized to the organ in question, and it is the practitioner's duty to diagnose it while it is in this surgically curable stage. In a case Portner describes at length the above triad of symptoms was assumed to indicate bladder stone, but a suprapubic incision showed the bladder empty, and 4 guinea-pigs injected with the urine all developed tuberculosis. Such cases confirm the importance of prompt cystoscopy; it is possible to use a small caliber cystoscope on a boy 2 years old and up, and to catheterize the ureter from the age of 8 up. General anesthesia is indispensable, and this is the most difficult point of the technic, as superficial anesthesia is inadequate. The bladder reflex persists longer than the corneal, and unless it is fully stilled the bladder will be intolerant of the fluid introduced and will expel it or may bleed. No attempt should be made to introduce the cystoscope until the pupils are contracted and cease to react. The bladder mucosa was found normal in the case described, but there was a possibility that the pus cells observed came from both kidneys. Functional tests of the kidney requiring catheterizing of the ureters or segregation of the urine could not be attempted in this small boy, but the indigocarmine test—chromocystoscopy—was applied at once, the child being still under the influence of the anesthetic. An injection was made in the buttocks of 20 c.c. of a 4 per cent. solution of the stain. In normal conditions the urine is seen to become blue in from 8 to 10 minutes, but in this case 12 minutes elapsed before the blue urine spurted from the right ureter, and not until after 21 minutes did the urine from the left ureter show a tinge of blue gradually deepening in the next 3 minutes—a difference of 9 minutes to the discredit of the left kidney. The absence of cachexia in this case indicated that the process was not bilateral. The slight delay with the urine from the right kidney suggested caution, however, so that the parents' dread of an operation turned the scale and merely a course of tuberculin treatment was instituted. This was the more justified, as the lack of tuberculous processes in the bladder rendered

ascending infection of the sound kidney improbable. In another case prompt nephrectomy put an end to the distressing pains and tenesmus, but the second kidney was evidently involved in the process, as surmised from the fact that neither of the ureters passed tinted urine after injection of indigocarmine. The involvement of the second kidney must have been of recent date, as the mouth of the right ureter seemed to be normal; the child's general health was also not much impaired, and the conditions in this case promise a favorable outcome.

Local treatment of the bladder with solution of bichlorid of mercury is useful after nephrectomy, but it is of no use, Portner says, when both kidneys are tuberculous, and it only torments the patients unnecessarily. As a rule, tuberculosis of the urinary apparatus seems to be more malignant in children than in adults, but Portner thinks that this impression is perhaps only due to the fact that we have not learned to differentiate it early enough. It is not so long ago that the same pessimism prevailed in regard to renal tuberculosis in the adult.

(An illustrated description of the method of chromocystoscopy was given in THE JOURNAL, Jan. 2, 1904, page 69. See also page 2005, Dec. 5, 1908.)

83. **Indications and Contraindications for Enemas.**—Boas discusses the change in opinion in late years in regard to the efficacy of medicinal injections into the intestines, his view being that astringent and other medicated enemas do more harm than good and are liable to induce inflammation and aggravate the existing. Even plain water enemas are liable to induce or aggravate mucomembranous enteritis, while all disturbances may cease when the constipation or the diarrhea is cured by dietetic measures. In cases of severe constipation, continuous irrigation with soapy water and a two-way tube, with the patient on the side or in the knee-elbow position, continuing with several quarts or until the water comes away free from feces, is the most effectual measure for severe acute or chronic coprosthesis, far surpassing, Boas asserts, injections of oil, although he sometimes adds a few hundred grams of olive oil to the water. Under other conditions enemas are of little value unless the lesion is accessible in the rectum, in which case benefit may be derived from protecting powders, such as bismuth. Except with tuberculous or syphilitic ulcerations he has always found that the process started to heal when treated with a 5 per cent. suspension of bismuth or the latter insufflated dry.

Monatsschrift für Geburtshilfe und Gynäkologie, Berlin

January, XXXI, No. 1, pp. 1-150

- 88 Arguments in Favor of Classic Technic for Cesarean Section. (Ein Wort für den klassischen Kaiserschnitt.) F. Schauta.
- 89 *Streptococcus Infection and Leucocytosis. W. Zangemeister.
- 90 Malformation of the Limbs in New-Born Infants. (Extremitätenmissbildungen bei Neugeborenen.) L. Mayer.
- 91 Muscle Plastic Restoration of Floor of Pelvis in Treatment of Genital Prolapse. (Myoplastische Bildung des Beckenbodens mit Hilfe des M. levator ani und des M. glutaeus maximus.) J. Tandler and J. Halban.
- 92 Laparotomy for Incarcerated Retroflexion of the Gravid Uterus. E. Poppel.
- 93 *Yeast in Treatment of Leucorrhea. (Neuere Versuche über die Hefebehandlung des weiblichen Fluors.) O. Abraham.
- 94 Outcome in Eighty Cases of Uterine Cancer. (Karzinomstatistik der Kgl. Universitätsfrauenklinik zu Halle a. S.) J. Veit.

89. **Streptococcus Infection and Tuberculosis.**—Zangemeister's experimental research and clinical experience have shown that certain features of the blood count with streptococcus infection may prove important for diagnosis and prognosis, as he explains in detail.

93. **Yeast in Treatment of Leucorrhea.**—Abraham announced in 1902 that living yeast had a destructive action on bacteria, and most of all on the gonococcus, killing the latter in 6 hours' contact, streptococci in 32 and staphylococci in 40. Killed yeast cells do not have this bactericidal action unless mixed with sugar. The bactericidal action is not connected with the living cells or fermentation products, as it continues after the cells have been killed, as in compressed and dried yeast, if mixed with sugar, but not without this admixture. He applied the facts thus learned to treatment of leucorrhea, and his experience in this line, he states, has confirmed the efficacy of yeast in treatment of gonorrheal and non-gonorrheal inflammation, erosions and similar lesions, both vaginal

and uterine. For the last year or so he has mixed the yeast with bolus alba as the most convenient vehicle. This ensures also the advantages of the bolus. He adds to the mixture also a little sugar and alkali, the latter in the form of magnesium sulphate, sodium phosphate and carbonate and potassium carbonate. The powder formed by this combination is durable; he applies it by insufflation or introduces it in a gelatin capsule. The bolus alone cures temporarily, he says, but does not remove the cause, so the trouble returns afterward, but the above combination seems to have a prompt and thorough action, not only drying up the source of the secretion, but destroying the gonococci and other germs. Recent gonorrheal colpitis subsides rapidly under its influence; erosions heal more slowly. Lesions in the uterus also heal as the sources of irritation and of constant infection in the vagina are cured. It is necessary, however, to mop out the cervix in case of much inflammation before applying the yeast mixture in order to ensure good results. All but 14 per cent. of his patients in this class had the cervix inflammation subside; in nearly half of the cases of failure the inflammation was kept up by some lesion in the adnexa.

Münchener medizinische Wochenschrift

January 11, LVII, No. 2, pp. 57-112

- 95 *Acute Poliomyelitis in Monkeys, and the Nature of Its Causal Agent. (Ueber experimentell erzeugte akute Poliomyelitis bei Affen und die Natur ihres Erregers.) S. Flexner and P. A. Lewis (New York).
- 96 Specific Changes in Drop-Forming Property: Stalagmometry. (Die spezifische Melostagminreaktion. Eine physikalisch-chemische Immunitätsreaktion.) M. Ascoli.
- 97 Formation of Fat Acids in Infants' Intestines. (Das Verhalten der Fettsäurebildung im Darminhalt des Säuglings.) A. F. Hecht.
- 98 Behavior of Liver in Chronic Pericarditis. O. Hess.
- 99 Phagocytosis and the Arneith Blood Formulas. (Phagozytose und Arneithsches Blutbild.) W. Busse.
- 100 *Liability to Genital Prolapse in Elderly Primiparae. (Der Genitalprolaps eine Folge der späten Erstgeburt.) M. Fetzner.
- 101 *Contusion of the Pancreas. (Ueber subkutaner Pankreasverletzungen.) N. Guleke.
- 102 Seroreaction in Syphilis as Tested at Strassburg Clinic. Hügel and Ruete.
- 103 *Hygiene of the Mouth and Pulmonary Tuberculosis. A. Moeller.
- 104 Brandy Intoxication and Test for Fusel Oil in Liquors. (Branntweinvergiftungen zugleich ein Verfahren zum qualitativen Nachweis von Amylalkohol [Fuselöl] in spirituellen Lösungen.) H. Holländer.
- 105 Bolus Alba in Therapeutics. (Zur Bolusbehandlung.) M. Nassauer.

95. This article appeared in THE JOURNAL, Dec. 18, 1909, p. 2095.

100. **Genital Prolapse as a Consequence of Advanced Age at First Labor.**—Fetzner gives a number of diagrams comparing the age at the first childbirth in connection with development of genital prolapse among the patients at the Tübingen gynecologic clinic. Women who bear their first child before the age of 20 very seldom have genital prolapse later; the tendency to it increases with every year of the woman's age at the time of her first pregnancy. The number of labors, Fetzner says, does not seem to influence the tendency to genital prolapse, only the age at the first pregnancy.

101. **Contusion of the Pancreas.**—Guleke reports 4 cases, one with autopsy. Operative intervention was necessary in all but the last case, and he reviews the indications for it. Three of the patients recovered; a tumor developed in the epigastrium in 2 cases, evidently an effusion in the lesser sac of the peritoneum.

103. **Care of the Mouth and Tuberculosis.**—Moeller urges extra care of the teeth and mouth by the tuberculous, not only to clear out nesting-places for bacilli, but also to insure proper mastication, which is especially necessary for them to ensure getting the greatest benefit from the nourishment taken.

Virchows Archiv, Berlin

January, CXCIX, No. 1, pp. 1-192

- 106 Research on Stasis in Pancreas of Living Rabbits. (Beiträge zur Lehre von der Stase nach Versuchen am Pankreas des lebenden Kaninchens.) M. Natus.
- 107 Cancer in Dogs. (Ueber den vollwertigen Organbau eines Talgdrüsenadenoms und eines Analdrüsenkarzinoms beim Hund.) A. Jaeger. (Zur Metaplasiefrage und den organoiden Entwicklungsvorgängen der Tumorengese, dargelegt an den Mammablastomen des Hundes.) Id.
- 108 Acquired Syphilis of the Small Intestine. (Ueber erworbene Dünndarm-Syphilis.) E. Fraenkel.
- 109 Endocardium Tumors. (Ueber sogenannte Endokardtumoren und ihre Entstehung.) H. Stahr.

Wiener klinische Wochenschrift, Vienna

January 13, XXIII, No. 2, pp. 51-82

- 110 Simultaneous Normal and Extrauterine Pregnancy. (Zur Kenntnis der gleichzeitig extra- und intrauterinen Gravidität.) Ehrendorfer.
- 111 Unilateral Exclusion of the Pylorus. (Zur unilateralen Pylorus-ausschaltung.) A. v. Eiselsberg.
- 112 Plastic Operation on the Cheek with Flap from Shoulder. (Wangenplastik mit am Sternalrand gestelltem, gegen die Schulter verlaufendem Brusthautlappen.) A. v. Hacker.
- 113 *Gastroenterostomy or Resection for Gastric Ulcer? J. Hocheuegg.
- 114 *Three Cases of Splenectomy. W. Otto.
- 115 *Calculus Anuria. (Bemerkungen zu einem Falle von kalkulöser Anurie.) A. Fraenkel.

113. **Gastroenterostomy or Resection for Gastric Ulcer?**—Hocheuegg remarks that gastroenterostomy for ulcer has become the most frequent operation he has to perform now, with the exception of herniotomies. The results are uniformly good with the routine technique employed. In his private practice all the patients were freed at one stroke from their ulcer disturbances and have been in good health for years, including 5 cases in which the ulcer was not in the pylorus region. On the other hand, in the one case in which he gave the preference to resection—a callous ulcer with adhesions to the pancreas—a small abscess was opened, and fatal peritonitis followed. Gastroenterostomy protects better than resection, he thinks, against recurring ulceration, while it is a far less serious operation than resection. Suspicion of cancer, of course, justifies the latter, but he does not approve of Payr's suggestion that a family history of cancer should turn the scale in favor of resection when gastroenterostomy otherwise seems indicated.

114. **Splenectomy.**—In one of the 3 cases reported by Otto the young woman married after splenectomy in 1887, and has borne 9 children since, and is now robust and without a trace of anemia. The spleen was removed on account of being six times the normal size; the patient was extremely anemic and had had three febrile attacks. In another case the patient presented the symptoms of far-advanced splenomegaly with cirrhosis of the liver, the syndrome to which Banti called attention in 1894. The patient succumbed soon after the splenectomy. In a fourth, recent case, a hemophilic taint warns against surgical intervention, and he is trying to cure the patient with arsenic. A fifth patient with the same disease is soon to be splenectomized.

115. **Reflex Anuria from Lithiasis.**—Fraenkel reports the case of a previously healthy man of 39 awakened at night by pain in the left lower abdomen. He voided urine as usual the next morning, but after this 8 days passed with complete anuria, no desires to urinate, no pain and not much disturbance in general health. The bladder was empty, the abdomen nowhere tender, the secretion of urine having evidently ceased for the time being. An incision over the left kidney revealed this organ much enlarged, suggesting that the other kidney had long been totally functionless, which proved to be the case. The trouble was evidently a reflex anuria from the irritation of calculi found in the hilus; others were expelled later from the ureter. The capsule was enormously distended, but when opened no urine was found in the hilus. Normal conditions in the circulation and epithelium were gradually restored, and the secretion of urine proceeded normally thereafter. An interesting feature of the case was the lack of general disturbances during the 8 days of total anuria, suggesting that the retention of waste matters is not after all the real source of the disturbances observed during anuria. In this case measures to promote diaphoresis and to keep the bowels open during the week of anuria warded off evil consequences from the retention. The danger is when the kidney tissue becomes seriously impaired by the factors primarily responsible for the anuria—this injures the secretory apparatus beyond repair, and operative intervention should never be delayed until this danger stage is reached.

Zeitschrift für Geburtshilfe und Gynäkologie, Stuttgart

LXV, No. 3, pp. 569-786. Last indexed Jan. 15, p. 247

- 116 *Stretching of Perineum During Delivery. (Untersuchungen über den Modus der Dehnung in der Geburt.) H. Küster.
- 117 *Oleic Acid Probably Not Responsible for Eclampsia Syndrome. (Ueber Oelsäurewirkungen als Ursache der Eclampsia gravidarum.) O. Polano.

- 118 A Polypous Cystoma on Posterior Surface of Uterus and Other Rare Findings in Internal Genitals. M. Bolaffio.
119 Male Pseudohermaphrodite. A. Heyn.
120 Axial Torsion of Uterus from Myoma in Ligament. (Unge-
wöhnliche Entstehung einer Hämatocervix.) R. T. Jaschke.

116. **Stretching of the Perineum During Delivery.**—Küster makes a cross of seven indelible dots on the perineum of lying-in patients to study the mode of distention of the parts during delivery, as the dots separate during the stretching. The fold of skin and vaginal tissue pushed before it by the head extends for 3 or 4 cm. beyond the musculature beneath so that an incision can be made in the middle line to this depth, in case the perineum does not yield, without fear of cutting into the muscles below. The findings with the dots show that the perineum does not stretch to such an extent as stated in the text-books. An incision in the median line to a depth of 1.5 or 2 cm. is generally sufficient, as this permits a yielding of 3 or 4 cm. According as the dots show that the stretching is mostly transverse or axial, the incision can be made to correspond. In some cases the vaginal wall is pushed along, so that as the parts relax after delivery it is found that the incision, 2 cm. long, is exclusively in vaginal tissue, the frenulum and skin of the perineum being intact. The dots aid in suturing the wound or laceration afterward, allowing more accurate coaptation. He makes a dot at the frenulum, at the point of junction of the mucosa of anus and rectum, at a point midway between these 2 dots, thus in the center of the perineum, and 2 other dots, each 1 cm. to right or left from the central dot, with 2 others 1 cm. beyond, this row being at right angles to the median row.

117. **Oleic Acid Not Responsible for Eclampsia.**—Polano's research has demonstrated that oleic acid is found in normal as well as in eclamptic placentas and not in any larger proportion in the latter.

Zeitschrift für klinische Medizin, Berlin

LXIX, Nos. 3-4, pp. 205-392. Last indexed Jan. 29, p. 421

- 121 *Early Physical Diagnosis of Pulmonary Tuberculosis. (Physikalische Frühdiagnose der Lungenschwindsucht.) A. Goldscheider.
122 Influence of Position of Heart on the Electrocardiogram. (Einfluss der Herzlage auf die Form des Elektrokardiogramms.) H. Grau.
123 *Clinical and Pathogenic Research on Levulosuria in Diabetes Mellitus. H. Koenigsfeld.
124 Research on Metabolism and Stools in Chronic Pancreatitis. R. Ehrmann.
125 *Hypoglycemia in Addison's Disease and in Dogs After Removal of Suprarenals. (Hypoglykämie bei Morbus Addisonii sowie bei nebennierenlosen Hunden.) O. Porges.
126 Primary Carcinoma in Hepatic Duct and at Junction of the Three Large Bile Ducts. D. G. Zesas.
127 *Research on Exophthalmic Goiter. (Zur Lehre vom Morbus Basedowii.) R. Hoffmann.

121. **Physical Diagnosis of Incipient Pulmonary Tuberculosis.**—Goldscheider discusses percussion in general, especially with his technic of extremely delicate percussion, and interpretation of the findings, comparing them with Roentgen findings and the later course of the cases. Thirty-two pages are devoted to the tabulated details of 88 cases, accompanied by a number of plates with pictorial comparison of the findings from percussion and screen examination. His aim is to demonstrate beyond question the advantages of his method of delicate percussion which, he insists, reveals apical lesions that escape recognition by any other means. Especially instructive is his comparison of the findings with delicate percussion with those of ordinary finger-finger percussion. In only one of the total number were the findings contradictory, and this case is still a mystery. In 20 cases skiascopy indicated a right lesion, in 63 bilateral lesions, while his delicate percussion indicated a right lesion in 15 and bilateral in 65, but ordinary percussion revealed bilateral lesions in only one of the cases. Auscultation findings differentiate active processes from residual changes. After first percussing as usual, he reduces the stroke to the lightest possible, comparing symmetrical points, generally commencing at the third intercostal space and working upward, or in the back near the spine at the fourth or fifth dorsal vertebra, gradually increasing the force of percussion. The room, of course, must be absolutely quiet. This delicate percussion will reveal minimal dullness, the signs of which may vanish if the force of the stroke is increased. The monograph fills nearly 80 pages and is the outcome of years of special study.

123. **Levulosuria with Diabetes.**—Koenigsfeld warns that levulosuria may be the result solely of excessive alkalinity of the urine after ingestion of unusual amounts of alkaline substances, the dextrose in the urine then becoming converted into levulose. In this "urinogenous levulosuria" there is no reduction of the power of the organism to assimilate levulose. Levulosuria may also be observed, with reduced gastric acidity and increased intestinal alkalinity. Ingestion of alkaline substances enhances this tendency to levulosuria, especially courses of alkaline mineral waters. When the liver cells are hampered in their function of transforming levulose into glycogen the capacity for assimilating levulose is correspondingly reduced. This sugar intoxication of the liver cells may be observed in chronic mild diabetes—the liver cells having long felt the effect of a weak sugar solution—and with recent severe diabetes, the liver cells feeling the effect of a strong solution of sugar. The practical points emphasized are that the polarization method is not reliable for quantitative determination of the sugars in the urine when the latter is alkaline; also that during a course of mineral waters the amount of levulose should be determined beforehand and quantitative fermentation be accepted as the more reliable test. Tests for the sugars in the urine vary in their results when the patient is or is not taking an alkaline mineral water. This explains why patients seem to eliminate less sugar during a course of mineral waters but return to the former proportions after finishing the course. Besides calling attention to the inverting of sugar in alkaline solutions, Koenigsfeld reviews the literature on the subject of levulosuria, citing 103 articles.

125. **Abnormally Small Proportion of Sugar in the Blood in Pancreatic Disease.**—Porges declares that the deficiency of sugar in the blood in Addison's disease and in dogs after removal of the suprarenals must be regarded as an important factor in the syndrome and a significant symptom. It is a temptation to regard this deficiency of sugar in the blood as the explanation of the muscular weakness, but his few therapeutic experiments with administration of sugar did not give positive results in ergograph tests. Intravenous injection of sugar in dogs after removal of the suprarenals seemed to render them more lively, but this impression is scarcely enough to base scientific conclusions on. At the same time, the research reported seems to demonstrate some connection between the proportion of sugar in the blood and the functioning of the suprarenals. It is possible, he thinks, that Addison's disease may be due not only to injury of the suprarenal tissue itself but also to lesions of the nervous apparatus governing its functioning.

127. **Treatment of Exophthalmic Goiter.**—Hoffmann's article is preliminary to another in which he is to report the influencing of exophthalmic goiter in certain cases by cauterization of the nose. He here discusses the etiology of the disease and especially its origin in and outside of the thyroid. It may be of central origin from permanent excitation or depression of the vasomotor center; in this case the disease may be cured by a sudden shock as from cauterization of the nose, hypnosis or autosuggestion, but it fails to respond favorably to surgical interference as the central cause still persists and continues its injurious action on the part of the thyroid still left. Possibly in these cases the goiter is only coordinated with the other symptoms of the disease, although the morbid thyroid secretion may secondarily aggravate the symptoms. The essential cause may be in the thyroid itself, in functional disturbances in the other glands with an internal secretion or in the central nervous system. The new data constantly being learned in regard to the correlation between the glands with an internal secretion are opening a wondrous field for research and practical therapeutics by the concerted work of physiologists, pathologists and general practitioners. He expatiates on the analogy between the thyroid and the suprarenals, and their antagonistic action, asserting that exophthalmic goiter is evidently the result of excessive thyroid functioning plus insufficient functioning of the suprarenals, while myxedema is just the reverse—thyroid insufficiency plus excessive suprarenal functioning. Myxedema is thus an epinephrin intoxication. His experiments on the frog eye

confirmed this assumption, the serum of thyroidectomized sheep and of myxedema patients dilating the pupil while normal serum shows no such influence. He suggests that trial of a suprarenal extract is justified in treatment of exophthalmic goiter. The measures liable to prove useful, corresponding to the special origin of the trouble, are resection of the thyroid, ligation of the artery, attempts to neutralize the thyroid secretion by the antagonistic suprarenal extract, and means to influence the vasomotor center by some sudden shock, possibly by cauterization of the nose. Hoffmann is assistant at Nemmayer's clinic at Munich for nose and throat diseases, and he states that before attempting an operation in exophthalmic goiter, a tentative course of thyroid treatment should be instituted. If well tolerated or if conditions improve under it, he advises postponing the operative intervention.

Gazzetta degli Ospedali e delle Cliniche, Milan

January 6, XXXI, No. 3, pp. 25-32

- 128 Lymphangitis of the Scrotum in New-Born Infants. P. Lilla.

January 13, No. 6, pp. 57-64

- 129 Paratyphoid Infection. A. Concio.

Policlinico, Rome

January 16, XVII, No. 3, pp. 67-98

- 130 *Quinin Prophylaxis of Malaria. (La bonifica umana nella lotta antimalarica.) U. Gabbi.

130. Quinin Prophylaxis of Malaria.—Gabbi compares the number of cases of malaria last year with those in previous years in certain localities in which malaria is endemic and in which irrigating canals, ponds, etc., render the extermination of the anopheles practically impossible, and where systematic quinin treatment of the malarial inhabitants and preventive quinin administration have resulted in a marked reduction in the number of cases in these worst hotbeds of malaria with no other prophylaxis than the quinin. He remarks that it is a difficult matter to convince the peasants of the advantages of taking quinin when they are not sick, but experience is repeatedly demonstrating that the quinin prophylaxis must be kept up like mercurial treatment of syphilis.

Hospitalstidende, Copenhagen

November 24, LII, No. 47, pp. 1513-1552

- 131 Improved Technic for Detection of Tubercle Bacilli in Sputum and Urine. (En ny Metode til Paavisning af TB. i Sputum og Urinen.) P. Bogason.

December 1, No. 48, pp. 1553-1592

- 132 *Simplified Technic for Differential Blood Count. (En ny Leukocyttællingsteknik.) V. Ellermann and A. Erlandsen.
133 Congenital Dislocation of the Knee in Twins. (Luxatio congenitalis genua hos et Tvillingpar.) F. Bentzen. Commenced in No. 47.

December 8, No. 49, pp. 1593-1624

- 134 Unexpected Frequency of Positive Wassermann Reaction in Cardiac and Vascular Disease. (Wassermann-Reaktionens Betydning ved Hjerte- og Karsygdomme.) A. Oigaard.

December 15, No. 50, pp. 1625-1656

- 135 Atrophy of Optic Nerve in Tabes Due More to Degeneration of the Nerve Tracts than to That of the Ganglion Cells. (Skyl-des Opticusatrofen ved Tabes en Lidelse af Ganglioceller eller af Nervetraade?) H. Rönne.
136 Operative Treatment of Mammary Cancer. H. Sverné. Commenced in No. 49.

December 29, No. 52, pp. 1689-1720

- 137 Compensating Emphysema and the Lessons to be Learned from It for Surgery of the Lungs. (Teorien om det kompensatoriske Lungeemfysem og dets Betydning som Arbejdsgrundlag i Lungekirurgien.) H. Møllgaard. Commenced in No. 51.
138 Diverticula in the Bladder. (Om Blæredivertikler.) A. Lendorf.

132. Improved Technic for Blood Count.—According to the authors' technic the blood is transferred to a small vial containing a glass bead and a fluid to dilute the blood, dissolve the reds, and fix the whites, all of which is accomplished with a mixture of 45 parts one-tenth normal hydrochloric acid, 45 parts 0.9 per cent. sodium chlorid and 10 parts formalin. A set of a dozen vials in a stand permits a number of simultaneous examinations. A circle is marked on an object glass and the blood specimen is placed in this circle and stained, dry, with a mixture of equal parts of a 1 per cent. aqueous solution of methylene blue and of a 0.2 per cent. solution of sodium hydroxid. As dry specimens can be used and as the appliances are simple and inexpensive, the writers think that this technic is destined to prove of material service.

Nordiskt Medicinskt Arkiv, Stockholm

XLI, Surgery, No. 4. Last indexed Aug. 21, p. 663

- 139 *Cure by Resection of Kidney of Incontinence from Supernumerary Ureter in Vulva. (C. D. Josephson.
140 Primary Hypernephroid Tumors in Female Genitals. (Im weiblichen Genitale primär entstandene hypernephroide Geschwülste.) E. Bovin.
141 Successful Trephining for Intracerebral Traumatic Hemorrhage. E. Lindström.

XLII, Internal Medicine, No. 2. Last indexed Dec. 11, p. 2044

- 142 *Colon Bacillus Responsible for Formation of Uric Acid. (Untersuchungen über das Verhalten der Harnsäure bei Säuglingen und Typhuspatienten so wie über die Entstehung der Harnsäure.) H. Trautner. Commenced in No. 3.
143 Proximal Paralysis of the Arm of Cortical and Subcortical Origin. G. Söderbergh.

139. Treatment of Incontinence from Supernumerary Ureter.—Josephson was consulted in regard to a little girl with incontinence of urine explained by a supernumerary ureter opening into the vulva below the normal urethra. He advised the parents to wait until the girl had grown larger and then to have the condition remedied by an operation. This was done when the girl was 18 years old. Injection of a stain into the kidneys through the normal ureters did not stain the urine from the abnormal ureter, showing that it had a separate pelvis. A supernumerary ureter has been known to cross to the bladder from the other side, but crossing has never been observed with one opening into the vulva, so he did not fear this possible contingency. A considerable amount of fluid injected into the right kidney caused pain exclusively in this region, which he assumed to be evidence that there were two separate kidneys. The part of the kidney containing the supernumerary hilus and ureter was found divided from the main portion by a deep groove and was readily resected. In conclusion he reviews the various operations that have been done for this condition, and criticizes the technic used in some as he thinks his method would have given better results in some of the cases on record.

142. Colon Bacillus and Uric Acid.—Trautner has continued his research in this line, examining 88 children, 39 infants and large numbers of older children, besides 32 typhoid patients, with 327 control examinations, the latter including 50 patients with scarlet fever, 28 with tuberculosis, 130 with other diseases, 110 healthy soldiers and 9 persons with the uric acid diathesis. No uric acid was found in healthy infants, and the colon bacillus was rarely present in their stools. When large amounts of colon bacilli were found in the infants' stools, considerable amounts of uric acid appeared in the urine. Rabbits with no uric acid in the urine soon showed a considerable amount after being fed with colon bacilli. Typhoid bacilli seem to kill colon bacilli, this action being marked in the test-tube with a peptone culture medium, in the course of a few days. During typhoid, the proportion of uric acid in the urine progressively declines as the disease runs its course, so that the amount of uric acid is much less in advanced typhoid than in normal persons and in those with other maladies and in the same person before the typhoid. These facts, he says, seem to confirm his assertion that the colon bacillus is responsible for the production of uric acid.

Upsala Läkareförenings Förhandlingar, Upsala

XV, Nos. 1-2. Last indexed Dec. 11, p. 2046

- 144 The Internal Secretions and the Clinical Importance of Disturbances in Them. (Om den inre sekretionen och den kliniska betydelsen af des rubbningar.) K. Petren.
145 *Kidney and Bladder Surgery. (Sammanställning af fall från urinvägarnas kirurgiska sjukdomar.) G. Ekehorn.
146 *Applied Social Hygiene in Campaign Against Tuberculosis in Sweden. (Det socialhygieniska försöket i Neder-Luleå socken.) G. Neander.

145. Surgery of the Urinary Apparatus.—Among the 87 cases reported by Ekehorn were 18 in which nephropexy was required, 5 cases of hydronephrosis, 7 of pyonephrosis, 10 of tumors in the kidneys, and 4 in the bladder, with 28 cases of bladder stone and several of renal lithiasis. He operated on account of hematuria in 9 cases. Among the points brought out from this material is the frequency of pyonephrosis in one kidney accompanying stones in the other. He encountered this combination in 5 cases. The importance of diagnosing and curing hydronephrosis to ward off more serious complications later is also emphasized. A history of symptoms suggesting old hydronephrosis is often found in the more severe forms of kidney disease. One patient, a woman, in this cate-

gory, required nephrotomy and nephrectomy later and a series of operations on the remaining kidney in which stones kept forming. She suffered much unless a tube was retained continuously in the fistula into the kidney. The lower end of the tube was finally implanted in the bladder to serve as an artificial ureter. It answered the purpose perfectly but the patient complained of pain from it, ceasing when the tube was withdrawn from the bladder. She now wears a urinal and is content with her kidney fistula, and is otherwise in good health. This long martyrdom might have been prevented, he believes, if the old hydronephrosis had been detected and cured years before. Among the 10 cases of kidney tumors were some in which blood-stained urine had attracted attention 6 years or several months before, but had not recurred; in others there had been hematuria constantly for from 2 to 6 months. One patient had noticed the tumor 4 years before, but in this and in another case the disturbances had been ascribed to the digestive apparatus. The tumor was readily palpable in all but proved inoperable in half the patients.

146. Practical Measures for Social Hygiene in Campaign Against Tuberculosis in Sweden.—Neander reports more fully the workings and details of the results accomplished in the model settlement, *Hälsan*, which was described in *THE JOURNAL*, Dec. 7, 1907, page 1930. It is an experiment to provide accommodations for the tuberculous who are unable to secure hygienic surroundings at home, while at the same time it supplies nourishing food for others who come merely to take fresh-air treatment, attend school, etc. Every family in the province has been examined and an accompanying chart shows the distribution of the cases of tuberculosis and the measures adopted to prevent the spread of the disease and to cure or relieve the sick. Neander calls it a "social hygiene experiment," but the results realized seem to advance it beyond the rank of an experiment. It combines the home and the sanatorium, food, recreation, dispensary and school, and takes the whole province under its wing.

Books Received

All books received are acknowledged in this column and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender. A selection will be made for review in the interests of our readers and as space permits.

A QUIZ BOOK OF NURSING FOR TEACHERS AND STUDENTS. By Amy E. Pope, Superintendent Insular School of Nursing, San Juan, Porto Rico, and Thirza A. Pope, Supervisor of Visiting Nurses of the New York A. I. C. P. With Chapters on Visiting Nursing, by Margaret A. Bewlwy, R.N., Instructor in Visiting and District Nursing in the Presbyterian Hospital, New York. Hospital Planning, Construction and Equipment, by Bertrand E. Taylor, A.A.I.A., and Hospital Bookkeeping and Statistics, by Frederic B. Morlok, Chief Clerk in Presbyterian Hospital, New York. Cloth. Pp. 469. Price, \$1.75. New York: G. P. Putnam's Sons, 1909.

THE AFTER-TREATMENT OF OPERATIONS. A Manual for Practitioners and House Surgeons. By P. Lockhart Mummery, F.R.C.S., Senior Assistant Surgeon, St. Mark's Hospital for Fistula and other Diseases of the Rectum, and to the Queen's Hospital for Children, London. Third Edition. Cloth. Pp. 251, with 38 illustrations. Price, \$2.25 net. New York: William Wood & Co., 1909.

THE STOMACH, INTESTINES AND PANCREAS. The Medico-Chirurgical Series No. 2. By W. C. Bosanquet, M.A., M.D., Assistant Physician to Charing Cross Hospital and to Brompton Hospital, and H. S. Clogg, M.S., F.R.C.S., Assistant to Surgeon Charing Cross Hospital. Cloth. Pp. 665, with 110 illustrations. Price, \$4 net. New York: William Wood & Co., 1910.

TRANSACTIONS OF THE AMERICAN ASSOCIATION OF GENITO-URINARY SURGEONS. Vol. III: Annual Meeting held at the Homestead, Hot Springs of Virginia, May 1 and 2, 1908. Pp. 188, with illustrations. Vol. IV: Annual Meeting held at Hotel Montanesea, Mount Pocono, Pennsylvania, May 31 and June 1, 1909. Pp. 306, with illustrations. Paper. New York: The Grafton Press.

PROCEEDINGS OF THE TWENTY-SEVENTH ANNUAL MEETING OF THE MARYLAND PHARMACEUTICAL ASSOCIATION. Ocean City, Maryland, June 22 to 25, 1909. Together with the Code of Ethics, Constitution and By-Laws, List of Officers and Members, etc. Paper. Pp. 160. [Secretary, E. F. Kelly, 303 W. Pratt Street, Baltimore.]

BULLETIN DE LA SOCIÉTÉ DE MÉDECINE DE ROUEN. Troisième série. Vol. 22. (Pour faire suite à l'Union Médicale de la Seine-Inférieure.) Publié par les soins de M. Dévé, Secrétaire des Séances. 47e Année, 1908. Paper. Pp. 263. Rouen: Au Siège de la Société Hôtel des Sociétés savantes, rue Saint-Lo, 1909.

DEMOGRAPHIE UND EPIDEMIOLOGIE DER STADT BASEL WÄHREND DER LETZTEN DREI JAHRHUNDERTE 1601-1900. Von Albrecht Burckhardt, Professor der Hygiene. Programm zur Rektoratsfeier der Universität Basel, 1908. Paper. Pp. 111. Basel: F. Reinhardt, Universitätsbuchdruckerei 1908.

THE HARVEIAN ORATION ON EXPERIMENTAL PSYCHOLOGY AND HYPNOTISM. Delivered before the Royal College of Physicians of London, Oct. 18, 1909. By George H. Savage, M.D., Consulting Physician and late Lecturer on Mental Diseases, Gny's Hospital. Paper. Price, 1 shilling net. Pp. 44. London: Henry Frowde, Oxford University Press, Amen Corner, E. C., 1909.

THE BIENNIAL REPORT OF THE BOARD OF MANAGERS OF THE SPRINGFIELD STATE HOSPITAL OF THE STATE OF MARYLAND, SYKESVILLE, MARYLAND, from Oct. 1, 1907, to Oct. 1, 1909, to his Excellency, the Governor of Maryland. Paper. Pp. 97, with illustrations.

INDUSTRIAL AND COMMERCIAL EDUCATION IN RELATION TO CONDITIONS IN THE CITY OF CHICAGO. Report of a Preliminary Survey by the Committee on Industrial and Commercial Education of the Chicago Association of Commerce. Paper. Pp. 64. 1909.

PROCEEDINGS OF THE AMERICAN SOCIETY FOR PSYCHICAL RESEARCH. Section "B" of the American Institute for Scientific Research. Paper. Pp. 119. Vol. III, Part 2. Price, \$1. New York: American Society for Psychical Research, 1909.

A TEXT-BOOK OF MEDICAL TREATMENT (Alphabetically arranged). By William Calwell, M.A., M.D., Physician, Royal Victoria Hospital, Belfast. Cloth. Pp. 630. Price, \$4.50. London: E. Arnold, 41 and 43 Maddox St., Bond St. W.; New York, Longmans, Green & Co., 1910.

DIE VERFÜGUNGSBESCHRÄNKUNGEN DES VERPFÄNDERS BESONDERS IN DEN PAPYRI, mit einem Anhang: eine Unveröffentlichte Basler Papyrusurkunde. Von Ernst Rabel. Paper. Pp. 116. Leipzig: Verlag von Veit & Comp., 1909.

JEJUNAL AND GASTROJEJUNAL ULCER FOLLOWING GASTROJEJUNOSTOMY. By Herbert J. Paterson, F.R.C.S., Assistant Surgeon to the London Temperance Hospital. Pp. 72. Cloth. London: John Bale, Sons & Danielsson, 1909.

THE DIETETIC TREATMENT OF DIABETES. By B. D. Basu, Major, I. M. S. (Retired). Cloth. Pp. 52. Second Edition. Price, 1 rupee, 8 annas. Allahabad: Panini Office, Bhuvanewari Asram, 40 Bahadurganj, 1909.

LE GLOBULIN DES MAMMIFÈRES. Par le docteur M. Aynand, Préparateur à la Faculté. Paper. Pp. 229, with illustrations. Paris: G. Steinheil, Editeur, 2 Rue Casimir-Delavigne, 1910.

PUBLICATIONS OF THE UNITED STATES PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE. Paper. Pp. 25. Washington: Government Printing Office, 1910.

New Patents

Recent patents of interest to physicians:

- 938125. Hair-growing device. F. G. Daggett and E. G. Slinghart, Cleveland, Ohio.
- 938128. Neutralizing solutions of salts. B. Diamand, Idaweiche, Oberschlesien, Germany.
- 927928. Preparation of camphene. O. L. A. Dubosc, Rouen, France.
- 938374. Production of kvass. A. Eisenberg, St. Petersburg, Russia.
- 938144. Sprayer. E. Harry, Buffalo, N. Y.
- 938247. Breathing mask. E. Kuhn, Berlin, Germany.
- 937825. Vibrating-tension, and operating table. J. Lend, Chicago.
- 938399. Electrical exercising apparatus. W. C. Schaeffer, Amsterdam, N. Y.
- 938440. Ankle-brace. F. J. Sescila, Lorain, Ohio.
- 938544. Hypodermic syringe. W. Ball, Echuca, Victoria, Australia.
- 938951. Hypodermic syringe. F. D. Bell, Glen Ridge, N. J.
- 938967. Catamenial syringe. C. B. Cahoon, New York.
- 938968. Sanitary washable case for comfortables. A. C. Caldwell, Sacramento, Cal.
- 938648. Atomizer. T. A. De Vilbiss, Toledo, Ohio.
- 939138. Utilizing dried milk. J. A. Just, Syracuse, N. Y.
- 939139. Fibrous desiccated milk. J. A. Just, Syracuse, N. Y.
- 939034. Surgical instrument. J. W. Kolb, Fairfax, Okla.
- 939035. Surgical instrument. J. W. Kolb, Medicine Lodge, Kan.
- 938597. Syringe for hypodermic and intramuscular injections. R. Lombardo, Genoa, Italy.
- 938496. Ambulance. C. Mestrovich, Portland, Ore.
- 938778. Water purifier. J. W. Morrison, Batavia, N. Y.
- 938779. Purifying water. J. W. Morrison, Batavia, N. Y.
- 939075. Phenol halogen phthalein compound. W. R. Orndorff, Ithaca, N. Y.
- 939162. Pasteurizing apparatus. A. A. Pindstoffe, Frederiksberg, near Copenhagen, Denmark.
- 939097. Preparing a preventive of tuberculosis. J. F. Rosenbach, Göttingen, Germany.
- 939098. Antiseptic finger moistener. J. A. Sauer, Brooklyn, and G. E. Potter, Newark, N. J.
- 938517. Beverage siphon. H. J. Schmitt, Jersey City, N. J.
- 938614. Non-odorous phenol salve and ointment. N. Sulzberger, New York.
- 938525. Electric mouth-mirror. B. E. Turney, Bridgeport, Conn.
- 938808. Therapeutic device. S. T. Yount, Chicago.
- 939584, 939540, and 939941. Manufacturing benzoate. E. O. Barstow, Midland, Mich.
- 939943. Catamenial garment. A. L. Brodton, Mobile, Ala.
- 939822. Massage and air-compressing machine. J. B. Fey, Columbus, Ohio.
- 939266. Vaginal syringe. E. H. Keske, Hoboken, N. J.
- 939520. Syringe or the like. C. P. Leyner, Boston.
- 939431. Hair tonic. F. W. E. Muller, Chicago.
- 939742. Treatment of quebracho extract. A. Redlich and J. Wladika, Vienna, Austria-Hungary.
- 940576. Obstetrical device. H. J. Barnes, Gunter, Texas.
- 940519. Surgical applicator. E. H. Eastman, Hot Springs, Ark.
- 940454. Breast-pump. E. P. Fowler, New York.
- 940256. Chest-expansion measuring device. C. W. Kennedy, E. W. Carlson, and N. C. Jeffes, Schenectady, N. Y.
- 940604. Vaporizer for disinfectants. C. C. Leathers, Leytonstone, England.
- 940477. Spraying nozzle. A. E. Preston, Battle Creek, Mich.
- 940622. Truss. T. H. Stanley, Denver.
- 940217. Method and apparatus for determining proportions in compounds and mixtures. L. Taylor, Swarthmore, Pa.
- 940097. Disinfecting apparatus. P. J. Walsh, Detroit.
- 940104. Ambulance. J. P. L. Wilson, Cleveland, Ohio.

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Original Articles

KIDNEY AND URETERAL STONE

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CHICAGO

Kidney-stone surgery affords an admirable opportunity for good team work. In my clinic the cystoscopic work and the catheterization of the ureters is in charge of Dr. H. L. Kretschmer and the *x*-ray work is in charge of Dr. H. E. Potter, to whom belongs much of the credit of this contribution. I am thoroughly convinced that in this difficult field of surgery the best results can be obtained only by such a division of labor.

In 1897 I used the *x*-ray for the first time in this country in the successful diagnosis of kidney-stone. Since that time I have operated in more than 70 cases of kidney-stone, using in practically all the *x*-ray to confirm the diagnosis. I desire to present very briefly some of my conclusions gained by this clinical experience.

The etiology of renal calculus is not as yet fully determined. Reasoning from analogy, however, it is most probable that kidney-stones, like gall-stones, are formed as the result of a low-grade mycotic infection. We might go a step further and state that the germ forms producing this infection are probably colon and typhoid.

Renal calculi sometimes run a silent course, giving rise to no symptoms. Large calculi, which have apparently produced little injury to the organ, are sometimes found in the kidney, post-mortem, in cases in which a careful, clinical history fails to show any symptoms referable to the stone. This harmless character is not so common with kidney-stone as with gall-stone. We know that a large majority of gall-stones give rise to no disturbance or such slight disturbance that their presence is not suspected. My impressions are that, although this may also be true in the case of kidney-stone, it is the exception.

CAUSES OF SYMPTOMS OF KIDNEY-STONES

Kidney-stones cause symptoms especially in two ways: (1) by favoring infection or (2) in a purely mechanical way by obstructing the ureter. Large stones seldom produce symptoms in a mechanical way, but usually by favoring infection. A stone the size of an egg in the pelvis of a kidney, if not accompanied by infection, may cause no distress. An accompanying infection, however, can produce more or less constant pain of a dull, aching character; or an acute attack of colic due to obstruction of the ureter with pus and blood or by swelling of its mucosa and obliteration of its caliber.

What is the cause of pain in a renal colic? Is it the passing of a stone through the ureter? I think that I can answer this question now fairly definitely.

1. The cause of a renal colic is a greatly increased intrarenal tension due to a plugging up of the ureter.

2. The passage of a stone through the ureter does not of itself cause any pain at all. I have now had the opportunity of determining these facts in several cases. I shall cite as the best example the following case:

A young woman of 22 or 23 had an attack of kidney colic, due to stone the size of a robin's egg. This was removed successfully, but later this kidney became the seat of tuberculosis and it was removed. Several years later she was brought to the hospital suffering from complete anuria. She



Fig. 1.—From skiagraph showing stone in the right kidney. Skiagraphed during suspended respiration.

was in great pain; had not passed a drop of urine for several days. I at once made a nephrotomy under nitrous oxid anesthesia and drained her solitary kidney. The pain was immediately relieved by the drainage. An *x*-ray picture the next day showed a stone in the upper ureter about the size of a coffee-bean. Four or five days later an *x*-ray showed the stone in the lower ureter and ten days later, without any pain or symptoms, she passed the stone per urethram.

In all this passage through the ureter after the kidney was drained the stone gave rise to no pain whatever. This and similar cases have taught me that intrarenal tension is the cause of kidney colic and not the passage of the stone through the ureter.

Another interesting fact is taught by this and similar cases, namely this: that the passage of the stone is not due to *vis a tergo*, but to the peristaltic action of the

muscle fibers of the ureter seeking to pass the foreign body along. In the majority of my 70 cases the symptoms were sufficiently clear to make a clinical diagnosis of stone fairly easy, i. e., kidney distress, kidney colic, pus and blood in the urine, all of these pointing to a kidney lesion and leading to the use of the *x*-ray and the establishing of a positive diagnosis by this means.

ATYPICAL CASES

In our series, however, we have had a number of cases in which the symptoms were atypical and the diagnosis difficult. In three or four cases the attacks were thought to be attacks of appendicitis. In 1,500 appendix operations I have in at least four cases found either at the time of the operation or later that the cause of the attacks was kidney or ureteral stones. In several cases the attacks simulated gall-stone attacks and in one case we had the reverse of the experience and found attacks



Fig. 2.—Large kidney-stone.

which we regarded as kidney colic attacks were, in fact, gall-stone attacks, and an *x*-ray shadow which we regarded as due to the presence of a stone in the kidney was that of a single gall-stone covered with a thick coating of lime salts.

Several of our cases have been sent with the diagnosis of ileus or intestinal attacks, and in at least two cases the patients were treated for years for stomach trouble until the *x*-ray revealed the renal cause of the disease.

As an example of these let me cite the history of two cases:

A. F., the proprietor of a hotel and restaurant, had for years, at intervals, very severe abdominal attacks accompanied with distention, sometimes with vomiting. These lasted from half an hour to two hours and each was relieved by one or more enemas. The patient stated that it would sometimes take one and sometimes four enemas to relieve an attack. An *x*-ray showed stone and the patient has never had any of his so-called intestinal attacks since its removal.

In another case, the patient, a traveling man, operated on for Dr. J. B. Herrick, had what had been treated for seven

years as stomach attacks. These were of two kinds: first, a dull pain, which could be relieved by one or two drinks of whisky; and, second, severe attacks of pain accompanied with vomiting and, as the patient stated, relieved by vomiting once or several times, although that he had had a few attacks which persisted for some hours, even after he had vomited profusely and apparently emptied his stomach completely. Dr. Herrick found blood in microscopic amount in the urine and had an *x*-ray taken showing a small stone about the size of an almond. This I removed from the lower pelvis of the kidney.

DIAGNOSIS

A clinical diagnosis can usually be made in those cases giving a typical history of ureteral colic, combined with the presence of blood, or pus, or perhaps both, in the urine; pain and tenderness on palpation along the course of the ureter may be looked on as additional aids toward making a diagnosis, but they are not always present, and in stout individuals they may be difficult to elicit.

I have now no hesitation in stating that with very few exceptions the *x*-ray can be relied on to show stones as large as a bean. I think that it is fair to say that with



Fig. 3.—Small kidney from which a stone had been removed eight years before, in which practically all the kidney tissue had disappeared. Removed on account of persistent fistulous tract.

good technic the percentage of error is less than 5 per cent.

Our present confidence in the accuracy of the *x*-ray test is based on both laboratory and practical proof that the less dense of the urinary calculi possess sufficient absorbing power for the rays so that they may be detected in critical skiagraphs. To be sure, the shadows are less pronounced in case of small, flat or soft stones and perhaps difficult to obtain in corpulent individuals, yet an error is more likely to result, in a difficult case, from a faulty technic or interpretation than it is from any inherent lack of virtue in the method itself if carried out properly.

The patient submitted for the *x*-ray test for stone should have his bowels previously cleared of all fecal accumulations by cathartic or enema or both. His abdomen will then be in as transparent a condition as possible and shadows resulting from intermittent collections of gas and feces will be reduced to a minimum. Ordi-

narily the patient lies on his back on a low, rigid table with his knees drawn up and shoulders elevated so that the lumbar curve of the spine is straightened out and the back lies flat against the plate on the table underneath. For a skiagraph of the whole urinary tract the center of the tube is placed over the umbilicus at a distance of twenty to twenty-four inches from the plate.

It is always advantageous to compress the abdomen by some mechanical device in order to restrict respiratory movements, immobilize the kidney and reduce the thickness of the abdomen by lateral displacement. When the whole scope of the urinary tract is to be included, this compression is best done by a canvas band stretched over the abdomen and tightened down as much as the patient will allow. In skiagraphing limited regions, compression may be made by the cylinder from the compression diaphragm apparatus. Instead of applying the pressure directly to the abdomen a plain, pneumatic cushion of pure rubber may be interposed. More com-

stances both ureters) should be catheterized with a skiagraph ureteral catheter, and a second *x*-ray exposure should be made, taking two views of the patient, one in the antero-posterior direction and one with the patient slightly inclined to one side. By this procedure we can absolutely and positively determine whether the suspected shadow is due to a stone in the ureter or not.

The tube is placed in a lead glass shield upheld by a rigid support. Below the tube is always inserted a lead diaphragm of sufficient aperture only to allow the escape of rays which shall just cover the region selected. In this way other portions of the body are shielded from unnecessary exposure and the impure or vagabond rays are absorbed.

The exposure is a matter demanding experience, skill and judgment. The electrical apparatus, the tubes and the plates must be as nearly perfect as possible. The tubes particularly are of importance, since they are the source of the light and are really the weakest part of the apparatus obtainable to-day.

The finished skiagraphs should be examined carefully in the best possible light, that is, before an evenly illuminated background. In skiagraphs of good quality the majority of stones can be recognized as such on first inspection (see Fig. 1). The shadows cast by small soft or flat stones require better plates to show them strongly and a certain amount of time should be spent in considering the qualities of their shadows as compared with

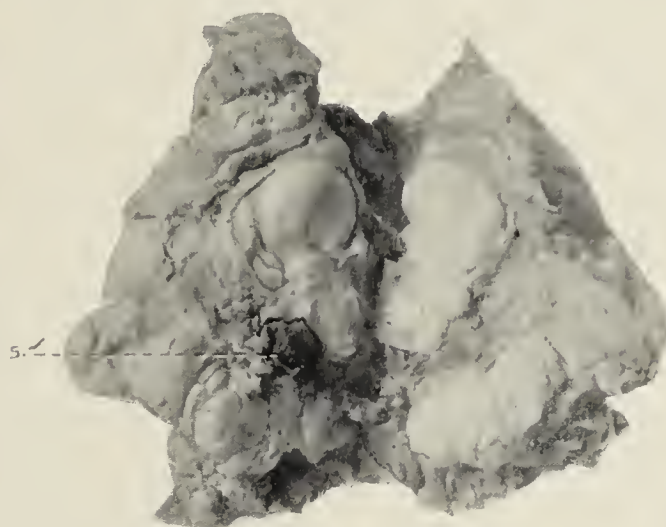


Fig. 4.—On the right, nephrolithiasis followed by suppurative pyelitis and perinephritis causing destruction and cicatrization of the kidney; on the left, compensatory hyperplasia of the opposite kidney.

pression with less discomfort may be obtained by the canvas band and cushion than in any other way I have tried. Corpulent patients with abdominal tenderness which prevents compression may sometimes be induced to lie on their stomachs with the pneumatic cushion beneath and be rayed from below. Their own weight will then serve to compress the anterior soft tissues and reduce their thickness appreciably.

In some cases of suspected ureteral calculus the *x*-ray may show the presence of a shadow, apparently along the course of the ureter, so that doubt might arise as to whether the shadow is due to a stone within the ureter or whether it is produced by some shadow-producing structure outside of the ureter, such as calcified lymph glands, phleboliths in the pelvic veins, ossifications in the pelvic ligaments, etc. Formerly these pelvic shadows were interpreted as those of ureteral calculi, only to have the error in diagnosis corrected at the time of the operation. To avoid this error in diagnosis and perhaps subjecting the patient to an unnecessary surgical procedure, the ureter on the suspected side (under certain circum-

stances both ureters) should be catheterized with a skiagraph ureteral catheter, and a second *x*-ray exposure should be made, taking two views of the patient, one in the antero-posterior direction and one with the patient slightly inclined to one side. By this procedure we can absolutely and positively determine whether the suspected shadow is due to a stone in the ureter or not.

The size, location and relative grouping of the shadows may speak very strongly for or against stone. All shadows due to other structures must be recognized and interpreted in the light of previous experience.

In the kidney region there are very seldom any localized deposits or other pathologic conditions capable of casting definite shadows, except calculi. Fortunately for renal diagnosis, on the right side the calculi in the biliary tract are almost uniformly transparent and thus save frequent confusion. In our work only about 3 per cent. of gall-stones cast shadows. The contour of the ribs should be examined in every case; otherwise small stones projected on the rib might be overlooked. In two cases we have had them projected on the transverse process of the second lumbar vertebra in part. Within the shadow of the true pelvis there are seen along the possible position of the ureter of many normal individ-

uals small round or oblong bodies variously interpreted as phleboliths, calcified glands or centers of ossification in the ligaments of the pelvic floor. The shadows so often seen near the spine of the ischium are centers of ossification in the pelvic ligaments. It is, therefore, necessary in some cases to prove or disprove the calculous nature of these bodies by the combined method of catheterization and skiagraphy.

It is to be remembered that in practice it is too often the tendency to interpret mass shadows in the kidney region and well-formed fecal shadows in the pelvis as soft stones. A recent collection of results covering the

into the ureter and then an *x*-ray picture taken show quite a marked difference in the course of the ureter.

Pyelography, as devised by Voelcker and Joseph, would hardly come under consideration as an aid in the diagnosis of ureteral calculus.

In taking *x*-ray pictures of suspected cases of ureteral calculus, it is well to *x*-ray the entire course of the ureter and the bladder, always bearing in mind the possibility of the passage of a ureteral stone down the ureter into the bladder, and this particularly in those patients who give a history of having previously passed stones.

TREATMENT

After a diagnosis is made, what is the treatment? I can now answer this question more positively than ever before. Operation and removal of the stone.

There are but two contraindications to operation: (1) kidney-stone in the very old and in those suffering

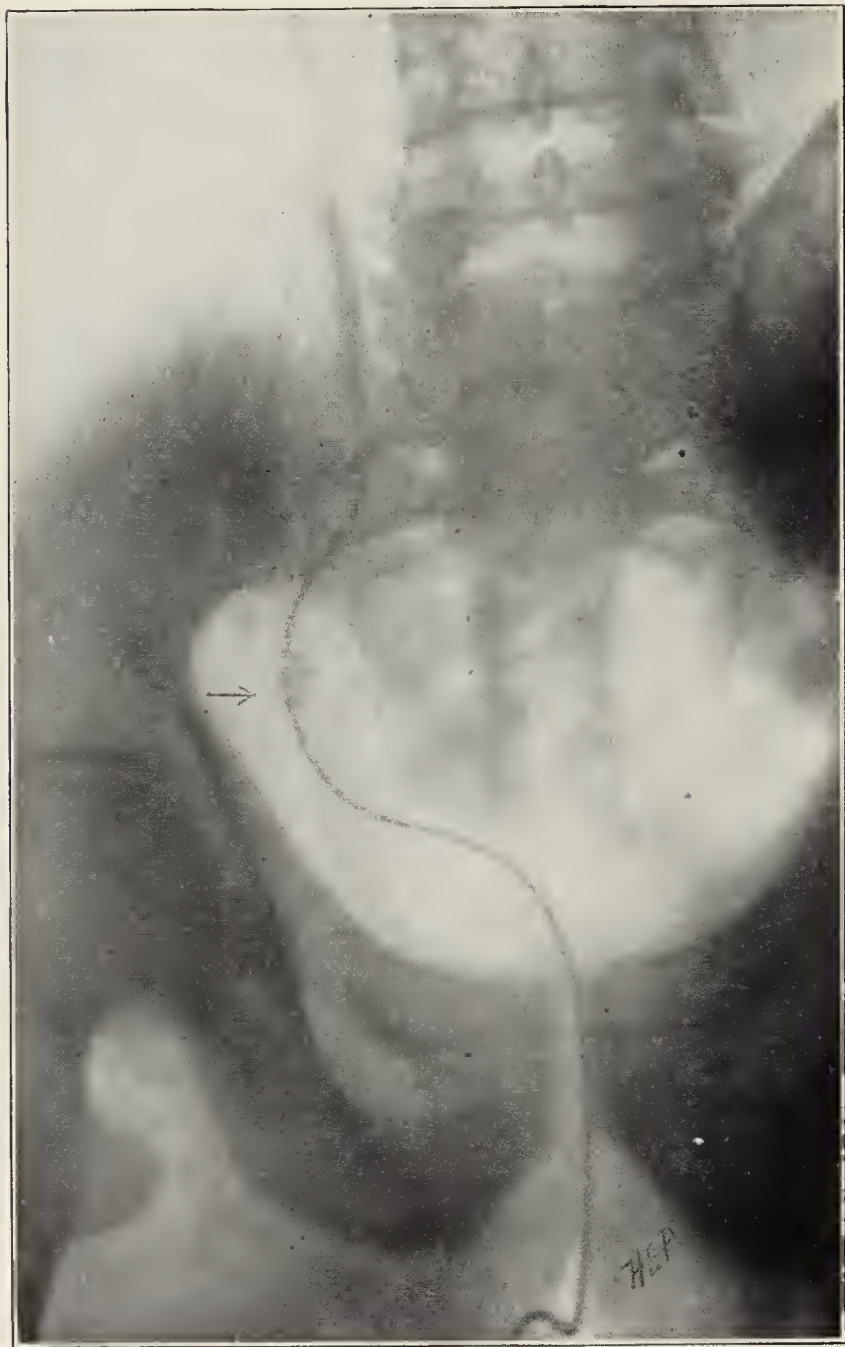


Fig. 5.—Skiagraph showing combined method of catheterization and radiography used to demonstrate that a calcareous body in the region of the ureter lies within it.

work of several men shows an 8 per cent. error due to calling these false shadows stone, with only a 6 per cent. error in failing to show interpretable stones afterward found at operation.

Individual workers have had as high as 97 per cent. perfect reports as to the presence or absence of stone in hundreds of cases.

While the size, shape, number and position of pelvic shadows may be an aid in differential diagnosis in some cases, they cannot be regarded as infallible, and the statement that the shadow corresponds to the position of the ureter, and hence must be a ureteral calculus, can be accepted only with a great amount of reserve, for some of the cases in which lead bougies have been passed



Fig. 6.—Skiagraph showing stone in anomalous kidney with cystoscopy and catheter in place.

from organic disease and bad general condition; (2) very small stones in the ureter which we may reasonably hope may be passed. As aids in the passage of the stone which becomes arrested in its course down the ureter may be mentioned the use of local anesthetics, such as sterile solutions of cocain, eucain, or alypin applied to the ureter in front of the stone through the ureteral catheter. Instead of local anesthetics, lubricants, such as sterile olive-oil or almond-oil or petrolatum, may be used. Klemperer has suggested manual movements along the course of the ureter. Jahr has recently devised an intra-ureteral method of dilating the ureter and thereby releasing the stone.

As already stated, however, the operative treatment will always remain the choice of treatment in a definite

number of cases. The question remains of the operation to be chosen—pyelotomy, nephrolithotomy or nephrectomy?

Pyelotomy, the incision into the pelvis of the kidney and removal of the stone, is the operation of choice in cases of small stones in the pelvis or stone of fair size limited to the pelvis. The incision should be closed with one or two fine catgut sutures and drainage provided—best with cigarette drains to the point of incision in the pelvis. This is an ideal operation, is free from hemorrhage, gives a rapid, smooth recovery with little menace to the kidney or the patient.

Nephrolithotomy is the operation required in multiple stones, in stones in the upper or lower pelvis, in stones in the calyces or branched stones or stones with gross infection. In doing a nephrolithotomy the kidney should be so freed from its fatty capsule that it can be well brought out of the external incision.

The vessels should then be compressed by an assistant with his fingers, never by clamp forceps, as has been sometimes suggested. A cut should be made about a centimeter behind the convex border of the kidney and parallel to it, through the kidney substance down on to the stone or stones or into the pelvis. In some cases of large branched stones the kidney must be completely laid open as in a post-mortem examination.

After the removal of the stone the line of incision is closed with catgut sutures. These, when properly applied, will control the bleeding completely. No drainage should be employed unless in the presence of gross infection with pus; and here, as I shall state later, it is, as a rule, where the conditions warrant, better to remove the kidney. A cigarette drain is carried down to the point of closure of the kidney wound. The one great objection to and danger in nephrolithotomy is hemorrhage. As a rule, this is a matter of no moment and the patient goes on to a good, smooth recovery as in the usual case of a pyelotomy. In some cases, however, no matter how much care has been exercised, hemorrhages will occur. I have had four or five cases of hemorrhage, one a fatal case, in removing a huge collection of stones (Fig. 2) from a kidney which was the only one possessed by the patient. In two other cases hemorrhage was so severe and persistent that, although the external wound had healed completely and the blood came down through the ureter into the bladder, I was compelled to remove the kidney to save the lives of the patients, the hemoglobin having been reduced in one case from 90 to 28 and in the other from 95 to 40. I have had several other cases in which, however, the hemorrhage ceased and the patients went on to a recovery.

Nephrectomy is the third operation which must be considered in operating on patients with renal calculus. We must not only remove the stone or stones in our kidney-stone cases, but we must permanently cure our patients. If we remove a stone from a badly diseased kidney, a suppurating remnant of a kidney (Fig. 3), we leave the patient usually with a suppurating urinary fistula, which is a source of great annoyance to him and may be a serious menace.

In my own work for the last few years my results have improved especially because I have recognized more than formerly the necessity of doing a primary nephrectomy in cases in which the kidney was so badly diseased that it was of no value and if left would give rise to trouble.

A great deal of work has been done to determine by different methods the functional capacity of the kidneys and of the separate kidneys. In spite of rather enthu-

siastic claims of these various methods—cryoscopy, the phloridzin test, the electric conductivity, the indigo-carmin test, etc.—we are, I believe, coming to regard these with little confidence. I am in my own clinic still resorting, in cases in which a possible nephrectomy is considered, to a cryoscopic examination of the blood and the phloridzin test. I must say, however, that I am controlled not so much by these as by more tangible evidence in my decision for or against a nephrectomy in a given case. This more tangible evidence consists in the following: (1) a cystoscopic examination with catheterizing the ureters to determine the presence of both kidneys; (2) the estimation of the total solids and urine output for several twenty-four-hour periods; and (3) the gross appearance as seen at the operation of the cross-section of the diseased and stone-bearing kidney itself.

If there is kidney sufficiency, as shown by repeated examinations of the total urine output, the surgeon of experience can determine from the gross examination of the kidney on section whether it is doing enough work to make its retention necessary (Fig. 4). If it is evident that it is of little value, then a primary nephrectomy should be chosen, as it will save the patient from a secondary nephrectomy which will be much more difficult and dangerous than the first operation.

The usual oblique kidney cut should be followed in all cases. In many of our cases we have operated under nitrous oxid anesthesia. With a patient in good condition and with an expert anesthetist I prefer ether. With a patient in poor condition but with a good heart, nitrous oxid is to be preferred.

Just a word here in regard to nitrous oxid. I have preached nitrous oxid a good deal and find now that it is being used by some surgeons without a clear conception of its value and its limitations. I have heard recently of several deaths from nitrous oxid gas, and when I have investigated them I have found that they have occurred in cases of individuals with heart trouble so bad as to contraindicate operation with any other anesthetic in the mind of the surgeon. Never use nitrous oxid in a very bad heart case. It is here not nearly so safe as ether. This fact should be more widely known.

ILLUSTRATIVE CASES

As a good example of the diagnosis and treatment of a ureteral stone I report the following case in which the first *x*-ray picture showed the presence of a shadow that suggested the possibility of a stone in the ureter. After Dr. Kretschmer had passed a ureteral catheter armed with fuse wire, as recommended by Kolischer and Schmidt, a second *x*-ray picture was taken, which showed the presence of the stone within the lumen of the ureter. This diagnosis was verified by the operative removal of the stone.

The patient, a man, aged 52, entered the Presbyterian Hospital on Dec. 5, 1908. The first symptoms of his present trouble began four years previously, at which time he was unable to void urine for a long time, and at other times he would have attacks of frequency of urination. At this time the patient had severe abdominal pain in the left lower quadrant of the abdomen. For the past eleven months the patient had felt a pain or discomfort in the lower left quadrant of the abdomen, and when the pain was severe it would radiate toward the kidney and the bladder. At irregular intervals he would have exacerbations similar to his first attack.

The physical examination was negative. There was no tenderness over the kidneys or the bladder. Some tenderness could be elicited in the left lower quadrant of the abdomen on firm pressure, which was not very severe or localized to any

special point. The urine was turbid; specific gravity, 1.020. The sediment showed the presence of red and white blood cells. No casts were found; no tubercle bacilli. Cystoscopic examination showed the internal urethral orifice negative. A slight amount of injection of the vessels of the trigone was present; otherwise the bladder was negative. On account of the pain on the left side, and owing to the fact that the suspicious shadow was found on the left side, it was decided to catheterize the left ureter only. For this purpose a ureteral catheter armed with fuse wire was used and passed into the pelvis of the kidney. A second *x*-ray picture was then taken, which showed the presence of the stone within the lumen of the ureter (Fig. 5). On examining this picture, the entire course of the ureter can be seen and in its course the shadow of the stone, most of which can be seen lying internal to the wire.

No obstruction to the passage of the catheter was experienced at any time during its passage.

In carrying out this work, it is of prime importance to obtain good, clear and distinct shadows on the *x*-ray plate. For this purpose cinnabar catheters and skiagraph bougies have been recommended. The ordinary ureteral catheter, armed with fuse wire, as was used in this case, has always given very satisfactory results, first, on account of the clear, distinct pictures produced; and, second, on account of its pliability, allowing the catheter to follow the course of the ureter without causing any deviation in its course.

This method of diagnosis can also be used in other conditions of the upper urinary tract, besides in the diagnosis of ureteral calculus, as, for example, in cases of renal calculi, in displaced kidneys, or in horse-shoe kidneys, as is illustrated by the following case:

The patient, Mr. T., complained of pain in the lower part of the abdomen a little to the right of the median line and the presence of pus in the urine.

The *x*-ray showed the presence of a shadow the size of a hickory nut compatible with that of a calculus just below the promontory of the sacrum. Stereoscopic views were then made, which showed that the shadow-producing mass was situated in front of the sacrum. On one of the projections the mass was seen about an inch to the right of the median line, which corresponded exactly to the point of tenderness.

On account of the right-sided pain and in view of the fact that one of the projections showed the shadow on the right side, it was decided to catheterize the right ureter with a skiagraph catheter and demonstrate the course of the ureter by *x*-ray. The catheter entered the ureteral orifice easily and advanced without any obstruction about one-third of its usual distance when an obstruction was met and further advance was impossible. After an *x*-ray was made it was seen that the catheter, instead of proceeding across the synchondrosis in its usual path to the kidney, swerved inward to the median line and stopped immediately in front of the stone (Fig. 6).

The value of this method is amply illustrated by this case and the preceding, in neither of which an accurate and positive diagnosis could have been made without it.

The following technic was employed in the above case of ureteral stone: Muscle-splitting incision about five inches long was made in the usual position of the incision for appendectomy. This was stretched widely so that the split in the internal oblique and transversalis extended almost to the middle line exposing the rectus muscle. This incision extended down to, but not through, the peritoneum. The peritoneum was stripped away so as to expose the iliac vessels: the ureter, with the lead wire catheter and the stone in it, was readily felt with the finger. The ureter was brought into view with a couple of blunt hooks, one below and one above the stone. An incision about one centimeter long was made longitudinally over the stone and the stone removed. The small opening in the ureter was sutured with a couple of fine catgut stitches and the external wound closed, leaving a cigarette drain with a small rubber tube in it down to the point of closure in the ureter. A small amount of urine

escaped for a few days along the cigarette drain. The cigarette drain was removed on the third day and the wound was completely closed by the tenth day.

PROGNOSIS

I can best estimate the prognosis in modern kidney-stone work from my own cases. In more than 50 cases of pyelotomy and nephrolithotomy I have had but one death—that in the case already referred to. I have had, however, two cases of death from secondary nephrectomies, both made extremely difficult because of the necessity of digging the kidney remnant out of dense scar tissue due to long-standing perinephritic inflammation.

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DISTURBANCES OF THE INTERNAL SECRETIONS CLINICALLY CONSIDERED *

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It is the object of this paper to present an abstract of the present knowledge of the physiology of the glands that furnish internal secretions; of the clinical conditions that disturbances of these glands are known to cause; of abnormal clinical conditions that disturbances of these glands are sometimes considered to cause; of the influence that can be exerted on the secretion of these glands by drugs and preparations of glands; and of the different physiologic activities that can be caused by the administration of gland preparations.

The glands to be considered are those that are known to furnish secretions which do not reach the blood and lymphatics by ducts. They are the pituitary (hypophysis cerebri), the thyroid, the parathyroids (epithelial bodies), the pancreas, the suprarenals (adrenals), the ovaries, and the testicles.

Also should be considered the glands and organs which have been assumed to furnish internal secretions. Such are the parotid, the thymus, the mammary, the liver, the kidneys, and the prostate.

PITUITARY BODY

While little is positively known of the function of this gland, it has been lately shown that the whole of the gland cannot be removed without causing death within twenty-four hours, but, if a certain part is left, death does not occur. Extracts from the infundibular portion of the gland raise the blood pressure and increase the cardiac activity, but this action is much less than that which occurs when suprarenal is administered. The blood pressure is raised principally by the action of the extract on the walls of the arterioles. Extracts from the hypophysis portion of the pituitary have been shown to cause slowing of the heart and prolongation of the systole.

This gland and the suprarenals seem to be the only glands of the body that furnish vasoconstricting stuff, and it has been claimed that the pituitary regulates the intracranial blood pressure, regulates diuresis, and exerts a tonic action on the sexual organs. Extracts from the infundibular portion have been shown to cause diuresis, whether the blood pressure is increased or not.

* Read at the Sixteenth International Medical Congress, held in Budapest, Hungary, Aug. 27 to Sept. 4, 1909.

The colloid substance of the gland perhaps represents a secretion.

The pituitary seems to be closely related in its functions to the thyroid gland; when the latter is diseased the hypophysis often becomes hypertrophied, and when the pituitary is diseased the thyroid has been found hypertrophied.

The relation of the pituitary secretion to the growth of the skeleton has not been determined, but the pathologic condition of this gland in acromegaly would seem to demonstrate that it has a function in bone development and bone growth that is of prime importance.

The consensus of opinion is that a diseased condition of the hypophysis cerebri is invariably a pathologic finding in, and, in all probability, a cause of, the disease of acromegaly. Instances of disease of the pituitary in which acromegaly does not occur do not militate against the acceptance of this etiology, as there may be supernumerary glands which furnish secretion compensating for defects in the pituitary, or disease of the pituitary may be so rapid as not to allow the condition of acromegaly to occur. It is quite possible that when autopsies on patients whose deaths have occurred early in acromegaly, have not shown macroscopically any changes in the hypophysis, microscopic examinations would have shown hyperplasia, and one or more instances are on record which have shown this condition to be present.

As has been stated above, the thyroid can supplement, and perhaps does so frequently, the work that the pituitary should accomplish.

It seems probable in every case of gigantism that the pituitary hypersecretes, and that this extra secretion stimulates an enormous bone growth. If this secretion is normal and simply increased in amount, and this extra secretion begins during the period of adolescence, a giant is the result. If, on the other hand, this hypersecretion begins after the full growth of the body has been attained, irregular bone growth and consequent deformity will follow, and a typical acromegaly will develop. It is also probable that in every case of gigantism, if the person lives long enough, signs of abnormal bone growth, acromegaly, will develop. In other words, gigantism is a condition due to hypersecretion of the pituitary, and acromegaly a condition primarily of hypersecretion, later hyposecretion, of the pituitary. This supposition does not seem unique when it is recalled that Graves' thyroid disease (exophthalmic goiter) is a condition of hypersecretion of the thyroid, and that later this same thyroid may so under-secrete as to cause some symptoms of myxedema.

Tumors of the hypophysis cerebri seem to cause a cessation of menstruation.

Disturbance of the secretion of this gland may be the cause of headache and muscular debility; at least this deduction may be made, as it seems to be a fact that the headache in many patients suffering from acromegaly may be removed and the muscular weakness may be lessened by the administration of pituitary extracts.

It has been suggested that pituitary secretion regulates sleep; too much of this secretion causing coma, and too little insomnia.

There is no proof of the ability of any drug to stimulate the secretion of the pituitary, though it is probable that both pituitary substance and thyroid substance may stimulate it. It has not been shown that any drug inhibits the activity of the pituitary.

It has seemed repeatedly demonstrated that prolonged use of pituitary substance causes the amelioration of the

headache and an increase in the muscular ability of patients suffering from acromegaly.

As hypophysial preparations raise the blood-pressure and slow the pulse, they have been used in cardiac and circulatory depression in typhoid fever, in pneumonia, and in irregular hearts and vasomotor disturbances. It has not been shown that extracts of this gland are any more efficient in these conditions than are suprarenal extracts. The action is certainly not so intense, but it may be more lasting.

From recent investigations it is possible that this drug may be used as a diuretic.

THYROID

This gland is the best understood of all the ductless glands, and its functions are so many and so diverse that the story of its physiologic activities seems scarcely believable. Its specific activities may be summed up as follows: A perfect secretion of the thyroid is necessary for the proper bone and mental development of the child, and the proper mental condition of the adult; for the proper relationship of the amount of fat to the rest of the body; for the proper health and functioning of the skin; for the proper health of the teeth, hair, and nails; for the proper menstrual and maternal functions of women; for the proper nitrogenous metabolism of the body; and for the prevention of nitrogen toxemias.

While this gland is present at birth, and functioning throughout childhood, it is most fully developed and active from the age of puberty to the age of forty-five. From that time its secretion is decreased until the gland atrophies in old age.

Besides its internal secretions, the thyroid produces a colloid substance which seems to be a storehouse for some of its activities. It acquires and stores iodine, and iodine is necessary for a part, at least, of the proper functioning of the gland.

Extracts from the thyroid lower blood-pressure and at the same time increase the rapidity of the heart. The polymorphonuclear leucocytes have been shown to be decreased by the feeding of thyroid, and, at times, the lymphocytes to be increased, while the whole number of white cells is diminished. This same condition of the blood is often present in exophthalmic goiter.

Men and animals can live for a time without the thyroid, provided the parathyroids (epithelial bodies) are not removed. Sooner or later, however, disturbances occur which will lead to death unless thyroid extract or secretion is in some manner furnished to the body.

Thyroid tissue has been successfully transplanted into various parts of the body and the thyroid then extirpated, and no symptoms have developed.

Hypersecretion of this gland has been proved to be the cause of Graves' thyroid disease (exophthalmic goiter). It is also true that any one, or more, of the many symptoms of this disease may be present without the other symptoms, and yet one and all be due to a disturbance of the thyroid. These disturbances may be in all degrees of intensity, and are tachycardia, nervous irritabilities, insomnia, loss of weight, more or less profuse perspiration, various digestive disturbances and various uterine disturbances (more especially a tendency to a profuse menstrual flow).

Cretinism and myxedema are positive signs that the thyroid is hyposecreting, and from this lowest degree of under-secretion up to that of slight subnormal secretion occur all the varying symptoms due to a diminution of thyroid activity. The conditions caused by hyposecretion of the thyroid are obesity, adiposis dolorosa, sleepi-

ness, mental apathy, dryness of the skin, chronic eezemas, digestive disturbances, slowing of the heart, increase in the blood-pressure, and amenorrhea or scanty menstruation.

Defective thyroid function in the mother is doubtless the essential factor in the production of cretinism.

As previously stated, it has been recognized that there may be all grades of thyroid secretion, from the excessive secretion which causes Graves' thyroid disease (exophthalmic goiter) to the complete absence of this secretion which causes cretinism and myxedema. Many apparently functional, neurotic, hysterical and mental disturbances, as well as disturbances of nutrition and toxemias due to disturbed nitrogen metabolism, may all be due to malfunction of the thyroid.

The neurotic, alert individual who is many times mentally bright, interesting, and magnetic is so, perhaps, because of an increased thyroid secretion. Excessive suffering from pain, real or imaginary, is probably due to excessive thyroid stimulation. Many unexplained insomnias are probably due to the same cause. So-called functional tachycardias without other symptoms of Graves' disease are possibly due to thyroid disturbance. The various forms of hysteria, some cases of epilepsy, mental depression, and even primary melancholia are all due to disturbed thyroid secretion. The excitability of the premenstrual period is doubtless due to an increased thyroid secretion. The uncomfortable symptoms of the menopause, hot flashes, sweatings, restlessness, and mental disquietudes are all due to an increased thyroid secretion, at a time when it is not needed for the menstrual function. If the thyroid decreases its secretion synchronously with the cessation of ovulation, the happiest development of the menopause takes place. If it continues to hypersecrete periodically, for a time, after ovulation has ceased, the well-known uncomfortable symptoms of the menopause occur. If, on the other hand, it under-secretes very rapidly after the cessation of ovulation, the patient gains weight, and there may be other symptoms of abnormal under-secretion, such as, even, some myxedematous phenomena.

If the thyroid does not act properly at the menstrual period, or if through its improper action menstruation does not occur, not only may violent headaches and other signs of toxemia appear, but epileptic attacks may develop. The proper administration of thyroid substance or extract will generally cause the menstruation to become regular and normal, will often prevent headache, and, frequently, will prevent epilepsy. Epileptic conditions that develop at the time of the menopause may be cured by the administration of extracts of this gland.

Some asthmatic attacks due to nitrogenous poisoning may be prevented by the administration of thyroid, showing that a thyroid undersecretion is present. The hypertension of arteriosclerosis and senility may be prevented by the administration of thyroid. Gouty manifestations are often made less frequent, and exacerbations may be prevented by the administration of thyroid. Senile eezemas and eezematous conditions in the young child may often be improved by giving thyroid, showing that in these instances an under-secretion is present.

The thyroid gland is stimulated to hypersecrete by alcohol, caffeine, arsenic, iodine, thyroid substance, and possibly by strychnin and phosphorus. A thyroid gland that is hypersecreting is quickly stimulated by alcohol and caffeine, and sometimes by iodine. Such repeated stimulations in conditions of exophthalmic goiter are dangerous and should not be allowed. The stimulation

from iodine, in small doses, and from thyroid substance lasts for a long time, and may awaken a subsecreting gland to more perfect work.

The thyroid gland may be inhibited in its activity by chronic lead poisoning, by the prolonged use of mercury, by the prolonged use of large doses of iodine, by severe infections, and by protracted disease. Its hyperactivity may be diminished by glycerophosphates, possibly by other lime salts, doubtless by morphin and other opiates, occasionally by belladonna, strophanthus, bromids, and by abstinence from meats.

Sexual excitement increases the thyroid secretion, and when there is hyposecretion of the thyroid, sexual desire is lost.

Thyroid extracts when administered by the mouth have the ability to cause all of the activities of the normally secreting gland.

PARATHYROIDS (EPITHELIAL BODIES)

It is comparatively recently that these glands have been shown to be not only important, but exceedingly active and very necessary for the health of the individual. It has also been proved that many of the supposed symptoms from thyroid extirpation are really due to parathyroid extirpation; that convulsions and tetany are due to extirpation of these glands; that, in man and many animals, removal of all of the parathyroids causes death, which can be prevented by the administration of parathyroid extract.

Whether the secretion from these glands prevents the formation of toxins or neutralizes toxins in the blood, it seems certain that their secretion prevents the irritation of the nervous system by such toxins, or regulates certain normal metabolic processes. It has been suggested that the secretion of the parathyroids may neutralize the toxins of muscular exertion and prevent fatigue.

While it has been stated that parathyroidectomized animals do not have convulsions if they are kept on a milk diet, it has still been asserted that these glands have little to do with nitrogen metabolism.

Recently MacCallum has shown that the parathyroids control calcium metabolism. If they are extirpated, rapid excretion of calcium takes place and a diminished amount of calcium remains in the blood, and hence there occurs an insufficient absorption and assimilation of calcium salts. This experimenter has shown that the symptoms after parathyroidectomy may be stopped by the intravenous injection of a 5 per cent. solution of acetate, or lactate, of calcium. Potassium solutions make the convulsive symptoms worse, while magnesium solutions, though beneficial, cause an undesired anesthetic action on the nervous system.

These glands vary in number (one to four), size and position in the neck. As they are necessary to life, in operations on the thyroid, two at least should be saved the patient, even if they must be transplanted.

Symptoms from hypersecretion of the parathyroid glands have not yet been recognized, though it has been suggested that a hypersecretion may be the cause of muscular weakness, and that a disturbed condition of the secretion may be the cause of paralysis agitans. Insufficient secretion of these glands seems to be the cause of tetany, and perhaps is the cause of other convulsive conditions, such as eclampsia and some forms of epilepsy.

Although the parathyroids have been found apparently normal after death from infantile tetany, this does not disprove the theory that tetany is due to their malfunction. Parathyroid extracts should certainly be tried

in tetany, in .003 to .006 gram (1/20 to 1/10 grain) doses. Parathyroid has been occasionally of benefit in paralysis agitans, and may be of value in eclampsia and in other convulsive conditions.

It would seem wise to give women during pregnancy and lactation small doses of calcinm, as such treatment should tend to prevent the softening of the mother's bones and the decay of her teeth, which so frequently occurs during this period.

The parathyroids have been found degenerated in primary infantile atrophy, but whether administration of preparations of these glands would be beneficial in such conditions has not been determined.

PANCREAS

Besides the pancreatic secretion which passes through the pancreatic duct, the pancreas furnishes an internal secretion necessary to the health and life of the individual. The pancreatic duct may be tied and the animal live, but the pancreas cannot be removed without death supervening.

It has been asserted that the internal secretion of the pancreas as well as the secretion through the pancreatic duct is necessary for the proper utilization of foodstuffs. This internal secretion of the pancreas has been positively demonstrated to be necessary for the proper metabolism of carbohydrates, and if this function of the pancreas is interfered with glucose will appear in the urine, and if this function is permanently abolished diabetes mellitus is the consequence. While glycosuria can occur without any apparent disease of the pancreas, and while disease of the pancreas can occur without glycosuria, it seems proved that disturbance of the internal secretion of the pancreas (whether from actual degeneration of the islands of Langerhans, from reflex nervous disturbances, from abnormal liver conditions, or from disturbed suprarenal activity) will surely cause glycosuria. Hence, a consideration of the carbohydrate metabolism from the intake of starch to the normal amount of sugar in the blood, and to the normal function of the muscles from glycogen nutrition, must take into account the internal secretion of the pancreas.

It should be emphasized that disturbances of the interrelations between the ductless glands, whether by disturbed secretions of one or more of them, or by disturbances due to nervous irritations, reflex or direct, may sufficiently disturb the pancreatic internal secretion to cause glycosuria and yet no apparent disease of the pancreas be found on autopsy. Instances of such glycosurias are those that occur from some irritations of the brain, injuries to the fourth ventricle, etc.; the glycosuria that often occurs in acromegaly (disease of the pituitary); the glycosuria that often occurs in thyroid disease; and the glycosuria that has been shown experimentally to occur from too much absorption of suprarenal extracts.

Thyroid secretion has been shown to exert profound influence on the secretion of the pancreas. If thyroid activity is insufficient, hypersecretion of the pancreas occurs. If there is excessive thyroid secretion, as in exophthalmic goiter, an under-secretion of the pancreas occurs.

Disease of the islands of Langerhans in the pancreas always causes diabetes mellitus, unless there is sufficient healthy pancreatic tissue or supernumerary pancreatic tissue to prevent an absence of this secretion.

While the pancreatic juice may be increased by hydrochloric acid and by secretin, and by various drugs such as creosote and salicylic acid, it is not known how the

internal secretion of the pancreas may be increased or diminished.

Unfortunately, the feeding of pancreas, or any extract made from pancreatic tissue, does not prevent or cure diabetes.

SUPRARENALS

These glands are necessary for life, and when they are extirpated death occurs. When they are diseased the patient becomes debilitated and finally dies.

The most interesting activity of these glands is that of their ability to furnish a secretion which enormously raises the blood-pressure, and one of their most important functions is to keep normal the tone of the systemic arteries. It has been experimentally shown that this active substance (epinephrin, suprarenin, or adrenalin) is the strongest vasoconstrictor that we possess, and its activity is exerted principally on the muscular coats of the arteries, although it is also a stimulant to the heart muscle. Too much of it is a respiratory depressant. This substance is probably oxidized in the tissues.

The suprarenal secretion seems not only to give general muscle tone to the system and to act as a muscle stimulant, but it especially stimulates the muscles innervated by the sympathetic system. As above stated, excessive amounts of suprarenal extract thrown into the circulation, especially if absorbed from the peritoneum (by reason of the rapidity of absorption), cause such disturbance of the carbohydrate metabolism, perhaps disturbance of the secretion of the islands of Langerhans, as to produce glycosuria. As might be inferred *a priori*, it has been shown that large amounts of pancreatic juice can inhibit this adrenalin glycosuria.

It has been suggested that the suprarenals have various antitoxic functions, but no such action has been demonstrated.

A proper amount of suprarenal secretion seems necessary to the normal development and health of the red blood corpuscles.

Experimental disturbances of the suprarenals has seemed to cause pigmentations of the skin, and it has been shown that the suprarenals have something to do with the normal pigments of the skin.

Suprarenal pressor substance acts especially on the blood vessels in the kidneys, and can contract the kidneys even in doses too small to be noticed by the general circulation. It is, therefore, quite possible that a hypersecretion of these glands may be an important factor in the etiology of chronic interstitial nephritis.

While it has been found very difficult to transplant suprarenals, grafts have been successfully placed in the kidneys, but whether they will functionate or not is still an undecided question.

Too strong solutions of suprarenal principle should not be used, as even ten minims of a 1 to 1,000 solution injected into the urethra has caused fatal poisoning.

The cortex of the suprarenal has been lately shown (Shäfer) to be probably a separate secreting gland tissue, which may have close relation to the sexual organs and to the pigments of the skin.

Hyperplasia of the cortex of the suprarenals has been shown to occur in puerperal eclampsia and in the nephritis of pregnancy.

When the suprarenal glands are diseased, symptoms develop which in their totality are called Addison's disease. These symptoms are progressive anemia, low blood-pressure, gastrointestinal disturbances, more or less abdominal pain, and a bronzing and pigmentation of the skin and some mucous membranes. The degeneration of

these glands which causes Addison's disease is most frequently a tuberculous process.

These glands have been found abnormal in various diseased conditions, and in many instances the vasopressor substance has been found greatly diminished. Acute insufficiency of the suprarenals can occur and cause death. They may become infected with various germs, be congested and be hemorrhagic, and such conditions may cause death. Hyperplasia of the suprarenals has been found to be an almost constant condition in arteriosclerosis and interstitial nephritis.

Arteriosclerosis is a disease of old age, and it is probably always preceded by a period of increased arterial tension. As the thyroid atrophies after fifty, and therefore furnishes a smaller and smaller amount of vasodilator substance, the relation of the vasopressor substance furnished by the suprarenals to the vasodilator substance in the blood is changed. Consequently, although the vasopressor substance may not be actually increased, it is relatively increased in the blood, and the arterial pressure is raised. This is normal old age. If at any time earlier in life the thyroid vasodilator substance should be diminished in amount, or if from any cause the suprarenal vasopressor substance is increased in amount, high blood-pressure and perhaps arteriosclerosis would be the result. Consequently any disease that interferes with the activity of the thyroid gland, or any disease that stimulates the suprarenals, may have as its ultimate consequence arteriosclerosis.

It is also possible that increased activity of the suprarenals may so increase the tension of the vessels of some of the abdominal organs that improper metabolism of nitrogenous foods may occur and gout be the result. In other words, it is possible that the suprarenals may take some part in the unexplained etiology of gout, and, as thyroid disturbances have been shown to be inherited, so may suprarenal disturbances be inherited. So much for hypersecretion of the suprarenals.

It is possible that neurasthenic conditions and conditions of chronic low blood-pressure, without tangible circulatory excuse, may be due to an under-secretion of the suprarenals. Gastrointestinal atrophy may also be due to this same cause.

Surgical shock as seen so many times following abdominal operations is probably due to injuries of the sympathetic system so interfering with suprarenal secretion that the vasopressor substance is not produced or circulated, and often irremediable low blood-pressure and death are the result. Good results in shock from acute infections, and especially in suppurative peritonitis, may be obtained by injecting intravenously 500 c.c. of physiologic saline solution to which has been added three drops of a 1 to 1,000 solution of the pressor principle of suprarenal.

Suprarenal has been used in uterine hemorrhage with success.

The active principle has been used with success in asthma and hay fever. To be effective it must be dissolved on the tongue or sprayed into the nostrils, or used in oily preparations in the nostrils.

To cause any rise in blood-pressure suprarenal extract must be absorbed from mucous membranes, or it must be administered intravenously or intramuscularly.

It is not known that any drug or preparation will stimulate the suprarenals to greater activity, but morphin seems to inhibit them, and the circulatory depression in morphin poisoning may be due to suprarenal inhibition.

Besides the use of suprarenal vasopressor substance as a local astringent and a circulatory stimulant, the administration of suprarenal substance as a whole, by the stomach, has not been shown to have great value. Although a number of instances are on record in which the administration of suprarenal extract has apparently cured Addison's disease, it has generally failed. There seems no other excuse for the internal administration of suprarenal substance.

OVARIES

Besides the function of ovulation, the ovaries seem to have an internal secretion, as evidenced by the well-known development of premature climacteric conditions, when both ovaries are removed. The unpleasant symptoms produced by such operations may be stopped by the administration of ovarian substance; consequently, the deduction seems warranted that the ovaries furnish something to the blood necessary to the perfect health of the female.

Preparations of ovaries contain a vasodilator substance, which may, however, be not other than the nucleoprotein contained in such preparations, and nucleoprotein is a vasodilator. Possibly, also, the cholin, which occurs in the decomposition of cholesterin and consequently in such substances as ovarian preparations, may also be a vasodilator.

It is thought by some that the mucous membrane congestion of the nose which always occurs during menstruation and always in both sexes during sexual excitement is due to ovarian secretion. Such congestion, however, is doubtless due to thyroid secretion. Ovarian secretion seems to be necessary for the proper functioning of the mucous membrane of the uterus.

Ovarian substance may be transplanted and functionate, whether the transplanted ovarian substance is from the same animal, from the same species, or from other species, and the animal may menstruate and conceive. Ovarian grafts, after double ovariectomy, have been placed in the broad ligaments and pregnancy has occurred four years later.

It has seemed that many of the disturbing symptoms of menstruation are due to ovarian insufficiency or to increased ovarian activity, and it is doubtless probable that many nervous symptoms in women are due to ovarian disturbance.

The corpus luteum has been thought to be a ductless gland furnishing an internal secretion which is necessary for the nutrition of the trophoblast during early pregnancy. This body subsequently atrophies. It has been claimed that bleeding from the uterus has been stopped by the administration of extract of corpus luteum.

When both ovaries are removed, the menopause is, of course, inaugurated, and various symptoms occur which are evidently distinctly due to the removal of the ovarian internal secretion, and such symptoms have been shown to be ameliorated by the administration of ovarian extract. Signs of gout in women often appear at the menopause. Although it has been stated that the administration of ovarian extract will prevent such symptoms, it often fails. Cancer of the breast may cease to grow after double ovariectomy; this before the menopause. Double ovariectomy has caused insanity.

Osteomalacia has been arrested by the removal of the ovaries; hence this disease may be due to disturbed ovarian secretion, perhaps an over-secretion. It has been suggested that milk from a goat whose ovaries have been removed should be of benefit in this disease.

Many cases of epilepsy develop in girls at the time of puberty, owing to a disturbance of ovarian and thyroid functions.

Ovarian substance has been administered in Graves' disease with some apparent success.

Iron, manganese and thyroid seem to be stimulant to ovarian activity. Whether these stimulants to ovulation are also stimulant to an internal secretion of the ovaries is not demonstrable.

While ovarian substance has seemed many times to prevent the unpleasant symptoms after double ovariectomy, the administration of this gland to a healthy woman apparently causes no symptoms. In amenorrhea it is not nearly so efficient as is thyroid.

TESTICLES

The general attributes of eunuchs and castrated animals show that there is a secretion from the testicles that is necessary for the normal development and health of the male. Castration before puberty causes animals and man to grow taller than normal, and to grow fat if they lead an indolent life, while the muscle strength depends on the amount of exercise they take.

If boys are castrated before puberty the skin becomes yellowish, and the hair of the face, axillæ and pubes is scanty, though there is plenty of hair on the head. The voice does not attain the masculine type. If one testicle is removed, the other may hypertrophy, and the breasts sometimes hypertrophy when the testicles are removed or atrophy. It is also stated that the prostate does not develop to normal size, but remains as a child's, if the boy is castrated.

There therefore seem to be two parts to the testicles, the seminal gland and an interstitial part. If the interstitial part does not develop in boys, a natural eunuch is the consequence. Variations in the internal secretions of the testicles may be from normal to total absence, and all grades of developmental peculiarities be the result.

If there is thyroid insufficiency, the testicles do not develop properly, and if the testicles are removed the thyroid remains small. In infantilism in the male both thyroid and testicular extracts should be administered, while thyroid alone will hasten delayed puberty.

Preparations of this gland are rich in nucleoprotein, and consequently contain vasodilator stuff. It is not clear that the so-called alkaloid spermin differs from the active principles extracted from other glandular and nervous tissues.

It has not been shown that the feeding of testicular extracts to young castrated animals or man will prevent the development of the characteristics of eunuchism.

Thyroid extract, phosphorus and strychnin have seemed to be stimulant to the testicles.

So far, the only effect of testicular administration seems to be due to the nucleoprotein. Any prolongation of life, or rejuvenation, or preservation of eternal youth, cannot be expected from testicular extract.

PAROTID

Although it seems almost improbable that the parotid glands furnish an internal secretion any more than do the submaxillary or sublingual glands, nevertheless, there is the ever-frequent occurrence of the infection of mumps causing the peculiar metastasis to the testicles and ovaries. This shows an unexplained relationship of the parotid glands to these sexual glands. It was long supposed that it was only the testicles that were subject to metastasis from infectious parotiditis, but more careful clinical observations have thoroughly demonstrated

the fact that the ovaries often become coincidentally inflamed and painful in this disease. The consequences of such ovarian congestion, however, have not been shown to be so serious as those from the corresponding testicular inflammation. It is within the range of probability, however, that the ovarian complication of mumps may cause a malfunction of the ovaries that may cause disturbances years after.

Parotid gland substance and parotid gland extracts have been given to patients who suffer ovarian pain and obstructive or congestive dysmenorrhea, and improvement has been observed in these conditions, but this action has not been proved to be more than a coincidence.

THYMUS

This ductless gland is actively functioning at the time of birth, gradually atrophies during childhood, and ordinarily disappears at puberty. While the thymus is necessary to the welfare of the growing child, it is not performing its whole function until puberty and its perfect activity seems to be more or less coincident with the complete inactivity of the thymus. While various experiments have been carried out with the object of determining the physiologic function of the thymus, a definite decision as to its use has not yet been deduced. It has been stated that when young animals are deprived of their thymus glands there is diminished growth of the bones. Chemically, on account of its large content of nucleated cells, the thymus gland contains a correspondingly large amount of nucleoprotein. Consequently, it contains a large amount of organic phosphorus.

Various symptoms have been shown to be caused by injections of extracts of thymus, but it has not yet been satisfactorily demonstrated whether young, warm-blooded animals can live without the thymus gland, or just what symptoms the deprivation of its secretion will produce. The gland does not normally contain iodine.

As this gland has its greatest activity during the period of the greatest growth of the body, as the greatest growth in childhood is that of the bones, and as this gland atrophies at about the time when the bone growth is complete, it would seem deductively that the secretion of the thymus was essential for such bone growth.

The thymus has not been proved to be a positive cause of any pathologic condition. If the phosphorus element in the blood were insufficient, and perhaps insufficiency of the thymus may cause this condition, thymic insufficiency could be the cause of the disease of rickets. Also general slow bone growth, slow eruption of teeth, and slow closing of the fontanels of the skull, especially if there were no symptoms of thyroid insufficiency, could be caused by an insufficient secretion from the thymus.

We have no positive knowledge of any symptoms from hypersecretion of the thymus, although this gland has been found enlarged coincidentally with enlarged lymphatic glands in conditions of lymphosis. The thymus may be more frequently enlarged in the general lymphatic and adenoid hypertrophies than has been supposed. Its excessive enlargement has been repeatedly stated to be the cause of the sudden death of infants, the so-called thymic death, supposed to be a condition of suffocation.

The administration of thymus gland substance has seemed occasionally to be of value in exophthalmic goiter, has seemed occasionally to have been of value in rickets, has seemed occasionally to have been of value in pulmonary tuberculosis (on the same theory that the hypophosphites have been of value), but no positive

result has been proved to occur from the administration of thymus. As a stimulant to the production of an increased number of white blood corpuscles, thymus gland may be administered as successfully as any other nucleoprotein treatment.

MAMMARY GLANDS

The interrelations between the thyroid, the ovaries, and the mammary glands are well understood. The perfect functions of the mammary and ovarian glands probably cannot occur without proper thyroid activity. The nervous or chemical adjustment between the ovaries and the mammary glands must be most perfect for their perfect correlation. When one set is performing periodic functions, the other set is generally quiescent, and when the other has its period of activity the other is at rest, this as far as their specific functions are concerned. The periodic congestion of the mammary glands just before menstruation, perhaps coincident with ovulation, again shows the correlation of these wonderful mechanisms.

That the mammary glands have, beside their specific secretion, an internal secretion is certainly supposable, but has not been satisfactorily proved. It has not been demonstrated that hypertrophies or large masses of the mammary glands cause any modification of the health of the female as compared with the health of one who has only small or atrophied glands. Consequently, more or less of the glandular tissue of the mammae, when lactation is absent, does not seem to cause signs or symptoms that can be noted. It has been suggested that, on account of the clinical observations having seemed to show that mammary preparations, when administered, have a stimulating action on the uterine muscles, the mammary gland has an internal secretion.

The mammary glands are stimulated to hypertrophy probably by both ovarian and placental influences, and certainly ovarian internal secretion seems to be necessary for their development, while the subsidence of ovulation seems to stimulate the milk secretion. On the other hand, it is known that putting a babe repeatedly to the breasts of non-pregnant women has caused the appearance of milk, and even a copious secretion.

Profuse uterine flow may be stopped by the application of a suction pump to the breasts for half an hour daily, during menstruation. This seemed to prevent excessive congestion of the ovaries and also to contract the uterus. The same treatment, between menstruations, seems to stop too great a frequency of this function, in young girls especially.

Mammary substance seems to have a positive activity when administered, and has frequently caused a cessation of uterine hemorrhage, profuse menstruation, and other uterine bleedings. It is also valuable in menorrhagia in young girls. Mammary extracts have not been shown to have any other activity.

LIVER

Among the manifold duties of this largest gland of the body may be that of furnishing an internal secretion that is antitoxic to various metabolic poisons, probably more especially poisons from disturbed nitrogenous metabolism.

There are various disturbances of the nervous system which seem to denote its irritation by ammonium compounds, and, although the major function of the liver may be performed well, such irritations may denote a mistake of the liver. There may be found on autopsy no histologic changes in the liver tissue, still there are conditions which are termed uremia and cholemia, and

unexplained anemias, and there occurs also disturbed purin metabolism, any one or all of which conditions may denote a faulty secretion in the liver.

The liver's relation to sugar metabolism has already been touched on, and it is possible that a cause of the increased amount of sugar in the blood in diabetes may at times be a disturbed internal secretion of the liver.

SPLEEN

From a histologic standpoint and from the standpoint of what is known of the physiology of the spleen, and from the fact that man and animals can live after the spleen has been extirpated, it seems doubtful if this organ furnishes an internal secretion.

When the spleen is removed, the lymph glands do its work. After such removal there is an increase of the lymphocytes in the blood and a decrease of the red corpuscles, as well as a reduction of the hemoglobin, but, in a few weeks, the blood becomes normal.

Splenic extract has been administered intramuscularly in capillary bleedings, and it has been thought to be of benefit in malarial poisoning.

KIDNEYS

It has not been proved that kidney preparations, or even raw fresh kidney, when administered, has any positive action, although it has seemed at times as though such kidney extracts did stimulate the secretion of the kidneys and had postponed final toxemias from kidney insufficiency.

PROSTATE

It has not been shown that the prostate has an internal secretion, or that its administration causes any symptoms, or any benefit in any pathologic condition.

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THE EVER-LENGTHENING CHAIN OF MEDICAL LITERATURE *

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A man attempting to carry a chain to which new links were being continually added would, in time, find himself fastened to a certain spot by the accumulation, his movements restricted to a circle, the size of which would be determined by the number of links his particular physical development would enable him to lift and carry. No matter how much the chain might be lengthened, the space over which he could move would be in no way extended. The added links would only serve to fasten him more securely to the spot. Medical literature is such an ever-lengthening chain. Hippocrates could arrange and join together all the existing links. Galen could lift and polish and use the whole of it. The schoolmen of the middle ages might count its links, and be somewhat acquainted with them all. But their attempt to carry the whole—the paralysis of original thought caused by trying to learn all that had been written by their predecessors—checked any further progress and prevented any important development in the healing art for centuries. Not until the profession ceased to attempt to carry the whole load of the dead past—not until the mastery of what other men had written ceased to be the ideal of medical education—not until men had turned from what their predecessors had observed of disease to look at it with their own eyes, like

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John Hunter, to learn from the body what none could teach in any language, living or dead—not until then did the renaissance of medicine occur.

Compare the products of the time when each scholar exhausted his strength in gaining an acquaintance with every treatise of medical literature, so that he was quite unable to add another fact or observation to the store, with the later period in which students acted on the belief that all was not yet discovered, and that new eyes would see new facts, new minds recognize new relations of cause and effect. Since the latter conception has prevailed the development of the medical sciences has gone on with increasing rapidity until medical literature is no longer represented by a single lengthening chain; but rather by a great number of chains, many of which are already too extended for any one mind to carry. Each department of medicine, each disease, each important medical theory, has a literature of its own that could not be fully mastered in a life-time. To know all that has been written about any one thing in medicine is impossible. To attempt to know it all is to give up one's life to a useless task, to the neglect of more important objects.

And yet, to know a great deal of what others have learned and accomplished is absolutely necessary to every one who aspires to a decent ability to practice medicine or surgery. The part that the most original and energetic student can observe and think out for himself is utterly insignificant compared with the whole mass of knowledge and the perfected technic that may be learned from others by the average member of our profession to-day. To have one's name associated with just one symptom, process, apparatus or theory that proves of permanent importance is to achieve exceptional fame. Leaving out of account all the learning of the past, how little can the most industrious worker, by a year of continuous, well-directed effort, contribute to the common fund of knowledge, compared with the total contributions during the year from the thousands of other workers who are daily dealing with similar questions in all parts of the world! How meager the results of the experience of any one in our profession compared with lessons that might be drawn from the experience of the whole! How trifling the new thoughts that anyone can contribute to the current literature of a year, compared with the sum-total of value which that literature contains!

I have not at hand any statistics of the annual additions to the medical literature of the world, but the College of Physicians of Philadelphia adds to its literature each year nearly 600 new books, of which 80 per cent. are first editions; and many of them are in two or more volumes. The number of American medical journals, according to the "American Medical Directory," is 259. The medical journals, published in other parts of the world, which achieve something beyond a local circulation, are more than 500. There are published each year probably more than 30,000 octavo pages referring to the subject of ophthalmology alone.

We have, then, the fact that the medical literature of the world, even the current medical literature of the day, quite apart from all of the past, is too vast to be mastered, or even superficially examined by the greatest possible individual effort. And we have the second fact that acquaintance with what the literature of the past contains is essential to the success of the physician or surgeon, while a similar acquaintance with the most recent achievements of his contemporaries is equally

necessary for the highest efficiency of anyone practicing the healing art.

WHAT CAN WE DO ABOUT IT?

It will help toward an answer to this question to get clearly in mind what cannot be done. Medical literature cannot be divided into separate departments, so small that the average human mind would be able fairly to master whichever one of them was chosen. The new therapy with vaccines will probably control some of the most persistent and rebellious diseases of the eye, ear and nasal cavities. The expert use of the ophthalmoscope reveals some of the most definite, instructive and the earliest symptoms of general vascular disease. Neither the ophthalmologist nor the internist can afford to be ignorant of what the other is doing. The interrelation of the different departments of medicine could be demonstrated from every medical book or paper published. The oculist who never reads papers on internal medicine, and the man who considers himself a general practitioner, and skips literature relating to the eye, both make a grave mistake that leads into a narrow specialism—the sort of specialism that has always been recognized to be wrong, fatal to general professional progress and individual development, and ending in blind and inefficient routine.

No, we cannot each select a certain line of work and confine our reading to a single group of journals and books, ignoring the greater part of general medical literature. Such a course would inevitably lessen intellectual energy, originality and activity, even in the chosen field of work. The in-and-in breeding of ideas is as certain to lead to degeneration and sterility as the too close breeding of stock. Our best thoughts, our most important glimpses of the truth, will come to nothing unless we can follow them across the lines that ordinarily limit our daily work, and feed them with appropriate nourishment drawn from other fields; unless we can extend our conceptions by observations made from other points of view; unless we can support our thought with facts familiar to other workers, but which have not fallen under our immediate notice. Our problem is not to be solved by the splitting up of medical literature into separate provinces, no matter how wisely these might be planned, or how carefully outlined.

The problem is rather to work out methods by which the student fairly familiar with some small part of medical literature can, with the least unnecessary expenditure of time and energy, follow his line of thought into any other region of medical literature, so that the surgeon confronted by a dangerous or persistent infection can most readily ascertain what is to be hoped from a serum or vaccine therapy; or, when compelled to choose a course of action with regard to deep-seated cerebral disease, can gather all the assistance possible from the special literature bearing on the diseases of the eye, ear and nose.

The accumulation of medical facts has been going on from the time of Hippocrates, and before him on the papyri of Egypt; in the manuscripts of China and India, and on the tablets of Assyria. It goes on in the mind of every practitioner of medicine as it does on every page of medical literature. The time has come when mere accumulation is no longer of the greatest importance, if, indeed, it may not be actually harmful. Arrangement, classification, systemization, the bringing of every accumulated fact in relation with some plan by which the student can most readily and directly reach

the things he needs is to-day the extremely important problem confronting us.

The first step toward solving it is the establishment and maintenance of medical libraries. Books must be brought together before any intelligent plan for their effective arrangement and preparation for use can be put into operation. The modern library is everywhere and pre-eminently a cooperative concern. There are already in this country at least six and probably eight or ten medical libraries that have outstripped any private medical library that has ever been brought together. With the present rapid growth of medical literature it must be more and more true that the so-called private library is a partial, incomplete affair, a survival of the past in process of extinction. This fact is best appreciated by those who have most to do with medical literature.

I was a good deal surprised many years ago when Dr. S. Weir Mitchell said that he had just sent the last of his medical library to the College of Physicians of Philadelphia. But with wider acquaintance in medical literature, and a better understanding of the uses of books, I can see that it was the only reasonable thing to do. To have the books properly arranged and cared for, and especially to have, not only what had been his own, but what had belonged to a great many others made equally accessible, all of them in one place, and included in one arrangement, far more than compensated for the distance of a few blocks that the collection was removed from his office. The incompleteness of the private library, and the fact that when it runs above 1,000 volumes, it is scarcely ever kept in complete order, or is kept in order only at relatively great expense, the fact that it is a hundred times more difficult to consult ten separate collections than one in which all the available books are brought together, make the private library an extremely wasteful and inefficient instrument as compared with a library which represents cooperative effort.

We must not forget that a library is something more than and something very different from a mere collection of books. It consists of publications arranged with reference to some plan that makes them accessible. Ten thousand volumes without any intelligible arrangement would be worth very little more than so many tons of waste paper.

The private library, in so far as it is arranged at all, corresponds simply to the habits and development of its owner or caretaker. On that account it is of comparatively little use in other hands. Where father and son have been physicians, in every instance I have known, when the son came into possession of the father's library he promptly sold or gave away the great bulk of it, although it might be fairly supposed that the good it contained would have been more accessible to him than to other members of the profession. A medical library, to be an efficient instrument of the profession, must be thoroughly systematized on some general plan and cared for by a skilled attendant whose acquaintance with it constitutes the key required to unlock the treasures of medical literature.

The economy of cooperation in attempting to gain access to medical literature is enormous and obvious to anyone who gives the matter a moment's thought. Compare what can be done by individuals spending \$25 a year for medical journals, and ten of them combining to share the journals that can be purchased with the resulting sum when combination has eliminated useless duplication. The library bureaus charge \$5 a year for

the bibliography of a single subject. The *Index Medicus*, for a little more, furnishes the bibliography of thousands of subjects connected with medicine.

It may be admitted that medical literature has grown too vast to be mastered by the individual. It may be admitted that any effort to become acquainted with it or to use it will be far more effective, far more economically applied by cooperation with others seeking the same end. But it may be urged that comparatively few doctors are interested in books, and that, while it is proper for these to go ahead and establish libraries and to take care of them, others of the profession have very little interest in the matter. It is the prevalence of this error that more than anything else hinders the progress of medicine and keeps down the efficiency, and therefore the influence and income, of the medical profession.

It is true that comparatively few men have the taste for wide, close, persistent reading. It is true that a large proportion learn more from experience and contact with their fellows. But these latter are in an especial degree dependent on their associates for the stimulation and fruitfulness of their intellectual processes. One bookworm, grubbing continuously in the library, visionary, impractical, and unheard of in the community, may do more to keep up the standard of professional information and activity of thought among his associates than the dozen men who see the largest number of patients or possess the best professional incomes.

The man who attempts to practice medicine without drawing on the experience of the profession in the past and without contact with the professional thought of his contemporaries remains ignorant and degenerates into the lower type of charlatan. If the minds are few that willingly devote their chief energies to the study of medical literature, it is all the more important to the profession at large that they should be furnished with the opportunities to do under the best conditions, this work, which, although recompensed only by the pleasure it gives the worker, is yet essential to the welfare of the profession as a whole. If we cannot be learned ourselves, let us have the benefit of association with those who are widely read.

It seems reasonable to expect that those whose usefulness in the community and whose ability to earn an honest livelihood comes wholly through the application of knowledge transmitted through medical literature, should contribute to establish and sustain a medical library, even though they have no great appetite for reading, and prefer rather to profit by contact with others who keep more closely in touch with the movements in medical thought. When this responsibility is shirked even by some who pose as teachers and leaders in the profession, who decline to give for this purpose even a fraction of what they contribute for churches, politics or social clubs, is there not need for active consideration and discussion of the relation the medical profession should bear to the swiftly augmenting literature of medicine?

A medical library develops slowly, especially during its earlier years. Time will be required to perfect it. It cannot be started too soon, or urged forward with too much energy. But in spite of all we can do we shall have to wait long before its size and efficiency will be what we desire. And if such a library is to be to us all that it might, when we have secured it, there is need meanwhile to learn to handle to better advantage the portion of medical literature already within our reach. Certain well-established principles should be applied to the writ-

ing of articles and the editing of journals and the compiling of books. But this is too long a story to take up here. It is of more immediate interest to consider plans for the systematic study of current medical literature in a cooperative way. The council of the academy has decided to arrange to give a part of each of the meetings, during the coming winter, to the presentation and discussion of the recent literature of some department of medicine or some particular subject of general interest. It is to be hoped that this will stimulate reading, and thought about the best methods of reading; that it will develop the power of getting at the kernel, with the least hindrance from the chaff, which constitutes such a large proportion in the vast bulk of the present medical literature.

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THE CLINICAL SIGNIFICANCE OF AEROPHAGIA *

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One of the most common complaints of patients suffering from so-called indigestion is belching, or eructation, of gas. These patients frequently say that everything they eat "turns to gas" and they occasionally volunteer the information that they are afflicted with "gastritis." They invariably believe that the condition is due to the fermentation of food in the stomach, and in most cases they have been treated with restricted diet and a variety of drugs by physicians who also believe that a process of fermentation is responsible for the symptom. The purpose of this paper is to show that the gas which these patients expel is nothing but atmospheric air, in the vast majority of instances, and that the condition is directly dependent on the fact that these patients, all unconsciously, swallow the air with their food or between meals.

Aerophagia, or air-swallowing, is seen in its most striking form in hysterical subjects and in other individuals with well-marked neurotic stigmata. In such cases enormous volumes of air may be expelled. Instances are on record of patients who have belched over 5,000 times in twenty-four hours; and the amount of air eructated has been measured and found to exceed 200 liters. It is evident, in examples of this kind, that the quantity of air expelled is many times in excess of that which could possibly be produced by any conceivable process of fermentation. Furthermore, the air expelled in such cases has been collected and analyzed by several investigators, who have shown that it approaches in composition atmospheric air, being composed almost entirely of nitrogen and oxygen with an admixture of but a small quantity of carbon dioxide, the latter being derived from the decomposition of the carbonates in the food or in the alkaline saliva.

This interesting condition was first described in 1814 by DeJardin, who cites the case of a conscript who, in order to escape military service, swallowed large quantities of air which produced abdominal tympanites. Since that time a number of writers have maintained that air can be introduced into the stomach during respiration and especially during deglutition of saliva

and food. Bouveret, in 1891, published an elaborate discussion of the mechanism of this affection and gave it the name "aerophagia." The condition, as it occurs in the extreme cases, has become a well-known clinical phenomenon. The eructations are almost always accompanied by more or less noise and the condition is a distressing one to witness.

The worst case I have seen was in a young newspaper reporter who had attacks when he would belch for several hours at a time. The act was accompanied by a to-and-fro movement of the head; each time the head came forward he would let out loud reverberating sounds that could be heard throughout the length of a large hospital ward.

I saw a second marked case two summers ago in a stout woman who was accosted by a negro while walking alone in a country road. She was greatly frightened and ran the distance of about three city blocks to reach her hotel. For a month after this experience she suffered intensely with abdominal distention and flatulence, so that she walked the floor a good portion of each night. The "cure" in this case was most interesting in that the condition absolutely disappeared in thirty-six hours after she was told that she was swallowing air. She had a "relapse" about a year later while undergoing treatment in the hospital for a nervous tic, and her abdomen became so distended that she reminded one of a toy balloon; it seemed as if she might rise out of the bed at any moment and go bumping against the ceiling. In this article, however, it is not my intention to discuss these extreme cases, but to show that air-swallowing is a very common affection and occurs to a greater or less degree in the majority of cases of the "false gastropathies" and other forms of so-called indigestion. A most excellent article on the subject of aerophagia, together with a very complete bibliography, is that by Spivak,¹ of Denver, Colo.

It is interesting to reflect for a moment that the phenomenon of swallowing air is not limited to man alone. Other animals, especially the horse, are subject to this affection. In the paper to which reference has just been made, Spivak quotes a communication from Mr. A. M. Farmington, Acting Chief of the Bureau of Animal Industry, U. S. Department of Agriculture, which deals at length with this subject:

Indigestion, or dyspepsia (in the horse) was formerly attributed as the cause of air-swallowing, but later observers have more properly classed it with the vices, and in the same category with a considerable number of other whims, bad or vicious habits, resulting in most instances from idleness, which the horse, free from restraint, incessantly repeats without any other motive in reality than the gratification of desires which finally become imperative, but which always interfere with his complete serviceability. The modes by which the horse accomplishes the act of air-swallowing are known by the names of "cribbing" and "wind-sucking." Usually, in cribbing, the horse takes a point of support or contact for his upper incisor teeth, which causes an abnormal wear of the teeth, and the vice can thus be detected. Less frequently he cribs the air without taking a point of contact, and is what is called a "wind-sucker." To crib in the air, the animal begins a rapid up-and-down movement of the lips, then suddenly lowers his head—sometimes to the level of his knees—and swallows a mouthful of air; most frequently with the production of a guttural sound, which has sometimes been wrongly interpreted as an eructation. When the effort is not successful, and is confined to the simple act of deglutition of saliva, the attempts are renewed until the desired satisfaction is secured.

* Read before the Medical Society of Virginia, at its Fortieth Annual Session, held at Roanoke, Va., Oct. 5-8, 1909.

1. Spivak, C. B.: Aerophagia and Flatulence, *Med. Rec.*, New York, 1905, lxxvii, 649.

Cribbing with support differs from the foregoing in that, in order to execute it, the inferior extremity of the head is supported or braced by means of the incisors upon a resisting body of some kind; such as a post, the bottom or edge of the manger, a window-sill, a cross-piece of a hay-rack, a shaft or pole, the halter or harness of his mate, etc. When subjects are prevented from eribbing on a support they will sometimes learn to erib in the air, and *vice versa*. A colt of a eribbing mare has been known to acquire the vice considerably before the age of one year. The muscles used in air-swallowing are not different, nor is the mechanism apparently different, except as above noted, from the act of deglutition generally. Remedies consist in the removal, so far as practicable, of objects that may serve as a base of support for the inferior extremity of the head, and the buckling of a strap around the neck just below the gullet. These methods, however, do not effect a cure, but only prevent the act while in use. Surgical operations have likewise failed to yield permanently satisfactory results.

The mechanism of air-swallowing in man has been variously described by different observers. Most of these agree that the air enters the stomach in the same way as food, i. e., by an act of deglutition. Other writers ascribe the condition to an aspiration or sucking of air. Whatever may be its exact mechanism, we know that it may occur in conditions of perfect health, particularly after rapid eating. Further than this, a great many of us can learn to swallow air after a certain amount of practice and bring it up again with loud eructations. Personally, I believe that the condition is always associated with more or less loss of tone in the muscular walls of the stomach, and this conception is readily understood by an analogy with the blood-vessels. We all know that the blood-vessels are hollow muscular tubes which are quite elastic and are regularly held in tone, or in a condition of partial contraction, by means of the vasomotor nerves. There is a most close relationship between the emotions and the state of vasomotor control. A trivial remark may cause an individual to blush so that the face becomes scarlet in color from the dilatation of every blood-vessel of the part. This is unquestionably due to an inhibition of the vasoconstrictors so that the nerves "let go their hold" and the pressure of the contained blood greatly increases the caliber of the vessels. Emotions of a different sort, such as fright, the sight of blood, etc., may cause the individual to become very pale, with almost blanched face. This may be due to a stimulation of the vasoconstrictors of the superficial blood-vessels, but more probably, I believe, to an inhibition of the vasoconstrictors of the large internal vessels of the trunk, a form of internal blushing, so to speak, so that the blood collects to a large measure in the splanchnic area with resulting pallor of the face and extremities. Now, in much the same manner, as I have elsewhere² suggested, it is most probable that certain states of nervousness produce an inhibition of the nerves having to do with the normal state of tone of the stomach musculature. Certain emotions, or reflex agencies, bring about a loss of tone in the walls of the stomach exactly analogous to the inhibition of the vasoconstrictor nerves which induces blushing. In this way there is produced a potential or actual relaxation of the stomach walls, so that the organ is easily inflated by air swallowed with the food or between meals. The eructations are produced by the irritable contractions of the stomach, while at the same time some of the swallowed air may

be forced through the pylorus and give rise to intestinal flatulence.

In addition to this relaxation of the stomach walls there is probably another factor. Most patients with functional stomach disorders suffer from a sense of fullness after meals, which is probably associated with a hyperesthesia of the gastric mucous membrane. They ascribe it to an accumulation of gas, of which they wish to rid themselves by belching. They do not at first succeed in this, however, and they therefore go through the form of belching in which they soon swallow air and then bring it up again. Many patients with hyperacidity and sufferers from gastric ulcer secure temporary relief from the pain by taking a full dose of bicarbonate of soda. This is invariably followed by belching of gas, due to the carbon dioxid generated by the action of the hydrochloric acid of the stomach contents on the sodium bicarbonate. The relief is caused by the neutralization of part of the acid, but the patient attributes it to getting rid of the gas. Most neuropaths are conscious of their stomachs at times and to this is due a great many of their subjective symptoms.

I could not refrain from laughing at a colleague of mine who entered my office a few days ago with a very long face and a most dejected expression. When asked the cause of his trouble he said that he was suffering from a "terribly sour stomach." He may or may not have been comforted by my opinion that his stomach ought to be sour, inasmuch as it was secreting hydrochloric acid if it were in proper working order. He would have found himself in a far more serious condition if his stomach were not sour. As it turned out, his gastric secretions were normal and his trouble was not "indigestion," but a neurosis. The sooner we learn to appreciate the true nature of the various gastropathies the less formidable will become the task of getting our patients well.

In presenting the point in this article special emphasis is being laid on the possibility of swallowing air and the great frequency of its occurrence. It is not my intention to claim that all cases of flatulency are due to aerophagia. We know very well that actual fermentation does occur in the stomach and bowels, and in such cases foreign gases may be demonstrated, notably hydrogen and hydrogen sulphid. Careful study, however, will easily prove that cases of actual fermentation are exceedingly rare, and I do not believe that they occur except in the presence of definite obstruction with stasis, or in patients acutely ill with perversion of the gastrointestinal motility and secretions from either inflammatory or toxemic conditions.

Aerophagia is entirely independent of the character of the gastric secretions, and is to be classed as a neurosis. It is possible, as has been suggested by Stern,³ that over-indulgence in outdoor sports, such as bicycle-riding, baseball, etc., may bring on an acute aerophagic condition, especially in untrained athletes who are mouth-breathers. Air-swallowing occurs relatively as frequently in patients with gastric subacidity as in those with an excess of hydrochloric acid, and is just as much a feature of organic stomach conditions as purely functional ones. An analysis of my records of cases, examined from July, 1908, to July, 1909, shows 74 cases of neurasthenia, most of whom were referred to me for symptoms on the part of the stomach. In 27 of these cases aerophagia was a prominent symptom. During

2. Vanderhoof, Douglas: The Rational Treatment of Indigestion, *Old Dominion Jour. Med. and Surg.*, 1908, vii, 356-365.

3. Stern, Heinrich: The Clinical Importance of Aerophagia, *New York Med. Jour.*, 1904, lxxix, 337.

this same period, 26 cases of gastric and intestinal neuroses were seen with 11 examples of aerophagia. Air-swallowing was a pronounced feature of 4 out of 7 patients with marked visceroptosis, in whom no evidence of actual fermentation of the stomach contents could be demonstrated. In this same year I saw 21 cases of gastric and duodenal ulcer, 8 of whom complained very much of this symptom. In 4 patients with carcinoma of the stomach, 2 suffered with it, while the other 2 were not at all troubled. An analysis of these 132 cases showed that 52 complained of flatulence or eructations. One or more gastric analyses were made in 35 of these 52 patients. Ten of these 35 cases showed a temporary or continued absence of free hydrochloric acid in the stomach contents after the test breakfast. The remaining number showed a normal gastric secretion with the exception of 4 cases of marked hyperacidity.

The symptoms that accompany aerophagia are those of the underlying functional or organic disease, plus the effects that the air in the gastrointestinal tract produces. In hysterical subjects the air may not even enter the stomach, but accumulate in the esophagus, from which it is audibly expelled after a short time. In other instances the swallowed air may pass through the pylorus and cause excessive intestinal flatulence. This appears to be quite common in neurotic women who often complain of more or less sudden "bloating" which compels them to remove their corsets or other tight clothing. Cases of aerophagia present an interesting picture when viewed on the fluoroscopic screen. When the patient makes an effort to expel the air from the stomach only a small portion of it is thrown out and the stomach walls are seen to contract violently, forcing the air-filled *Magenblase* up against the diaphragm. After one has seen this procedure repeated time after time at short intervals, it is not hard to conceive that such a violent internal upheaval should cause unpleasant symptoms.

The importance of recognizing the true nature of these cases accompanied by aerophagia is evident. The condition is almost invariably misinterpreted and it would seem that the possibility of air-swallowing is a clinical feature that is generally overlooked.

The treatment of aerophagia is most interesting in that many patients get well over night, so to speak, on simply having the true nature of their affection explained to them. The condition is essentially a symptom and not a disease, hence every patient requires a thorough physical examination in addition to a careful scrutiny of the gastrointestinal tract. The important thing is to find and treat the underlying cause, whether it be organic, functional or, as in some cases, simply a habit. In the purely functional cases it is a serious mistake to attempt to cure these patients by means of restricted diet and so-called intestinal antiseptics. What these individuals need is building up, and improvement often begins as soon as they are given forced diet with starches and sweets. It should be pointed out to the sufferer from aerophagia that the air he eructates is odorless, and that he brings up much more gas than could be produced by any form of fermentation of the quantity of food ingested. It is usually a simple matter to demonstrate to him that the symptom does not depend on the quality of food he eats, but that it is most prone to occur when he is worried, fatigued or provoked. A good many cases are seen in which the loss of nerve tone in the walls of the stomach is unquestionably reflex from pathologic conditions outside of the

gastrointestinal tract. A competent oculist has been able to relieve a number of my patients by finding and correcting previously unsuspected errors of refraction.

Several drugs are of service in controlling the symptom when it arises. Probably the first among these is asafetida. While this drug is generally credited with having some special effect in reducing flatulency, I suspect very strongly that the true reason of its efficacy lies in the fact that patients stop belching after its administration because with each eructation they are reminded of the horrible odor of the drug. A good drink of whisky, taken undiluted, or a dose of aromatic spirits of ammonia, often relieves by stimulating the muscular walls of the stomach to contract and so expel the contained air. Other remedies that may be tried are chloroform water and turpentine. The use of the stomach-tube is rarely indicated in cases of chronic or recurrent aerophagia. Its employment is similar to the folly of prescribing a special diet, designed to be free from fermenting substances. Both of these measures are not only useless in preventing aerophagia, but, by their rigid persistence, serve to attract the patient's attention to his affection, and so tend to perpetuate or aggravate the habit.

SUMMARY

1. Aerophagia is a well-known clinical phenomenon, seen in its most characteristic form in cases of hysteria.
2. It occurs, however, in normal individuals, and is a most common symptom in functional stomach disorders.
3. In such cases its significance is very frequently misinterpreted as being due to some form of fermentative dyspepsia.
4. Actual fermentation in the gastrointestinal tract is a rare occurrence, and never gives rise to the excessive quantities of gas that are expelled by the aerophagic patient.
5. Aerophagia is a neurosis associated with a loss of tone in the muscular walls of the stomach, so that the organ is easily inflated by air swallowed with food or between meals.
6. It is entirely independent of the character of the gastric secretions, and occurs relatively as frequently in patients with anacidity as in those with an excess of hydrochloric acid.
7. It does not depend on what the patient eats, but on the condition of the stomach nerves when he eats.
8. The treatment of the condition, after excluding all organic diseases and correcting all possible reflex causes, consists principally in explaining to the patient that the gas he eructates is not due to fermentation, but that it is atmospheric air that he unconsciously swallows.

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Tonsils Responsible for Relapses in Syphilis.—Gusman announced some time ago that spirochetes might often be found in regions previously the site of manifestations of the disease but now free from such. In a recent communication to the *Monatshefte für praktische Dermatologie*, L. 1910, 10, he states that the spirochetes may be found lurking in regions entirely free from manifestations at any time. The tonsils are especially liable to shelter them in this way, and he describes three cases in which spirochetes could be cultivated from the tonsils during the year after infection although there had been no symptoms on the part of the tonsils to draw attention to them. The positive findings in these cases, after energetic specific treatment had apparently aborted the disease, shows that freedom from symptoms is by no means synonymous with complete extermination of the spirochetes, and that their persistence at inaccessible points may be responsible for the flaring up of the infection later.

INFANT MORTALITY AND ITS REDUCTION, ESPECIALLY IN NEW YORK CITY *

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The awakening of the world to a consciousness of the immense sacrifice of infant life is recent. Most of it has come within the last twenty years.

The economic importance of this subject in certain of the European countries, especially Germany and France, has engaged the attention of the governments, and there the question of infant mortality is being studied with great interest. This has been forced on the attention since in all European countries a steadily declining birth-rate is evident. This decline in the last twenty-five years in eleven European countries has been from an

thirteen European countries for a period extending from 1879 to 1892, the years not being always the same for each country, and found that in a total mortality of 28,660,733 the deaths under one year were 7,708,978, or 26.9 per cent. of all.

Taking the average estimate of many writers, it may be said that, of every 1,000 infants born, one-fifth die during the first year. While the impression prevails that the death-rate in infants has recently fallen considerably, this view is contradicted by some who have given special attention to this subject, by whom it is urged that the fall in the death-curve is simply due to the decrease in the number of births.

In order to arrive at a correct idea of the infantile death-rate, it must be considered from several points of view. I have studied it in several centers of population, but chiefly in New York City, (1) in relation to the

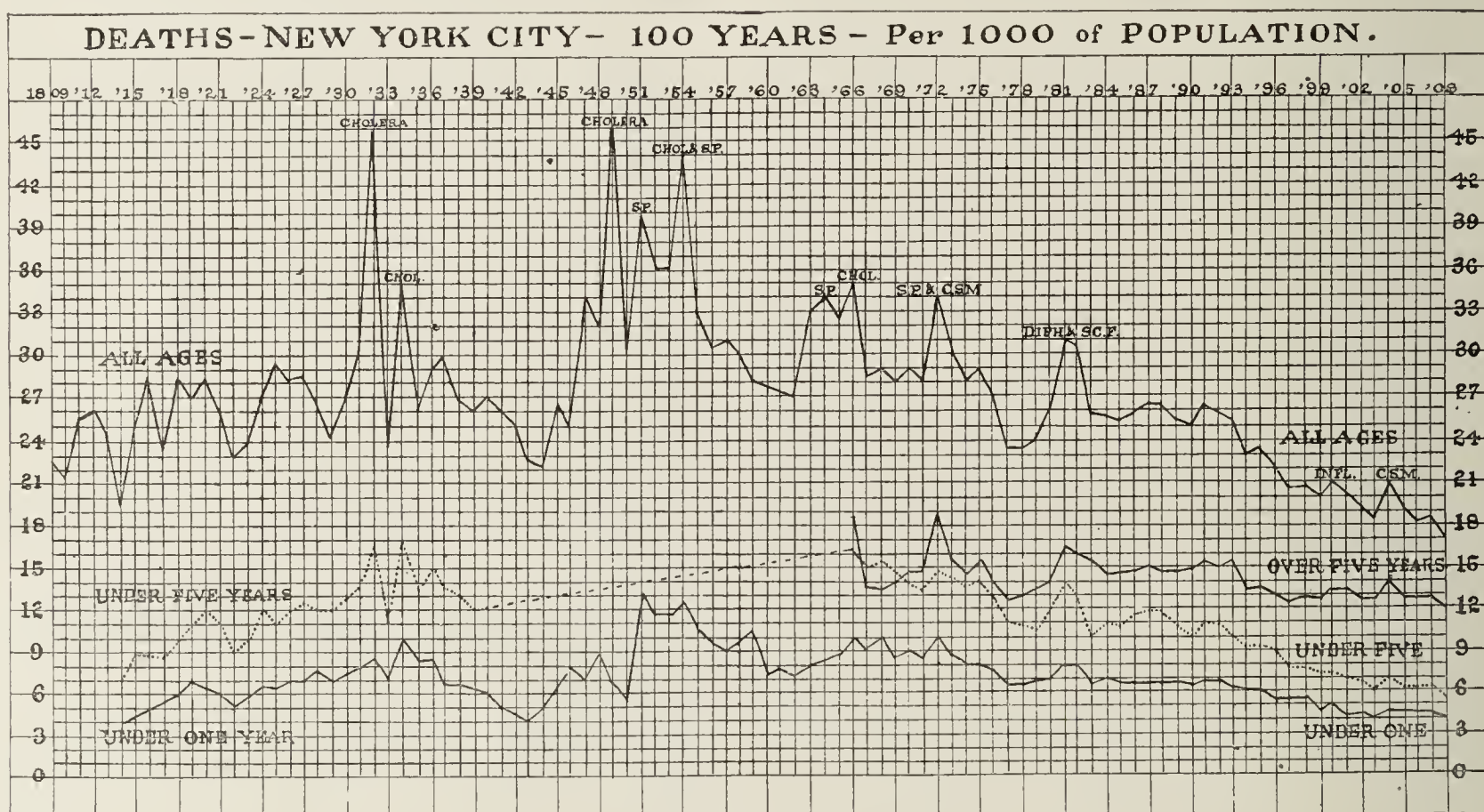


Chart 1.

average of 33.7 per thousand of population to 30 per thousand, or about 10 per cent. of births. The fall is least in Ireland, Norway and Sweden, and greatest in England, Germany, Italy, Austria and Hungary. No such decline is as yet apparent in this country, owing to the influx of immigrants into our large cities. But for this it would be great, as is indicated in the statistics of rural communities where a marked decline is reported. How great a factor immigration is in maintaining the birth-rate of our cities may be illustrated by comparing different parts of New York City. In the best residential portion, the present birth-rate is 4 per thousand of population; while in districts occupied chiefly by Italians and Russian Jews it is from 40 to 45 per thousand.

Infant deaths—i. e., deaths under one year—in different places and under different conditions form at the present time in civilized countries from 20 to 25 per cent. of all deaths. Eröss,¹ in 1894, collected data from

total population, (2) in relation to the total death-rate, (3) in relation to births, (4) in relation to the estimated population under one year.

The results of these studies are embodied in the accompanying charts. Chart 1 gives the death-rate for New York City (Boroughs of Manhattan and Bronx) for one hundred years. During this time the population has increased from 91,618 to 2,620,447; and the total deaths per year from 2,038 to 44,061. Thus, while the population has increased 29 times, the total deaths have increased but 22 times. The upper curve gives the mortality for all ages and indicates the city's health for the century. The figures for the earlier years are probably not absolutely correct; but they are taken from official sources and are the best obtainable.²

Beginning with a death-rate of about 22 per thousand, an irregular but steady increase is seen up to about 1866, when the general rate was about 35 per thousand; in exceptional years it was much higher than this. From that time a general decline is seen until 1908, when the

* Read in the Section on Diseases of Children of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909. Owing to lack of space, the article is here abbreviated. The complete article appears in the author's reprints.

1. Eröss: Archiv. f. Kinderh., 1894, ix, 249.

2. Documents of the Board of Aldermen, 1809-1842, were chiefly used for early New York records.

rate was but 17 per thousand, the lowest point in the century. The obvious explanation of this seems to be that the rapid increase of population with very little regard for sanitation brought about a steadily rising death-rate. With the beginning of modern sanitary regulations, however, a change soon became apparent. In 1866 the New York Health Department was organized. Largely through its activities and the advances in our knowledge of the methods of preventing disease there has occurred a reduction in the death-rate which, when we consider the constantly increasing concentration of population and the present condition of overcrowding, seems truly remarkable.

Up to the year 1854 the mortality line is a very irregular one, the sharp peaks indicating the great epidemics which visited the city. But these wide fluctuations gradually disappear, and since 1882, especially, the yearly variations are within comparatively narrow limits.

The year 1832, the first great rise, marks the great cholera epidemic; a similar one to-day would mean 35,000 deaths in the boroughs of Manhattan and Bronx.

The years 1834, 1849, 1854 and 1866 were also cholera years. Epidemics of smallpox were witnessed in 1849, 1851, 1854 and 1865.

An epidemic of cerebrospinal meningitis occurred in 1872, and the same year smallpox was also prevalent.

The years 1881 and 1882 were years of great prevalence of both scarlet fever and diphtheria. The rise of 1901 was due to influenza and complicating pneumonia; that of 1904 marks the most severe year of the recent epidemics of cerebrospinal meningitis.

The line of infant mortality (under one year) follows in a general way that of total mortality, but shows fewer abrupt rises, since infants were less affected than were adults in the epidemics. At what period of life the reduction in the death-rate has occurred does not appear until we separate the deaths over five and the deaths under five, and again the deaths under one and deaths from one to five years.

From 1866 to the present the accuracy of the figures can, I think, be depended on.³ Since that time, comparing deaths over five with those under five, we note that for the first few years, until about 1870, these mortality lines repeatedly cross each other, indicating that at that time half the total deaths, some years even more, were in children under five. A gradual divergence of these two curves is noted from this period. There is a slight fall in the line for over five years, but a very marked one in that for under five years. In 1908, at the end of the period, the death-rate under five is only half that over five, or one-third the total. Since 1866 the death-rate over five has fallen from 18.4 to 11.2 per 1,000; that under five has fallen from 16.4 to 5.8 per 1,000. It is, therefore, with children under five that the principal reduction in the death-rate has occurred.

Separating now the deaths under one year and those from one to five years, we find that a slightly greater reduction has occurred in the latter than in the former group. The death-rate for children under one has fallen from 10 to 3.8 per thousand; that for the ages one to five has fallen from 6.3 to 1.9 per thousand. In proportion to the population, therefore, the mortality for these ages is approximately one-third what it was about fifty years ago.

But since those who doubt the fact of a reduction in infant mortality argue that these figures are only one

result of a declining birth-rate, there is shown in Chart 2 a comparison of the births per thousand of population for the same period. The birth-line shows an irregular but steady rise for the period. This is not, however, wholly to be trusted. The registration of births in New York City is by no means as uniform as are the death reports, or as the birth records of many European cities.

The Registrar of Vital Statistics of New York estimates that for the early part of the period under consideration only about 70 per cent. of the births were recorded, while at the present time only about 92 per cent. are recorded. Even making this correction, we have a birth-line which tends slightly upward, to compare with a death-line which tends steadily downward. The rise in the birth-curve is due, as already mentioned, to the great influx of foreign population.

Precisely the same result is shown if we take another standard of comparison, viz., the deaths under one year and the population for this age. The records for the population under one year are available since 1888. These are derived from the actual enumeration in census years and are estimated for the intervening periods.

In 1888 the deaths under one year were 10,411, or 24.4

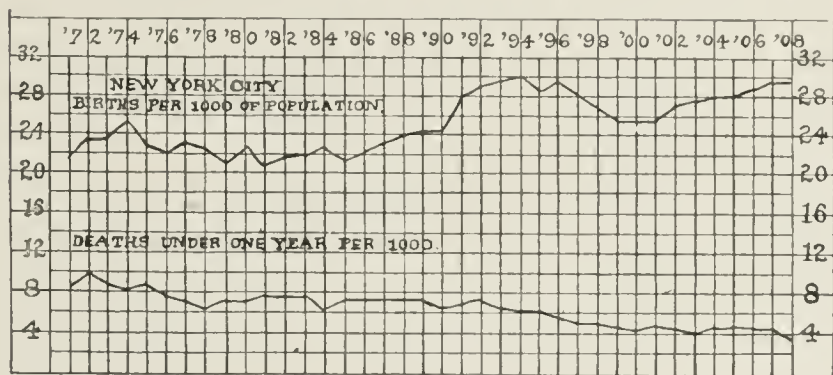


Chart 2.

TABLE 1.—STATISTICS OF POPULATION AND DEATH-RATE OF CHILDREN IN VARIOUS LARGE CITIES

City.	Year.	Population.	Population under 5 yrs.	Per cent. of children to population.	Deaths under 5 years.	Deaths under 5 yrs. per 1,000 of population under 5 yrs.
New York..	1880	1,209,268	140,673	11.6	14,650	104
	1890	1,631,232	189,760	11.6	16,305	85
	1900	2,053,979	233,537	11.3	15,646	66
	1907	2,541,084	291,208	11.4	15,645	53
Boston	1880	362,839	29,649	8.2	3,349	112
	1890	448,477	40,001	8.9	3,349	83
	1900	560,892	57,361	10.2	3,752	65
	1907	609,757	72,166	11.8	3,160	43
Chicago ...	1880	503,298	...	...	5,639	95
	1890	1,200,000	140,783	11.7	9,954	70.7
	1900	1,698,575	190,355	11.2	8,282	43
	1907	2,107,620	213,713	10.1	10,077	47
Philadelphia.	1880	846,980	91,544	10.8	6,594	72
	1890	1,046,964	103,847	9.9	7,913	76
	1900	1,293,697	...	...	8,078	...
	1907	1,500,596	147,988	9.8	7,669	51
London ...	1880	3,771,139	497,044	13.1	36,220	72
	1891	4,221,452	501,558	11.8	33,340	66
	1900	4,589,129	546,570	11.9	31,139	56
	1905	4,681,794	518,794	11.0	24,838	47
Paris	1880	2,239,938	148,601	6.6	17,159	115
	1891	2,424,705	150,490	6.1	14,048	93
	1900	2,511,629	...	...	8,966	...
	1905	2,722,731	170,694	6.6	8,617	50.4
Berlin	1880	1,123,749	183,060	16.2	19,249	105
	1890	1,579,524	164,370	10.4	17,630	107
	1900	1,864,203	...	...	15,498	...
	1907	2,096,318	183,441	8.8	10,833	59
Vienna	1880	721,016	58,023	8	8,219	141
	1891	1,378,530	130,808	9.4	15,610	110
	1900	1,656,662	160,233	9.6	13,650	85
	1905	1,897,630	213,884	11.2	13,282	62

3. Reports of the New York Health Department, especially 1906.

per cent. of the estimated population under one year. In 1908 the deaths under one year were 10,073, or 15.1 per cent. of the estimated population under one year.

The evidence seems, therefore, conclusive that during the period of the last twenty-five to thirty years there has been in New York a very great and steady reduction in the mortality of infants and young children, that this has been both relative and actual, and that the actual mortality is now only about one-half what it would have been had the old conditions prevailed.

Similar conditions have been found to exist, but to varying degrees, in all the other large cities which I have studied—Chicago, Philadelphia, Boston, London, Paris, Berlin and Vienna. Table 1 gives for these cities since 1880 the variations in the total population, in the child population (under five years), the deaths under five, and the deaths per thousand of child population.

The most significant figures in the table are those indicating the change in the death-rate of children compared with the child population in the period studied. This is graphically shown in Chart 3.

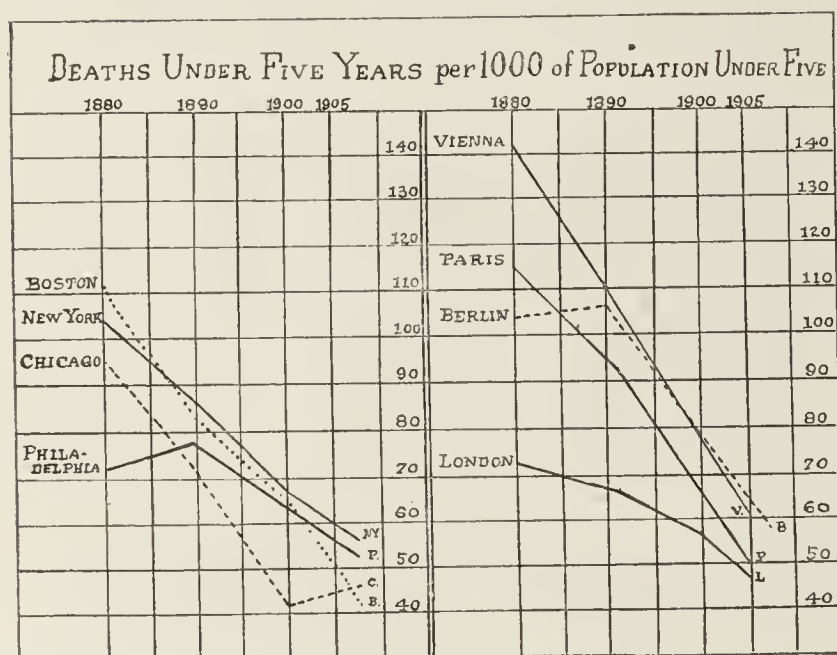


Chart 3.

The figures for deaths under one year were not available for all the cities hence I have used those of deaths under five years for the comparative study. This is quite proper, since the deaths under one year bear everywhere a fairly constant relation to the deaths under five; i. e., two-thirds, or 66 per cent. They are very slightly less than two-thirds the total for the beginning of the period and slightly more than two-thirds the total for the latter part of the period. In other words, the fall in the death-rate from one to five years has been slightly greater than that under one year.

Such a correspondence in results in all these different places is too close to be accidental. It is certainly striking that in recent years the death-rate of children in eight large cities of the world is so nearly the same. Different agencies have no doubt operated in different cities to bring about this result. It is not possible from my own investigations to state in detail what these have been.

It is also rather striking that at the present time the ratio of the child population (under five years) to the total population is nearly the same (a little over 11 per cent.) in New York, Boston, London and Vienna. It is much lower in Berlin, but is lowest of all in Paris.

All the advances in modern medicine have, after all, done very little to reduce adult mortality. It is true that cholera and smallpox have been practically elimi-

nated, that typhoid has been curbed and tuberculosis reduced, but pneumonia, cardiac disease and Bright's disease are steadily increasing. Adult deaths are inevitable, but infant deaths are very largely preventable, and herein is the hopeful sign of this problem.

CAUSES OF INFANT MORTALITY

The most fundamental cause of high infant mortality is infancy itself, the period in which the organism has the feeblest resistance to adverse conditions. The younger and more delicate the infant, the greater the perils that surround it. Hence we find, as we would expect, that the highest mortality of the first year is during the first month, and that the death-rate steadily decreases with each advancing month of life.

Chart 4, from figures of Westergaard,⁴ Berlin, for the years 1893 to 1897, shows that 25 per cent. of the deaths of the first year occur in the first month and 47 per cent. during the first three months.

DEATHS DURING FIRST YEAR BY MONTH OF AGE

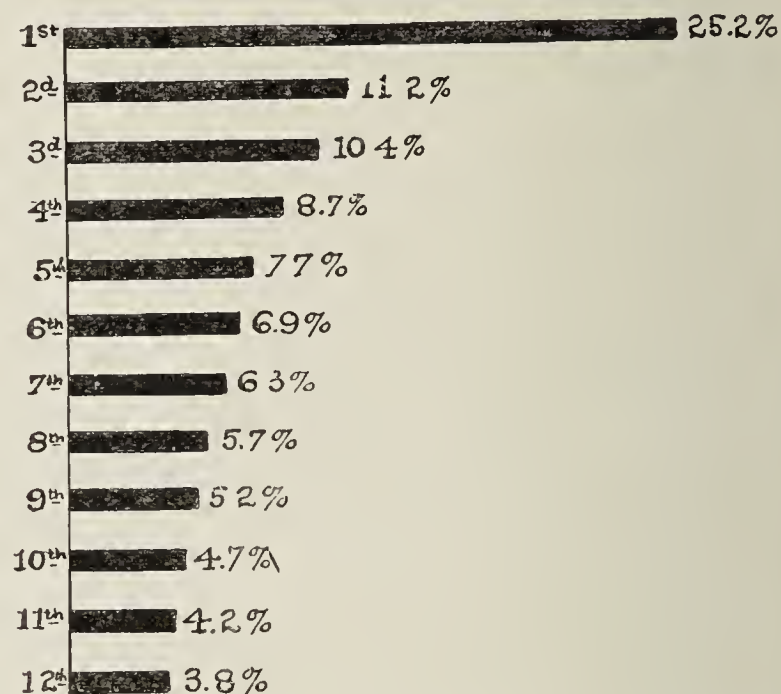


Chart 4.

TABLE 2.—PERCENTAGE OF DEATHS UNDER ONE YEAR FOR THE DIFFERENT AGE PERIODS

	London.	Berlin.
First day	9.64	....
Second to seventh day.	11.09	....
Second week	5.08	....
Third week	4.98	....
Fourth week	3.78	....
First month	34.6	25.3
Second month	11.4	11.3
Third month	8.4	10.4
Fourth month	6.9	8.7
Fifth month	5.9	7.7
Sixth month	5.25	6.9
Seventh month	5.20	6.3
Eighth month	4.8	5.7
Ninth month	4.7	5.2
Tenth month	4.5	4.7
Eleventh month	4.2	4.2
Twelfth month	4.1	3.8

In Table 2 these Berlin figures are compared with those of London⁵ for 1907. They correspond in a very striking manner. The London figures, moreover, indicate how large a part of the first month's mortality is in the first week. This group, which forms over 20 per cent. of the deaths of the first year, is largely made up of hopeless cases.

4. Pfaundler and Schlossman: Diseases of Children; American Translation, i, 294.

5. Reports of the Registrar-General, London.

Brothers,⁶ writing in 1896, is authority for the statement that in four years, 1889-1892, there were recorded 173,126 births. During the same period there were 16,888 deaths within the age of one month, not including premature births. Making the estimated correction for the incompleteness of birth returns already referred to, it would appear that at that time about 8 per cent. of children born did not survive the first month.

Eröss¹ in 1894 gives even higher mortality figures for the first month. From figures collected from sixteen large European cities, including 1,439,056 births, he states that 9.5 per cent. died during the first four weeks, and that during this time the number of deaths was as great as in the remainder of the first year. A great reduction in the mortality of this first month has been brought about since the time of which he wrote by the general introduction of aseptic methods in obstetrics, sepsis in the new born being once a common cause of death.

A certain proportion of infants born die because of premature birth, or a feebleness at birth too great to support an independent existence. Alcohol, vice, syphilis and some other forms of inherited disease are factors of considerable importance in the production of these conditions. Again, there occur certain malformations of heart, intestines or brain which are incompatible with normal development or even with life. A certain number of infants perish from unavoidable accidents at birth. But these combined groups of the cases which might be called hopeless probably make up not more than 25 per cent. of the total.

The loss of infant life is, in large measure, due, not to inherited disease, malformations or congenital feebleness, but because of the failure to furnish the proper conditions not only for healthy growth, but even for life itself. These conditions are proper food, suitable housing and intelligent care. Most infants die primarily, therefore, not from inherent causes, but from accidental and, therefore, preventable ones.

The fundamental causes of infant mortality, as we may call them, are mainly the result of three conditions—poverty, ignorance and neglect. As direct results of poverty we have bad housing and overcrowding in cities, the necessity for mothers to work both late in their pregnancy and very soon after confinement, insufficient food to nursing mothers, improper food for children deprived of mother's milk and the inability to escape the consequences of bad surroundings, such as excessive heat in summer or cold in winter. Ignorance of the simple facts of hygiene and feeding in those to whom the care of such children is intrusted is a factor of immense importance, quite as disastrous in its consequences as is the use of bad milk or other improper food. Neglect may be due to intemperance or vice in the parents, but often is one of the results of poverty.

Infant mortality is much greater everywhere in cities than in the rural districts; but it is not the mere fact of city residence, but because in cities are combined all the other important conditions which cause a high infant mortality. The death-rate, therefore, does not depend on the size of the city, but on the hygiene, sanitation and the character of the population.

The following figures are from the U. S. Census of 1900, and give the death-rate of infants under one year per thousand births.

New York State.	159.8
New York City.	189.4
Nashua, N. H.	261.0
Lowell, Mass.	275.5
Fall River, Mass.	304.7
Mobile, Ala.	344.5
Savannah, Ga.	387.5
Charleston, S. C.	419.5

Density of population is, therefore, only one of many causes affecting the infant death-rate. Nashua, Lowell and Fall River are typical factory towns, but not large ones. A similar very high death-rate is seen in factory towns in England. The excessively high death-rate of the Southern cities is doubtless explained by the large colored population. While in general the figures above given point the truth, they should not be too implicitly believed. Conditions are certainly bad, but I do not think they are so bad as indicated, for the reason that in most of our cities and towns the registration of births is notoriously imperfect, while that of deaths is usually reliable.

All who practice medicine among children and all who study the question of infant mortality statistically are struck with the marked contrast between the death-rate of the children of the poor and those of the rich. Clay estimates that in England in the aristocratic families the mortality of the first year is 10 per cent.; in the middle class, 21 per cent.; in the laboring classes, 32 per cent. This difference in the infant mortality of the various classes is most striking in the case of acute intestinal disease. Halle states that of 170 deaths from this cause investigated in Graz in 1903 and 1904 there were 161 among the poor, 9 among the well-to-do, and none among the rich. It may not be true in adult life, but in infancy money may purchase not only health, it may purchase life, since it puts at the disposal of the infant the utmost resources of science, the best advice, the best food and the best surroundings for the individual child. To relieve, or even greatly to diminish, infant mortality these basal conditions of modern city life—poverty and ignorance—must be attacked.

HOW THE CAUSES OPERATE

Having glanced at the fundamental or primary causes it is interesting in the next place to see how these operate in causing the deaths of infants. This would be a comparatively simple matter if the actual cause of death in each child under one year were known. But mortality records are not so complete as one could desire for such a study as we are making. The return made to the health department often covers only the last thing which happened to the child; the real causes which are back of this terminal condition cannot be ascertained from the records. Thus, a death is recorded as due to acute diarrhea in summer, but the facts very often are that a condition of malnutrition or marasmus with disturbed digestion due to improper feeding had existed for weeks or months before the final two or three days of acute illness, and were the real important factors. It is not easy from the classification made in the records of vital statistics to get at these fundamental causes which we are now seeking, for we wish to learn not what the last illness chanced to be, but why it was that the child succumbed to that particular acute disease.

Again, death certificates are of necessity accepted from a great number of persons who possess very indifferent qualifications for correct diagnosis, and many faulty ones are thus recorded from which one must be careful in drawing inferences. Bearing in mind, how-

6. Brothers: *Infant Mortality During Child-Birth and Its Prevention*, 1896.

ever, the foregoing points, much information can still be gained from a study of the causes to which death in infancy is ascribed in the records of our cities.

In Chart 5 are represented the most important groups making up the mortality of the first year in cities generally, combining the records of New York and Philadelphia for two years, Boston for three years and Chicago for one year, making a total of 44,226 deaths under one year.

Looking at this chart even casually one is at once impressed with the paramount importance of three groups: (1) the acute gastrointestinal; (2) prematurity, congenital debility and marasmus; (3) acute respiratory diseases. Together they make up 72 per cent. of the total infant mortality.

Let us glance at these groups separately. The group "acute gastrointestinal disease" is the largest and is so in nearly every large city in the temperate zone. The percentage of deaths from this cause is considerably higher in Chicago and Philadelphia than in New York,

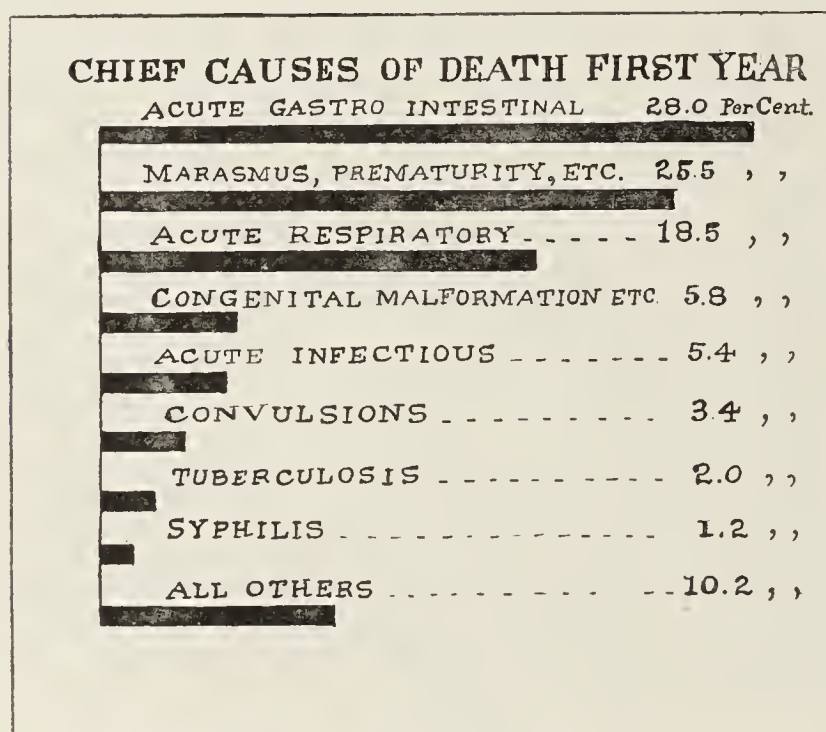


Chart 5.

while in Boston it is lowest of all. The curve of diarrheal diseases is so important that it practically controls the curve of infant mortality. This group embraces acute gastritis, gastroenteritis, all forms of acute diarrhea, dysentery and cholera infantum and makes up the largest part of the immense summer mortality. It is these diseases which cause regularly each year the sharp rise in the death curve in July and August.

Chart 6 shows the deaths in New York City for the past five years by the different months in infants under one year and in children from one to five years. The regularity of the summer rise is very striking. It is most acute during the month of July and most frequently the curve touches the highest point during that month.

In children from one to five years old, no such summer rise in the death curve is seen. At this age the highest mortality is in the late winter and early spring, usually the months of March and April. This is due in New York to the prevalence of acute respiratory diseases and acute contagious diseases, especially measles.

Turning now to the acute gastrointestinal diseases of the first year, we note that the most important underlying causes are three: atmospheric heat, method of feeding, city residence. The scope of this article does

not permit of a discussion of the ways in which a high atmospheric temperature causes diarrheal diseases. The fact is too well known to need argument. There is the closest possible connection between the frequency and fatality of diarrheal disease and methods of feeding. Hope of Liverpool has shown that in 1,000 breast-fed infants under three months there were only 20 deaths from diarrheal disease; while of 1,000 bottle-fed infants under three months there were 300 deaths. Of 1,000 fatal cases of diarrheal disease investigated by the New York Health Department in 1908, only 90 had previously been entirely breast-fed. Newsholme gives almost identical figures for England, viz.: 10 per cent. of deaths from diarrheal disease in breast-fed infants and 90 per cent. in bottle-fed infants.

But that it is not artificial feeding *per se* which is to be blamed is shown by the relatively small proportion of deaths in the artificially fed that are seen among the well-to-do. Among the poor it is not simply the method of feeding which is responsible for the results, but the other conditions which are apt to accompany such feeding, such as bad surroundings, lack of maternal care (many of these children are illegitimate) and even gross neglect. Besides, we must reckon with bad milk or other improper food and, even when the milk-supply is good, bad methods of feeding due chiefly to ignorance.

It is my own belief that ignorance in feeding causes quite as many deaths as bad milk. But ignorance in matters of feeding is by no means confined to the poor. Even the best milk, badly handled in the home and improperly fed, is capable of doing great harm.

City residence is an important factor in the production of diarrheal disease. In proportion to the population there are three times as many deaths from diarrheal diseases in the cities of New York State as in the rural districts. But in some of the smaller factory cities, Troy, Cohoes and others, the mortality is higher than in New York City, showing that other unhygienic conditions may be even more important than density of population.

Prematurity is not classed separately in New York City or in Boston; but statistics for New York State for 1907 and 1908, Philadelphia for 1907, Chicago for 1906, Washington, D. C., for 1906 and London for 1907, combined, show that in a total infant mortality of 81,680 there were 13,757 cases, or 16.8 per cent., in which prematurity was recorded as the cause of death. This is, therefore, a factor of the first importance, since it is apparently the cause of about one-sixth the deaths of the first year.

In the second part of this great group, figuring in statistical tables as marasmus, malnutrition, congenital debility, inanition, etc., death is due in part to faulty hygiene and care, but still more to the manner of feeding. The manner of feeding is, therefore, a factor of the first importance in infant mortality. Artificial feeding is the chief etiologic factor in these first two groups, which taken together make up 53.5 per cent. of the total mortality of the first year.

The extent to which artificial feeding is practiced in New York City at the present time is a subject on which it is difficult to obtain exact information. From data collected through various agencies, the Health Department estimates that at present about 85 per cent. of the infants in New York are breast-fed and about 15 per cent. are bottle-fed. These data are gathered chiefly from the tenement districts and seem to me rather low for the artificially fed. I believe that, for the entire population, 18 to 20 per cent. would be nearer the truth.

The difference in the mortality of these two classes is most striking. The Health Department estimates that 85 per cent. of all infantile deaths are in those artificially fed. This statement is borne out by figures drawn from other sources. Tyson states that of 150,000 infantile deaths in Great Britain 75 per cent. were in those who were artificially fed. Kober states that of 54,047 infantile deaths investigated at home and abroad with reference to feeding 86.6 per cent. were artificially fed. In Munich the mortality in breast-fed infants is stated to be 15 per cent., while in bottle-fed infants it is 85 per cent. In Württemberg the mortality of breast-fed infants is placed at 13 per cent.; that of those artificially fed at 42 per cent. The whole question may be summed up in a few words:

Breast-feeding requires but little experience and may be very successfully done even by those with a very low grade of intelligence and among the poor; but artificial feeding is not successful unless carried on with much intelligence and experience and at the same time with a certain amount of money to secure reliable materials, especially pure milk.

The child's nutrition, dependent largely on the manner of feeding, affects profoundly the mortality from every form of acute disease. Deaths attributed to convulsions are almost all of them in children artificially fed. It is easy to see, therefore, why it is that the kind of feeding is so important a factor in mortality figures.

Turning now to the acute respiratory diseases, especially bronchitis and pneumonia, we note that deaths from these causes form 18.5 per cent. of our infant mortality in the four cities considered. The percentage is considerably higher in New York and Chicago than in Philadelphia and Boston. That the percentage of New York is higher than other cities is, I think, to be explained in part by the greater congestion of our population. Overcrowding affects to some degree all diseases, but much more those of the respiratory tract—bronchitis, pneumonia and tuberculosis.

Recently an infant was admitted to my wards in the Babies' Hospital suffering from his third attack of pneumonia within a few months. It was learned that he was one of a family of ten, all living in a single room. Such overcrowding inevitably leads to a great increase in acute respiratory diseases in the winter. Fuel is scarce and expensive and doors and windows are kept tightly closed to keep out the cold. No such thing as ventilation exists. Then it is that all the evil effects of overcrowding are intensified. The spread of common colds and influenza is certain. When neglected or when proper care or treatment is impossible, these quickly lead to severe bronchitis and pneumonia. It is the infants who feel most keenly the effects of such unfavorable conditions, since they are continually subjected to them, besides being the most susceptible members of the household.

The subject of influenza is one which deserves something more than passing mention. Ever since the general epidemic of 1891, it has prevailed regularly every winter season. Although it appears as an insignificant factor in mortality tables, it is one of major importance. In the Babies' Hospital during the past winter cultures were taken from throats of nearly all cases of severe bronchitis and pneumonia during life and from the lungs after death, and it was exceptional to find a protracted case of either of these diseases which was not complicated by influenza infection. Aside from its association with diseases of the lungs, influenza plays an important part in the production of diseases of the upper respiratory tract, the nasopharynx, ears, mastoid, etc.

The importance of acute respiratory diseases as a factor in infant mortality has greatly increased during recent years. Chart 7 gives a comparison between the mortality in New York City from bronchitis and pneumonia and that from diarrheal diseases since 1880. The curve for diarrheal diseases shows a steady decline, that

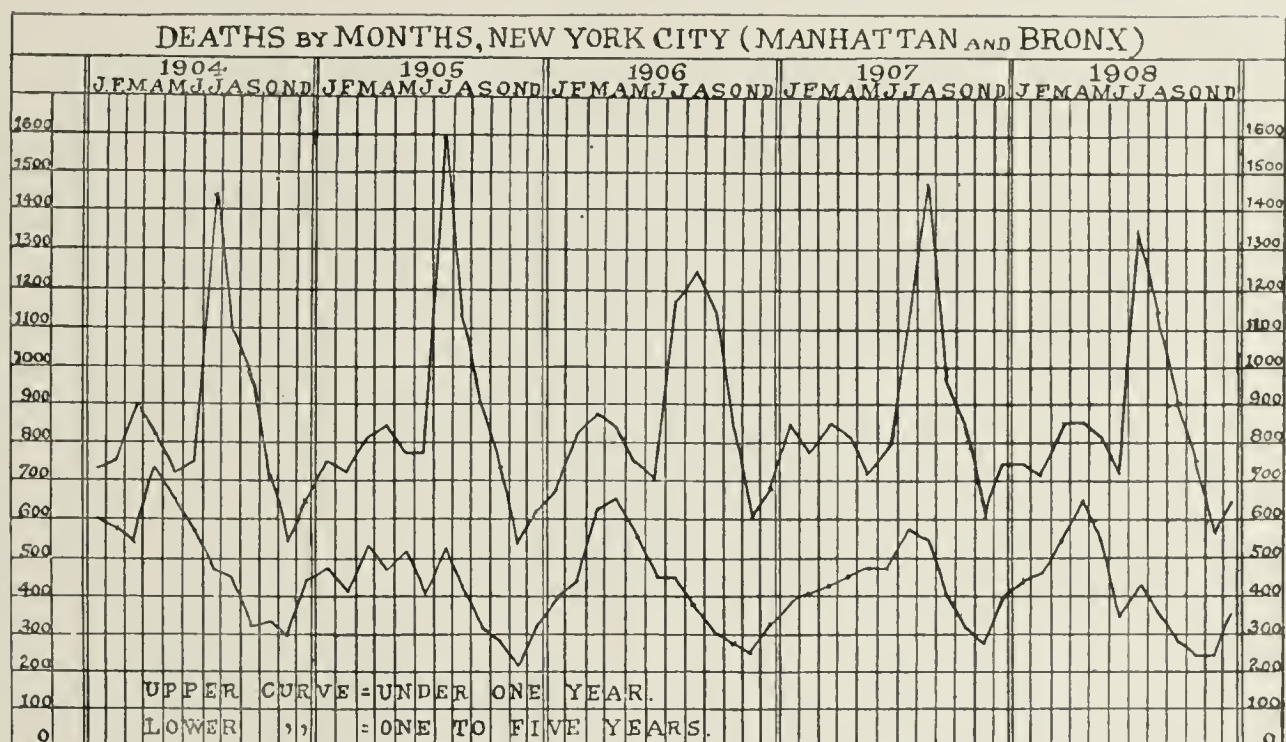


Chart 6.

for acute respiratory diseases quite as regular a rise. For this increase the prevalence of influenza is, I believe, largely responsible. For the first three years of this period the deaths from diarrheal diseases for Manhattan and Bronx were more than twice as many as the deaths from bronchitis and pneumonia. A gradual approximation of these curves is seen until in 1902 the deaths from acute respiratory diseases exceeded those from acute gastrointestinal diseases in 1903. If this tendency had continued, in a short time acute respiratory diseases would have taken first place in the infant mortality figures. During the years 1907 and 1908, however, the curve for intestinal diseases again rises, while the curve for respiratory diseases declines. The reason for this is not quite apparent unless it is that the gospel of fresh air which has been so vigorously preached is beginning to bear fruit.

It is my belief that the figures for tuberculosis given in the mortality tables of the different cities do not represent the part which that disease plays in infant mortality. The mortality figures of the Babies' Hospital for ten years show that in that institution 5.6 per cent. of the deaths under one year were from tuberculosis, or nearly three times as many as the proportion in New

York or in the four cities combined. This difference I believe to be only a consequence of more accurate diagnosis in the hospital. There is no doubt that much infantile tuberculosis is overlooked in general practice. The city figures show a very considerable number of cases diagnosticated "simple meningitis," nearly all of which are surely tuberculous. Again, the tuberculin tests employed in the hospital and the careful search for tubercle bacilli show many pulmonary cases to be tuberculous, which in outside practice are regarded as cases of simple bronchopneumonia. These facts have operated to reduce the percentage of hospital deaths from non-tuberculous acute respiratory diseases to 15.3 per cent., while in the cities generally it stands at 18.5 per cent. The hospital figures I believe to be fairly representative of the frequency of tuberculosis in infancy, since in most respects other than those mentioned they are in substantial agreement with mortality figures of the city as a whole.

The prevalence of tuberculosis is closely associated with overcrowding and insanitary dwellings. The exciting cause in infants is usually exposure to adult cases

others are doubtless instances of status lymphaticus, tetany or tuberculous meningitis.

Syphilis is put down as causing 1.2 per cent. of the deaths. The figure is so nearly the same in all the cities that it ought perhaps possibly to be accepted. But syphilis is responsible for many deaths which go down in records as due to prematurity. Besides there are deaths ascribed to marasmus which are due to syphilis.

The group "all others" includes all nervous diseases except tuberculous and cerebrospinal meningitis and convulsions, diseases of the heart, liver and kidney, deaths by violence or accident and a large variety of others that scarcely deserve mention.

While in the four American cities studied there is a general agreement regarding the importance of the various factors, there are some interesting differences. The figures for acute gastrointestinal diseases are highest for Chicago, 32.9 per cent.; almost the same, 32 per cent., for Philadelphia; considerably lower for New York, 26.8 per cent.; lowest of all, 19.5 per cent., for Boston. Acute respiratory diseases cause the greatest number of infant deaths, 20.9 per cent., in New York; almost as many, 19.8 per cent., in Chicago; while in Philadelphia the percentage is only 15.6 and in Boston only 15.1.

Greater differences are seen between our American cities and London. In that city the percentage of acute gastrointestinal diseases is only 12.9, as compared with our average, 28 per cent. Acute respiratory diseases cause 21.3 per cent. of the deaths, compared with our average, 18.5 per cent. Deaths from acute infectious diseases are 9.5 per cent., against our average, 5.4 per cent.; while more striking still is the fact that tuberculosis is more than twice as common, the deaths from this being 4.3 per cent., against our 2 per cent. in American cities.

THE REDUCTION OF INFANT MORTALITY

Any effort to reduce infant mortality must take into account not only the final or terminal diseases which are put down as causes of death, but the important underlying causes. Let us now take up the different groups of cases and see by what measures it is possible to lessen the death-rate from them.

To affect prematurity, its underlying causes must be discovered and removed. Syphilitic women should, of course, receive treatment during pregnancy. But even for other cases something can be done. Pinard in 1895 made observations on 1,500 women in France. In the first group of 500 who worked up to the time of their confinement, the average weight of the infant at birth was 3,010 gm. (6½ pounds); in 23.9 per cent. the children were born more than ten days before term. In a second group of 500 who spent ten days in retreat before confinement, the average weight of the infants at birth was 3,290 gm. (7¼ pounds); where they were in such a place for a longer period than ten days the average birth-weight was 3,366 gm. (nearly 7½ pounds). In the last two groups only 12.6 per cent. of the infants were born more than ten days before full term.

A period of rest to the mother before confinement has then a very direct and important influence on the completion of pregnancy and hence on the weight of the child at birth, both of which factors are important in relation to the child's vitality. This is a strong argument for prematernity hospitals or retreats. It also points to the necessity of some law which shall prevent women from working in factories for a certain period, from two to four weeks before delivery. But it is not in factories alone that women are obliged to work hard,

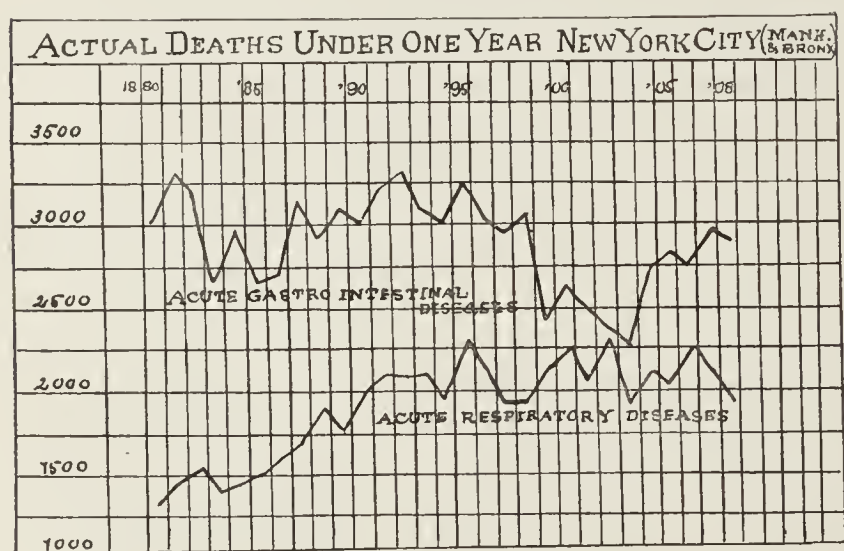


Chart 7.

of pulmonary tuberculosis. It is to the sick father, mother or other member of the household that the care of the baby usually falls when the healthy members of the family are away at their work. Such close contact usually leads to infection of the infant. To such exposure we have been able to trace definitely nearly one-half of the cases of tuberculosis in infants admitted to the Babies' Hospital in recent years, and it certainly existed in a very much larger number than we were able to demonstrate it.

Congenital malformations in most vital statistics include cases of chronic hydrocephalus as well as affections of the heart, intestines, etc. With these have been grouped injuries at birth and certain other conditions peculiar to the new-born. The proportion is about the same in the different cities studied as nearly as one can estimate by the classification adopted.

That acute infectious diseases play so small a part, 5.4 per cent., in infant mortality is somewhat surprising to one who studies the figures for the first time. Whooping-cough is altogether the most frequent one and makes up nearly half the total in this group. Next in order come diphtheria, measles and erysipelas, all others being relatively infrequent in the first year.

Convulsions are not classified as a separate cause of death in some of our cities, e. g., in Boston. They should not be in any. Many of the cases so classed belong in the acute diseases of the gastrointestinal tract,

sometimes up to the very hour of their confinement, and again within a few days after it, and this class also needs to be protected and relieved.

Again, there is urgently needed proper hospital provision for the care of premature infants. They are exceedingly difficult patients to deal with, requiring the most skilled nursing and medical care. Almost no provision is made for their care in existing institutions. In the homes of the poor nearly all die. This factor in infant mortality is one which has too long been ignored. In cases of true congenital debility the conditions and the needs are essentially the same as in premature infants.

To reduce the mortality from marasmus and acute intestinal diseases, the important causative factors, food, methods of feeding, summer heat and surroundings, must be kept in mind.

Among the poor and ignorant, breast-feeding is by far the most effective measure that we possess in preventing intestinal diseases in summer. Little or nothing has been done systematically in this country to encourage maternal nursing. France has taken the lead in this as well as in other organizations for the protection of infancy. As long ago as 1876 the importance of this subject was recognized and the *Société pour la propagation de l'allaitement maternel* was organized. Another society, called *Oeuvres des mères de famille* exists, whose object is to furnish employment at home to nursing mothers to relieve them from the necessity of leaving their infants to work in shops and factories.

While desirable for the greater part of the first year, maternal nursing is of special importance during the early weeks of life to enable the infant to make a start. England, Germany and Switzerland have had for many years laws forbidding the employment of women in factories for a certain number of weeks after and in some countries also before confinement. But such prohibitory laws are not effective unless they are supplemented by some adequate provision, public or private, for the relief of mothers whose necessities compel them to work under such circumstances. Such measures have been officially taken in Germany and Austria. Assistance by finding proper work at home, furnishing special food—milk, eggs, etc.—to nursing mothers among the poor would in our own city bring a large return. As yet this important subject, so far as I can ascertain, has received little or no attention in this country. In New York we have been so much engaged in the furtherance of the best methods of artificial feeding that means of promoting maternal nursing have not received due consideration. We must be on our guard lest with our day-nurseries and milk depots and other means we do not encourage artificial feeding and discourage maternal nursing.

In this connection a word should be said against wet-nursing as a regular practice where maternal nursing is impossible. While this method of feeding is sometimes necessary, it should not be employed when artificial feeding can be successfully conducted, as with the great majority of children of the well-to-do it can be. The general employment of wet-nurses tends, on the whole, to increase infant mortality rather than reduce it, owing to the excessively high mortality of wet-nurses' infants.

Next to maternal nursing should be placed good artificial feeding when breast-feeding is impossible, and this not only as a means of preventing acute gastrointestinal disease, but also that other group of cases quite as great, classed as marasmus, general debility, etc.

For good artificial feeding several things are necessary. The first is intelligence, which is more important

even than the best materials. The next is a pure milk-supply, which must be carefully safeguarded until it reaches the home. The value of what has been done by the Department of Health in New York City and in other municipalities can hardly be overstated. But it is a question whether along these lines very much more can be accomplished in the reduction of infant mortality than is now being done.

General pasteurization of a city's milk is a procedure of doubtful utility, but there can be no question regarding the advantages of the home pasteurization of milk in summer, especially among the poor. So much evidence has already been adduced in its favor that it need not be discussed here. When no ice is available, sterilization by boiling is safer than pasteurization. The heating of the milk fed to infants in summer by one or other methods is now very general among the tenement population of New York and has been a factor of no inconsiderable importance in the reduction of infant mortality in the hot months.

Further improvement must come through better artificial feeding, especially among the poor. Ignorance and neglect are more difficult to reach even than a general milk-supply. But so long as it remains true that over four-fifths of the deaths in the first year are in children who are artificially fed, the direction which effort must take to bring about a change is clear.

By far the most effective agency is instruction in connection with the distribution of milk through the milk depots. Here the mother or some other representative of the family must report daily and must bring the child at stated intervals for inspection. Slight derangements of digestion are quickly brought to notice and can be met by appropriate changes in the food. When the food furnished is suitable in character, proper in quantity and sufficient only for the needs of twenty-four hours, there is not the chance of going wrong in regard to quantity and frequency as when the mother prepares the food herself. Through such agencies as the milk depots I believe more can be accomplished than by any other plan yet devised. An extension of this work would, in my judgment, do more than any other means proposed to reduce infant mortality in summer. Its effect on the deaths for the remainder of the year is much less marked.

The outlook for a reduction in the mortality from acute respiratory diseases and tuberculosis is not so hopeful as for the groups just mentioned. Both tuberculosis and acute respiratory diseases are greatly increased by overcrowding and bad housing, two conditions very difficult to reach in all large cities, but especially so in New York. But much has already been done to improve them. Something can also be accomplished by teaching the importance of fresh air and removing the traditional fear of taking cold as a causative factor in these diseases. The radical remedy is the abolition of the old insanitary tenement and the erection of more sanitary dwellings. Thanks to the energy and efficiency of the Tenement House Commission, very much has been accomplished already along these lines. The removal of those with young children from the densely populated districts to the suburbs should be encouraged by every possible means.

Tuberculosis is not, as was once thought, an uncommon disease in infants. That it causes 5.6 per cent. of the deaths under one year in an institution like the Babies' Hospital is conclusive evidence on this point. Tuberculosis will not be materially reduced by sterilizing milk, for it is a very small fraction of the patients

who acquire the disease in this way, but by removing adults or others affected with pulmonary tuberculosis from association with infants—certainly from their immediate care. It is only by the removal of these carriers of infection from the household that any great results can be obtained. This is a very difficult question when it is a parent, especially a mother, who has the disease.

The ordinary acute infectious diseases play so small a part that they may be passed over with a word. It is particularly whooping-cough from which infants should be protected and, next to this, measles, especially in the winter and spring season.

General hygiene is of the greatest importance, since it affects nearly all the foregoing diseases, but particularly the acute intestinal diseases of summer and the acute respiratory diseases in winter. Everything which touches the general healthfulness of a city influences infant mortality. It is these most susceptible members of the community who show most quickly the effects of adverse conditions and reflect most markedly improved conditions of living.

The most important causes of infant mortality may be divided into three groups, according to the degree to which they may be reduced:

1. Those but little influenced by treatment:
 - Malformations.
 - Extreme feebleness or prematurity (before the seventh month).
 - Certain accidents during birth.
2. Those capable of considerable reduction, chiefly through proper housing, isolation and medical treatment:
 - Tuberculosis.
 - Acute respiratory diseases—influenza.
 - Contagious diseases—whooping-cough, measles and diphtheria.
3. Those capable of very great reduction through proper feeding and care:
 - Acute gastrointestinal diseases.
 - Marasmus and inanition.
 - Prematurity, after seventh month.

For this last group, which is much the largest, there is needed the fullest and most exact scientific knowledge of the subject of infant-feeding and hygiene. It is in the medical schools that the work of instruction in these subjects should begin. We cannot expect to have well-taught mothers and nurses unless we have well-instructed physicians. What results could be looked for when the subject was so lightly regarded by even so representative a body as the Committee on Curriculum of the American Medical Association in 1905, which, in an "ideal medical course," considered ninety hours sufficient for the study of the diseases of children, exactly the same as the time allotted to electrotherapeutics?

At present there are hardly half a dozen medical schools in the country that possess an independent department of diseases of children. From most colleges a man may graduate without even passing an examination in this subject. It is only a few years since, even in the best institutions, anything like adequate instruction has been given. The older members of the profession who received their education before this time have been wont to regard matters of infant-feeding and hygiene as subjects which may be safely left to maternal instinct or the wisdom of the trained nurse.

The recognition of the claims of this department of medicine have been tardy, but there are signs that it is coming at last. It is encouraging to note that the Com-

mittee on Curriculum of the American Medical Association in 1909 allotted twice as many hours to the diseases of children as were given four years ago. In the whole range of preventive medicine I believe that there is no field which opens up wider possibilities than the means which may be employed to reduce infant mortality.

NOTE.—Other important articles in relation to the subject of infant mortality are the following:

- Comby: *Traité des maladies de l'enfance*, i. 69.
- Freeman, R. G.: The Reduction of Infant Mortality in the City of New York and the Agencies which have brought it about, *Med. News*, Sept. 5, 1903.
- Graham, E. E.: Infant Mortality, *THE JOURNAL A. M. A.*, Sept. 26, 1908, li. 1045.
- Hartley, Robert M.: *An Essay on Milk*, 1842.
- Kober: President's Report on the Committee of Social Betterment, 1908.
- McCleary, G. F.: *Infant Mortality and Infants' Milk Depots*, London, 1905.
- Newsholme: *Jour. Hyg.*, 1896.
- Phelps, F. B.: *A Statistical Study of Infant Mortality*, 1908.
- Stowell, W. L.: *Infant Mortality, Past and Present*, New York *Med. Rec.*, May 22, 1909.
- Tyson: *Journal of State Medicine*, September, 1904.

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ABSTRACT OF DISCUSSION

DR. KOPLIK, New York: I am sure we appreciate Dr. Holt's statistics showing the inaccuracy of the statement that with all our work we had not succeeded in reducing the mortality in infants in the last fifty years. Some years ago Flügge undertook to determine whether sterilization of the milk and other advances in infant feeding had reduced the mortality, but he found that the birth-rate in many cities was so badly recorded that he had to leave it an open question. Dr. Holt has shown that even in New York 15 per cent. of the births are unrecorded and we are unable to make any calculations on that deficiency. Any one who has been in the hospitals and seen the children brought in will agree that there has been a great reduction in infant mortality by careful feeding. By a careful recording of births and deaths we will be able to know just what work we are doing. I am glad to see that at least there is some encouragement for all of us. Mr. Phelps tried to prove that there had been absolutely no change in the mortality the world over within the last fifty years in infants below one year of age.

DR. E. E. GRAHAM, Philadelphia: A year ago I read a paper on infant mortality in this Section, and Dr. Holt's conclusions to-day tally with mine of a year ago. All interested in infant mortality will find that there has been a marked reduction not only under the age of one year but also under the age of five years. It is gratifying to me to see that Dr. Holt has brought out the point that infants die because they are not nursed by their mothers. A great fault of pediatric teaching is that while our efforts have been largely directed to the modifications of cow's milk we have given but little attention to the best means of procuring for children their natural food. America is behind other countries in providing pregnant women with proper facilities for obtaining proper food and care. As long ago as 1876 a society was established in England which sees that the pregnant woman is properly fed, clothed and housed, and when necessary she is taken care of for the year following her confinement. The mother takes care of the baby and it lives. In France there are restaurants where good meals are supplied three times a day to pregnant women. If we are going to reduce this enormous infant mortality we must see that the mother is able to nurse her baby. It is interesting to note the difference in deaths between the legitimate and the illegitimate children. The illegitimate die two for one of the legitimate. In this country a woman who has had an illegitimate child, as a rule, is turned into the streets just as soon as she is able to leave the hospital. Statistics show that a large number of illegitimate children die during the first two months of life. If the mother were kept at the hospital for the first three months of the child's life it would tide the child over the period when it is most likely to die, and it is possible that the association of mother and child during those first three months would tend to make

the mother more willing to do things for the child that she might otherwise be unwilling to do. I think it a very conservative statement that deaths from diarrheal diseases in the summer could easily be reduced 50 per cent. by seeing that these children get proper milk and are visited by competent nurses and have proper improvements made in their surroundings.

DR. E. LACKNER, Chicago: I wish to describe to this Section a movement founded in Chicago this summer. The aid society has established local stations all under central control. Each of the local offices is under the charge of a physician. We have tried to pattern after two organizations in Paris, the first, where the mother is encouraged to nurse her baby, and the second, where artificial food is furnished to children. Of course, there is a whole program to be carried out. Each local station has a visiting nurse. She must be a very capable person, for much tact is required, and she must watch the children carefully, and report to the physician in charge of the office. The consultation is free as to the care of the child, not medical advice but simply advice as to how to take care of the child. This organization is based on those described by Keller. The main point is that the mother is urged through the nurse, through the doctor and by every one possible, to nurse the child, and if she has to work, then she is paid to stay at home and nurse her baby. In Germany there are more illegitimate children than there are here. In a German city of a population of 200,000 they had in one year 1,500 illegitimate children under the care of the organization. The mother who is a good mother is not requested to call at the consultation very often, but the poor or negligent mothers are asked to report at the office frequently. Then, at this bureau, if the physician orders that the child be taken to the hospital, the child goes. Whatever in the city is of a charitable nature is consolidated and there is a central organization that has entire control and the children will be disposed of in whatever way the doctor feels is best. The mother, for the last one or two months of her pregnancy, if for reasons necessary, is taken into the lying-in hospital and is encouraged to nurse her child and she is kept in the hospital until the child's health is established.

DR. H. W. COOK, Minneapolis: Is there any reliable estimate of the number of women in New York who do nurse their children? We know that a larger and larger number of women are not nursing their children through the first year, so that the large mortality among artificially fed children in comparison with breast-fed infants may give an exaggerated idea of the dangers of artificial feeding.

DR. C. G. KERLEY, New York: Dr. Graham states that in this country the mother with an illegitimate child is sent out of the hospital with the child as soon as possible. That is not the case in New York. There are three institutions in New York that are capable of caring, and do care for, several thousand illegitimate children.

DR. HENRY L. COIT, Newark, N. J.: It seems to me that each of us should consider it a duty to encourage and, when possible, to urge the nursing of infants by their mothers and repeat the work that is being done in Europe by the establishment near the homes of the poor of consultations for nursing mothers. The main question before us, however, is that of statistics. The great difficulty in obtaining reliable mortality statistics is emphasized by the fact that the registration area for vital statistics in the United States includes less than half the population. The study of epidemiologic records, together with the statistics on acute gastrointestinal disease indicate that milk is the largest causative factor both in morbidity and mortality among infants, the importance of which cannot be overestimated, nor to the study of which can be applied too much patience or judicious detail. Reliable information as to the incidence of various causes in the total mortality should be gathered, and it seems impossible to get this information from the government or in any way except as Dr. Holt has laboriously obtained it in his own city. A concerted effort in which every section of the country is represented should be organized. There should be some central medical body to direct this work and to secure in every large center a statistician to work out these problems.

DR. FRANK S. CHURCHILL, Chicago: In the last chart, in the two curves showing the death rate from respiratory troubles and gastrointestinal troubles, in the last five years there is a steady rise in the death rate among babies in New York. Happening for four or five successive years, it would seem as if there must be some cause for that and I wish Dr. Holt would tell us if he knows the cause.

DR. J. W. VAN DERSLICE, Oak Park, Ill.: It seems that we have far more reason for congratulation on the lowering of the death-rate in view of the change from a rural to an urban population. I think we have not yet learned how to live in the cities. While in European countries they have the classes and the masses, we have nothing of that kind here, and I think this step of ours toward paternalism is the first great step toward establishing such a state of affairs in this country. As to the care of the mother and child when sent from the hospital, it is true that these institutions do take care of a small number, but it is hard to get the women to go to these places. The great point is the development of the maternal instinct in these women; this would save more children than anything else.

DR. ALFRED F. HESS, New York: In looking over about thirteen hundred cases among the Russians in New York, I found that 80 per cent. of the mothers nurse their children through the first three months. Only 5 per cent. did not nurse their children at all. It was interesting to note, too, that most of these women were delivered by midwives and were not urged to nurse their children by physicians. I was struck by the fact that the mortality was not particularly low, although I have not closely investigated these statistics. I had an opportunity to study these children and children in another dispensary where the mothers do not nurse their children so frequently, and I could not see that there was any great difference in the mortality.

DR. C. F. TENNEY, Toledo: An effort has been made in Toledo to obtain certified milk owing to a number of cases of typhoid traced to the milk supply. We finally succeeded in getting certified milk at a reasonable price. Clean milk is a most important thing in artificial feeding, and we were able to get it.

DR. E. HOLT, New York: I think that the change in figures in these statistics is due to the fact that they were actual mortality figures and not relative ones. The rise in the mortality from diarrhea in the years referred to by Dr. Churchill may be explained by the increase in population. For the last five or six years we have had a very careful watch kept over the milk supply. While I think that the milk is exceedingly important, when we have done all we can through the milk we still have a large problem on our hands. Much is due to ignorance. One advantage in breast feeding is that a very stupid woman may do it well, but a stupid woman cannot feed an artificial food and do it well. We must not only do all we can to help those who cannot properly feed their children, we must teach all phases of infant hygiene. The problems of infant mortality are very difficult and they are of immense importance. I do not believe that we are going to succeed in solving them merely by securing clean milk. Poverty and ignorance are causative factors of great importance. Mothers must be taught how clean milk is to be fed if we accomplish very much. As to the statistics on breast-fed infants in New York City, 85 per cent. of all the children are breast fed, 15 per cent. are bottle fed, but these figures are taken largely from the hospitals, so probably 80 per cent. breast fed and 20 per cent. bottle fed would be nearer the truth, but the fact remains that 85 per cent. of the deaths occur among artificially fed children.

Nodules on Endocardium.—In the heart of a 4 months old child dead of bronchopneumonia were found a large number of wart-like nodules on all the valves and the septum of the foramen ovale. Microscopic examination of the nodules showed a delicate substratum of connective tissue supporting a layer of epithelium. There were no signs of recent inflammation and no round cells. Cardiac dulness in life was not increased and the heart sounds were normal.—Jewesbury, in *Proc. Royal Soc. Medicine*, December, 1909.

A PLEA FOR THE ESTABLISHMENT OF AN AMERICAN ASSOCIATION FOR THE PREVENTION OF SOCIAL DISEASES *

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Though I do not treat venereal diseases as a rule, I have undertaken this study because, in my work as an internist and family physician, the great necessity of a general awakening to the importance of this subject in the United States has been forced on me from year to year with greater and greater emphasis. In many of our large cities no provision is made for the treatment of venereal diseases, and in some cities patients suffering from these diseases are specifically forbidden admission to any of the existing hospitals.

Furthermore, the present paper does not pretend to be exhaustive, as it is based chiefly on personal observations, impressions and convictions, and not on library work.

As to the amount of venereal diseases in the United States we can only guess. It is fair to assume, however, that the percentage of the population so infected does not vary greatly from that which obtains in Germany. According to a recent article by Bierhoff, the number of prostitutes in New York, 36,000, is proportionately as great as in Berlin, and the amount of venereal diseases may be assumed to vary directly with the amount of prostitution. Even in Germany an exact estimate is out of the question; but the dispensaries of the workingmen's compulsory insurance give statistics the like of which does not exist in any other country of the world, because at the present time those suffering from venereal diseases are not only treated free in these dispensaries, like all other cases and with the same consideration, but also receive a like indemnity if they are thereby rendered unable to work.

The larger the city, the higher the percentage of venereal diseases, because of the greater amount of prostitution, the lower moral standards resulting from the crowding of the poorer classes in insanitary dwellings, the difficulties in the way of early marriage (30 per cent. of the total number of births in Stockholm and 50 per cent. in Budapest are illegitimate), and the gravitation of the idle and criminal classes toward the centers of population. Berlin shows the highest figures in Germany, and Professor Blaschko's estimates for Berlin are as follows:

Annually infected with venereal diseases:

Soldiers	4 to 5 per cent.
Salesmen	16.5 per cent.
Waitresses	13 to 30 per cent.
Students	25 per cent.

On any single day about 100,000 people are under treatment for venereal diseases in Germany, according to an estimate made from a canvass on April 30, 1900.

Of the 12,000,000 insured in the German Empire, about 750,000 are infected annually at a cost to the insurance treasury of 6,000,000 to 7,000,000 marks; and to this should be added, in estimating the real cost to the country, the time lost by the acute attack and by sequelæ, and by the shortening of life, by blindness, etc., etc.

Professor Blaschko has estimated that of every 100 men between the ages of 20 and 30 in Berlin 20 are infected with gonorrhea and 2.4 with syphilis each year.

(Professor Linden's estimates for Hanover are about a sixth less.)

If a young man practices sexual intercourse for ten years before marriage in a large city, the chances are that he will have had gonorrhea two or three times, and the chances are about one to four that he will have had syphilis. Citron stated in Budapest last month that 10 per cent. of the wet nurses in Dresden were syphilitic, and, though they had no symptoms, 75 per cent. of their children had, and that these women without symptoms could spread the disease.

Only the family physician who has learned to recognize the protean manifestations of venereal diseases among his patients has an idea of the ever-increasing extent of this curse of civilization. I need only mention the brides who go to the gynecologist's table during the first years of their married life, the chronic invalids, the childless homes, the asylums for the blind and deaf and dumb, and the host of tabetics, hemiplegics, paretics, and mental and physical cripples who owe their afflictions directly or indirectly to venereal diseases.

A volume might be written—yes, many volumes have been written—on the extent and importance of venereal diseases, but I pass over this topic with the preceding brief but suggestive allusions, in order to have more time for other considerations.

This pandemic should be met in two ways—treatment of the existing cases and prophylactic efforts to limit the spread of the disease. The former is included in any comprehensive grasp of the latter problem.

The danger of any individual's contracting a venereal disease increases directly with the number of different persons with whom the person has sexual relations; therefore the prostitute is more liable to these diseases than any one else, and consequently prostitution is the principal source, the chief factor, in the spread of venereal diseases.

Prostitution cannot be abolished because it exists in response to the demand of the uncontrolled natural sexual instincts of the race—because it is the result, not the cause, of the immorality of our large cities.

The only way to abolish prostitution is to remove the demand for prostitutes. This implies education of the public to high ideals of self-control and to a knowledge of the physiologic and pathologic facts involved, and such an improvement of the average intelligence and physique as to make it possible for the masses to be guided by cold reason. This, all will admit, is too utopian to have practical value at the present time.

The individual, on the other hand, may be brought to this ideal condition if the training is begun early enough.

I believe that this part of the education of our young people is usually put off far too long, even when it is given, and it is often omitted altogether. The individual, I say, may be taught the meaning of the sexual impulse and the various expedients for keeping it under control—baths, clothing, exercise, choice of associates, reading, etc., etc. He may be convinced that there is no physiologic necessity for sexual intercourse before marriage, and that his organism will suffer in no way from indefinitely protracted chastity; he may learn that syphilis is not as easily and certainly cured as is generally believed; that marriage should not be thought of for four years after infection; and that the certainty of a cure in any individual case cannot be demonstrated without an autopsy; he may further learn that gonorrhea is not a trivial malady "like a cold in the head,"

* Read at the Fifty-ninth Annual Session of the Medical Society of the State of Pennsylvania, Sept. 28, 1909.

but a serious infection, which in any individual case may become general, or may prove to be incurable, and which may embitter his whole life and the lives of those most dear to him; he may learn further that illicit intercourse cannot be freed from the dangers of these infections. When he has learned these things, if he has sufficient strength of character, he will take no chances.

But not all can be so educated, and many have not the character to profit by such enlightenment. We may not say to such, "We have given you the facts; if you suffer, it is your own fault," any more than we may let a man drown because he disregarded our advice and got into deep water; first, because we recognize the obligation of the strong to help the weak, and, second, because the results of weakness and stupidity are not confined to the individual, but, in ever-increasing circles, spread disease and disaster throughout the body politic.

The state or municipality has the same moral obligation and the same financial interest in the control of venereal diseases as in the control of any other controllable disease.

The protection of the interests of every individual increases as the sum total of contagious diseases is diminished.

Various factors which I need not mention have hampered any frank consideration of this problem in America. Individuals, notably Dr. Prince A. Morrow, President of the American Society of Sanitary and Moral Prophylaxis, have raised their voices from time to time, and several societies have been organized during the last few years, and are doing good work, as the Pennsylvania Society for the Prevention of Social Diseases, and societies in New York, Detroit, Baltimore, Chicago, Indianapolis, St. Louis, Spokane, Portland, California, Jacksonville, Denver, West Virginia, and possibly by this time Georgia, Texas and Connecticut. If, however, we would study the practical value of the varied efforts for the control of venereal diseases, we must turn again to the older countries of Europe.

We hear a great deal about the police control of prostitution for the purpose of limiting the spread of venereal diseases. Let us consider briefly the methods employed with the arguments for and against this system, its value and limitations.

In several European cities it has been tried and abandoned, as in London, Christiania and Copenhagen, and, although the partisans of control point to statistics showing increase of venereal disease in the years following the abolition of police supervision in London and Christiania, many of the most careful students of the question assert that the curve of the amount of venereal diseases shows waves of variation independent of all extraneous influences, that, e. g., the amount of venereal disease in London and Christiania has fallen as low at times since the abolition of control as it ever was under the control régime. Christiania was twenty-eight years under control and has been twenty years without control.

Hence we are once more disappointed in our recourse to statistics.

In Stockholm, where the problem has received much careful consideration, and where a royal commission has been at work on the question for the past five years, I found the police control of prostitution apparently dying a natural death, the number of prostitutes under supervision diminishing from year to year, in spite of the fact that the number of prostitutes in the city is probably keeping pace with the city's growth. There are prob-

ably 4,000 or 5,000 prostitutes in Stockholm at the present time, and only about 250 are under control.

In Berlin, as in many other German cities, there exists, on the contrary, an energetic and growing system of control. It is probably nowhere better done than in Berlin, where I was again and again astonished at the intelligence, scientific thoroughness and humane consideration shown in this work.

It is found in all large cities where control is in force that the women who are most likely to remain under control are the older ones (I saw several over 50 years of age in the examining rooms in Berlin) and a large proportion of these have gone through syphilis, and in the tertiary stage are liable at any time to develop contagious lesions; and they have had gonorrhea so often that it, too, is liable at any time to light up afresh from some smoldering focus, so that no amount of control can make them safe; while the younger women, chafing at the restrictions of the police, seek to elude them by frequently changing their residence, or by keeping up an ostensible occupation. Venereal disease in these younger women is more amenable to treatment, and at the same time the younger women are more important factors in the spread of disease because of their greater popularity; therefore any system that would bring this class under medical supervision would be of inestimable benefit.

Any attempt at police control of prostitution without the European system of registration of all inhabitants with compulsory notification of all changes of residence, occupation, etc., would be futile, and therefore I consider police control of prostitution impracticable for our American cities. Perhaps this is not a misfortune, for it is not yet demonstrated that better results cannot be obtained by social organization against this social evil. Many of us feel that the organization against tuberculosis is productive of great good to the human race. There is even more reason to expect immediate results from efficient organization against venereal disease, for, although the number of cases of venereal diseases rivals the number of cases of tuberculosis, yet infection in the former disease is much more easily controlled.

National organizations against venereal disease exist in Germany, France, Austria, Denmark, Italy and Hungary. In Sweden, although as yet no organization exists, the physicians have done much in the way of the publishing of tracts and the giving of lectures to young men and to young women of different classes.

The organization in France and Belgium is nine years old; that in Germany, seven years. The oldest organization for this purpose in the world is the "Teleia" of Budapest (literally translated, "Venus"). This organization is fifteen years old, has 400 contributing members, and gets some help from the city. For many years it attracted little attention and could accomplish but little; now it is most active and rapidly growing. The president is a nobleman very much interested in the work. The Teleia holds meetings, gives instructive lectures to various classes of society and issues tracts of warning and advice; but its chief activity is a clinic for the free treatment of venereal diseases, where about 8,000 new cases were treated last year. They have different rooms for gonorrhea and syphilis, with different staffs consisting of a chief and four to six assistants each, and different hours for men and women. They give individual, up-to-date treatment, and command the respect, admiration and obedience of their clientèle, who drop enough money in the box for voluntary contributions to pay for the necessary new instruments. Prostitutes are not

treated if recognized as such (as this is forbidden by the laws of Budapest to any but the regularly appointed police physicians), but no unnecessary questions are asked, the object of the society being to combat the venereal diseases in every way possible. In addition to treatment at the dispensary, medicines are given, much good advice, verbal and printed, and sometimes even condoms are furnished. Married victims are tactfully directed to send their husbands or wives as the case may be. Sometimes 150 cases are treated in the evening of a single day, keeping the staff busy from 6 p. m. to 9:30. The evening I visited the Teleia I saw Dr. Emödi ably, courteously and sympathetically supervise the treatment of seventy-one cases. All patients who have been treated by the Teleia are directed to report again whenever they have the intention of marrying, and they generally comply with this request; they then receive a careful and thorough examination, including massage of the prostate, with microscopic-examination of the strippings, and Wassermann's test in appropriate cases. As a rule they do not marry until they receive the permission of the chief. Those who announce their intention of marrying as soon as possible receive especial attention from the first.

Hungary has the compulsory workingmen's insurance similar to Germany, with the same broad-minded regulations as regards venereal diseases. There is no compulsory registration of venereal diseases in either Germany or Hungary.

The National Hungarian League Against Venereal Diseases is at the present time rather inactive, being hampered by the attitude of a certain Hungarian cabinet minister.

Let us now consider the aims and accomplishments of the German Society for the Combating of Venereal Diseases—the D. G. B. G., as they call themselves (*Deutsche Gesellschaft zur Bekämpfung der Geschlechtskrankheiten*). Founded seven years ago with a membership of physicians, statesmen and laymen of all walks in life, both male and female, its membership now numbers 5,000. The annual dues are three marks, and all members receive the bi-monthly publication of the society. There are more than thirty branch societies scattered through Germany, and, in addition, many departments of the government, insurance associations, dispensaries, philanthropic societies, associations of workingmen and of students, cooperate with the society in bringing about desired reforms in the laws of the country, and in the regulation of insurance and eleemosynary institutions, and in spreading the saving knowledge in all strata of society. Three national congresses have been held, at which many of the most important questions in regard to this work have been most ably and thoroughly discussed, such as the criminal and civil relations of venereal diseases, the reform of the methods for the control of prostitution, the compulsory registration of venereal diseases, individual prophylaxis, etc., etc.

The practical attainments of this society have been many and important, as, for example, the abolition of all discrimination against venereal diseases in the laws regulating compulsory insurance, the increase in the number of beds for venereal diseases, and the creation of special wards for these diseases in many of the hospitals, the doing away with the careless and irresponsible method of treating these diseases which formerly prevailed, and the putting of them on the same plane as any other diseases, the overcoming of the popular prejudice against being treated in these departments, and the improvement of the methods of the sanitary police for

the control of prostitution, the introduction of chairs for venereal diseases in the medical departments of the universities, and questions on the same in the state examinations, the establishment of lectures on venereal disease before the students of other departments of the universities in each semester, the introduction in most states of lectures on sexual hygiene to advanced students of preparatory schools, seminaries, etc., and to graduates of these schools on the nature and danger of venereal diseases, and evening lectures for parents on the sexual education of their children. The German press has also been brought into line for the cause. All the foregoing has been accomplished, and at the present time the society has presented and is working for a new imperial law according to which prostitution shall not be punishable so long as it does not offend against public order and decency, and the harboring of prostitutes shall not be punishable so long as it is not in the form of brothels, and is free from any share in or extortion of the earnings of the prostitute, while at the same time the conscious or irresponsible spreading of venereal disease is to be strenuously prosecuted.

Besides the publication of the *Mitteilungen*, the society aids in the publication of the *Zeitschrift für Bekämpfung der Geschlechtskrankheiten*. It has also published circulars of warning with appropriate differences for the youth of both sexes, of which 5,000,000 have been distributed (4,000,000 at the cost of the society). These *Merkblätter* describe briefly the venereal diseases with their many dangers to the infected and to their associates, give sound information in sexual hygiene and suggest prophylactic measures for such as will take the risk of illicit sexual relations, warn against the effects of alcohol in undermining good resolutions and weakening the will power, as well as predisposing to infection, emphasize the importance of early treatment, and warn most emphatically against quacks, teaching also the necessity for all who have ever been venereally infected to obtain the assurance of a specialist that they are cured before renewing sexual relations and before marriage.

The society has also published, at nominal prices, a number of different papers dealing with different phases of the question and written particularly for different classes of society, and prizes have been offered for such papers and tracts. Traveling speakers with a collection of wax models, pictures and tables, give lectures in the various towns, and the exhibit is loaned to larger cities which furnish their own speakers and demonstrators, just as our tuberculosis exhibits are used. The society is also directing investigations into various mooted questions and social evils, thus collecting the materials for future reforms.

One cannot but be filled with admiration at the accomplishment of this association and at the energy and ability of its management. The president is Prof. A. Neisser of Breslau, the vice-president, Prof. E. Lesser of Berlin, the general secretary, Dr. A. Blaschko of Berlin.

All who have given much thought to this subject agree that the only efficient means of fighting these diseases consists in the education of the public, the establishment of free dispensaries for the treatment of venereal diseases, with every possible inducement to get the infected to accept the treatment thus offered, the repeal of bad laws, and the adoption of new ones which work only for the desired end.

The laws of Norway, after twenty-eight years of control and many years of experience without control, are

generally regarded as the most efficient yet devised, and they are certainly worthy of study. They are briefly as follows:

Venereal diseases must be reported like all other contagious diseases, but with initials of the patient instead of the full name. The probable source of the infection, if ascertainable, must be given on the notification blank, and whether male or female, the individual alleged to be the source of the infection is summoned to appear before the sanitary police officer. Informed that he or she is suffering from a contagious disease, he is asked to submit to an examination by the physician of the department. This examination cannot be insisted on. If accepted and venereal disease is found, free treatment is furnished if the individual desires. If the examination is refused, the individual is directed to bring a certificate from an approved physician that he is well or under treatment. This demand must be complied with, and if a venereal disease is reported the subject must sign a form running something as follows:

Dr. N. N. has told me that I am suffering from (name of disease) a contagious disease, he has fully explained to me the dangers of this disease with regard to myself and my associates, and its probable duration, and has made it clear to me that I must remain under treatment until he gives me a certificate to bring to this office that I am well and no longer a possible source of contagion. I know that if I have sexual intercourse during this time, whether I transmit the disease or not, I am liable to be punished under Section — of the Laws of Norway.

This paper, duly signed, is filed with the doctor's certificate. If the signer is known to have sexual intercourse thereafter, he is arrested and prosecuted. During the past year twelve, mostly men, were arrested and two were punished.

A monetary indemnity may be legally demanded in Norway by a man or woman who has been thus knowingly exposed to venereal infection. The fact of infection from the accused does not need to be established.

In several cities, as in Stockholm and Breslau, a useful expedient is employed against gonorrheal ophthalmia, which consists in sending by return mail a printed warning to all parents of the lower classes, on receipt of a birth registration, which in these cities is immediate.

For some years it has been my personal conviction that every physician is under the moral obligation of seeing to it that no patient of his, through ignorance, exposes his bride to gonorrhea or syphilis, and that no female patient marries a man who is ignorant of the dangers of venereal disease, long after an apparent cure. No difficulties are encountered in carrying this into practice.

From the foregoing, it is evident that the scientific method has been introduced into the consideration of these problems. We have learned that if we are to handle the problem of prostitution we must study the prostitute. Scientific observation, not theory or sentimentality, even with the best of intentions, must be our guide.

The word "prostitute," in the mind of a sanitary inspector like Inspector Penzig of Berlin, after many years of personal contact, connotes something very different from the word "prostitute" in the mind of the average layman, pastor, or even settlement worker.

Inspector Penzig says prostitutes are such because they are degenerate, because they belong psychically to the criminal class, that they cannot be counted on to react to new and favorable environments as psychically normal individuals would, and that therefore any efforts

at voluntary sanitary control as advocated by the D. G. B. G. will fail. He points to the statistics of Copenhagen, where recently voluntary medical control was substituted for the compulsory control of the police with results far below what was anticipated.

He claims that the number of Berlin prostitutes seeking treatment at the dispensaries of the D. G. B. G. is very small; in fact, insignificant. He asserts that this shows a lack of intelligent appreciation on the part of the prostitutes; that they are, in fact, "penny-wise and pound-foolish" as is usual with the mentally deficient, and therefore choose to shun the doctor who may even temporarily interrupt their business. On the other hand, the able leaders of the D. G. B. G., after years of observation, study and discussion, are convinced that voluntary sanitary control, especially if combined with such laws as those of Norway, can be made in time a more efficient weapon against venereal disease than any form of police control. This shows us that many important questions remain to be settled, and that they can be settled only by organized efforts, by scientific methods, and by taking advantage of the experiments in different directions wherever made.

Chaos has often resulted heretofore in the consideration of these subjects from a mixture of motives. It is obviously impracticable to try to consider the questions of social hygiene from a legal or a moral standpoint. Let the home missionaries, the settlement workers, the juvenile and criminal courts, do their utmost with the unfortunate and the degenerate. Let the police make what efforts they may in the interest of decency and order; with that we are not here concerned, nor is our object to safeguard promiscuous sexual relations from the dangers of venereal infections. Our aim is, first, to protect the health and happiness of innocent women and children, our sisters and our daughters; second, to relieve as much as possible the physical and mental sufferings of our fellow-beings in a spirit of broad philanthropy that brooks no moral or social distinctions, and, third, to conserve and to raise the physical and economical coefficient of our population, male and female, and to this end I urge the organization, from our present local societies, of an American Association for the Prevention of Social Diseases, with branches and dispensaries in all our cities.

5431 Fifth Avenue.

HOW AN ENLARGED AND MORE UNIFORM NATIONAL HEALTH ADMINISTRATION MAY BE SECURED

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That suspicion of improper interference on the part of the federal government, when through its power over interstate commerce it has sought to exercise authority in even an advisory manner over public health matters, is still a bogey with the extreme advocates of a state's rights policy. This fear of unwarrantable meddlesomeness with the affairs of a state will always hinder a salutary national administration of affairs pertaining to public health of the United States.

This distrust of federal supervision in public health affairs is seemingly not confined to any particular part of the country. At one time it was thought that the states lying south of Mason and Dixon's line were pe-

culiarly sensitive in regard to federal interference; but it is apparent to-day that Massachusetts, Ohio and Illinois and other northern states are much more jealous of the prerogatives of state sovereignty in sanitary matters than are the southern and southwestern states.

The action taken at the Chattanooga convention in 1905 by the health representatives of the gulf states, and the subsequent complaisant view of the subject of federal control of maritime quarantine methods for the entire gulf section of the southern United States, as expressed in Congress, brought out the fact that these states yielded very cheerfully their constitutional rights over waters adjacent to their seaports. It is doubtful, however, if this federal statute would stand the test of adjudication by the Supreme Court of the United States should any of the officials of a state affected by the provisions of the law choose to contest it, for this statute is not uniform in its action, but is a piece of special legislation for a section, not for the entire seacoast of the United States. For instance, the Mexican gulf coast of the United States is placed by national statutory enactment under direct maritime sanitary control of the national government, a condition which does not apply—without the consent of the several states interested—to the Atlantic ports north of the capes of Maryland, or to the seaports on the Pacific. But even with the existing federal quarantine law as applicable to the southern gulf seaports, it is nevertheless contended by distinguished jurists that sanitary authority or control over wharves and docks is still vested in the state, and that it is possible under state laws for state health officials to prevent the landing of passengers or freight on sanitary grounds, even though the vessel may have a federal permit to enter a harbor. This is due to the fact that the powers not specifically granted by the Constitution to the federal government are reserved to the states.

Though eminent jurists have tried to define the scope of authority possessed by the federal government in restraining the spread of disease between the states, and in certain instances within the state, when interstate traffic is affected, yet the general government apparently hesitates to insist on the enforcement of federal sanitary regulations if they conflict in the slightest degree with those of the state health authorities, or to supersede the constituted health authority of a state by federal management, except at the request of the governor of the state.

The various federal acts for the prevention of travel of persons sick with quarantinable contagious diseases, although drawn very carefully, receive not infrequently a severe jolt at a state line.

A few years ago, at one of the annual conferences of State and Territorial Health Officers with the Surgeon-General of the Public Health and Marine-Hospital Service, a state health officer, to the surprise of many, declared that even with the control of interstate commerce lodged with the federal government, it would not be possible to transport a person sick with a contagious disease—smallpox for instance—through his state against his protest or against the disapproval of the constituted health authority of his state; and furthermore, that the sick person could be stopped and detained at the state line. The legality of this position was not disputed by the chairman. Not many years ago a Syrian leper was in the position of a shuttlecock between the battledores of several states who would neither care for him themselves nor allow the federal health authority to transport him to a place of refuge where he could be sent

to his own country; and the Public Health and Marine-Hospital Service was powerless to act in the matter, since any federal health authority possesses only the powers conferred by Congress, which in its turn is circumscribed by the Constitution.

The brilliant success achieved by Gorgas in exterminating yellow fever and inaugurating a model system of sanitation in Cuba—a success productive of so much commercial benefit to the people of North America—could never have been attained under a form of government which permitted provinces to dispute the central authority. Supported by a military organization controlled by a commander whose early military training had included hygiene and sanitation, it was possible with system and persistence to conquer an enemy which for over one hundred and forty years had brought personal grief and commercial loss to Cuba and to the United States. While a system of sanitation similar to that adopted in Cuba has vastly improved the health conditions on the Isthmus of Panama, the results have not been as speedily attained, because the form of government at Panama has made it more difficult to carry out the regulations than in Cuba. Until the municipality of New Orleans surrendered to the federal government all sanitary control of the city in the yellow fever epidemic of 1905, the Public Health and Marine-Hospital Service could do no more than advise and suggest, but when that service was given unrestricted power to deal with the situation its management of the epidemic had splendid results.

At present the national government possesses only limited authority over the sanitary affairs of a state, and therefore is unable to pursue an aggressive policy for the benefit of the people as a whole. While the general government has control over the navigation of streams within state lines, its power to restrict the dangerous pollution of those waterways is not without question.

Prof. Irving Fisher not long ago, in a very instructive and interesting report to the National Conservation Commission on the subject of "National Vitality, Its Wastes and Conservation," points out some of the crying demands of the times for improving the national vitality: "The national government should exercise at least three public health functions; first, investigation; second, the dissemination of information; third, administration." The first two conditions can be very readily brought about, as the general government commands both able men and financial resources; but the bar to an efficient superintendence of sanitary matters by the general government is the restraint imposed by the Constitution.

How, then, can this difficulty be overcome? The will of the governed must always be the supreme law, and authority for the federal government to supervise sanitary matters must come from the people through the states, by each state asking for an amendment to the Constitution to this effect. This will permit without question the enactment of laws by Congress carrying ample power for the exercise of authority sufficient to cover every detail of a sanitary administration.

When this is accomplished the general government will be in a position to remove a reproach constantly made against the nation, namely, that more pains are now taken to promote the health of farm cattle than of human beings.

It is easy for writers on sanitary subjects to say what the general government should do, but few who discuss the proposition ever consider whether the general gov-

ernment could legally do the numerous things which have been proposed.

Professor Fisher says:

The national government should prevent transportation of disease from state to state in the same way as it now provides for foreign quarantine and the protection of the nation from importation of disease by foreign immigration. It should provide for the protection of the passenger in interstate railway travel from infection by his fellow passengers and from insanitary conditions in sleeping-cars, etc.

No sensible person will dispute the wisdom and soundness of Professor Fisher's argument. But how can such action be taken within state lines without the consent of the state? In no other way than by that just suggested. It is not believed that there will be any objection raised by the several states to ratifying an amendment to the federal Constitution by which the Congress shall have power to supervise and control all matters affecting the public health of the citizens of these United States, whereby the life, health and physical discomfort of the citizen is or may be endangered. When this is accepted and Congress shall pass sanitary laws framed on a broad basis of general necessity the national health officer or authority, whether departmental, commission, or the present Public Health and Marine-Hospital Service, can then be held responsible for any fault in the administration of health matters. Then and not until then can a system free from conflict of authority be hoped for or secured. It is not desired, however, that the arguments advanced or the opinions expressed shall be understood as recommending that the health police powers of a state shall be materially abridged, still less entirely superseded, by the general government, but rather that some of the defects in the present system of administration may be remedied and the awkwardness of many existing conditions corrected.

PARAGONIMIASIS OR PARASITIC HEMOPTYSIS

REPORT OF AN IMPORTED CASE IN CALIFORNIA

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Paragonimus westermanii, *Distoma westermanii*, *Distoma pulmonis* or *Distoma pulmonale*, as the fluke which causes this disease has been variously termed, is parasitic in the lungs of man in Japan, China, Corea and Formosa, where in some districts a considerable proportion of the inhabitants are said to be infected.

Ward¹ reports the discovery of this parasite in the lungs of a dog from Ohio, and comments on the importance of the recognition of any cases that should occur on the American continent. He notes the character of the parasite and of the eggs, and describes the disease. We have made liberal use of his article.

Stiles² and Sir Patrick Manson and A. E. Shipley³ similarly give a detailed account of the parasite and the nature of the disease. To these three articles the reader is referred for a description of the fluke, its geographical distribution, etc.

Pathologically the parasite gives rise to tumor-like cysts which are situated near the lung periphery. The cysts contain the flukes and their eggs, and masses of

Charcot's crystals, and communicate with the bronchi by fine openings through which the eggs and the crystals reach the exterior in masses of mucus and blood. Similarly cysts have been found within the liver, peritoneum, mesentery and the cerebral hemispheres.

The number of eggs discharged in a single period of twenty-four hours from a patient who has suffered thirteen years from the disease has been estimated to be not less than twelve thousand. In water an oval ciliated embryo develops within the egg some time after it escapes from its host. The future development of this embryo and the manner in which an individual becomes infected are not at present known, though it is surmised that the drinking-water is at fault.

Symptomatically these flukes lead to recurrent attacks of hemoptysis, to a chronic cough, and to a rusty mucoid expectoration. These symptoms strongly suggest chronic pulmonary tuberculosis, with which the disease for a time was confused; and it is not improbable that a number of Orientals in this country who are believed to have tuberculosis are really suffering from this fluke infection.

Though during the continuance of the disease the patients commonly suffer from malaise, the accidental rupture of a large blood-vessel by the destruction of the lung tissue and a general anemia from the repeated losses of blood seem to be the only dangers to be feared. Some patients appear to recover from the disease, this recovery being considerably aided by removal from the infected district. A general lowering of the bodily health from disease or dissipation has considerable influence in increasing the virulence of the symptoms.

The physical signs which are associated with this disease are surprisingly few, and in no way characteristic, and it is only by an examination of the sputum that a diagnosis can be made.

In view of the rarity of this disease on the American continent (Stiles refers to one imported case having been recognized in Oregon) and the importance of its recognition from the public health standpoint, we deem it our duty to report the following case:

Patient.—Inone, aged 35, came to California from Japan six years ago, since when he has worked in the California fruit orchards. His immediate complaints are soreness in the lower part of his neck, which is associated with some distress in swallowing, and intense headache, most marked in the temporal regions. The spitting of blood which, he states, is also present, is regarded by him as of secondary importance, and has only lately acquired a significance in view of the distress in swallowing, and the fact that a relative died from cancer of the esophagus.

History.—The family history is irrelevant with the exception of the one relative alluded to. The patient has drunk at times immoderately, but does not use tobacco or opium. One year ago he had an attack of gonorrhea from which he completely recovered. There is no history of a venereal sore or any syphilitic manifestations. Thirteen years ago he had chills and fever in Japan. He was treated and recovered, and has had no recurrences. He has had no other bed-confining illnesses.

Present Symptoms.—A.—Coughing up of Blood: This began when the patient was 12 years old, when he coughed up about a cupful. He continued to suffer from hemoptysis on an average, two to three times a month. At that time he began to drink immoderately, and these attacks became more frequent. When twenty he commenced his army service of three years, during which time he took no alcoholic liquor, and his attacks became less frequent and intense. When he left the service he again dissipated, and the coughing up of blood again became worse. At that time he went to a Japanese country doctor who told him that he was suffering from distoma. Shortly

1. Ward: Med. News, lxxv, 236.

2. Stiles: Osler's Modern Medicine, I, 536.

3. Manson, P., and Shipley, A. E.: Allbutt and Rolleston's System of Medicine, II, 860.

afterwards his sputum, instead of looking like pure blood, began to be mixed with "spit." Since that time his condition has remained about the same, it becoming worse when he drinks, and improving when he becomes temperate.

B.—Soreness Associated with Swallowing: The pain in the lower part of the neck and distress in swallowing came on a few months ago. The symptoms have been a source of great anxiety to him, and he has lost 15 pounds in weight in the last few months. The patient associates these facts.

C.—Headache: This is also of a few months' duration. It is very intense, usually most marked in the temporal regions; on other occasions the inferior occiput is the seat of the most severe pain. These headaches are worse by day than by night, are fixed and deeply located, he thinks. There are no shooting pains, nor does he suffer from neuralgic pains in other parts of the body.

The patient's appetite is good and bowels regular. He becomes somewhat short of breath on walking up hill, but in ordinary work he suffers no distress. He sleeps well and does not get up at night to pass urine.

Examination.—The patient is compactly built, and fairly well clothed with muscle and fat. The expression of his face is heavy and dull. The pupils are equal in size and react briskly to light and accommodation. There is no nystagmus, and no diminution of the field of vision. There is no abnormality of lid or eye muscle movement. The conjunctivæ are watery. The eyegrounds are normal; so are the teeth, mouth and throat. Breathing through either nostril is normal. The patient hears well with either ear closed. There is considerable tenderness on superficial pressure over the region of both frontal sinuses, in the upper temporal region, and in the tissues just below the occiput. Both supraorbital nerves seem unduly sensitive. No thickening can be made out anywhere. There are no glandular enlargements in the neck, axillæ, above the elbows or in the groin. There are no venereal sores or scars present on the penis. The testes are normal.

Thorax.—Respiratory System: The patient has a broad, well-set up chest. The supraclavicular regions are somewhat hollow, but equally so. The two sides move equally; vocal fremitus is everywhere normal. On percussion the note over the left lung is slightly subtympantic from the apex above to the level of the nipple in front, and the midscapular region behind. There is a normal extent of lung resonance, and normal increases on both sides during inspiration. A few sibilant are audible underneath the left clavicle. Elsewhere the expiratory murmur is normal, and the vocal resonance presents no abnormalities.

Cardiovascular System: There is marked epigastric pulsation of the right ventricular type, but no other cardiovascular pulsations. There are no palpable thrills. The apex is located just outside the midclavicular line in the fifth intercostal space. The right border cannot be determined; the left border is not unduly arched. The heart sounds are pure and regular in time and character, and 80 to 90 to the minute. The pulse is regular in time and character, the peripheral vessel-walls are somewhat thickened and tortuous. The systolic blood-pressure equals 145 mm. Hg, the diastolic 100. It is the same on each arm.

Abdomen: The abdominal wall is soft; no intra-abdominal tumors are palpable. The liver is not enlarged. The kidneys are not palpable. The spleen is enlarged, extending an inch below the rib margin, its edge is hard and thick, and above its dullness reaches the eighth rib. The Murphy maneuver causes no discomfort.

Extremities, Etc.: There are no abnormalities to be found in the skin, muscles, bones and joints. The reflexes, movements and sensations are normal.

Esophagus: Dr. Fehleisen had found some resistance to the passage and withdrawal of a medium-sized probang about eight inches from the teeth. The head of the probang in this position gave rise to a distress similar to that complained of by the patient. On esophagoscopy examination a small area about the size of a ten-cent piece was found with small heaped-up islands of epithelium between which red fissures ran. The fissures were evidently covered with a thin layer of epithelium as the cotton used to swab this area remained quite dry. The opportunity was taken to swab this area with a 5 per cent.

silver nitrate solution. This entirely relieved the patient, and since then a full-sized esophageal probang has been passed without distress. It seemed at first as though this area might be indirectly of distoma origin, but in view of the apparent rapid cure this seems unlikely.

Examination of Chest by Radiography: Postero-anterior chest and apex radiograms show no abnormalities. The tree-like branching of the lower pulmonary fields are well marked, but no more so than in many healthy people.

Sputum: When the patient is not drinking or taking medicines the sputum amounts to about two ounces in twenty-four hours. It presents a peculiar glassy jelly-like appearance, and is very viscid. Scattered through it are red or brownish-red areas which look like colored pneumonic sputum. Occasionally small quite fresh coagula of blood are seen here and there. Though it is, we believe, generally understood that the fresh sputum should always be microscopically examined, there can be no doubt that this is frequently neglected by general practitioners, and even in some laboratories and colleges. Owing to such neglect the ova had in this particular case hitherto escaped recognition.

Microscopic examination of the colored portion shows a large number of pus cells, many red blood corpuscles, many large multinucleated cells which contain a large quantity of brownish pigment. In every field two or three eggs of the distoma can be seen. They are oval, brown in color, have a double outline, and at one end a lid is plainly visible. Within the egg are granular areas and very small rounded bodies which look like fat droplets. Many such little bodies are also present outside, it appearing as though some of the eggs had been ruptured. Microscopic examination of the clear portion shows mucous strands and leucocytes, no eggs being visible. The stained fixed film shows the presence of many cocci and bacilli, but no tubercle bacilli. The eggs are no longer recognizable as such. The color of the colored patches of sputum is due to red cells and the pigmented cells, and not to the eggs present.

Urine: This amounts to 40 to 50 ounces in the twenty-four hours, has a specific gravity from 1020 to 1030, and contains no sugar; a trace of albumin is present. Microscopically a few red blood cells and a few leucocytes are to be seen, but no casts or eggs.

Stools: These are normal in appearance; the food is well digested, and no eggs are to be found.

Blood: The hemoglobin is 80 per cent, the red cells 4,800,000 per cubic millimeter, the white cells 8,000, of which the polynuclears are 70 per cent., the large lymphocytes 8 per cent., the small lymphocytes 20 per cent., and the eosinophils, 2 per cent.

Cerebrospinal Fluid: In view of the headache and the fact that the parasites occasionally invade the brain, a lumbar puncture was made. The cerebrospinal fluid was under pressure of 200 mm. of water. It was reduced to 150 by removing half an ounce. The portion removed was clear, and was normal in every respect. The tapping in no way relieved the headache.

Treatment and Its Effect.—The treatment of the esophageal symptoms has already been alluded to.

Headache: In view of the old malarial history, the presence of an enlarged spleen and of very sensitive supraorbital nerves, 5 grains of quinin in acid solution were administered three times a day. This quickly led to a return to normal of the spleen, but had no effect on the headache. Potassium iodid was then administered in 25-grain doses in milk three times daily. Considerable improvement in the headache resulted. Ten grains of aspirin three times daily were then prescribed, with the result that the headache completely disappeared but returned when the drug was stopped. The scalp tissues remained very sensitive. The patient was then instructed to massage the hypersensitive regions vigorously for several minutes on several occasions during the day. This led to a disappearance of the hypersensitiveness, and the patient became quite free from his headache.

Pulmonary Symptoms: During the time the patient was taking quinin the sputum greatly diminished, and it was only with difficulty that one could obtain specimens for examination. The patient regarded himself as cured of the pulmonary

complaint during this time. While the potassium iodid was being taken the sputum returned, became of a disagreeable odor and more copious than it was prior to the patient's taking any drug, and had very much the appearance of muddy water. Aspirin had no effect on the sputum.

The discovery of this case was reported to the board of health, and the patient is, in the meantime, at work in the fruit-orchards free from his headache and distress in swallowing, but spitting up small amounts of ova-containing sputum, though again taking quinin.

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THE VIRULENCE OF OLD CULTURES AND SUBCULTURES OF *BACILLUS MALLEI* *

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BOSTON

The virulence of pathogenic bacteria is to some degree dependent on or modified by their environment, and, as the result of experiment, it is known that the virulence of such organisms may be raised by their passage through animals. On the other hand, it has been stated that the virulence of some is lost in a comparatively short time when cultivated on artificial media.¹ Different strains of the same organism may differ to a marked degree in this respect, and conclusions in regard to a class of organisms should not be based on results obtained unless the organisms are from several sources.

Bacillus mallei is an organism handled frequently by many laboratory workers; consequently any fallacy in regard to loss of virulence in old cultures should be corrected, since, if one strain has proved virulent, all should be regarded as such unless proved to be otherwise.

At the Boston Board of Health laboratory, work is constantly being done with *Bacillus mallei*, 722 specimens having been examined for the diagnosis of glanders during the past three years, of which 237, or nearly 33 per cent., were positive.

The outfit, consisting of a labeled tube containing two sterile swabs, together with a card with blanks for data, may be found at any of our culture stations, and after use it may be returned to the laboratory by the regular station delivery, or, as more frequently happens, it is brought or sent by the veterinarians.

On arrival, from 3 to 5 c.c. of sterile water is added to the swabs, which are thoroughly rubbed up, most of the material being left in the water. A plant is then made on potato, and a smear is made in order that we may have a guide as to dosage.

Two pigs are inoculated with this suspension: one with 1 c.c., the other with 0.5 c.c., unless there are quantities of organisms or streptococci present, when half that amount is used. A number of freak results from these inoculations have been reported.²

Mallein is also made at the laboratory and furnished free to the veterinarians of the city. It is made by inoculating *B. mallei* in glycerin broth and allowing it to grow at 37 degrees C. for six weeks after the formation of a pellicle, which occurs in about a week or ten days after inoculation. This is then tested by making transplants on agar slants and potato, and from this

growth a suspension in sterile water is made and guinea-pigs are inoculated. No mallein is used unless there is a typical Strauss reaction from these inoculations. Failure to obtain this reaction is rare.

After testing, the mallein is boiled for 5 or 6 hours, and 0.5 per cent. phenol is added, and it is then ready to filter and bottle. We handle the pigs and suspected material, using the ordinary laboratory card and technic.

A statement³ in regard to the rapidity with which the virulence of subcultures of *B. mallei* is lost was noticed late in October, 1909, and on November 2 a series of inoculations was begun, using a culture recovered from a pig inoculated for the diagnosis of glanders during our routine work, it being the first one to be obtained after the article was read. On the third day a transplant was made on potato and also an aqueous suspension with which a pig was inoculated, using 1 c.c. Transplants from potato to potato and inoculations have been made every two or three days, and now we have reached the twenty-sixth subculture, and the virulence is as great as it was during the early generations. In this series one pig was inoculated with the eleventh subculture which failed to give the Strauss reaction, and another pig was inoculated giving a typical reaction, the non-reacting pig being kept under observation. Six days after inoculation a small tumor was noticed at the inoculation site, and ten days later there was a swelling noticed on the left forefoot, followed a few days later by a similar swelling on the right forefoot.

At autopsy Dec. 23, 1909, there was found a tumor in the omentum and also a submaxillary tumor, from both of which typical organisms were obtained, and typical cultures were obtained from the omental tumor. The swellings on both feet had completely disappeared and there was no Strauss reaction.

On December 23 two pigs were inoculated, one with the eleventh subculture which had been on potato since November 21, and the other with the twelfth, which had been on potato since November 23. Both gave a typical reaction.

From these few instances it seems justifiable to draw the following conclusions:

1. That in glycerin broth *B. mallei* live and retain their virulence for at least two months, even when kept at body temperature.

2. That a culture of *B. mallei* may be virulent after growing on potato for at least a month.

3. That some strains of *B. mallei* retain their virulence through a great many subcultures on artificial media.

I wish to express my thanks to Dr. F. H. Slack and Miss E. Marion Wade for aid and criticism.

30 Huntington Avenue.

The Cerebrospinal Fluid in Acquired and Inherited Syphilis.—P. Ravaut describes the physical, bacteriologic, chemical and cytologic findings in the cerebrospinal fluid of the syphilitics examined in the Broca and Saint-Louis hospitals in Thibierge's service, at Paris, and discusses the conclusions from comparison of these findings with the clinical course. His article appears in the *Revue mensuelle de Médecine interne et de Thérapeutique*, June 15, 1909, and teaches the lesson that any judiciously interpreted modification of the cerebrospinal fluid in an individual with acquired or inherited syphilis should be regarded as a manifestation of the disease like any other symptom, and justifies energetic treatment controlled by the clinical course of the disease and the findings with lumbar puncture.

* Read before the Society of American Bacteriologists, Boston, Dec. 27, 1909.

1. Bevan and Hamburger: The Occurrence of Glanders in Man, *THE JOURNAL A. M. A.*, May 16, 1908, 1, 1595.

2. Arms, B. L.: Some Freak Results from Animal Inoculations, *Am. Jour. Pub. Hyg.*, xix, No. 3.

3. Marshall, Chas. E.: The Beginnings of Life from the Viewpoint of a Bacteriologist, 11th Rep. Mich. Acad. Sc., 1909.

EMBOLISM OF THE SUPERIOR MESENTERIC
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Embolism of the mesenteric vessels is of unusual interest to the surgeon because of (1) its comparative rarity, (2) the extreme urgency of its symptoms and imperative demand for an early diagnosis, which is frequently difficult and often impossible, and (3) the difficulties attendant on its surgical treatment, which to a greater degree than most surgical problems demand that nicety of judgment and precision of technic acquired by only a few in the field of surgery. Considering these facts, I feel justified in reporting the following case:

History.—Male, aged 26. Family and previous history negative except for an attack of rheumatism two years ago. His general health had been excellent and patient had followed his occupation as locomotive fireman every day. On the evening of September 30, after coming home from his work the patient ate a hearty supper, after which his bowels moved normally and without pain. A few minutes later he was seized with sudden cramping, agonizing pain which he described as originating in the epigastrium, but so intense in nature as to be indescribable and involving the entire abdomen. In the absence of his family physician I was summoned and reached the patient within thirty minutes of the onset of the pain.

Examination.—Physical examination revealed the characteristic peritonitis facies with evidence of extreme suffering—face pinched and anxious, both knees drawn up, skin relaxed and clammy, abdomen already tympanitic and very sensitive to pressure, both recti rigid. The clinical picture was that of an intestinal perforation or severe intra-abdominal hemorrhage. The temperature was subnormal, pulse rapid and thready and pupils widely dilated.

Diagnosis.—There was absolutely nothing in the previous history of the patient that would indicate previous appendiceal trouble, gastric or duodenal ulceration or gall-bladder involvement. From the condition of the patient, the character, severity and distribution of pain, the diagnosis lay between fulminant appendicitis, gastric or intestinal perforation and severe intra-abdominal hemorrhage such as would occur in acute hemorrhagic pancreatitis. Because of the age and previous history of the patient it was thought that the former condition was the most probable. The family was advised of the serious nature of the trouble and the probable necessity for early surgical interference. The patient was made as comfortable as possible by the administration of a hypodermic of morphin, the application of an ice bag and interdiction of everything by mouth. Next morning I saw the patient in consultation with his family physician. He had vomited frequently during the night, had been very restless and had suffered intensely despite the 1/2 grain of morphin he had received hypodermically in the evening. His pulse was 150, temperature subnormal, skin still relaxed and clammy, abdomen greatly distended and universally tender. No peristalsis could be made out and paralytic ileus seemed present. The lips were cyanotic, breathing shallow and hurried. At this time dulness in the flanks could be determined which changed with change in the position of the patient. Subjectively the patient stated that he felt better than during the night, though the findings showed he was *in extremis*. The family physician readily agreed that the outlook was extremely grave if not hopeless, and from the rapid progress, general collapse, dulness in the flanks and cyanosis we were inclined to consider the case one of acute hemorrhagic pancreatitis.

Operation.—Immediate operative measures were urged but the family were inclined to temporize because of the patient's subjective symptoms. Later in the day permission was given to operate but in the interval his failure had been so rapid that it was deemed useless. Vomiting had been almost continuous, large quantities of brownish liquid being ejected at frequent intervals. Notwithstanding the hopeless outlook a surgeon from a neighboring city had been summoned by wire

and preparations for an immediate operation completed. Death occurred, however, before his arrival, thirty-one hours after the onset of the first symptoms. There was vomiting with the initial symptoms, but the vomitus was not blood-stained at any time. There was some tenesmus for the first few hours but very little passed from the bowels. There was no diarrhea and no blood in the bowel discharges.

Autopsy.—Permission to hold a limited autopsy was gained nine hours after death; not, however, until an undertaker had tapped the abdomen and injected embalming fluid. The undertaker stated that he removed by aspiration about two quarts of blood-stained fluid from the abdominal cavity. On opening the abdomen the parietal peritoneum was found to be smooth and glistening, the liver pale, yellow and smooth, not enlarged, the gall-bladder normal in size and appearance, containing about two ounces of bile. The bile ducts were patent and normal in appearance. The pancreas was intact and showed no evidence of rupture. The omentum was congested but the peritoneum of the stomach, bladder and large intestine showed no involvement. The entire small intestine from the duodeno-jejunal to the ileocecal junction was black and gangrenous and so friable that efforts to put the mesentery on the stretch in order to determine the presence or absence of previous limited infarctions were unsuccessful, the mesentery and gut separating like wet paper under the slightest tension. The superior mesenteric artery was occluded at a point between the colica media and colica dextra. That portion of the duodenum supplied by the gastro-duodenalis was not involved.¹

Because of the free anastomosis of the mesenteric vessels through the arches of the vasa intestinae, serious interference with mesenteric circulation is extremely rare. The gravity of the condition is usually in proportion to the extent of mesentery and intestine involved, though very small hemorrhagic infarctions frequently result in localized necrosis and perforation. The suddenness with which vascular changes of this character are initiated is also a factor. Thrombotic occlusion and interference with the circulation by adhesions or mesenteric inflammation offer a better prognosis because their more gradual development permits a readjustment of the circulation. The suddenness of the shock and insult in mesenteric embolism, however, is so overwhelming that there is no time for circulatory readjustment and a paralytic ileus promptly develops.

If occlusion of the superior mesenteric artery occurs, the integrity of that portion of mesentery and intestine supplied by it can be maintained only by anastomosis of the gastroduodenal and inferior mesenteric arteries. When it is recalled that the blood, in order to reach this portion of the intestine through anastomosing channels, must pass for a considerable distance through a plexus of very small vessels, the grave danger to the integrity of that part of the intestine deprived of its natural blood supply is at once apparent. Embolic occlusion of the trunk of the superior mesenteric practically always results in gangrene of the entire field of its distribution. Embolic occlusion is most frequently due to septic processes, endocarditis, aortitis, valvular and aortic vegetations. In this case it was assumed to originate from an endocarditis following rheumatism.

Mesenteric infarction is the least frequent of endocardial embolic phenomena, constituting but 1 per cent. (Edwards). Its features were first noted by Virchow. Jackson, Porter and Quimby collected 225 cases from the literature showing a mortality of 94 per cent. The onset is usually sudden, with intense colicky abdominal pain, vomiting and collapse. The vomitus may be bloody (a feature that has not been satisfactorily

1. Since preparing this report I have read an excellent article by Crouse (Surgery, Gynecology and Obstetrics, December, 1909) in which a case with similar pathologic findings is recorded.

explained), or even fecal. Diarrhea is said to occur in 40 per cent., frequently bloody. Early death from collapse before symptoms of peritonitis develop is the most common termination, the lowered vascular tone due to primary shock being so great that there is little or no absorption of septic products, though peritonitis sometimes develops from gangrenous perforation in infarctions involving small areas.

As there is nothing in the symptomatology to indicate the extent of infarction, the abdomen must be opened before this can be determined, and even in these few favorable cases where a probable diagnosis can be made early, portions of intestine that are apparently healthy but with a circulation seriously compromised may be left which will later become necrotic and cause the patient's death, or the primary shock may be so extreme as to make immediate operation extra hazardous and the surgeon may be persuaded to wait for a reaction that, as a rule, never occurs. There have been instances of spontaneous recoveries just as there are records of operative recoveries, but the mortality is dishearteningly great. If on opening the abdomen the entire small intestine is seriously involved, operative measures are obviously useless.

TUBERCULOSIS OF OS SACRUM TREATED WITH BISMUTH PASTE

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It is probably too early to determine the exact value of bismuth-paste injections in the treatment of tuberculous sinuses, but the favorable reports of many cases treated with this paste in the last two years suggest that at last we have an agent that is really curative. Only a few years ago a patient with a psoas abscess or tuberculous sinus of the hip or sacro-iliac joint was usually doomed; but now such patients are being repeatedly cured by injections of bismuth paste after the method originated by Dr. Emil Beck of Chicago. The following case is interesting in that it shows the cure of a condition which heretofore was almost hopeless; also it shows the severe poisoning which may occur from the bismuth. The injections were used altogether over a period of eighteen months.

The patient, Mrs. F. B., American, in January, 1906, at the age of 21 had a hard fall on the ice, striking on the buttocks. Three days later pain developed over the left sciatic notch and kept the patient in bed for two months. After that she got up and was treated for sciatica. Sometimes she would feel pretty well, then again she would be in bed for a week or two. I saw her in December, 1907, and found a tuberculous abscess over the left sacroiliac joint. She went to Spokane, where the abscess was opened and drained. Iodoform emulsion was injected daily. The patient stayed there a month, the abscess discharging profusely. She came home much emaciated and having night sweats. In February, 1908, I operated, exposing the left sacroiliac joint according to the method of Schede. The whole left buttock was undermined by the abscess and the gluteal fascia covered by tuberculous granulations. The abscess extended to, but not through the capsule of the hip-joint. I removed a sequestrum from the sacrum, carious bone from the joint and scrubbed out the granulations. The wound healed nicely, leaving a sinus down to the sacrum.

The patient improved rapidly, and about March 14 I began injecting the bismuth paste into the sinus three times a week. Her night sweats stopped and she gained greatly in strength. The sinus would not heal and the patient, becoming discouraged, went to Rochester, Minn., to consult the Mayos. They continued the injections twice a week. She stayed there three

months, and during this time gained twenty pounds. She came home in October with the sinus still discharging. In November she began to show signs of chronic bismuth poisoning and the injections were stopped. There was a black line along the gums; the molar teeth became loose; the patient lost weight and vomited frequently. In December she was very sick for a week with violent vomiting and diarrhea. The sinus closed in the latter part of this month. She now developed symptoms of an iliac abscess. The thigh became flexed and the patient was unable to straighten out her leg. There was marked lordosis and a hard tender mass formed in left iliac region. In the early part of February, 1909, I operated again, going down just internal to the anterior superior spine of the ilium and found pus on its internal surface, beneath the iliopsoas muscle. Mixed with this pus was about an ounce of the bismuth paste. It had been there at least ten weeks and was apparently unchanged.

The vomiting after this operation was terrific and almost caused death, lasting eight days. I put a drainage-tube down to the bottom of the abscess and injected sterile petrolatum every other day for the next month. The symptoms of bismuth intoxication subsiding, I again started to use the bismuth cautiously, using it once a week and keeping the tube in to insure free drainage. Later the tube was withdrawn as the sinus kept open without it. All during the summer of 1909 the patient lived in a tent in a pine forest, enjoying good health and coming in once a week for her injection. In October, examination showed both sinuses solidly closed and no tenderness or pain to be found. The patient said she felt better than she had for years. She is now doing her own housework and is apparently cured.

To one who has seen such patients suffering from tuberculous bone disease undergo operation after operation and finally die, such a result as this is, indeed, remarkable.

HUMAN TUBERCULOSIS CONSIDERED FROM SEVERAL VIEWPOINTS *

GEORGE HOMAN, M.D.

President of the Missouri Association for the Relief and Control of Tuberculosis

ST. LOUIS

Tuberculosis in its most common form of manifestation, which is pulmonary consumption, is such a nearly universal infection, is so fully known to mankind in almost every climate and human condition, that its literature alone has reached proportions far beyond the reasonable ability of any one person to read or adequately to digest; but, nevertheless, a sketch will be attempted concerning the principal points of view from which it has been considered.

Probably the aspects that have received the widest attention and study may be grouped under four headings, namely, sanitation, statistics, sentiment, and statesmanship, and these main topics will be dealt with briefly not only in their relation to the disease named, but also in their relation to each other.

SANITATION

In the public health language of to-day this word, in the strictest sense, means prevention—that is, a watchful, unsparing, resolute, intelligent detection and destruction of every agent given off, directly or indirectly, from the body of a sick person, which can cause disease in another. In the case of tuberculosis this applies chiefly to the spittings of consumptives, and, inasmuch as this malady is ordinarily of chronic dura-

* An address delivered before the Medical Society of City Hospital Alumni, St. Louis, Dec. 2, 1909.

tion, this task of vigilant watchfulness must be maintained by physician, nurse, friends, health officer, and the patient through months certainly, and possibly years of time.

As has just been stated, such sanitation must be the joint outcome of the efforts of all these parties in order that it shall be most effective for public protection. Under a law that would require notification by the attending physician or affected family to the local health officials of the presence of a case of disease, appropriate regulations would be applied which would call for the sincere cooperation of the parties in interest, alike for the defense of the public against harmful influences proceeding from the sick-room, and for the protection of the convalescing patient against reinfection of himself or herself by undestroyed germs in the expectorated matter or other discharges.

To secure legislation adequate to cope with such dangers, and to secure its enforcement, the teaching of the public is a work of necessity, and this is usually begun by the pioneer efforts of medical men who point out the risks of promiscuous spitting, poor ventilation, and the like; and, ordinarily, such instruction is supported and supplemented by ministers, teachers, and other leaders until a state of public opinion is reached which will demand that nothing in reason shall be left undone to protect the people against either home-grown or imported infection.

Thus, when a clear perception of the danger with regard to any certain disease is reached, the way is opened for ready acquiescence in measures of sanitation aimed at other disease-breeding agents and conditions; as, for example, those that foster typhoid fever, malaria, dysentery, and the like, the sum-total of such cooperative work developing a distinct stiffening and toning-up of a community's moral and physical fiber, betokening an actually heightened power of resistance toward disease in general, together with a courage and self-reliance growing out of sound knowledge and right understanding of dangers to be faced, and the measures to be employed for their defeat.

This would mean that science, skill and sense would leave no room for demoralization, fear, or panic and that pestilential threatenings would be met with the same cool, firm judgment that should distinguish trained, orderly minds when other forms of calamity and peril are confronted.

Thus, then, the word "sanitation" epitomizes and is the expressed measure of all the forces and influences—moral, intellectual and physical—that can be summoned forth by the power of man to make war on disease; and to prove that public education is a prime factor in this question it is only necessary to point to the fact that, however perfect a sanitary law may be, it will nevertheless be a dead letter unless the live wit and perception of the people comprehend its purposes, and demand its strict, impartial enforcement against given conditions unfavorable to health.

When called before a tribunal fitted to judge in such matters, and the reason for its being is demanded, Sanitation can stand upright and with calmness and confidence make this answer: "I know the causes and conditions from which come tuberculosis, cholera, rabies, malaria, yellow fever, hookworm disease, meningeal fever, sleeping sickness, diphtheria, bubonic plague, leprosy, and still others. Give to me, therefore, the law and the money and I will strangle outbreaks of these diseases in their cradle."

On a medal struck by the English people to commemorate their deliverance from the Spanish Armada, and all that it meant, is this simple but striking legend: "His winds blew and they were not." So with respect to foes of our own, coming from former Spanish lands to the southward, it may be said, "His work was done and they are not," to mark the conquest by our medical fellow-countrymen of yellow fever and malaria in Cuba and Panama.

STATISTICS

In no way other than by carefully gathered and kept records of births, sickness and deaths, with the causes of the latter and other pertinent data made plain, can any state or community take account of its vital resources and liabilities, and learn the truth that is of fundamental importance to its own existence and well-being. Until a recent law was enacted, sad to say, there were no means by which Missouri as a state could have such an accounting. It was possible to learn such facts only with respect to certain localities, namely, the larger cities, which by local ordinance require the reporting and recording of vitality, morbidity, and mortality figures, thus affording a datum-line from which statistical measurements and conclusions respecting population, health, fecundity, sanity, longevity, etc., can be computed.

But, from the local data thus gathered taken in connection with federal census figures, and vital statistics collected under state laws elsewhere, in which the conditions of population are substantially the same as in Missouri, it is possible to approximate the truth with respect to our own state, and to make estimates in cold figures of our losses year by year from tuberculosis.

Let it be said here that the delinquency on the part of a state which fails strictly to require the recording of every birth and death tells against the intelligence and good name of its government. To illustrate, in the cold-blooded calculations of life-insurance actuaries such an omission weighs heavily; as, where the full truth with respect to health conditions is not officially discoverable, the doubt is resolved against the commonwealth, and higher rates are assessed and must be paid accordingly.

Let a glance, therefore, be taken at the estimates of losses from the single cause mentioned, which are deduced from sources just referred to as affording the only safe data for the purpose. Such a story may be to many persons like a thrice-told tale, but its constant iteration, told in passionless facts and figures, seems necessary to make an impression on that variety of the mathematical human mind called business intelligence, which scorns anything so soft as sentiment.

For example, it is known that in St. Louis more than 1,000 persons die every year from tuberculosis, most of them being under middle age and in the prime of productive usefulness to themselves and the public; and, further, that for every one thus dead there are no fewer than five persons sick with that disease and tending toward the same destination. This local ratio of disease and death, when extended proportionately to the whole population of Missouri, shows an annual death-list of upward of 5,000, with probably five times that many persons similarly diseased. Your own pencils will show, if you are statistically inclined, that the dead bodies thus annually produced, if laid side by side, would extend nearly one and one-half miles—a causeway of death corduroyed by human corpses at a net cost or economic loss to the state, under its own valuation of a human life, of more than \$20,000,000.

Not to speak of either the heartlessness or the stupidity of tolerating such a situation, when the test of widest medical experience has shown it to be both needless and improvident, would it not be a good business stroke for the state to enact laws and furnish funds providing for a searching survey of its own vital and sanitary status, to the end that it may accurately measure its own danger, destroy the conditions that favor such vital and economic waste, and let the world know the facts concerning its own hygienic housekeeping? Is it not a stinging indictment of a hollow civilization, and doubtful Christianity that millions on millions of public money are poured out by this nation because of the fantastic conjurings of a mad militarism, when but a tithe of such profligate squanderings would save so many thousands of lives, and give physical happiness to so very many thousands more? Think what answer could be made to the question, asked perhaps by some visitor from another world curious to know something of our manners and ways: "And is this the best wisdom that the human race can show?"

SENTIMENT

As before suggested, many self-wise persons are unwilling to take account of sentiment, declaring that it can have no proper place in every-day affairs. Such persons are oblivious to the fact that sentiment sways human minds to an extent that justifies the saying that he who writes the songs of the people need have no care who makes their laws. Every sentiment that grows out of human thought or temperament must acknowledge some relationship to this serious subject. The poet's apostrophe to death denotes this:

Come in Consumption's ghastly form . . .
And thou art terrible: the tear,
The groan, the knell, the pall, the bier,
And all we know, or dream, or fear

—all these are more or less bound up in the story of this infection and its ravages amongst mankind.

Pathos and tragedy have unfailingly attended the prolonged march of successive generations of consumptives to the grave. Good and bad, high and low, bond and free, Dives and Lazarus, have alike been constrained by man-made conditions to join this procession, and no other than a flickering gleam has lighted the somber picture until within the present generation, but now the sun is risen and it has been convincingly shown that there is reason for the assured hopefulness with respect to those thus diseased; that the sentiments of dread and despair once almost universally felt are without good grounds, provided the teachings of sane judgment and sound reason are heeded.

Sentiment aside, the fact is that as man has sown so has he reaped, in this as well as other respects, the punishment often reaching to later generations, for only in this way, perhaps, can the blind and selfish greed of man be brought to a proper sense of his offending against the laws of Nature respecting health.

To rob one's brother of his rightful share of earth, air, light, and heaven, is to invite self-destruction through the evil conditions to which that brother is thus reduced; for, as oppressor and oppressed must needs breathe a common air, so an even-handed justice ordains that an environment charged with infection may prove more deadly to Dives and his friends than to Lazarns and his like—who may, perchance, through hazardous experience, have gained a degree of immunity thereto.

STATESMANSHIP

Last, but not least, come all of those organized civic forces of the state whose appointed aim is the public service and general welfare—those in whose hands lie the taxing power and the spending of public funds.

Statesmanship is defined as the quality of being skilled in the art of government, having broad, sagacious views and distinguished ability in dealing with questions arising in public affairs—in short, the art or skill of a statesman.

It has been said that he who causes two blades of grass to grow where only one grew before is a public benefactor, and this is an economic truth simply stated, for it means that that particular form of subsistence is doubled—two heads of wheat, two loaves of bread, two dollars instead of one—briefly so much wealth and comfort added to the world; and statesmanship recognizes the obligation thus conferred.

But how about him who causes two human lives to develop in health and vigor where but one survived before? Has statesmanship recognized in any tangible manner in these days the economic gain and public value of such an achievement? If the lives thus saved had been those of chattels under the law, as was the case here in Missouri fifty years ago, there can be no doubt that the answer would have been in the affirmative; but, unhappily, now the reply must be "No," for human life has been, and is yet, held so cheaply in a general sense that little more than conventional regret is expressed over the wastage by preventable disease of those in their prime, and whose expectation of life reasonably should not be below the scriptural limit. Usually it is only when the grief of a personal loss is felt that concern is expressed by the man of affairs, who before knew little and cared less, respecting the conditions that give headway to tuberculosis.

The experience of an active health official in a neighboring state will illustrate this point. He was trying to raise funds to make a fight against consumption and called on a rich man, a business and social leader in his own city. After some explanation he was given a small contribution for that purpose. Three years later this man called on the official and reminded him of the former meeting, saying, among other things, that he had given the money to get rid of him, as he had an engagement, and added: "My daughter is dead of tuberculosis. I understand the subject now. I want to contribute. Furthermore, I regret that the infirmities of age make it impossible for me to give my services." Incidents such as this are not uncommon—men of business judgment, prudence and foresight are dead, as it were, to the danger of attacks by a subtle foe, the hour or place of which can never be certainly known. You or I, you and I, here or elsewhere, may be the next to yield to this insidious power. Here is a field, indeed, for the statesman's skill involving no abstract considerations that concern a few only, but a thing that may come near to or touch sooner or later the purse, the health, the life of every person in the state.

To summarize: What is a fair conclusion of this whole matter?

If the case has been clearly and honestly stated the answer is plainly this:

1. In thorough-going sanitation, rightly supported and directed, is to be found the weapons and resources with which a now pandemic infection may be met and overthrown.

2. Statistics, properly collected and kept, afford the only true measure of health or disease in a given body of people, and constitute an index showing where sanitation is needed, and how it should be applied.

3. Sentiment, the sense of loss or fear of loss in the individual and public, is often the compelling cause or force that moves a heedless or ignorant people to better things in public health affairs.

4. Statesmanship, rightly directed, possesses the promise and power of fundamental changes in economic directions through enlightened legislation, and in the supplying of funds needed for overcoming disease. These possibilities are now only dimly seen, but when realized in public policy and law will foreshow the virtual extinction of tuberculosis, as a population infection, and which now looms as the appointed destroyer of a very considerable percentage of the civilized world's human inhabitants.

323 Odd Fellows Building.

A CASE OF STENOSIS AND ATRESIA OF THE ALIMENTARY TRACT WITH IMPERFORATE ANUS

CHARLES GOOSMAN, M.D.

CINCINNATI

History.—The history of both parents was negative. Labor was normal except that the amniotic fluid was distinctly increased in amount. The infant, a male, weighed 6 pounds. The cry was feeble. Imperforate anus was found when the baby was washed. Twelve hours after birth vomiting commenced, arousing a suspicion that an occlusion might exist in upper part of alimentary tract. The vomitus was bile-stained and continued at frequent intervals until death sixty hours after birth.

Post-mortem Examination.—A median perineal incision disclosed the blind end of the rectum about three-quarters of an inch from the surface. The bowel contents were grayish white and flaky, not resembling the meconium. The introduction of a probe showed this part of the bowel to be closed about 1½ or 2 inches farther up. On removing the stomach and intestines it was found that the large intestine (containing meconium) ended in a blind extremity, which lay alongside of the upper closed end of that segment of bowel which had been opened from below. In other words, there was imperforate anus plus atresia of the large intestine higher up. There was a Meckel's diverticulum three-quarters of an inch long, about six inches above the ileocecal valve. This diverticulum had no adhesions. The stomach showed an hour-glass contraction involving chiefly the greater curvature. This stenosis allowed the passage of a good-sized probe.

Two features of practical importance in this case were:

1. The early onset of vomiting, pointing to some other complication besides imperforate anus.

2. If this infant had been operated on, the rectum could readily have been found, but the absence of meconium would have led to a search for the atresia higher up. The presence of meconium, on the other hand, does not exclude the possibility of atresia of the intestine higher up, according to Kuliga,¹ who believes that intestinal atresia is comparatively late in its development, after bile secretion had commenced. But it seems very unusual, at least, to find meconium below a congenital atresia, even if, in the supposed cases, we admit the dark-colored substance to have been meconium, a statement not yet proved.

As for the ever-recurring question of etiology, in this case there were no signs of adhesions, peritonitis or any

constricting bands. The very plausible theory of Kreuter¹ seemed to fit pretty well. Kreuter found, from a study of human embryos between the ages of 4 and 10 weeks, that after the alimentary canal had been formed there occurred a rapid growth of the lining cells, which ultimately caused an obliteration of its lumen. After a short period in this condition the rapid growth of the bowel wall caused a complete re-establishment of the lumen. Some of this had been known before, especially in the development of the duodenum,² but had not received attention as a generally applicable explanation of congenital atresia. Kreuter believes all these cases to be due to failure in the re-establishment of the lumen.

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THE OPSONIC INDEX OF BACILLUS-CARRIERS*

ALICE HAMILTON, M.D.

CHICAGO

The importance of the typhoid carrier as a conveyor of infection is being impressed on us daily, and we are greatly in need of some method for detecting such persons which is quicker and less cumbersome than the bacteriologic examination of stools and urine. Aside from the fact that the latter takes usually several days to carry out, there is the further disadvantage of intermittency in the excretion of typhoid and paratyphoid bacilli, which makes it possible for a carrier to escape detection for weeks or even months if the specimens are collected during one of the germ-free intervals. The agglutination test is positive in a certain proportion of carriers, but in the opsonic index we have apparently a means of diagnosis more rapid than the bacteriologic examination and more constant than the agglutination test. Gaegtens¹ recently examined the opsonic index of 12 typhoid convalescents who were not carriers, and of 16 chronic typhoid carriers. He found that while the former lost their high index to the typhoid bacillus within three or four months after recovery, the carriers, with one exception, had a persistently high index lasting for months or years. On the other hand, only 75 per cent. of the carriers gave a positive agglutination.

Recently I undertook a search for typhoid carriers among 24 persons who had a history of gall-bladder disease, making the agglutination and opsonic tests during the time occupied by the bacteriologic examination. Seven of the 25 (28 per cent.) had a decidedly abnormal index to typhoid or paratyphoid bacilli, sometimes to both. Repeated opsonic examinations showed that in those persons the index was always abnormal. Those who were at the time suffering from acute symptoms had a fluctuating index, now below normal, now very high, while the others had always a high index, never falling to normal. Five of these seven persons agglutinated typhoid or paratyphoid bacilli or both in dilutions of 1 to 50 or more. The bacteriologic examination showed that all seven were bacillus-carriers, five of paratyphoid bacilli and two of typhoid. Of the seventeen non-carriers, none agglutinated either variety of bacilli in dilutions as high as 1 to 50 and none had a decidedly or persistently abnormal index. As the opsonic index was abnormal in 100 per cent. of the car-

2. Tandler: Anat. Anz. (Erganzungsheft), 1900, xviii. Mentioned in Quain's Anatomy, Ed. 11, Vol. i, on Embryology, in a footnote to p. 163, on the alimentary tract).

* From the Memorial Institute for Infectious Diseases.

1. Gaegtens: Deutsch. med. Wchenschr., 1909, xxxv, 1337.

1. Referred to by Kreuter: Die angeborenen Verschlüssungen und Verengerungen des Darm-Canals im Lichte der Entwicklungsge-schichte, Deutsch. Ztschr. f. Chir., 1905, lxxix, 1.

riers and the agglutination test in only 71 per cent. the former is evidently the more valuable procedure for the detection of carriers.

The test can be made rapidly and easily, and in case of an unexplained epidemic in an institution where a large number of persons would have to be examined the work would be simplified by first taking the opsonic index of all the suspects and making a bacteriologic examination of the stools of those who showed an abnormal index.

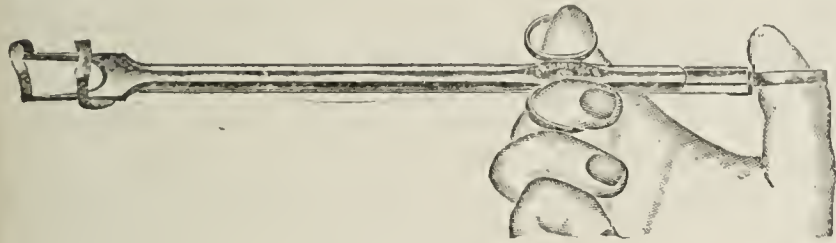
In making these tests the serum both of the control and of the suspected person should be heated to 58 C. for 15 to 20 minutes. By this means the lysin for typhoid bacilli is destroyed while the heat-resisting element in the opsonin remains, making a decided contrast between normal serum, which contains but very little of this element, and immune serum which is usually very rich in it.

1745 West Harrison Street.

A NEW TONSILLOTOME

WILLIAM EDWIN GROUND, M.D.
SUPERIOR, WIS.

The frequent necessity for removing the tonsils has given opportunity for the invention of a variety of instruments. Many of these are clumsy and others are inefficient, as I know from personal experience. The most popular instruments are the tonsillotome and the scissors.



A new tonsillotome.

The scissors operation, if rightly done, is effective, but the difficulty in operative manipulation is considerable. The tonsillotome is the most desirable instrument for the average operator to use, but the trouble with the tonsillotomes on the market has been heretofore that only a partial removal of the tonsil was possible, in that only as much of the tonsil as projected beyond the faucial pillars was removed. All beneath that plane was left, and this is usually the most dangerous part of the tonsil. The dictates of modern teaching is to the effect that all of the tonsil should be removed.

With the idea of utilizing the tonsillotome feature I have devised the instrument shown in the cut. The cutting mechanism is placed at right angles to the shaft, thus allowing it to be placed down between the pillars of the fauces.

If adhesions exist between the tonsil and the pillars, as is often the case, they are severed. I have devised an oblique angle scissors for this purpose, but this is not material. When the tonsil has been made free the tonsillotome is slid down over it and the tonsil quickly removed.

I believe that this instrument will be of material assistance to many in executing what is usually a very awkward and incomplete operation. The mechanism is very simple. Aside from the finger-rings, there are only two pieces. These are nicely tongued and grooved the entire length of the shaft to insure precise and firm

coaptation of the blades. The whole instrument may be slid apart instantly for cleaning, without so much as adjusting a screw. The tonsillotome can be operated with equal facility on either side.

1708 Ogden Avenue.

VACCINES IN ACUTE AND CHRONIC OTITIS MEDIA

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Although in late years bacterial products prepared in one way or another have been used in almost every conceivable pathologic condition, and especially in localized inflammatory processes, there is little in the literature on the application of inoculation treatment to otitis media. It would seem from the fact that this is a strictly local disease, and from the ease with which the causative organisms are isolated in the majority of cases, that this condition would lend itself particularly well to treatment by specific vaccines. The fact of its use is mentioned by a number of writers, but little is said of the value of the treatment in this particular disease. For these reasons I desire to report the following cases:

CASE 1.—Private J. H., Hosp. Corps. U. S. A., aged 41. Date, Aug. 2, 1908.

History.—At 15 the patient had discharge from right ear; at 25 had malaria; for past ten years has been troubled with excessive amount of wax in the ears.

Present Condition.—About a week ago his right ear began to ache and he put sweet oil into it. Ear continued deaf and painful and three days ago a purulent discharge began. On examination the nasopharynx is found to be normal except for some congestion; Eustachian tubes are both readily inflated by Valsalva's method. Left ear, normal. Right ear, external auditory canal full of pus, drum red and thickened, small perforation in posterior lower part.

Treatment and Course of Disease.—Lavage of canal daily followed by thorough drying. Inflation through Eustachian catheter.

August 4: Drum red and thick. Discharge continues.

August 5: Pain and discharge stopped. The local treatment is continued until August 11, when the symptoms having entirely subsided, the treatment is stopped.

August 17: Profuse discharge and considerable pain. Agar tube is inoculated from the pus. Local treatment again given twice daily until August 20, when it is stopped.

August 21: The purulent discharge continues unabated. The culture made on August 17 shows a diplo-bacillus belonging to the *Mucosus capsulatus* group, apparently in pure culture. A vaccine is made from this culture and on this date 1 c.c. is injected. In three or four hours after the injection the site of injection is red and swollen and the patient says he feels as if he had the grip. These symptoms are all gone in twelve hours.

August 25: The discharge has entirely stopped. No pain; 1 c.c. vaccine injected. No reaction.

August 31: No return of pain or discharge. Drums look normal except for a small red spot at the site of the perforation.

July 1, 1909: The patient has remained to the present time without any return of the disease.

CASE 2.—Corporal G. B., First U. S. Cavalry, aged 35. Date, Aug. 16, 1908.

History.—Patient had smallpox when a child; malaria two years ago; dysentery one year ago. Six months ago felt tickling sensation in right ear and afterward a purulent discharge began and has continued to the present time.

Present Condition.—Patient complains of tickling sensation in right ear and of a purulent discharge from it. On exam-

ination the nose is found to be normal except for slight roughening of the septum, where a spur was removed about a year ago. Left ear normal. Right ear: External auditory canal contains a dirty-white purulent material; drum is thickened and all of the central part is covered with granulation tissue; around the periphery the drum has a normal color; short process very prominent, manubrium cannot be seen; drum bulges out when Valsalva's method of inflation is used.

Treatment and Course of Disease.—Aug. 16, 1908: Lavage of ear with hot phenolized water followed by careful drying. Spraying of menthol in alcohol through Eustachian catheter.

August 17: Culture on agar shows a diplococcus and a bacillus which is identified as *Bacillus pyocyaneus*. A vaccine is made from a mixed culture of these two organisms and on this date 0.5 c.c. is injected. This is followed in a few hours by decided increase in the discharge from the ear and considerable pain.

August 18: Marked swelling of the tissues around the auditory canal and free discharge. Patient complains of considerable pain. Local treatment is continued.

August 21: A culture is again made from the discharge and shows the same organisms. A vaccine is made after plating and securing the organisms in pure culture.

August 28: Discharge and pain continue.

September 1: No lessening of pain or discharge; 1 c.c. of the second vaccine is injected. No reaction.

September 3: Pain entirely stopped; discharge much less in amount.

September 9: Slight discharge and no pain; 1 c.c. vaccine given.

September 18: No discharge and no pain; 2 c.c. vaccine given. No reaction.

October 4: No discharge and no pain since September 13; 1 c.c. vaccine given.

October 28: No return of the pain or discharge. Drums look normal except for slight retraction. Inflation easy by Valsalva's method. The local treatment was stopped in this case on August 28.

July 1, 1909: Patient has never had any return of trouble with ear.

CASE 3.—Private H., First U. S. Cavalry, aged 38. Date, Aug. 27, 1908.

History.—Patient had measles, typhoid, and malaria when a child. Never any trouble with ears before.

Present Condition.—Patient complains of severe pain behind angle of jaw and in left ear. On examination right ear is seen to be normal. Left drum is red and bulging.

Treatment and Course of Disease.—August 27: Drum of left ear is incised; followed by discharge of thick white pus. Lavage of canal daily with warm water and inflation through Eustachian catheter. This treatment is continued for a period of one month, until September 27, when a culture from the discharge shows the *Staphylococcus pyogenes aureus* in pure culture. On this date the discharge is profuse and there is considerable pain.

September 27: A vaccine was made from the culture of the staphylococcus and diluted to contain 500 million organisms to the cubic centimeter. One c.c. is injected on this date. Injection followed in three or four hours by feeling of malaise and by a chill.

September 30: Discharge entirely stopped. Drum looks uniformly red but there is no swelling of the external auditory canal as on September 27. On account of absence from the post the patient was not seen again for ten days.

October 10: Discharge has not recurred and no pain has been felt in the ear. Drum looks moist and white and a small granulation is present on the posterior half; 1 c.c. of the vaccine is injected. No reaction.

October 31: No return of the pain or discharge. Drum looks normal except for slight retraction. Readily inflated by Valsalva's method.

December 7: No return of the disease.

July 1, 1909: No recurrence of the disease to the present time.

CASE 4.—Sergeant S., U. S. Cavalry, aged 26. Date, May 28, 1909.

History.—Patient had measles when a child; dengue in 1906; never any trouble with ears before.

Present Condition.—Patient went swimming on May 12, and three or four days afterward noticed aching and soreness in the left ear. He says that on the night of May 27, something broke in the ear and that it afterward felt better; a profuse discharge began after this. Examination, May 28, shows the tissues around external auditory canal to be greatly swollen; I am unable to see the drum except in its posterior part, in which a large perforation is visible. Left tube can be inflated only by catheterization, but is readily inflated by this method.

Treatment and Course of Disease.—May 28: Lavage of canal twice daily with warm phenol solution followed by thorough drying. Daily inflation of Eustachian tube.

May 31: Discharge continues; yields cultures of *Bacillus pyocyaneus*. Vaccine is made from this and is diluted to contain 250 million organisms to the cubic centimeter.

June 3: No improvement; 0.5 c.c. vaccine injected. Local treatment stopped.

June 4: Pain in ear somewhat increased and site of vaccine injection red and swollen.

June 6: Pain has disappeared and discharge stopped.

June 12: No return of pain or discharge; 1 c.c. vaccine given. No reaction.

June 30: No return of any of the symptoms. Ear drum looks normal.

August 1: Patient has remained well to the present time.

CASE 5.—Private M., First U. S. Cavalry, aged 24. Date, May 15, 1909.

History.—Patient had measles and typhoid when a child; had acne for many years until about two months ago, when the lesions all disappeared after a course of treatment lasting for several months with an autogenous vaccine of *Staphylococcus pyogenes albus*. About middle of March of this year, during target practice, his left ear became very painful and shortly afterward pus began to run from it. On May 15 the right ear also began to discharge.

Present Condition.—Profuse discharge from the right ear. Canal so swollen that the drum cannot be seen. Ear is washed out thoroughly each day and afterwards dried. Eustachian tube inflated daily and air is heard to escape through the drum.

May 19: Swelling of canal abated sufficiently to allow drum to be seen. Perforation just below short process. Discharge is profuse and pain continues.

Treatment and Course of Disease.—May 26: Culture is made from the discharge and vaccine prepared.

May 30: Discharge continues; 1 c.c. vaccine injected.

May 31: Patient admitted to hospital with temperature 104; extreme prostration. Site of the vaccine injection much swollen.

June 2: Patient feels well again. Temperature normal. Discharge from ear very slight.

June 5: Soreness and discharge have entirely stopped in both ears. Drums in both ears look normal except for small red spot at site of perforation in the right. Both readily inflated by Valsalva's method.

June 19: No vaccine has been given since the first dose on account of the severe reaction obtained at that time. There has been no return of the pain or discharge. Both drums look normal. Both are readily inflated by Valsalva's method and show no retraction; 0.5 c.c. vaccine given. No reaction except slight redness at the site of injection.

August 1: No return of any of the symptoms.

CASE 6.—Private C., First U. S. Cavalry, aged 26. Date, May 24, 1909.

History.—Patient had gonorrhea one year ago; malaria a few months ago; has secondary syphilis at the present time. He went in swimming two weeks ago and a day or two later his left ear became painful and began to discharge.

Present Condition.—On entrance to hospital the left auditory canal was so swollen that the drum could not be seen. On inflation through catheter air is heard to escape from a perforation in the drum.

Treatment and Course of Disease.—Daily lavage of the canal with warm phenolized water and thorough drying. Inflation through catheter.

May 26: Drum can now be seen; it is thickened, white, and moist. No perforation can be distinguished. Local treatment is continued until June 1, when a culture from the pus shows *Bacillus pyocyaneus* in pure culture. A vaccine is prepared from this and diluted to contain 250 million organisms to the cubic centimeter.

June 3: Five-tenths of a cubic centimeter vaccine injected.

June 4: Discharge a little more profuse; redness at site of the injection. Patient not seen again on account of field work until June 13, when the canal was still somewhat swollen. No discharge; 1 c.c. vaccine given.

June 28: Arm remained red and slightly swollen for about a week after last injection so that no more was given until to-day. Patient says that he has had no pain in the ear since the last injection and that there has been no discharge. On inflating the tube by Valsalva's method air escapes from the perforation and with it a drop of watery fluid; 1 c.c. vaccine given. No reaction.

July 17: No pain or discharge. Drum looks normal except for slight congestion along manubrium. Inflation easy by Valsalva's method.

August 1: Ear looks normal. No return of any of the symptoms.

Twelve cases besides those reported here have been treated with vaccines, but the results in all, with two exceptions, have been similar to those obtained in these. Of these two exceptions, one was of eighteen months' and the other of two years' duration, and in both of them at times there were found small pieces of bone in the discharge. These patients improved under the vaccine treatment from time to time, but always relapsed. It is believed that the vaccines would be of assistance even in this class of cases, but operative interference would probably be necessary to remove the necrotic tissue. In most of the cases treated the local treatment was stopped when the vaccines were started in order that the two methods might be compared, but it would obviously be much better to use both together in order to obtain the good effects of both.

To avoid the reactions reported in some of these cases the vaccines are now made to contain 250 million organisms to the cubic centimeter, and for the first dose only 0.5 c.c. is injected; if there is no reaction with this the dose is repeated in five days, but if there is reaction the second dose is deferred for a week. When 0.5 c.c. can be given without reaction the dose is increased to 1 c.c., and this is continued at weekly intervals until a cure is accomplished. No opsonic counts were made in these cases, and I believe that the clinical symptoms are sufficient to base the dosage on if the initial dose is small and the rate of increase very gradual.

The vaccines in these cases were prepared by inoculating agar tubes with a platinum wire from the discharge as it issued from the perforation in the drum, or if this could not be seen then as close to the drum as possible. If more than one organism was found the culture was plated and vaccines made from cultures of the separate organisms recovered; these were then diluted to contain a certain number of germs to the cubic centimeter and then mixed in equal proportions. I believe that better results are obtained by this method than by making the vaccines directly from a culture which is a mixture of two or more organisms, as is sometimes done. When the germs are grown together one may develop more rapidly than the others, so that the vaccine does not represent all of the causative organisms. The time that it takes for plating is not an objection to the method, for it is found that in the acute cases only one kind of organism is present in the major-

ity of instances, and that plating is necessary only in the chronic cases.

It has been stated so often by writers on vaccines that they are not to be considered "cure-alls" that it seems unnecessary to repeat it, but that they are efficient aids in the treatment of many morbid conditions it is now impossible to deny. No one can treat by inoculation one of these obstinate cases of otitis media which refuse entirely, or only after the most prolonged treatment, to yield to local means, without reaching the conclusion that bacterial inoculation is a powerful agent for the cure of this disease.

Therapeutics

PNEUMONIA

Those who believe that didactic teaching is not an important factor in the instruction of medical students should read the lecture on the treatment of pneumonia by Dr. Frank S. Meara, of New York, Professor of Therapeutics in Cornell University Medical School (*New York Medical Journal*, Jan. 8, 1910).

The didactic lecture will always have its part in the curriculum of medical instruction. Text-book recitations and explanatory talks on the text can never be quite so complete as the condensed, composite picture presented by an able instructor in the form of a lecture.

Pneumonia is a general infection with a primary local manifestation in the lungs. There is no specific treatment, but the proper management of all details in the care of the patient causes a splendid percentage of recovery from this disease, which tends to recovery less than most acute infections.

Meara well discusses the treatment of bronchial pneumonia and lobar pneumonia together, as the management is certainly almost the same, with the difference that bronchial pneumonia is a disease of early childhood, of old age, and sometimes secondary to other infections, and to anesthesia; while lobar pneumonia may occur at any time of life. The duration of bronchial pneumonia is indefinite. Lobar pneumonia typically is self-limited, and from this standpoint tends to recovery, but complete recovery in any given length of time depends on the management of the patient. In other words, lobar pneumonia to-day is a very serious disease. The increase of circulatory defects, which is enormous, as shown by statistics, has made lobar pneumonia a much more serious proposition than it was twenty-five or even ten years ago, as the greatest strain comes on the heart. Also, the permanent recovery of lung and heart is more tedious and more doubtful than ten years ago.

Meara divides the management of pneumonia under various heads and shows how important the sun and fresh air exposure is if the patient cannot be actually put on a veranda; how important it is that the bed should be just right for the patient's comfort and for the ability of the nurse to handle the patient comfortably; how important it is that the patient should have the most comfortable, absolute rest compatible with his needs and wants; and emphasizes the fact that a weakened heart may be pushed to acute injury or even final collapse by an unnecessary physical exertion.

The necessity for slightly changing the position of the patient frequently is emphasized. This is especially true of older persons in whom hypostatic congestions due to impaired circulation can aggravate the dyspnea and

cardiac tire in pneumonia, or can even allow edema of the lungs to occur.

Meara emphasizes the necessity for a bed that does not sag in the center, which is true for all patients suffering from acute disease. Backaches and muscle tires are eliminated if such a condition of the bed is prevented. The feet should always be kept warm in pneumonia, more perhaps than in most diseases, as the better the peripheral circulation the less the internal congestion.

The temperature of the room should be down to from 65° to 70° even in mid-winter, and if the wind blows dust or snow through the open windows Meara suggests putting cheese cloth screens over them.

The open-air treatment is strongly advocated, and Meara is certainly right in declaring that the temperature will be lowered, dyspnea diminished, sleep induced, and the necessity for cardiac stimulation reduced to a minimum.

The preparation of the patient for open-air treatment in winter he carefully describes as follows: A blanket is spread over the woven wire spring large enough to extend beyond the sides and below the foot. Over this is spread a rubber sheet or paper and then the mattress. Next the blanket and rubber sheet are folded up over the mattress and secured with safety pins. The patient is clothed in a light suit of flannel, stockings and a hood. He is covered with enough to keep him warm. The lighter weight warm clothing, such as eiderdown quilts, if possible, are preferable. A hot-water bag at the feet completes the equipment.

Very strenuous hydrotherapeutic measures which are so well described by Baruch and referred to and quoted by Meara are not needed in the fresh-air treatment of pneumonia.

It is becoming more and more recognized that increased temperature is one of Nature's methods of overcoming an infection. Consequently the mere matter of high temperature, even to 104 F., and if short-lived to 105 F., does not require active antipyretic measures in pneumonia. Coal-tar products certainly should not be given, except possibly for a dose or two on the first or second day of the fever. Aconite and veratrum viride should not be given. In other words, the heart must be protected from everything that will affect its strength from the very beginning of pneumonia. Hyperpyrexia, or prolonged temperature of 104 F., can be well combated by rolling the bed of the patient into a warm room or closing the windows and warming up the room in which he is ill, and sponging him with tepid, cool or cold water, depending on the height of the fever.

For cleanliness the patient, unless critically ill, should be sponged daily with hot water or with tepid water. Meara emphasizes the necessity for careful cleansing of the mouth, nostrils and eyes of pneumonia patients. The exact method and the simple solutions used may depend entirely on the choice of the physician and nurse. There is nothing that better shows the ability of a nurse than the condition of the tongue, teeth and mouth of a seriously ill patient.

Whatever is done for the patient must be done at regular intervals, as prolonged periods of rest with as little disturbance as possible are very important desiderata in pneumonia.

Meara goes into careful details of the calories needed by a patient with fever, and the calories furnished by different types of food. Suffice it to say that the patient with pneumonia ordinarily should not be under-fed, but the greatest care should be exercised that the food allowed does not cause either gastric or intestinal indi-

gestion. There is a tendency from the disease alone to intestinal distention and tympanites, which is serious and may be the actual cause of the patient's death. Such distention which prevents the proper action of the diaphragm may be the last straw to a laboring heart.

It is a mistake to believe that a patient who has high temperature can long stand his disease without sufficient nutrition. While the nutrition is not of so much importance in pneumonia as it is in typhoid fever where the febrile process is so much longer continued, it will still often be the difference between life and death as to whether a patient is properly nourished. Too large an amount of any single food, or too much of any combination of foods, will certainly cause maldigestion and add toxins to the blood that is already surcharged with the toxins of the disease, and the result will often be an overwhelming of the nervous system and death.

Cerebral irritation, insomnia, delirium and meningismus are often the results of constipation or insufficient evacuation of the bowels, an overloaded stomach, sluggishly acting kidneys, and a dry skin or a skin covered with perspiration that has not been properly removed. All these preventable conditions are factors in causing these cerebral complications. Therefore, proper daily evacuation of the bowels with a simple laxative tablet or with an enema, the ingestion of plenty of water, the proper care of the skin, and the prevention of indigestion will generally keep the cerebrum free from irritation.

Theoretically, a quart of milk, one or two raw or coddled¹ eggs, a cup of thin oatmeal gruel, the expressed meat serum from a pound of chopped steak, a little salt, the juice of one orange, perhaps a cup of coffee in the morning, and plenty of water during the day (unless the heart is failing and there are edemas) will furnish the nutrition needed. Any indigestion, or a particular dislike for any one article of food, should be quickly met by a change. Some patients cannot take unmodified milk, and various preparations of it may be substituted, or various methods of administering cooked milk may be substituted.

In the beginning of pneumonia, as in the beginning of all infections, a dose of calomel is generally indicated. Meara, in consonance with many clinicians, advises small doses of calomel frequently repeated. This method of administering calomel is not to be advised, as much better results are obtained by giving the amount the patient apparently requires, viz., rarely more than 3 grains, often but 2, administered with 10 or 15 grains of bicarbonate of soda, and often coincidently with an aloin compound tablet. The resulting evacuation of the bowels is generally all that is desired. If not, some simple saline cathartic may be administered. Later in the disease other laxatives are better, and catharsis is rarely indicated.

If in spite of careful management of the diet and of the bowels meteorismus occurs, a colon tube should be passed to evacuate the gas in the lower intestine. If the temperature is high, an ice coil over the abdomen will reduce the temperature, cause tone to the intestines, and often is more efficient than the much-advocated hot turpentine stupes in causing expulsion of the intestinal gas. Enemata containing turpentine are advised, but it is rarely that rectal injections will relieve tympanites of the small intestine. Such distention is generally caused by paresis of the muscle coats of the intestine, and sometimes strychnin hypodermatically may be effective, in

1. A coddled egg is an egg broken into boiling water after the water has been removed from the fire.

doses of 1/30 of a grain, three or four times in twenty-four hours, if the condition is not serious. Sometimes eserine (physostigmine) given hypodermatically is effective in removing the condition. Aseptic ergot, injected intramuscularly, is sometimes of the greatest value in restoring tone to the intestines.

The first pain in pneumonia certainly requires morphine, as this pain can be severe enough to cause considerable cardiac depression, to say nothing of suffering. There is no question that hot moist applications over the side affected tend to prevent the necessity for much morphine. Whether advisable or not depends on the decision of the individual physician. They have done good; they can do good. On the other hand, they are not a necessity and patients will often do as well without them. They should not be used if a trained nurse is not in attendance, and they should not be used unless the patient is surrounded with all the comforts needed to properly change and readjust such moist applications.

Meara believes that the patient should not receive an expectorant, stating that these preparations tend to upset the stomach. This is perfectly true of expectorants as they are written. It is not true of ammonium chloride administered in sour mixture. If the cough is out of all proportion to the necessity for expectoration, codeine should be given. If the mucus is sticky and adhesive, ammonium chloride will render it more liquid and easy of expectoration. The following prescription is a type of what is meant by a sour cough mixture:

R.	gm. or c.c.	
Codeinæ sulphatis	20	gr. iv
Ammonii chloridi	5	or ʒiiss
Syrupi acidi citrici	50	fl.ʒiii
Aquæ, ad	100	ad. fl.ʒiv

M. et Sig.: A teaspoonful, in a wineglass of water, every two, three or four hours, as deemed necessary.

Of course, the codeine could be left out of the above prescription if it is not indicated. If it has seemed advisable to apply moist hot applications to the chest, these alone seem to render the expectoration easier.

If in spite of the fresh-air treatment, of proper evacuation of the bowels, and of the carefully regulated diet, cerebral irritation and insomnia occur, the hypnotic selected will depend on the condition of the circulation. If the circulation is good, as advised by Meara, "trional (sulphonethylmethanum) in 10-grain doses, in a warm drink, or in a little wine or whisky, or chloralamid, 20 grains," administered in a little cold whisky and water, may be given. Meara states that either of these may be repeated in one or two hours, if needed. Hyoscin hydrobromide is often efficient as an hypnotic in pneumonia. Veronal-sodium, in 5-grain doses, is another good hypnotic. If the circulation is weak, the safest hypnotic is morphine, and this, as Meara states, will often be efficient in small doses, from 1/12 to 1/8 of a grain.

Venesection may be indicated in the first stage of pneumonia in plethoric individuals, and certainly has saved life. Brisk purging, the stopping of pain with morphine, and a hot foot bath will often relieve the necessity for venesection. If the heart begins to fail later in the disease, the sheet anchor should be strychnine, but this drug should never be pushed. Except in emergencies, temporarily, the frequency of strychnine should not be more than once in six hours, hypodermatically, in 1/30 of a grain dose. If a smaller dose is given, it may be administered more frequently. Meara places a great deal of faith on digitalis and strophanthus. Many clinicians believe digitalis of value in the failing heart of pneumonia; but, on the other hand, and with more rea-

son, an equal number believe that digitalis should never be used in that condition.

If the circulation is failing, a careful analysis should be made of it. Is the heart acting weakly? Is it rapid? Is the pulse tension high or low? Is the patient cold, and is there profuse perspiration? Is the patient hot and dry? Are the feet cold? Is the head hot? Are the lips blue? Is there marked dyspnea? The first caution is certainly not to do too much. While oxygen may be helpful to the patient, there is nothing that will compare with the fresh air of an open-air or practically open-air treatment. The feet should be kept constantly warm with hot-water bags. The hot-water bag over the heart is of advantage. If the pulse tension is low, strychnine is indicated, and so is adrenalin; and, as above stated, Meara believes in digitalis and strophanthus. Meara administers adrenalin solution in doses of from 10 to 15 minims, injected into a muscle. Ampules of adrenalin, 1 to 10,000, are now prepared ready for subcutaneous administration. If the skin is hot and dry, pulse tension pretty good, but the face badly congested, alcohol may do a vast amount of good. The amount should not be sufficient to disturb the cerebrum. If it acts well it will dilate the peripheral blood-vessels, slow the heart, increase perspiration, and cause warming of the extremities. If all the vital centers of the body seem depressed, strychnine is certainly the sheet anchor, but it should not be used to excess, as above cautioned. If there is profuse cold perspiration, with failing circulation, hypodermatic injections of atropine, in 1/150 of a grain dose, once in six hours for a few times, is good treatment. If the brain is becoming clouded and the lungs edematous and the pulse tension is low, intramuscular injections of an aseptic preparation of ergot are often of great value.

Hypodermoclysis is probably rarely indicated in pneumonia. Much more work is put on the circulation to dispose of the increased amount of liquid at a time when it is working at a disadvantage. When the lungs are imperfectly clearing and when mucus and exudates are increasing in the lungs, physiologic salt solution would seem contraindicated.

In convalescence from pneumonia, the greatest of care should be exercised to protect the heart, which has been so severely overworked, from becoming more or less dilated and from permanent damage to its musculature. The increase of food should be carefully regulated, getting up should be very gradual, and all heart tire from the early ambulatory condition should be carefully guarded against. Not only the lungs need repair after pneumonia, but also the heart.

A patient is rarely thoroughly over the effects of pneumonia for six months, and if he is able financially to go to a warm climate, if it is winter, or to a dry climate if it is some other season, and rest for two months after his apparent complete recovery, his lungs and heart will be guarded against sequelæ from pneumonia.

Americans Live Wastefully.—Americans, poor and rich, live wastefully. This cannot continue. A new basis must be established which shall, while avoiding the extreme care and economy of continental Europe, which destroys initiative and kills pride, stop the major wastes in our system of living. But of more importance than mere economy of living is the influence of the environment and method of living on the race. Will out of it all in the long run come a strong and virile race of people—a race capable of meeting the complex problems of the future and advancing still further our civilization?—From inaugural address by H. J. Waters, president of Kansas State Agricultural College, *Science*, Dec. 3, 1909.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

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[For other information see second page following reading matter]

SATURDAY, FEBRUARY 26, 1910

ACTIVITY OF COMMERCIAL SUPRARENAL PREPARATIONS

We have frequently had occasion to call attention in these columns to the need of physiologic standardization of certain important remedies such as digitalis, ergot, and suprarenal preparations. Physiologic standardization of the antitoxins, from the introduction of these remedies, has been a *sine qua non*, and there is an increasing demand that tuberculin and other vaccines be standardized before being tried on the patient. The recent publications of Hale and Edmunds and other workers have shown that the need for more uniform preparations of digitalis is no less imperative.

Schultz¹ has just published the results of a careful examination of samples of the suprarenal preparations on the American market which illustrates once more the need of more care in the methods of preparing or keeping this important drug. Of the six different products, only two were of the strength claimed; the others varied from 3.7 to 66.6 per cent. of this strength. This is the third paper on this subject to which we have called attention. Hunt, in 1906, showed that some of the preparations labeled 1 to 1,000 had only one-fifth the activity of others bearing the same label. Sollmann and Brown, in Cleveland, showed the activity of eight commercial preparations to differ greatly. Schultz is careful to give the serial numbers of the manufacturers so that the firms will probably be able to determine the date of manufacture, and we have no doubt that they will be ready with explanations of how the products were old or had been improperly kept by the retailers, etc. The fact remains, however, that inferior preparations are on the market and are probably passing into the hands of physicians daily. It is clearly the duty of the manufacturers to devise some means of preventing this, either by greater care in the manufacture, by a system of recalling the preparations after a certain date (as is done in the case of the antitoxins) or by giving the pharmacist more explicit directions as to how to keep them. There are reasons for believing, however, that some of the firms preparing this and some other drugs requiring physiologic standardization are not properly equipped for the work.

Schultz's results with the synthetic suprarenin are interesting. This product was for some time advertised as being as active as the natural base and having certain advantages, such as greater stability, over the latter. Schultz confirms his earlier work, as well as that of Cuslmy and others, that the synthetic product has but approximately one-half the activity of the natural base—a fact which has been recognized, somewhat tardily, by the manufacturers themselves. Apparently, from Schultz's results, solutions of the synthetic product do not possess superior keeping qualities, although it seems probable that its salts are better suited for the extemporaneous preparation of solutions by the pharmacist or physician.

All this emphasizes once more the necessity of the medical profession exercising, through pharmacologic laboratories, a greater degree of watchfulness over the drugs it uses.

CANCER RESEARCH

In respect to the endeavor to remove or to relieve human suffering from disease, "the brotherhood of man" is not an empty phrase; witness the eagerness with which our profession is seconded in its work. For example, the present antituberculosis propaganda is mitigating suffering and minimizing disease from that plague to an enormous extent; moreover, it bids fair to revolutionize human life on the side of sanitation and prophylaxis. This propaganda has assumed its great influence and beneficence largely because of the support given it by men of great affairs and wealth. In the conquest of cancer, on which so many of our colleagues are now engaged, the work which they are doing is being seconded most earnestly and enthusiastically by people of great fortune. The recent bequest of Mr. George Crocker is tinged with pathos, since both he and his wife before him died of this dreadful disease. His gift, which may total \$1,500,000, is for the prosecution of medical and surgical research regarding cancer; the proceeds from the sale of Mr. Crocker's town and country houses, their sites and their rare and beautiful contents, are to be turned over to Columbia University, in New York City, to be used for biologic laboratory research. No part of the gift is to be used for building, and should cancer research in the future become unnecessary this fund is to be used for other medical or surgical investigation. With the possible exception of one made to a London institution for the same purpose, this is the largest single bequest made to this cause, whether by an individual or by a government. Thus is the generosity of wealthy humanitarians coupled with the devotion and heroism of a veritable army, distributed throughout the civilized world, of surgeons, laboratory workers, clinicians, statisticians and nurses.

The cancer problem is a grave one, according to statistics, though, of course, any deduction from statistics in regard to the increase of the disease should be made

1. Quantitative Pharmacologic Studies: Relative Physiologic Activity of Some Commercial Solutions of Epinephrin, Bull. 61, Hyg. Lab., Bureau of Public Health and Marine-Hospital Service, Washington, D. C., 1910

with conservatism and accepted with caution, since early vital statistics are notoriously incomplete, and later ones, though more full, not as exact as could be desired. In 1906 Dr. Bainbridge¹ reported figures indicating that cancer was increasing in the United States, the census report showing that from 1850 to 1890 the mortality from this disease increased from 9 to 33.5 to every 100,000 population. In England and Wales the registrar-General's returns showed the following annual ratio of deaths from cancer to each 1,000,000 persons: in 1864, 385; in 1895, 755; in 1900, 828. In France the mortality from cancer and other tumors has risen from an average of 840 per 1,000,000 persons (urban population only) in 1890 to 1,050 in 1898. In Germany, Switzerland, Austria, Norway and Sweden, Holland, Denmark and various other European countries cancer has been increasing; and since Dr. Bainbridge's contribution the Bureau of the Census has found that "the reported mortality from cancer [for 1907] is steadily increasing."

A most important function pertaining to the great centers of cancer research is that of acting as clearing-houses of the offered "cures" of cancer; it is for them to dispose of exploited but ill-founded therapeutic measures, of evanescent agents, such as prove futile when subjected to adequate scientific tests; to probe and, if necessary, to discard untenable theories of the disease. While the cause and origin of cancer remain, as at present, a mystery, it is impossible to predict from what quarter help may come. At present, as Crile² has said, "the pre-cancer stage is the preventable or curable stage," and one gleam of hope is seen in the possibility of early recognition of the disease, and of treatment before the incurable stage is reached. This latest gift to the cause warrants renewed confidence that we shall not much longer be obliged to work in the dark so far as the origin of cancer is concerned.

PHYSICIANS AND DIVORCE

The special report³ of the Bureau of the Census on marriage and divorce between the years 1867 and 1906 contains many interesting data with regard to the social questions involved in these problems. Only the first part has yet been issued; and in this is to be found a discussion of the prevalence of divorce among the different occupations. This comparison is of special interest for the medical profession, because, according to the statistics given, physicians and surgeons are very high in the list of those who obtain divorces themselves or have divorces obtained against them. The report says:

"Actors and professional showmen, according to this ranking, are at the head of the list, reporting more divorces in proportion to their numbers than any other class. In all but one of the nine states considered, more-

over, they occupy first place, and in the one exception they rank second. These figures thus confirm the popular impression that divorce is unusually prevalent among actors.

"Musicians and teachers of music seem to rank next to actors in the relative frequency of divorce. In South Dakota they rank first, in West Virginia they share first place with the actors, while in three of the remaining states they are second, in three third, and in one fourth. Commercial travelers apparently rank third."

Immediately after the commercial travelers come telegraph and telephone operators and then—a fact which is rather startling to our professional self-complacency—come physicians and surgeons.

Almost more interesting than the list of those who precede physicians in divorce frequency is the catalogue of those who follow them in this unenviable regard. Sixth on the list are barbers and hair-dressers; seventh, servants and waiters; eighth, bar-tenders; ninth, restaurant and saloon-keepers; tenth, hotel-keepers. Painters are fifteenth on the list; tailors are twenty-first; plumbers, twenty-second; lawyers come only in the twenty-fifth place; while teachers and professors in colleges are in the twenty-ninth place. The fewest divorces are obtained by agricultural laborers. Next to them in infrequency are clergymen, and only a little above them on the list are farmers. The striking difference between various professions is worth noting. The fact that divorces are so much fewer among lawyers than among physicians is rather surprising, though it is only to be expected that clergymen should have an advantage.

Of course, these tables are not complete. Sufficient data have been obtained, however, to permit of interesting study and discussion. There has been a very great general increase in divorce in the last twenty years, and this has apparently affected the physician even more than it has other professional men. It may be that the loss of the intimate personal relationship between the old-fashioned family doctor and his patients in their family circles has weakened the bonds of social restraint. Certainly the respect and affectionate regard of a whole community is not often sacrificed by those who have had the grace to win it. It would be interesting to know whether divorce has not affected the city much more than the country physician, and the specialist more than the general practitioner.

The whole subject is open to discussion and suggestion on many other interesting points. The present census is to be made of much more complete value in this regard both for divorce itself and for the occupation of divorced persons. It will be years before its conclusions can be reached. In the meantime it would seem that one of the duties of medical bodies and medical schools should be to maintain the honor of the profession by drawing the line firmly with regard to members of the profession whose sexual divagations would lessen public confidence in the members of the profession, thus disqualifying them for relations of intimate trust.

1. Bainbridge, W. S.: A Brief Résumé of the World's Recent Cancer Research, New York Med. Rec., Sept. 1, 1906.

2. Crile, George W.: The Cancer Problem, THE JOURNAL A. M. A., 1908, 1, 1883.

3. Issued by the Government Printing Office, Washington, 1909.

EDUCATION IN DIETETICS AND HOME ECONOMICS

The importance of a properly balanced and properly cooked diet on the health of nations as well as of individuals needs no emphasis. This is recognized more clearly every day, and, in view of the increasing cost of living, so much discussed just now, the proper utilization of food and prevention of waste is an added consideration. Until the matter of public health is given more attention and a national bureau of health is created with comprehensive powers and functions, probably no national action will be taken on the subject. It is, however, eminently suitable for action by the states and should be systematically taken up by them. The best present agencies for the dissemination of knowledge concerning foods, diet and cooking are the public schools, in a few of which, particularly in the cities, some attention is given to the subject. The principal part of the instruction of the public in this important matter at present, however, seems to be carried on by the agricultural colleges of various states. The New York State College of Agriculture at Cornell University has established a four-year course in home economics, which includes the subjects under consideration; in addition it has established a reading-course for farmers' wives, to be conducted by mail, taking up particularly the phases of the question here discussed. These efforts cannot fail to have a beneficial effect on the public health, but it is to be regretted that this vitally important work is left to the agricultural colleges, which can at best reach only a limited portion of the population. The instruction should be more universally diffused, and should be given more directly by the state governments. Let us hope that the day when such action will be taken is not far distant.

AUTOMOBILE DATA

Many physicians are replying to the questions propounded on advertising page 47 of *THE JOURNAL* last week, and we appreciate their cooperation. We request any who may have overlooked or neglected the list of questions to reply now. These condensed experiences are desired not only from those who have had much to do with motor-cars, but also from those whose use of them has been limited or who have employed only horses. Typewritten numbered answers on separate paper are preferable, of course, but the blank is provided for the convenience of the busy practitioner. Each one who replies will receive (without the necessity of asking for it) the key containing the names of the machines described or mentioned in the Automobile Number.

International Veterinary Commission on Tuberculosis.—The International Tuberculosis Commission selected by the American Veterinary Medical Association and consisting of practical dairymen, breeders and representatives from the government bureau of animal industry and various veterinary schools in the United States and Canada recently met in Buffalo. Without making specific recommendations the commission agreed that (1) general compulsory tuberculin test and slaughter of cattle is impractical; (2) voluntary testing for owners as a general state policy should be retained; (3) the tuberculin test should be accepted under certain conditions as a basis of suitable control legislation.

Medical News

COLORADO

Doctors' Building in Denver.—The five-story building on Fourteenth and Champa streets, which is now nearing completion, is to be occupied above the first floor, exclusively by physicians and surgeons. Special laboratory and other office conveniences will be provided.

New Buildings for Hospitals.—The overcrowded condition of the Denver County Hospital is to be relieved by the addition of a new wing to cost \$90,000.—The main building at the county farm is to have an addition to cost \$30,000. A building committee has been appointed with instructions to push the work.

State Hospital Crowded.—The State Hospital for the Insane, Pueblo, with 920 patients, is overcrowded. It was maintained last year at a per capita cost of 41 cents per day. The Colorado Association of County Commissioners has unanimously urged the erection of another state hospital for the insane.

Personal.—Dr. George H. Stover, Denver, has left for Molokai, Hawaii, to study the effect of the x-ray on the inmates of the leper colony.—Dr. Hubert Work, Pueblo, has succeeded to the chairmanship of the state republican committee.

FLORIDA

New Sanitarium.—Physicians of Lakeland have organized a stock company to operate a sanitarium to be known as the Lakeland Sanitarium.

County Society Meeting.—At the annual meeting of Bradford County Medical Society, held in Starke, February 1, Dr. Seeber King, Lake Butler, was reelected president, Dr. Thomas D. Gunter, Starke, vice-president, and Dr. Albert H. Freeman, Starke, secretary-treasurer.

New Rules Adopted by Board of Health.—The State Board of Health, at its annual meeting in Jacksonville, February 9 and 10, adopted two important rules: The first provides that no public or private school shall be operated in the state without adequate sanitary toilet facilities, and it shall be the duty of the county board of public instruction in the case of county schools, and the principal in the case of private schools to carry into effect the provisions of the rule. The second rule prohibits the keeping or maintaining a mule or horse in a corporate town or city within 500 feet of any residence or store unless under such conditions as will prevent the breeding or liberating of flies, and it shall be the duty of the city board of health, if such exist, and the mayor of the city if there is no city board of health, to carry this rule into effect.

ILLINOIS

Examination to Be Held.—A civil service examination to fill the vacancy of senior physician at the Cook County Institutions will be held February 28. The position pays a salary of \$1,800 with board and lodging.

Medical Branch of Public Library.—The Winnebago County Medical Society has appointed a committee consisting of Drs. Henry M. Starkey, Edward H. Weld and Emil Lofgren, to ascertain the views of the library board regarding the establishment of a medical branch in the Rockford Public Library.

Hospital Overcrowded.—The warden of Cook County Hospital announces that all but one of the wards of the hospital are at present overfilled. The overcrowding of the entire institution amounts to 189, and this is attributed by the warden to the increased population of the city and the growing tendency of individuals who are ill to enter hospitals.

Personal.—Dr. Harry M. Hayes, Peoria, who has been abroad for a year, sails for the United States to-day.—Dr. Charles E. Crawford, Rockford, special inspector of the State Board of Health, is reported to be seriously ill at his home from exposure and overwork during his official duties at the Cherry mine.—Dr. Paul S. Scholes has been elected a member of the medical staff of Graham Hospital, Canton, vice Dr. James M. Nelles, resigned.—Dr. Joseph DeSilva, Rock Island, has been elected secretary of the Illinois Penitentiary Commission.—Dr. Vaclav H. Podstata, superintendent of the Elgin State Hospital, has resigned to take effect March 1.

Chicago

Unlicensed Practitioner Fined.—Mrs. Anna Binder, charged with practicing medicine without a license, is said to have been fined \$100 and costs by Municipal Judge Scovell, February 8.

Memorial Service for Dr. Brower.—A memorial service for the late Dr. Daniel L. Brower will be held at the Church of the Epiphany at 10:45 a. m., February 27, the anniversary of Dr. Brower's death.

Fraud Order Issued.—The postoffice department is said to have issued a fraud order, February 17, against the Dr. Hall Electro-Vigor Company of Chicago, manufacturers of an electric belt, for which great healing claims are made.

Examination for Assistant Commissioner.—An examination was begun February 16 at the rooms of the civil service commission to fill the position of assistant commissioner of health, made vacant by the death of Dr. Frank W. Reilly. Three applicants appeared.

Meeting of Medical Historians.—The newly-organized Society of Medical History of Chicago held a meeting in the Auditorium February 19, with Dr. Isaac N. Danforth in the chair. Dr. Howard A. Kelly, Baltimore, delivered the address of the evening on "Hortus Siccus, a Nosegay from Old Times," in which he gave interesting sketches of some of the older American physicians who were interested in botany, and for whom flowers have been named. About seventy were present.

Tuberculosis Is Not Reported.—In a statement issued by the department of health, it is shown that of 326 who died from consumption during January, 176 had never been recorded at the health department while living, and that 84 others were not reported until within a month of death. There is no necessity for this neglect as patients who are unable to employ physicians may go to one of the seven dispensaries of the Chicago Tuberculosis Institute, and in addition the Department of Health furnishes tuberculin free to aid diagnosis, and will instruct physicians how to use it, or will send an expert to assist in the administration.

Work of Tuberculosis Institute.—At the annual meeting of the board of directors of the Chicago Tuberculosis Institute, held February 18, it was reported that 1,225,325 Red Cross Christmas stamps had been sold in Chicago, leaving more than \$9,000 available for local use. The following officers and heads of departments were elected: President, Dr. Henry B. Favill; vice-presidents, Drs. Frank Billings and Robert H. Babcock; secretary, Mr. Sherman C. Kingsley; treasurer, Mr. David R. Forgan; head of the sanatorium department, Dr. Theodore B. Sachs; head of the dispensary department, Dr. Ethan A. Gray; and head of the educational department, Dr. Orville W. McMichael.

Sanatorium for Patients of Moderate Means.—Incorporation papers for the Valmora Industrial Sanatorium of New Mexico were filed February 14, by a group of Chicago physicians and business men. Among the directors are Drs. E. Fletcher Ingals, Edwin B. Tuteur, John M. Dodson, Charles L. Mix, and Frederick Tice. No capital stock was named as the organization is not for profit, and is expected to be self-supporting. A fund of \$50,000 is to be raised for the purchase of Valmora Sanatorium and for immediate improvements. It is planned to allow the patients to pay their expenses in part in light labor. Poultry farming, truck farming, dairying and bee-keeping will be taught to the patients. At a meeting of the association, February 18, Dr. E. Fletcher Ingals was elected president, and Dr. Edwin B. Tuteur, secretary.

MARYLAND

Asks Appropriation for Library.—A delegation from the Medical and Chirurgical Faculty of Maryland appeared before the senate finance committee, February 10, and asked for an appropriation of \$10,000 for its library. For the two previous years \$12,500 has been asked and obtained.

Personal.—Drs. Philip B. Housekeeper, North East, and W. T. Morrison, Elkton, have been appointed physicians of Cecil county.—Dr. James M. Corkran, Centerville, has been appointed school commissioner of Queen Anne's county.—Dr. Wright S. Sudler, Highlandtown, has been appointed coroner of the twelfth district, Baltimore county.—Dr. Z. Duvall, Ridout, St. Margarets, and his eleven-year-old daughter are undergoing antirabic treatment in Baltimore.

Society Meeting.—The Anne Arundel County Medical Society, at its meeting in Annapolis, reelected Dr. Thomas H. Brayshaw, Glenburnie, president; and elected Dr. Walton H. Hopkins, Annapolis, vice-president; Dr. Louis B. Henkel, Jr., Annapolis, secretary; Dr. Frank H. Thompson, Annapolis, treasurer; Dr. Jesse O. Purvis, Annapolis, censor; Dr. Charles R. Winterson, Hanover, delegate to the Medical and Chirurgical Faculty of Maryland, and Dr. Samuel H. Anderson, Woodwardsville, alternate.

Baltimore

Portrait Presented.—At a meeting of the Baltimore City Medical Society, February 18, a portrait of the late Dr. William Riley was presented to the Medical and Chirurgical Faculty of Maryland by Dr. William E. Mosely, Jr., a grandson of Dr. Riley, and was accepted for the faculty by its president.

Public Instruction.—The committee on public instruction of the Medical and Chirurgical Faculty of Maryland has arranged a series of seven lectures to be given weekly in Osler Hall. The subjects treated will be pure food and drugs, preventable blindness, sewerage disposal, water supply, infant mortality, and modern methods in mental diseases, etc.

Banquet to Dr. Welch.—A testimonial banquet will be tendered Dr. William H. Welch of Johns Hopkins University, April 2. More than one hundred persons are expected to unite in this tribute to his achievements in medicine and in the expression of admiration and love to this representative American physician. Gold portrait medallions of Professor Welch will be presented to Professor Welch, Johns Hopkins University, and the Medical and Chirurgical Faculty of Maryland.

Personal.—Dr. Ernest J. Becker was elected president of the German Historical Society of Maryland, February 15.—Dr. Thomas S. Cullen has been awarded a gold-headed cane, given by Mr. P. C. Larkin, vice-president of the General Hospital, Toronto, for the best contribution to medical literature made by an ex-house surgeon of that hospital. Dr. Larkin's article was on "Adenomyoma."—Dr. Robinette B. Hayes and T. Marshall West of the staff of the University Hospital will leave in a few days for Fayetteville, N. C., where they will assume charge of the Marsh Hospital.

NEW JERSEY

Expectorators Pay Fine.—Twenty-seven men recently arrested in Newark for violation of the anti-spitting ordinance, pleaded guilty and were fined \$10 each in the police court.

Personal.—Dr. William H. Shippo has been elected health officer of Bordentown.—Dr. and Mrs. Edmund L. B. Godfrey, Camden, are spending the winter in Southern California.—Dr. Horace G. Norton, Trenton, has been elected secretary of the State Board of Medical Examiners, vice Dr. Edmund L. B. Godfrey, Camden, resigned on account of continued ill health.—Dr. William H. Murray has been elected a vice-president, and Dr. Benjamin Van D. Hedges, secretary of the Antituberculosis Society of Plainfield and New Plainfield.—Dr. Henry J. F. Wallhauser has been elected president, Dr. Henry A. Towle, vice-president, Dr. William Gauch, secretary, and Dr. Louis A. Koch, treasurer of the medical board of the Newark City Dispensary clinics.—Dr. Charles F. Hill has been appointed a district physician of Newark.—Dr. Charles A. Rosenwasser, Newark, announces that he has established an office in New York City.

Society Meetings.—Orange Mountain Medical Society, at its annual meeting, elected the following officers: President, Dr. Richard P. Francis, Montclair; vice-president, Dr. Richard D. Freeman, South Orange; secretary, Dr. Levi W. Halsey, Montclair; treasurer, Dr. J. Minor Maghee, West Orange (reelected); executive committee, the president, secretary, and Drs. Walter Dodge, Orange, and Arthur W. Bingham, East Orange, and censors, Drs. Mefford Runyon, South Orange, and William H. White, Bloomfield.—At the annual meeting of Gloucester County Medical Society, held in Woodbury, the following officers were elected: President, Dr. Cyrus B. Phillips, Pitman; vice-president, Dr. J. Harris Underwood, Woodbury; secretary-treasurer, Dr. George E. Reading, Woodbury; reporter, Dr. Howard A. Wilson, Woodbury; censors, Drs. James Hunter, Jr., Westville, Luther M. Halsey, Williamstown, and Harry A. Stout, Wenonah; and delegate to the state society, Dr. Charles S. Heritage, Glassboro.

Pediatric Society Organized.—The New Jersey State Pediatric Society was organized in Newark, February 3, with 34 charter members. The objects of the society are to unite the qualified physicians of the state for the scientific study of diseases of infancy and childhood, to promote by its concerted efforts scientific medical research in the department of pediatrics, to foster greater interest in pediatrics among general practitioners, to study the problems of infant mortality and to popularize a knowledge of infant hygiene and the means for the protection of child life. The annual meeting will be held in Atlantic City on the day preceding the meeting of the state medical society. In order that the society may

fulfil its obligations to the profession and indirectly to the public, a series of meetings will be organized in four different parts of the state during the year, when papers designed to instruct the general practitioner in the principles and practice of scientific medicine among children will be presented by well-known authorities on pediatrics. The following officers were elected: President, Dr. Henry L. Coit, Newark; vice-president, Dr. Alexander McAlister, Camden; secretary, Dr. Martin J. Synnott, Montclair; treasurer, Dr. Benjamin Van D. Hedges, Plainfield, and councilors, Drs. J. Finley Bell, Englewood, Thomas N. Gray, East Orange, Burdette P. Craig, Jersey City, Emery Marvel, Atlantic City, and Francis H. Glazebrook, Morristown.

NEW YORK

Honor Dr. Trudeau.—Many men and women of prominence met at Saranac Lake recently to celebrate the silver anniversary of the First Open Air Sanatorium and many others from all parts of the civilized world sent messages of congratulation to Dr. Edward L. Trudeau. Dr. Trudeau made an address in which he gave the history of his pioneer work in the open-air treatment of tuberculosis in America.

Communicable Diseases for 1909.—There were 461 cases of smallpox reported, half as many as in 1908. About 8,000 cases of typhoid fever were reported, of which 3,700 were in New York City. There were 16,186 cases of diphtheria in the city of New York and 4,500 in the rest of the state, practically the same as in the year 1908. In 1908 there were 30,400 cases of scarlet fever reported; in 1909, 22,100. About 50,000 cases of measles were reported, with 1 death to 40 cases. There were 484 cases of cerebrospinal meningitis reported, and 323 deaths. There have been reported 40 cases of ophthalmia neonatorum outside New York City; this is the first year that such a report has been required. The total mortality from epidemic diseases was 9,025, or 6.5 per cent. of the deaths from all causes. There were 7,864 deaths from diarrhea and enteritis under two years of age, 1,247 less than in 1908. The childhood mortality was a little under that of 1908. Pulmonary tuberculosis caused 13,948 deaths. During the last twenty-five years, during which the population has increased from 5,600,000 to 8,600,000, there have been 330,000 deaths, a yearly average of 13,200. For the entire period there have been about 180 deaths per 100,000 annually; in 1909, 160. Pneumonia caused 9,400 deaths, 773 more than in 1908. From other diseases of the pulmonary organs there were 11,381 deaths. Cancer caused 7,034 deaths. Violence caused 9,199 deaths. The total mortality from all causes was 139,783, a death rate for the year of 16.1 per 1,000. There were 200,865 births reported and about 80,000 marriages.

Is Cancer Cure Near?—A hope of greatly ameliorating the condition of cancer patients and perhaps of curing many is held out by the report of Dr. Harvey J. Gaylord, director of the Cancer Laboratory of the State Department of Health at Buffalo. This hope is based on inoculation experiments, mainly with rats, with the cancer virus. The report states that where resistance of the animal is not sufficiently awakened by one inoculation of the tumor this resistance can be increased by repeated doses, and in a considerable proportion of cases immunity can be raised to a point that will bring about a cure. The report urges on the legislature that the time has come when experimentation should be begun on human beings. To do this it is necessary that a number of patients shall be maintained for the purpose. It is impossible to undertake work of this kind unless a sufficient number of patients can be placed under observation, to make the figures sufficiently conclusive to corroborate any conclusions which may be reached. A fund sufficient to maintain ten such patients is the least amount that can be of value if this work is to be undertaken. Other investigations of far-reaching importance were conducted by the laboratory in regard to the prevalence of many forms of cancer in fish. It was a very remarkable coincidence that the area of the United States which includes the greatest concentration of human cancer cases, is almost identical with the area through which the various members of the trout family, which are frequently affected by cancer of the thyroid, is distributed. This suggests the theory of a possible distribution of cancer through water. Statistics show that cancer continues to increase. The increase in the United States has been from 9 per 100,000 population in 1850 to 43 per 100,000 in 1900, an average of 65 in 1901, and of 70 in 1906. In the year 1909 there were 7,034 cases of cancer reported in New York State.

The Work Against Tuberculosis in Buffalo.—The report of Dr. Francis E. Fronczak, acting health commissioner of Buffalo, received February 21 by the State Charities Aid Association, covers a period of three months from Oct. 1 to Dec. 31, 1909. During this period, 347 individual houses were inspected, 290 were investigated after removals, and 117 after deaths of persons from tuberculosis. During that time, 159 disinfections and 153 fumigations were made to prevent the spread of the disease. During 1907, only 540 living patients with tuberculosis were registered; in 1908, after the law drafted by the State Charities Aid Association, came into effect, there were 740 living patients reported and in 1909, 1,183 living were reported. Of these 1,183 cases, 452 were reported since the appointment of inspectors, Oct. 1, 1909. During the year there were 523 deaths from tuberculosis as compared with 535 in the previous year. Already more than two living patients with tuberculosis are reported for every death, whereas two years ago the deaths greatly exceeded the reported living patients. The following brief summary is presented to show what Buffalo has done to control tuberculosis:

1. All cases must be reported to the Health Department within 24 hours of their discovery on blanks furnished by the department.
2. The department furnishes each patient, free of cost, a complete "hygienic outfit" consisting of sputum cups and cup holder, paper napkins and water proof bags, and replaces same as often as necessary. Other assistance is also provided, as indicated.
3. All deaths or removals must be recorded within 24 hours.
4. Card indexes are kept of all cases, with their history.
5. The department employs two inspectors to visit homes where death or removal has occurred, to instruct, to enforce disinfection and renovation.
6. No house or premises may be reoccupied until proper disinfection and renovation have been done.
7. The inspectors visit patients who have no physician, to give instructions and to furnish patients with circulars of information.
8. The Buffalo Association for the Relief and Control of Tuberculosis conducts the following: (a) The Day Camp; (b) tuberculosis classes; (c) tuberculosis dispensary; (d) the district nurses; (e) educational work.
9. The Charity Organization Society is furnishing food and raiment to many needy tuberculous families.
10. The city is about to erect a hospital for the care and treatment of incipient cases. This will be at Perrysburg, N. Y., 40 miles from the city.
11. Advanced cases are accommodated at the Erie County Hospital.
12. The bacteriologic examination of the sputum is available to any citizen without charge.
13. Ordinance regulations:
 - (a) Spitting in public places is prohibited.
 - (b) Meat sold in Buffalo must bear the approval of the federal or city inspectors.
 - (c) Ordinances regarding ventilation, light and general sanitary conditions are strictly enforced.
14. Outdoor life is encouraged. Buffalo has a large park area, and at present 7 playgrounds; 3 additional playgrounds will be added next summer.
15. Personal cleanliness is encouraged. We have two free public bath houses, both of which have laundries attached, situated in the densely populated parts of the city. A free bathing beach is open during the summer.
16. Educational work.

New York City

Alumni Dine.—The annual dinner of the Association of the Alumni of Mount Sinai Hospital, held at the Hotel Knickerbocker, February 26, was in commemoration of the fiftieth anniversary of the connection of Dr. Abraham Jacobi with the hospital.

Off for Convalescent Home.—The first lot of 27 children, selected from the schools of the city in response to the report that a large number of school children were physically unfit to make use of the instruction offered, were sent to the Convalescent Home of the Children's Aid Society near Chappaqua, N. Y. There were selected 209 children from six schools as in need of such care as the home provides, and as soon as the children recently sent are restored to health, their places will be taken by others on the waiting list.

Early Still a Leper.—The committee of three doctors and two lawyers appointed by the Society of Medical Jurisprudence last December to investigate the case of John R. Early, the alleged leper, made a report which was submitted at a meeting of the society at the Academy of Medicine February 14. The first report of the committee was confirmed, and Early was pronounced a probable leper. Dr. L. Duncan Bulkley, who has insisted all along that the case was not one of leprosy, asked for a further investigation. The report of the committee was accepted without any judgment on the case being expressed by the society as a whole.

New Harbor Hospital.—By March 1 Health Officer Doty will have completed and prepared for occupancy a hospital and four pavilions for the isolation and treatment of measles, scarlet fever, diphtheria and chicken pox. Cases of these diseases have hitherto been allowed to go on ship to the

pier and there were turned over to the board of health of the city. It was thought that the detention of these cases at quarantine would give better protection to the public. This hospital with the four pavilions will accommodate 300 patients and the total cost has been something less than \$230 a bed, which is said to be much less than the usual cost of such institutions.

Gifts to Charity.—The will of Charlotte A. Vanden Heuvel gives \$5,000 to each of the following institutions: The Association for Improving the Condition of the Poor, Daisy Fields Home and Hospital for Crippled Children and Messiah Home for Little Children.—The will of Rosalie King gives \$1,000 to Mount Sinai Hospital and the same amount to the Home for the Aged and Infirm Hebrews and Montefiore Home. Beth Israel Hospital and the United Hebrew Charities each receive \$500.—The proceeds of the German Charity Ball amounted to \$10,765, of which sum \$10,600 will be distributed among various hospitals and societies.—The Hospital Saturday and Sunday Association announced at their thirty-first annual meeting that the general collection was larger this year than last, though the exact amount could not as yet be announced; last year it amounted to more than \$100,000.

NORTH CAROLINA

Personal.—Dr. James G. Anderson, Asheville, has been appointed director of the State Hospital for the Insane, Goldsboro.—Dr. Slocomb R. Edwards, Siler City, has been appointed medical superintendent of the Presbyterian Eye, Ear, Nose and Throat Hospital, Baltimore.

Antituberculosis Program.—The North Carolina Association for the Prevention of Tuberculosis is to meet in Greensboro, March 15 and 16. Men from other sections of the state have been selected to speak on various phases of tuberculosis, and officers of the national association and delegates from other states will be present and speak on the national crusade against the disease.

Society Adopts Resolutions.—Guilford County Medical Society, at a recent meeting in Greensboro, adopted resolutions condemning the secret method the police officers of that city have employed to secure evidence against physicians alleged to have violated the state prohibition laws. The society also approved the resolutions adopted by the state medical society condemning the violations of the provisions of the prohibition laws, and urged the examining board to revoke the licenses of all convicted physicians. The society adopted resolutions forbidding any Greensboro druggist from exhibiting to any police or other city official any physician's prescription without first securing from the physician or patient an order permitting such examination.

OREGON

Hospital News.—The Dalles Hospital has recently been enlarged and remodeled and now has a capacity of 75 beds.—The Carlsbad Hot Springs Sanatorium, North Powder, is now under active construction. The buildings, which will cost \$250,000, are expected to be ready for occupancy in August.

Dispensary Staff.—The Portland Free Dispensary opened January 12, with the following staff: Drs. Kenneth A. J. Mackenzie, Otis B. Wight, George S. Whiteside, Alvin W. Baird, N. Wiley Jones, Edna D. Timms, Otis F. Akin, Frank M. Taylor, C. Gertrude French, Clarence J. McCusker, George F. Koehler, Donald Jessup and Norman Pease.

Willamette Valley Physicians Meet.—The Central Willamette Valley Medical Association, composed of physicians of Linn, Benton and Lincoln counties, at its recent meeting in Albany, elected Dr. William H. Dale, Harrisburg, president; Dr. Joel C. Booth, Lebanon, vice-president; Dr. Henry J. Kavanagh, Albany, secretary; Dr. Matthew H. Ellis, Albany, treasurer, and Dr. Albert G. Prill, Scio, delegate to the state society.

Suit Against Physicians Fails.—The damage suit of Floyd D. Moore against Drs. Francis G. Swedenburg, Ashland, and Joseph S. Herndon, Sacramento, Cal., in which the plaintiff claimed \$17,000 damages on the allegation that the effects of an operation performed on him had been injurious, that he had been neglected in the hospital, and had been given an overdose of a poison by a nurse, collapsed before it reached the jury on account of lack of evidence.

Medical Reserve Corps for Oregon.—A general order has been issued creating a medical reserve corps of twelve surgeons, graduates of reputable medical schools, named by the governor on the advice and recommendation of the general staff, and receiving commissions as first lieutenants only after passing examination. Members of the corps will be

appointed at stations where one or more companies of the national guard are located. Their work will be examination of applicants for enlistment and such other duties as pertain to surgeons of the state militia.

Personal.—Ernest H. Parker, Portland, who has been critically ill with pneumonia at Avalon, Cal., is reported to be improving.—Dr. Robert J. Conroy, Medford, has been appointed local surgeon for the Pacific and Eastern Railroad.—Dr. Calvin S. White, Portland, has been elected secretary of the State Board of Health, vice Dr. Robert C. Yennery, Portland, resigned.—Dr. Harvey J. Clements, pathologist of the Oregon State Insane Asylum, Salem, has been elected medical director of the State Tuberculosis Sanatorium, which is located in the old Deaf Mute School building south of the city. The state tuberculosis commission includes Drs. Willis B. Morse, Salem, and Calvin S. White, Portland.

PENNSYLVANIA

Society Will Publish Monthly Magazine.—At the February meeting of the Bucks County Medical Society, held in Doylestown, it was decided to publish a monthly bulletin for the benefit of the members. A committee of four was appointed to formulate plans for the publication of this bulletin.

Medical Society Elections.—At the annual meeting of the staff of the Pittsburg and Lake Erie Railroad, held February 10, the following officers were elected: Dr. John D. Milligan, Pittsburg, president; Drs. Jefferson H. Wilson, Beaver, and John A. Barr, McKee's Rocks, vice-presidents, and Dr. Edward M. Hand, Coraopolis, secretary-treasurer.—At the annual meeting of the Pottsville Medical Club, February 10, the following officers were elected: Dr. J. Harry Swaving, president; Drs. George R. S. Corson and Merchant C. Honscholder, vice-presidents; Dr. John J. Moore, secretary-treasurer, and Drs. George H. Boone, Patrick H. O'Hara, and Joseph G. Kramer, censors.

Philadelphia

Gifts to Colleges.—The Philadelphia College of Physicians has been given \$75,000 by an anonymous donor through Dr. S. Weir Mitchell.—A gift of \$100,000 has been received by the University of Pennsylvania to endow a chair in the medical department.

Personal.—Dr. S. Weir Mitchell celebrated his eightieth birthday anniversary February 15.—As a token of esteem and admiration to their retiring chief, the medical staff of Henry Phipps Institute gave a testimonial dinner in honor of Dr. Lawrence P. Flick, February 1, presenting him with a massive silver loving-cup. The presentation speech was made by Dr. Daniel J. McCarthy.—Dr. Joseph Price, who has been seriously ill at his summer home in Whitford with septicemia, is reported to be improving.

Medical Department of Library.—It is announced that there will be added to the free library of Philadelphia an additional alcove for the exclusive use of books, pamphlets and papers on the practice of medicine and kindred branches. This action was the outgrowth of a consultation between the library authorities and a committee of the Philadelphia County Medical Society, composed of Dr. James M. Anders, chairman, and Drs. Edmund E. Montgomery, Charles A. E. Codman, M. Howard Fussell, Albert M. Eaton, A. Bern Hirsh, Herman B. Allyn and Henry Lefmann.

RHODE ISLAND

Money for Hospitals.—By the will of the late Mrs. Eveline A. Cozzens, a colored woman of Providence, \$3,000 is bequeathed to the Rhode Island Hospital.—By the will of the late Dr. Robert Millar, Providence, \$8,000 is devised for the endowment of a permanent free bed in the Rhode Island Hospital.

Personal.—Dr. George H. Kenyon, Providence, surgeon-general of the Rhode Island National Guard, will, it is believed, be obliged to resign on account of continued ill health.—Dr. Alanson D. Rose, Manton, has been seriously ill with septicemia, due to an operation wound.—Dr. George A. Matteson has been appointed visiting physician to the Rhode Island Hospital, vice Dr. Donald Churchill, deceased.

The Work Against Tuberculosis.—Through the combined activities of the Rhode Island State Board of Health and the Rhode Island Antituberculosis Association arrangements are being made to send the state tuberculosis exhibit to every town and city in the state not yet reached in this campaign.—The trustees of the State Sanatorium for Tuberculosis,

Wallum Lake, recommend the building of an infirmary and entertainment hall, better quarters for employees, and that the buildings be put in proper repair.

Society Meetings.—At the annual meeting of the Washington County Medical Society, held in Westerly, the following officers were elected: President, Dr. Frank C. Pagan, Westerly; vice-presidents, Drs. Edward E. Kenyon, Usquepaugh, and John L. May, Westerly; and secretary-treasurer, Dr. J. Howard Morgan, Westerly.—At the annual meeting and banquet of Kent County Medical Society, held in Arctic Centre, Dr. John A. Mack, Crompton, was elected president; Dr. William S. Reoch, Phenix, vice-president; Dr. Thomas F. Darby, River Point, secretary; Dr. Frank D. Smith, Washington, treasurer; Dr. Warren E. Page, Phenix, delegate to the state medical society; Dr. Ira D. Hasbrouck, Washington, counselor; and Dr. Fenwick D. Taggart, East Greenwich, censor.

State Society Appoints Delegates.—At the quarterly meeting of the Rhode Island Medical Society, held in Providence, Drs. William J. McCaw and William McDonald, Jr., Providence, were appointed delegates to the United States Pharmacopoeial Convention, Washington; Drs. William B. Cutts and V. Lee Fitzgerald, Providence, to the Maine Medical Society; Drs. Harlan P. Abbott and G. Edward Buxton, Providence, to the New Hampshire Medical Society; Drs. George B. Haines, Valley Falls, and Nelson R. Hall, Warren, to the Vermont Medical Society; Drs. Charles H. Leonard and George T. Spicer, Providence, to the Connecticut Medical Society; Drs. Robert F. Noyes, Providence, and Alexander C. Sanford, Newport, to the Massachusetts Medical Society; Drs. Henry A. Jones, Howard, and D. O. Kidd to the Medical Society of the State of New York, and Drs. John W. Keefe and John T. Farrell, Providence, to the Medical Society of the State of New Jersey.

GENERAL NEWS AND COMMENT

Personal.—Dr. James T. Wayson, Honolulu, for several years a member of the board of health of that city, has retired to become superintendent of the Kilihi Hospital. Dr. William C. Hobdy, P. H. and M.-H. Service, has succeeded Dr. Wayson as a member of the board of health.

Hygiene Congress Postponed.—By joint resolution, February 3, Congress has postponed until some time in 1911 or 1912 the International Congress of Hygiene and Demography which was to have been held this year. The President is to designate where the congress shall be held; cities, therefore, may apply for the privilege of receiving it.

Mexican Society Meets.—The International Medical Association of Mexico, which held its annual meeting in Aguascalientes January 25-27, elected the following officers: Dr. C. E. Husk, Santa Barbara, president; Dr. Frederick W. Taube, Zacatecas, vice-president; Dr. J. S. Steele, Monterey, secretary-treasurer; Drs. Robert Griewe, Santa Barbara, and H. D. Eaton, Chihuahua, censors, and Drs. R. D. Robinson and W. R. Jamieson, Torreon, editors of the annual (reelected). The association will meet in Juarez next year.

Tri-State Association Meeting.—At the twelfth annual session of the Tri-State Medical Association of the Carolinas and Virginia, held in Richmond, Va., February 15-17, the following officers were elected: President, Dr. Joseph A. White, Richmond, Va.; vice-presidents, Drs. Joseph Graham, Durham, N. C.; Thomas P. Whaley, Charleston, S. C.; and Samuel Lile, Lynchburg, Va.; secretary-treasurer, Dr. J. Howell Way, Waynesville, N. C. (reelected), and executive council, Drs. Harry T. Marshall, Charlottesville, Va.; Carl V. Reynolds, Asheville, N. C.; Harvey E. McConnell, Chester, S. C.; James S. Irvin, Danville, Va.; Andrew J. Crowell, Charlotte, N. C.; Archibald E. Baker, Charleston, S. C.; Robert C. Bryan, Richmond, Va.; Henry T. Bahnson, Winston-Salem, N. C.; and Rolfe E. Hughes, Laurens, S. C. The following committee on cancer education was appointed: Virginia, Drs. Southgate Leigh, Norfolk, Stephen Harnsberger, Catlett, and J. Shelton Horsley, Richmond; North Carolina, Drs. Hubert A. Royster, Raleigh, James E. Stokes, Salisbury, and W. E. Ragland; and South Carolina, Drs. LeGrand Guerry, Columbia, Charles F. Williams, Columbia, and Charlton E. Gamble, Turbeville. The next meeting of the association will be held in Raleigh, N. C., in February, 1911.

Society to Prevent Infant Mortality.—The first meeting of the executive committee and board of directors of the recently organized Association for the Study and Prevention of Infant Mortality was held at the building of the Medical and Chirurgical Faculty of Maryland, February 9. The necessity of the prompt and accurate registration of births was recognized as the fundamental element in the campaign. Dr. John S. Fulton was made chairman of a committee to enlist the cooperation of state and municipal boards of health through-

out the country, to promote the enforcement of laws in communities where such laws are on the statute book, and urge the enactment of the necessary legislation in other localities. A committee composed of Drs. Mary Sherwood, Baltimore, Miss M. Adelaide Nutting, New York City, and Mr. Homer Folks, secretary of the New York State Charities Aid Association, was appointed to outline plans for nurses' associations, social workers, milk stations and other similar organizations. Drs. Lillian Welsh, Baltimore, and Joseph S. Neff, Philadelphia, were made chairmen of committees to map out plans for the membership campaign. The association is national in scope, and the plans embrace a campaign of study and prevention analogous to that of the National Association for the Study and Prevention of Tuberculosis. Its work is divided into the following sections: state, federal and municipal prevention, presided over by Dr. William H. Welch, Baltimore; medical prevention, presided over by Dr. L. Emmett Holt, New York City; educational prevention, presided over by Dr. Helen C. Putnam, Providence, R. I.; and philanthropic prevention, presided over by Hastings H. Hart, New York City.

CANADA

Personal.—Dr. Helen MacMurehy, Toronto, has been appointed by the Toronto Board of Education to examine about 100 mentally defective children attending the public schools of Toronto.—Dr. J. J. Gagné, Montreal, has been elected mayor of that city. Dr. Emmanuel P. Lachapelle, Montreal, chairman of the Quebec Board of Health, has been elected a member of the new board of control of that city.—Drs. Rodolphe Boulet and Louis de L. Harwood, Montreal, have returned from a trip to Cuba and Mexico.

Rabies in Ontario.—Several members of the Toronto Academy of Medicine, headed by the president, Dr. Alexander McPhedran, recently waited on the Ontario government and strongly advocated the establishment in Ontario of a Pasteur Institute, in view of the widespread outbreak through western Ontario of rabies, as about fifty persons in the last three years who have been bitten by dogs have had to go to New York for treatment. It is understood that the government will make a preliminary grant of \$1,000 for the purpose.

New Legislation.—The Ontario osteopaths have introduced a bill before the legislature to secure the provincial incorporation of a college of osteopathy in either Toronto or Hamilton. The Ontario Medical Council and the Toronto Academy of Medicine will oppose the measure.—To abolish compulsory vaccination in Ontario is the aim of a bill before the Ontario legislature. The bill seeks repeal of the present act and to leave to each person to decide whether he will or will not be vaccinated.—The Ontario Medical Council is discussing the proposed amendments to the Ontario Medical Act with the Ontario government. Among the profession there is a great deal of discontent over university representation. The council wants the power to deal immediately with all cases of unprofessional conduct arising among members of the college which may be considered in the light of disgraceful conduct in a professional sense, instead of as now waiting until the annual meeting in July.—One medical member of the Ontario legislature has a bill before that body which will seek to prevent the propagation of criminals, idiots and the like. The measure is based on the Indiana act.

Hospital Notes.—The new Lady Grey Hospital, Ottawa, was opened February 11, through the efforts of the Ottawa Anti-Tuberculosis Society.—Dr. T. J. W. Burgess, superintendent of the Protestant Hospital for the Insane, Verdun, Quebec, says there is great need for a society to watch over patients discharged from that institution. During the past year there were 197 admissions and the total number of patients was 783, the largest in the history of the institution.—A new wing is to be built to the Toronto Isolation Hospital so that there will be better facilities in that city for the treatment of infectious diseases. The estimated cost is \$102,000, and it will accommodate 100 additional patients.—The Montreal Emergency Hospital for typhoid fever patients has treated 119 patients since it was opened a few weeks ago. Of the cases 89 per cent. were found to be of a virulent type.—According to the eighth annual report of the Vancouver General Hospital, there were treated in that institution during the past year 3,842 patients, as compared with 2,554 in 1908.—The Toronto General Hospital treated during the year ending Sept. 30, 1909, 5,104 patients. There were 302 births in the institution. The cost per adult patient per day was \$1.37.—Mr. J. C. Eaton, Toronto, has donated a quarter million dollars to build the surgical wing of the new Toronto General Hospital, in commemoration of his father, the late Mr. Timothy Eaton.—The Toronto City Council favors an

additional grant of \$200,000 to the Toronto General Hospital, and the matter will be submitted to the rate-payers at an early date.

FOREIGN

Deaths Abroad.—Among recent deaths of English physicians which have not been mentioned elsewhere are those of Mr. William Warrick Wagstaffe, F.R.C.S., Eng., an anatomist of more than ordinary ability, who died in Sevenoaks, Kent, January 22, aged 67, from paralysis; Mr. William Ilbert Hancock, F.R.C.S., Eng., assistant surgeon to the Royal London Ophthalmic Hospital, and formerly dean of the staff of the Central London Ophthalmic Hospital, who died January 26 from pulmonary embolism, five days after an operation for appendicitis, aged 36; Surgeon General Charles Dodgson Maddon, D.S.O., honorary surgeon to the king, who was graduated from Trinity College, Dublin, entered the army in 1854, and died in Leonards-on-Sea, aged 76; and Lieutenant-Colonel Campbell Mellis Douglas, brigade surgeon R.A.M.C., retired, who was awarded the Victoria Cross in 1867, and died Dec. 31, 1909, aged 69.

BERLIN LETTER

(From Our Regular Correspondent)

BERLIN, Feb. 2, 1910.

Personals

Privy councillor Schmidtman has been elected president of the German Society of Public Health (*Deutsche Gesellschaft für öffentliche Gesundheit*) in place of the deceased Wehmer. The society has also elected the city councillor Marggraf as an honorary member in recognition of his services in the interest of public health in Berlin, particularly by the establishment of sewage farms.—Privy councillor Bäumler of Freiburg was elected an honorary member of the balneological society.—The philosophical faculty of Heidelberg has conferred the honorary title of doctor on Dr. Höfler of Bad Tölz on account of his excellent work in the field of medical history.—Professor Strauss, for many years an assistant of Senator, has been chosen as the successor of Prof. J. Lazarns as director of the medical section of the Jewish hospital.—Privy councillor Steffen, a well known pediatrician, died January 7, at the age of 84.

Tuberculosis in Berlin

At the last meeting of the society for social medicine Professor Kayserling, who is a well known worker in the field of tuberculosis hygiene, delivered an address on the repression of tuberculosis in Berlin and made some suggestions which are worthy of note. In the campaign against tuberculosis experience shows that two ends are to be sought: the protection of the healthy from infection and the treatment of tuberculosis patients. From his observations, dwellings of one room are the worst foci for tuberculosis but the danger of infection of healthy individuals in other dwellings is a matter calling for especial care by the sanitary authorities. The housing problem is therefore an important matter with reference to the protection of healthy people from infection. The disinfection of rooms and the protection of healthy people living in them is constantly a matter of care for the hygienic stations and for the national insurance societies. The best measure against the disease, namely, the isolation of all tuberculous patients who expel tubercle bacilli, is unfortunately not practicable. Healthy children must be protected by sending them to the forest convalescent stations and outdoor schools. The effort should be made, as in France, to place children in families in the country. Moreover the matter of disinfection must be improved. In the last year disinfection was carried out in only 2,100 cases of tuberculosis in Berlin, while 3,900 deaths from the disease were recorded. Although some of the tuberculous in whose cases disinfection was not undertaken died in the hospitals, yet these figures show that disinfection needs more careful attention. This measure should be applied whenever a patient capable of communicating the disease is transferred to a hospital or changes his residence. Disinfection must be free of charge, which has hitherto not been the case with tuberculosis. Hospitals for advanced tuberculosis should be built which will be acceptable to the patients and which are so arranged that they do not endanger the nursing force. A further urgent need is the provision of a sanitary working environment for infectious tuberculous patients who are able to work.

School Nurses

The experience of school physicians that very many ailing children remain without medical treatment in spite of repeated warning from the school physician, has led to the installation

of school nurses in several German cities, as is the case in some other countries, especially in America. The functions of the school nurses in Charlottenburg are as follows: They are to visit the homes of the parents of such school children as receive no medical treatment in spite of repeated warnings, and to endeavor to induce the parents to follow the advice of the school physicians. They are expected to learn whether there are any reasons which hinder the parents from adopting the requisite steps to secure the health of their children. If the parents cannot go with the child to the physician, the school nurse is to relieve them of this task. With the permission of the parents the nurse is to take the child to the physician who it has been agreed shall treat it, receive the instruction of the physician, return with the child to its home and instruct the parents in regard to the treatment. If the nurse learns that the parents have not the means to purchase the bandages, medicines, etc., ordered she shall endeavor to provide them with the help of the city physician. If a child in the school is noticeable for its uncleanness or insufficient clothing or poor nutrition, the nurse is to inform herself regarding the economic status of the parents and the housing and nutritive condition of the child and make appropriate suggestions for the relief of the situation. In some circumstances she is to free the children from vermin. If the house or the linen, etc., are the habitat of the vermin, she is to provide for their cleansing through the municipal disinfection institute. Altogether the field of labor of the school nurse is chiefly in the home of the pupils; only exceptionally she has anything to do in the school itself. She receives instruction only from the school physician and does not work independently but only under his advice and oversight. She must not undertake to give advice regarding the treatment of diseases or of patients. Opinions which have so far been expressed by school physicians regarding the arrangement, which has now been in vogue for two years, are favorable.

Society Jubilees

Berlin is to have a jubilee year in 1910 as a whole series of memorial celebrations will occur in this year, chief of which is the centennial of the Berlin university. This series of memorials was inaugurated by the centennial celebration of the founding of the Hufeland society and the society for natural and medical sciences. February 1 a brilliant meeting of the first named society took place. The president of the society, Prof. v. Hansemann, gave a historical review of the development of the society and combined with it a eulogy of its founder. In 1810 Hufeland founded the society as the "medico-chirurgical society" after the plan of Goethe's *Freitagsgesellschaft* of which he was a member. On the fiftieth anniversary of his doctorate in 1833, the society received the name of the *Hufelandische Gesellschaft*. The members met at Hufeland's house, heard lectures, and reported clinical cases, epidemics, etc. The thirtieth year of the nineteenth century marked the culmination of the society. The troubles of 1848 did not fail to have their effect upon it; its sixtieth and seventieth year brought new difficulties. By union with other medical societies (finally with the *Demonstrationsgesellschaft*) new blood was infused into it. Now it has a splendid membership (348). Prof. v. Hansemann lauded Hufeland as a model for the medical profession and for medical science. He was distinguished by his philanthropy and helpfulness toward the poor and humble. Professor Strauss spoke of Hufeland as a theorist and as a practical physician. Hufeland chose for his motto: The physician should be the servant and not the master of Nature. This gifted man was already an advocate of the hardening process and of baths and the hydropathic treatment of inebriety. It is worthy of notice to-day, in the era of specialties, that Hufeland advocated the instruction of all-around physicians (*Vollärzte*) not of physicians for a part of the body only. The final reason for his popularity lies in the remarkable force of his medical personality, and even to-day Hufeland may serve as a model for every physician in the way in which he followed his calling. Finally Professor Brieger, the president of the balneologic society, which developed from the Hufeland society, spoke of the importance of Hufeland for balneology. On the occasion of the jubilee the Hufeland society elected the following as honorary members: Robert Koch, Erb (Heidelberg), Lord Lister (London), Franz König and W. A. Freund (Berlin). The following were elected as corresponding members: v. Eiselsberg (Vienna), F. v. Korányi (Budapest), Bonchard (Paris), Koehner (Bern), Pawlow (Petersburg), Hamén (Helsingfors), Hansen (Bergen), Retzius (Stockholm), Morpurgo (Turin) and Welch (America). A few days after the Hufeland society the society for natural and medical

sciences (*Natur- und Heilkunde*) celebrated its centennial. This society, which is more strictly of a professional and private character than the Hufeland society, was founded 100 years ago by 15 distinguished physicians and has during its existence counted as members some of the most noted of the Berlin profession. At present its president is Prof. Waldeyer.

Suicide in Prussia During 1907

According to official statistics for the year 1907, 7,643 persons, 5,844 men and 1,799 women, committed suicide. The number of suicides increases from year to year. In 1878 it was only 4,689; in 1888, 5,393; in 1898, 6,361. In thirty years it has risen from 17.7 to 20.2 per 100,000 living. There are each year nearly four times as many among men as women. More than a fourth of the suicides are undoubtedly caused by mental disease, and of the other suicides a large number are dependent on psychic causes. Insanity appears as the cause much more frequently among women than among men. Two-thirds of the men and half the women hang themselves, one-third of the women, but only one-eighth of the men drown themselves. With increasing age the tendency to suicide increases. Among the men the largest number of suicides occurred in July, among the women in May and the smallest in both sexes in February. The frequency at different times of the day is: forenoon, afternoon, night, evening, midday, and shortly after sunrise. As in regard to the months, the examination of the hour shows that the higher temperature is undoubtedly favorable to suicide. As to the day of the week, social reasons seem to be distinctly active. The day most frequently chosen is Monday, probably because it follows the revelry of Sunday. The fewest suicides occur on Saturday, ostensibly because the wages are paid on that day and Sunday is to follow. How far these considerations are really the effective ones must be determined by the observation of more cases.

The Physiologic Importance of Colloids.—An interesting paper on colloids by Henry Leffmann appears in the *Proceedings of the Pathological Society of Philadelphia*, December, 1909. The nature of colloids was first defined by Graham, who divided bodies according to their power to pass through animal membranes into crystalloids which pass readily and colloids which pass with difficulty or not at all. The colloids are mostly animal substances but inorganic substances are capable of existing in the colloid as well as in the crystalloid state. In the colloid condition substances otherwise insoluble in water may exist in a state of very fine subdivision in suspension in water, exhibiting most of the properties of a solution. A distinction must be made between the extremely finely divided particles of gold or silver in the so-called colloidal state and the colloid condition of protein substances, starch, silicic acid, etc. The former assume a different state of aggregation and precipitate on the introduction of an easily ionizable substance, while the latter, although capable of assuming ionic charges, are not affected in the same way as to aggregation. Colloids having an extremely extended surface in consequence of their fine division readily attach themselves to other substances showing the phenomena of adsorption. In physiologic processes, a change from colloid to crystalloid and *vice versa* is frequently effected. This was at one time thought to be due to a change in size of the molecule but recent investigations have shown that the conversion of a protein into a sodium salt suffices to make it dialyzable so that it does not appear that a simplification of the molecule is necessary. The properties of colloids make possible many of the activities of cells that would be otherwise inexplicable. The conversion of soluble carbohydrates into colloid forms (starch, glycogen) enables them to be retained in the cell until needed in other parts of the economy. The colloid character of enzymes also allows them to be stored in cells until their action is needed and makes possible the occurrence of chemical actions of different character in different parts of the cells. Thus an oxidizing ferment in its colloid form may be held in one part of a cell while a deoxidizing enzyme acts in another part of the same cell. The phenomena of adsorption make it possible for the cell to retain the special nutriment suited to it and possibly account for the power of the cells to modify the composition of lymph and blood serum in which they float or with which they come in contact.

Pharmacology

PHYSIOLOGIC STANDARDIZATION

Report of the Council on Pharmacy and Chemistry

The Council has adopted the rule that it considers the phrase "physiologically standardized" or "assayed" as misleading, unless the standard and method are published in sufficient detail to permit of their control by independent investigators. The Council has further voted that this ruling and the reasons therefore, be published. In accordance with this order the following explanatory note is given.

W. A. PUCKNER, Secretary.

The chief credit for the practical introduction of "physiologic standardization" belongs to American pharmaceutical manufacturing houses, which deserve the highest commendation for voluntarily subjecting themselves to great expense and trouble in developing suitable methods of physiologic assay. Without wishing to detract from the credit which justly is due them, the Council nevertheless, feels constrained to call attention to the abuses to which the phrase "physiologically standardized" is liable. To the physician the phrase means that the preparations to which it is applied are made to conform to a definite standard. This obvious meaning, however, is entirely misleading, when it is remembered that each firm has its own standard and that that standard is kept secret, a practice which obtains almost universally. There is little if any more justification in calling such a preparation "standardized" than there would be in calling a diphtheria antitoxin "standardized" without stating its strength. The government would promptly proceed against the manufacturers of such an antitoxin. With the drugs, however, this would be more difficult, since there are no official methods of assay. Every manufacturer can therefore feel at liberty to employ any method of assay which suits his purpose or fancy. Indeed, he might even omit the performance of any test, without serious fear of discovery.

It is scarcely necessary to point out to what confusion and abuses this may lead. A dishonest or careless manufacturer may set himself a very low "standard." Another, more exacting, may set his standard many times as high—yet the products of both would, under the present loose meaning of the term, be called "physiologically standardized," and supposedly, therefore, be of uniform strength. The danger to the public is obvious.

The comparative experiments of Edmunds and Hale on "The Physiologic Standardization of Digitalis"¹ demonstrates that the fear of want of uniformity, at least, is not ungrounded. Other investigations point in the same direction. The remedy for this condition lies in the establishment of official methods of assay; in their absence, however, a great deal would be accomplished if manufacturers who use the phrase "physiologically standardized" would define its exact meaning, so that their claims can be controlled, and their preparations compared with others for which the same claim is made. This is necessary for the protection of the public, and entails no serious sacrifice on the part of the manufacturers. The information which is demanded may once have been a valuable trade secret but it is no longer since a choice of methods of physiologic assay is now available to any one who cares to look for the information.

In view of these facts, the Council believes that it should enter an emphatic protest against claims of "standardization" based on secret, widely fluctuating "standards;" and in the future it will not accept any preparation for which the claim of physiologic standardization is made unless the standard and method are published in sufficient detail to permit of their control by independent investigators.

1. Abstracted in THE JOURNAL A. M. A., June 12, 1909, p. 1938.

Pau-Cola—A Reprimand to Testimonial-Givers

In *The Bulletin* of the Chicago Medical Society for Feb. 12, 1910, the chairman of the committee on ethical relations reported among other things the following:

"The following leaflet entitled 'Pan-Cola Company, Capital Stock \$1,000,000, guaranteed 7 per cent., Preferred Stock,' etc. This is a liquid beverage served at soda fountains to the public. By quite a large number of physicians in good standing as members of the Chicago Medical Society, said beverage is landed and recommended as a 'healthful drink, good for digestion,' 'an appetizer,' 'relieves fatigue and malaise,' etc., 'containing pure and wholesome ingredients,' a 'safeguard to the health of the community,' 'of great value, delicious flavor,' 'the safest hot-weather drink I have ever known or heard of,' and all this and more is endorsed by reputable physicians.

"It is the opinion of your committee that the practice of physicians lending their names for or without a monetary consideration to advocate, exploit or recommend the use of nostrums is not in good taste nor dignified. All physicians so doing should be reprimanded by your honorable body."

The report was accepted, which, we understand, includes approval of the recommendation in the last line, thus administering the reprimand referred to.

Delegates to the Pharmacopeial Convention

The following list of delegates to the Pharmacopeial Convention of 1910 is received from the secretary, with the statement that it is offered for publication without prejudice, it being understood that such publication does not of necessity mean that these delegates will be received and seated by the convention, as their credentials have not as yet been passed on by the Committee on Credentials and Arrangements.

Attention is invited to the ruling of the Committee on Credentials and Arrangements, that it cannot recognize the right of any one individual to represent more than one organization or institution.

AMERICAN PHARMACEUTICAL ASSOCIATION.—Albert B. Lyons, Charles Holzhauer, Lyman F. Kebler; alternates, Joseph W. England, Thomas F. Main, Leo Elhel.

AMERICAN CHEMICAL SOCIETY.—George D. Rosengarten, L. W. Andrews, Edward Hart; alternates, Thomas B. Aldrich, John T. Baker, A. B. Lyons.

MEDICAL DEPARTMENT, U. S. ARMY.—Walter D. McCaw, Carl R. Darnall, Frederick F. Russell.

BUREAU OF MEDICINE AND SURGERY, NAVY DEPARTMENT.—H. G. Beyer, G. L. Angeny, P. J. Waldener.

UNITED STATES PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE.—John F. Anderson, Reid Hunt, Martin I. Wilbert.

ARKANSAS ASSOCIATION OF PHARMACEUTISTS.—Frank Schachleiter, John B. Bond, Sr., W. L. Dewoody; alternate, Jesse D. Hodge.

COLORADO STATE MEDICAL SOCIETY.—E. C. Hill, George A. Moleen, W. T. Little; alternates, C. M. Gilbert, George W. Miel, Sol Ringolsky.

UNIVERSITY OF COLORADO MEDICAL DEPARTMENT.—Carol E. Edson, Alvin R. Peebles, William A. Jolley.

YALE MEDICAL SCHOOL.—Oliver T. Osborne, Herbert E. Smith, Clarence G. Spalding.

CONNECTICUT PHARMACEUTICAL ASSOCIATION.—Charles A. Rapelye, John K. Williams, Charles W. Whittlesey.

DELAWARE PHARMACEUTICAL SOCIETY.—H. J. Watson, W. F. Dunn, William Poole; alternates, Thomas Donaldson, J. O. Bosley, J. T. Challenger.

MEDICAL SOCIETY OF THE DISTRICT OF COLUMBIA.—Murray Galt Motter, John W. Chapell, D. Webster Prentiss.

GEORGE WASHINGTON UNIVERSITY, DEPARTMENT OF MEDICINE.—Sterling Ruffin, B. M. Randolph, Noble P. Barnes.

GEORGETOWN UNIVERSITY SCHOOL OF MEDICINE.—George M. Kober, G. Lloyd Magnuder, W. M. Barton.

GEORGE WASHINGTON UNIVERSITY, NATIONAL COLLEGE OF PHARMACY.—Henry E. Kalusowski, Samuel L. Hilton, Lewis Flemer; alternates, Samuel Waggaman, Frank P. Weller, Wymond H. Bradbury.

ILLINOIS STATE MEDICAL SOCIETY.—N. S. Davis, W. E. Qulne, Henry B. Hemenway; alternates, Charles E. Chapin, C. W. Lillie.

NORTHWESTERN UNIVERSITY MEDICAL SCHOOL.—Arthur R. Edwards, John H. Long, Alfred N. Richards.

UNIVERSITY OF ILLINOIS MEDICAL DEPARTMENT.—Bernard Fantus; Alternate, Edward L. Heintz.

ILLINOIS PHARMACEUTICAL ASSOCIATION.—Wilhelm Bodemann, W. C. Simpson, Herman Fry; alternates, Andrew Scherer, G. Lindvall, C. M. Snow.

UNIVERSITY OF ILLINOIS SCHOOL OF PHARMACY.—C. S. N. Hallberg, W. A. Puckner, W. B. Day; alternates, A. H. Clark, C. M. Snow, E. N. Gathercoal.

NORTHWESTERN UNIVERSITY SCHOOL OF PHARMACY.—Oscar Oldberg, Harry Maun Gordin, Charles W. Patterson.

INDIANA STATE MEDICAL ASSOCIATION.—W. H. Foreman, Samuel Kennedy, James A. Mattison.

PURDUE UNIVERSITY SCHOOL OF PHARMACY.—Harvey W. Wiley, Ernest G. Eberhardt, Charles E. Vanderkleed.

VALPARAISO UNIVERSITY SCHOOL OF PHARMACY.—J. Newton Bee, George D. Timmons, A. E. Heineman; alternates, Arthur Linton, John P. Sievers, Otis B. Nesbit.

UNIVERSITY OF IOWA COLLEGE OF MEDICINE.—Charles S. Chase, UNIVERSITY OF IOWA COLLEGE OF PHARMACY.—Wilber J. Tecters.

KANSAS PHARMACEUTICAL ASSOCIATION.—Frank Holliday, W. S. Ainos, Matt Noll; alternate, S. J. Crumbine.

UNIVERSITY OF KANSAS SCHOOL OF PHARMACY.—L. D. Havenhill, E. H. S. Bailey, L. E. Sayre; alternates, H. W. Emerson, F. W. Bushong, W. S. Dick.

JOHNS HOPKINS UNIVERSITY MEDICAL DEPARTMENT.—William S. Thayer, Thomas McCrae, Leonard G. Roundtree.

MASSACHUSETTS MEDICAL SOCIETY.—Frank G. Wheatley, Charles H. Cook, Maurice P. V. Tyrode.

COLLEGE OF PHYSICIANS AND SURGEONS, Boston.—Ephraim Cutter.

UNIVERSITY OF MICHIGAN DEPARTMENT OF MEDICINE AND SURGERY.—Charles W. Edmunds, Worth Hale, J. W. Trask.

MINNESOTA STATE MEDICAL ASSOCIATION.—Ray Humiston, alternate, F. J. Patton.

UNIVERSITY OF MINNESOTA COLLEGE OF PHARMACY.—Frederick J. Wulling, W. A. Frost, Robert L. Morland.

NEW JERSEY MEDICAL SOCIETY.—Henry L. Coit, Isaac E. Leonard, Henry H. Davls, Joseph Tomlinson.

NEW JERSEY PHARMACEUTICAL ASSOCIATION.—George M. Peringer, Herman J. Lohmann, George H. White; alternates, Edward B. Jones, Charles Holzhauer, H. H. Deakyne.

ALBANY MEDICAL COLLEGE.—Howard Van Rennselaer, Spencer Lyman Dawes, Victor Caryl Myers.

LONG ISLAND COLLEGE HOSPITAL.—Frank E. West, Elias H. Bartley.

UNIVERSITY OF BUFFALO MEDICAL DEPARTMENT.—Eli H. Long, DeWitt H. Sherman, Edward J. Kiepe.

SYRACUSE UNIVERSITY COLLEGE OF MEDICINE.—William Dewey Alsiver, Frank P. Knowlton.

NEW YORK STATE PHARMACEUTICAL ASSOCIATION.—Joseph Kahn, John Hurley, Joseph Weinstein.

ALBANY COLLEGE OF PHARMACY.—Willis G. Tucker, Alfred B. Husted, Theodore J. Bradley; alternate, Harry B. Mason.

BROOKLYN COLLEGE OF PHARMACY.—William C. Anderson, Henry W. Schimpf, A. P. Lohness; Alternates, Daniel C. Mungan, Tracy E. Clark, F. P. Tuthill.

UNIVERSITY OF BUFFALO DEPARTMENT OF PHARMACY.—Willis G. Gregory, Frank E. Lock, John F. Gray; alternates, George Reimann, Lee W. Miller, John C. Krieger.

LITERARY AND SCIENTIFIC SOCIETY OF GERMAN APOTHECARIES OF THE CITY OF NEW YORK.—E. C. Goetting, William C. Alpers, F. Hirsman; alternates, Carl F. Schlensner, Otto Raubenheimer.

KING'S COUNTY PHARMACEUTICAL SOCIETY.—Otto Raubenheimer, Adrian Paradis, Miss K. C. Mahagin; alternates, J. H. Reifuss, C. O. Douden, C. E. Heimerzheim.

NORTH DAKOTA PHARMACEUTICAL ASSOCIATION.—Oscar Hallenberg.

UNIVERSITY OF CINCINNATI MEDICAL DEPARTMENT.—Julius Eichberg, L. C. Schriekel.

OHIO STATE PHARMACEUTICAL ASSOCIATION.—Lewis C. Hopp, T. D. Wetterstroem, George B. Topping; alternates, John C. Farmin, Azor Thurston, Eugene Selzer.

OHIO STATE UNIVERSITY COLLEGE OF PHARMACY.—George B. Kauffman, C. A. Day, William McPherson; alternates, D. S. White, W. E. Henderson, J. Mel. Phillips.

WESTERN RESERVE UNIVERSITY DEPARTMENT OF PHARMACY.—Harry V. Arny, Joseph Feil, William T. Hankey.

UNIVERSITY OF OKLAHOMA SCHOOL OF PHARMACY.—Hobert C. Washburn, Edwin DeBarr, John D. McLaren; alternates, Albert E. Van Vleet, Louis A. Turley, Henry H. Lane.

MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA.—Adolph Koenig, David Riesman, Henry Beates; alternates, James B. Walker, Thomas S. Blair.

COLLEGE OF PHYSICIANS OF PHILADELPHIA.—H. C. Wood, Jr., Solomon Solis Cohen, James H. Anders; alternates, Richard A. Cleeman, Judson Daland, L. F. Appleman.

WOMAN'S MEDICAL COLLEGE OF PENNSYLVANIA.—Henry Leffman, Arthur A. Stevens, Frederick P. Henry.

PENNSYLVANIA PHARMACEUTICAL ASSOCIATION.—Lucius L. Walton, M. N. Kline, W. L. Cliffe; alternates, C. B. Lowe, D. J. Thomas.

PHILADELPHIA COLLEGE OF PHARMACY.—Joseph P. Remington, Samuel P. Sadtler, Henry Kraemer; alternates, Frank X. Moerk, Charles H. LaWall.

UNIVERSITY OF PITTSBURGH DEPARTMENT OF PHARMACY.—Julius A. Kosh, James H. Beal, Louis Sallback; alternates, Louis Emanuel, B. E. Pritchard, George W. Kutscher.

FORT WORTH UNIVERSITY MEDICAL DEPARTMENT.—R. H. Needham, W. G. Cook, William R. Howard; alternates, M. E. Gilmore, I. C. Chase, F. G. Wanders.

TEXAS PHARMACEUTICAL ASSOCIATION.—J. C. Buckner, E. G. Eberle.

MEDICAL SOCIETY OF VIRGINIA.—Roshier W. Miller, F. M. Read, John Staige Davis.

UNIVERSITY OF VIRGINIA DEPARTMENT OF MEDICINE.—J. A. E. Eyster, J. C. Flippin, J. H. Kastle.

UNIVERSITY COLLEGE OF MEDICINE, Richmond, Va.—A. L. Gray, A. G. Brown, F. W. Howle.

UNIVERSITY OF WASHINGTON SCHOOL OF PHARMACY.—Charles W. Johnson, Irvin W. Brandel, Albert H. Dewey; H. G. Byers, T. C. Frye, John Weinzirl.

WISCONSIN PHARMACEUTICAL ASSOCIATION.—Otto J. S. Boberg, Edward G. Rauber, Ferd W. Thleman; alternates Edward Williams, George Kestin, Richard Sommer.

Miscellany

The Chemical Regulation of the Processes of the Body by Means of Activators, Kinases and Hormones.—Of recent years experimental investigations in physiology and clinical studies on man have led us to understand that the complex of activities in the animal body is united into a functional harmony, not only through a reflex control exerted by the nervous system, but also by chemical regulation effected through the blood or other liquids of the organism. The chemical regulation is brought about by at least two classes of substances, which are not altogether separate and distinct from each other. These are the internal secretions (i. e., those secretions from ductless glands, which pass directly into the blood stream—as is the case in the suprarenal capsule, thyroid, etc.) and the hormones of Bayliss and Starling. Hormones, as defined by Howell (address of the chairman of section K—Physiology and Experimental Medicine, American Association for the Advancement of Science, Boston, Dec. 28, 1909, *Science*, Jan. 21, 1910), are “those substances in solution which, conveyed from one organ to another through any of the liquid media of the body, effect a correlation between the activities of the organ of origin and the organ on which they exert their specific effect.” Perhaps the best example of correlated chemical activity among the organs, brought about through the agency of hormones, is to be found in the interrelation of the activities of the stomach, duodenum and pancreas. The process is described as follows: “Hydrochloric acid formed in the stomach and brought into the intestine with the chyme stimulates the epithelial cells of the intestine to form secretin and to pass it into the blood. The secretin conveyed by the blood to the pancreas stimulates this organ to secrete pancreatic juice. The pancreatic juice is carried to the duodenum and stimulates the epithelial cells to form enterokinase, which then activates the trypsinogen to trypsin.” Thus clinicians of the present day must bear in mind another great demonstrated physiologic principle, i. e., the chemical correlation of the various activities of the organs and tissues. Concerning the number and importance of the hormones, Howell goes on to say: “The substances of known composition which may be regarded as playing the rôle of hormones are few in number, three or four at most, as follows: First, the carbon dioxid formed in the tissues, particularly in muscle during contraction. It seems agreed now that the carbon dioxid acts as the normal stimulus to the respiratory center. . . . Second, the adrenalin of the adrenal glands, which in some way, directly or indirectly, makes possible the full functional activity of the involuntary musculature of the body. Third, the hydrochloric acid produced in the stomach which stimulates the formation of secretin in the duodenal epithelium. Fourth, possibly the iodothyron of the thyroid gland with its dynamogenic effect on the neuromuscular apparatus of the body. In addition, there are a number of hormones of unknown composition which have been either proved or assumed to exist, and which are held responsible for certain well-known correlations of function. The pancreatic secretin formed in the epithelium of the duodenum or jejunum which stimulates the flow of pancreatic secretion; the gastric secretin formed in the pyloric mucous membrane which gives rise to the chemical secretion of gastric juice; a secretin formed in the duodenal epithelium which stimulates the formation of intestinal juice in the following segments of the intestine; unknown hormones of pancreatic origin which determine the absorption activity of the intestinal epithelium; vasodilator hormones formed in tissues in functional activity and which have a specific effect on the vessels of the functioning organ; a vasoconstricting and a diuretic hormone formed in the posterior lobe of the pituitary body; a hormone controlling the growth of the bones and connective tissues produced in the anterior lobe of the pituitary body; a hormone controlling the oxidation of sugar in the body and produced in the cells of the islands of Langerhans in the pancreas; a hormone produced in the thymus which controls possibly in some way the development of the reproductive organs; a vasoconstricting hormone formed in the kidneys; a hormone in the salivary glands which controls the flow of water from the blood capillaries in the glands; a hormone produced in the fetus *in utero*, which stim-

ulates the growth of the mammary glands; a hormone in the ovary which controls the growth of the uterus and the processes of menstruation; a hormone in the ovary which controls the implantation of the fertilized ovum and the growth of the placental tissue; a hormone in the testis which initiates the development of secondary sexual characteristics in the male; hormones of an indefinite number, produced in all the tissues and acting specifically on the determinants in the gametes in such a way as to make possible the transmission of acquired characteristics.”

Breast-Feeding of Infants.—Supervision of breast-feeding, especially when the nutrition of the infant is under suspicion, cannot be properly conducted without frequent determinations of its exact weight. Only in those extremely rare instances in which there is no secretion from the breasts is it possible to determine with certainty before the expiration of ten or more days whether the infant may not subsequently thrive at the breast, since gains in weight often improve when the mother is out of bed, and has regained her health. Crying may have many causes and is not a reliable indication that the infant is not getting enough milk. Green, or loose, or scanty stools in a new-born infant are often coincident with regular gains in weight. They are frequently due to physiologic conditions, or favored by irregular nursing, and by no means indicate of necessity that the milk disagrees with the infant. When the stools are scanty and the weight stationary or the gains slight, suitable supplementary feeding may be advisable until the breast milk can be improved. Early and sudden weaning should never be advised for an infant of stationary weight until every effort has been made to improve conditions by proper nursing hours, regulation of the mother's health and hygiene, and trial in her diet of milk and of yellow corn-meal gruel. An apparently disturbed infant who is steadily gaining, or has recently gained well, at the breast, should not be weaned until all the factors in the disturbance have been thoroughly investigated, as the probabilities are in favor of successful continuation of lactation. On the other hand, an infant at the breast who seems well and contented and has good stools, should not be allowed to long stand still in weight or to make insufficient gains for the lack of some supplementary artificial feeding. This holds true not only during the first few weeks but at any period of lactation.—T. S. Southworth, in *Amer. Jour. Obst.*

Summary of the Antituberculosis Campaign.—According to Jacobs (*The Survey*, Jan. 29, 1910), a review of the work done in the campaign against tuberculosis during 1909, shows that \$8,180,621.50 was spent, 9,456,409 pieces of literature were distributed and 117,312 patients were treated. These figures include the work done by sanatoriums, associations, dispensaries and municipalities. There were about 300 associations engaged in the work, spending \$3,253 each, and 16,988 patients were given aid. The capacity of the various institutions aggregated 14,208 beds, 60 per cent. for incipient, 15 per cent. for moderately advanced and 25 per cent. for advanced cases, giving an average of 2.7 patients for each bed during the year, and making the average stay of each patient in the institution 101 days, which is not considered enough. While the small local hospital is becoming more popular, the demand for institutional care is increasing, with the result of a shortened stay for each patient. The average daily individual expenditure of hospitals and sanatoriums was \$1.34. There were 250 dispensaries with 61,000 patients, each visiting the dispensary an average of 10 times. Nearly 350 nurses were employed, whose visits to the homes of patients would foot up into the millions. According to the expenditure, the number of patients treated and the literature distributed, New York leads, Pennsylvania comes second and Massachusetts third. For fourth place, while Colorado and New Mexico lead in expenditure, they have done little or no educational work, and fall far below Missouri, Maryland and Illinois in the number of patients treated. In the amount of literature distributed, which Jacobs feels is an index of the educational work done, Missouri stands third, with New Jersey fourth, Rhode Island fifth and Illinois and Massachusetts sixth and seventh. The cities leading in antituberculosis work may be grouped in the following order: New York, Boston, Chicago,

Philadelphia, Baltimore, St. Louis, Pittsburg, Cincinnati, Rochester and Denver. Reports from all parts of the country indicate that this year the work will be more than doubled. Special antituberculosis appropriations aggregating \$3,976,500, have been made in the various municipalities for this year, and in addition over \$4,000,000 has been appropriated by state legislatures. Besides these large sums, a large number of the existing institutions are planning enlargement of effort, and new organizations are being formed daily.

Prevention of Malaria.—Prof. Ronald Ross (*Public Health Reports*, Jan. 21, 1910), says, regarding malaria and its prevention: Malaria will not remain long in a locality (1) unless the carrying agents (*Anophelines*) are numerous enough; (2) unless there is a sufficient number of infected persons to infect the carriers; and (3) if the insects are prevented from biting human beings. The measures to reduce the disease are therefore: (1) *Anopheline* reductions, as employed in the Suez and Panama canal zones; (2) case reduction according to the plan originated by Koch and Celli in 1900, by leaving the mosquitoes alone and curing the infected patients; and (3) isolation by the use of nets and screens, an ancient method. Isolation and case reduction require ready compliance on the part of the public, which is difficult to attain; but swamps may be drained and water-courses cleared without objection by any one, expense being the consideration, and on this account this plan is better adapted for areas with great density of population, as cities. General preventive measures are, (1) measuring the amount of malaria in the locality affected by examining periodically the spleens of school children, adults being largely immune; (2) treatment of children by distribution of free quinin; (3) house protection by proper construction, screens, etc.; (4) mosquito reduction where advisable (a) by minor works, (b) major works; (5) a suitable permanent organization and annual malaria report. An additional measure might perhaps be the introduction of the Indian *Anopheline*, *Myzomyia rossii*, which does not carry malaria, in the hope that it may crowd out the malarial mosquito.

Tuberculous Passengers on Railroads.—Cars for tuberculous passengers should be compartment cars with compartments opening on a corridor running along one side of the car and not in the center. Each compartment should have two berths, placed lengthwise with the car, a water closet, not enclosed, and a folding washstand with running water. The floor should be covered with linoleum, or should be of cement, and a small rug used. The upholstery should be of leather or, preferably, of movable cushions with washable covers. All dejects should be thoroughly disinfected before being allowed to escape from the closet. The sputum cups should be of pasteboard and should be burned in a stove designed especially for that purpose. There should be such a stove in each car. When a compartment is vacated by a tuberculous passenger, it should not be used again until thoroughly disinfected with formaldehyd, everything washable boiled, the woodwork and floor thoroughly cleansed and the movable cushions, mattresses and blankets disinfected in a hot room. These rooms should be at railway terminals, where supplies of disinfected cushions, blankets and mattresses could be obtained without causing any more delay than is made necessary by thorough cleaning of the compartments; but owing to the comparatively long intervals in the departure of hospital cars there would be sufficient time for thorough disinfection.—From *Public Health*, Lansing, Mich.

Factory Inspectors and Public Health.—The present needs of the states are the adoption and enforcement of laws of the pattern of those in Massachusetts. Pennsylvania's needs are an affiliation of the factory department with the state and local boards of health, with the submitting of appropriate reports. The supervision over the hygienic conditions of factories, noxious gases and dust, spitting, dampness, ventilation, sanitation, nuisances, location and condition of toilets, dairy and other food inspection should be placed in the hands of medical men qualified in sanitation, as the water supplies and transmission of diseases now are. The factory inspectors should then retain their other duties, being largely advisory

mechanicians rather than sociologists. It cannot be expected that factory builders, factory owners or operators will adopt means for the protection of their employees until they receive free instruction and advice which is backed by legal authority, and are then led to appreciate the importance and economic value of saving the health and lives of the workmen. Those factory accommodations which mean inconvenience and estheticism require attention, but those industrial conditions which spell danger and death demand correction.—H. B. Wood, in *Pennsylvania Medical Journal*.

Artificial Feeding of Infants.—Bottle-feeding should be the last and not the first resort. When found to be absolutely necessary it should, when possible, gradually displace the breast. The first step in artificial feeding is to secure perfect digestion of a weak milk mixture which is reasonably certain not to cause disturbance, and so to time our changes as to increase the strength neither too rapidly nor too slowly. Due regard for proper quantities and proper intervals outweighs in importance ultrarefinements in decimal percentages. When the infant is steadily gaining we should not be in too much of a hurry to increase its food, but when the gain slows down or ceases we must carefully investigate the cause and determine whether the evidence calls for an increase or a decrease in the food strength. We should remember that sufficient proteid is the foundation for a well-balanced development, and that more proteid may be given to the average infant over six months of age if the fat does not exceed 2.50 per cent., or at the most 3 per cent., and also that well-cooked starch in some form is readily digested and absorbed after the seventh month, and is more successfully given combined with the milk mixture than in any separate form.—T. S. Southworth, in *Amer. Jour. Obst.*

Animal Experimentation.—Nothing is more certain than that scientific experimentation on animals constitutes the very basis of physiologic, pathologic, medical and surgical advance. To question its value in scientific progress is as futile as to question the value of the railway or the telegraph in commerce. To assert that it is synonymous with the infliction of pain rests on gravely mistaken assumptions regarding its procedures. To abolish it or fetter it by legislation would change our hopefulness of future victory over hitherto unconquered diseases into despair, and deprive future generations of the blessings which we believe we or our successors can give them. And yet there are persons who would not hesitate to abolish animal experimentation summarily were they given the power. Others, seemingly normal-minded in many respects, would seriously restrict it. And for what reason? Because of an overwrought emotionalism, a hyperesthesia regarding the possible sufferings of animals, a state of things in the laboratories that is wholly fancied, and an unwarranted distrust of the humanity of man.—F. S. Lee, of Columbia University, in *Science*.

The Saliva Sign of Cancer of the Esophagus.—R. Gaultier has encountered a case of cancer of the esophagus presenting in typical form what he calls Roger's esophago-salivary syndrome: a continuous excessive secretion of saliva as the result of a cancer in the esophagus. This phenomenon is mentioned also in the reports of 20 cases of cancer of the esophagus in the literature. In some cases the salivary reflex was noticed before there was any disturbance in swallowing. The saliva flows most freely during or soon after eating, as a rule; sometimes it is swallowed and vomited later, especially in the morning. The tormenting incessant secretion aids materially in weakening the patients. Gaultier states in his communication in the *Archives des Maladies de l'Appareil Digestif* that his experiments on dogs confirm Roger's explanation of the phenomenon as an esophago-salivary reflex action from irritation of the esophageal mucosa.

Colon Reactions.—A. Mathieu, in the *Archives des Maladies de l'Appareil Digestif*, calls attention to attacks of apparently severe indigestion or simulating chronic appendicitis which are merely the expression of a morbid reaction on the part of the colon to some reflex action, of local or neurasthenic origin or to absorption of toxins. In some of the 14 typical cases reported in detail the attack was accompanied by loss of con-

sciousness for a few minutes. In other cases there were colic pains and vomiting with an extremely tender point near the splenic flexure of the colon, or in the region of the cecum. In one case the disturbances continued to occur unmodified after removal of the appendix. Treatment should aim to cure existing constipation and any inflammatory condition present in the bowel and last, but not least, should include measures to tone up the nervous system.

Rise of Temperature in New-Born Infants.—The temperature of the baby should be taken, in the rectum, with a special rectal thermometer, with the same regularity as the mother's is taken during the puerperium. During the first week there is very apt to be a rise ranging from 101° to 105° F. This rise has been variously explained: by several it is attributed to sepsis, by others to starvation. I have seen too many babies relieved of this fever by a small artificial feeding, especially when the mother's milk was slow in coming, without any therapeutic remedies, not to believe that starvation is a factor in many cases of otherwise inexplicable high temperature in the child. Associated with the fever, in these cases, are restlessness, constant drawing up of the legs, crying, hot, dry mouth and skin.—H. E. Tuley, in *Archives of Pediatrics*.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

TO MAKE EPSOM SALTS PALATABLE

To the Editor:—To make Epsom salts palatable, add a small bit of citric acid to each dose. This makes a pleasant drink. I advise my patients to follow this method and it works well, and is a great saving.
B. L. HALE, Cherryvale, Kan.

CHEMICAL NAME OF SAL VOLATILE

To the Editor:—What is sal volatile? It is mentioned frequently in a new text-book I have, but in none of my works on materia medica.
W. E. WHITESIDE, Fenwick, W. Va.

ANSWER.—Sal volatile is a practically obsolete name for ammonium carbonate. It is generally used in the form of smelling salts with spirits of lavender.

DIPHTHERIA ANTITOXIN IN PERTUSSIS

To the Editor:—What is the present status of diphtheria antitoxin as treatment for pertussis?
C. E. McREYNOLDS, Goodrich, No. Dak.

ANSWER.—There is no recognizable scientific basis for the practice of treating pertussis with diphtheria antitoxin, whatever the results of its empiric use may be. Against it should be urged the fact that the injection of a foreign serum is not altogether without danger, and hence is not to be recommended when there is not good reason to believe that the beneficial results will certainly outweigh the possible chances of discomfort or even actual danger.

DR. LAMBERT'S TREATMENT OF MORPHINISM

To the Editor:—Please send me the formula of Dr. Alexander Lambert's morphin cure.
F. W. BURNS, Stewartville, Minn.

To the Editor:—A patient has asked me if I knew anything about a formula used by Dr. Alexander Lambert to cure the drug and drink habit. She stated that the formula could be obtained through the American Medical Association. I therefore write you for information. I understand that Lambert's experiments were conducted at the Bellevue Hospital. Kindly let me know what Dr. Lambert's formula is and where I can find a reliable report of cases.
J. J. MCGOVERN, Milwaukee, Wis.

ANSWER.—Dr. Alexander Lambert, 36 East Thirty-first Street, New York City, published an article on the subject in THE JOURNAL, September 25, page 985. While the supply of the issue lasts, THE JOURNAL will send copies for 15 cents each in stamps. Dr. Lambert may be willing to send reprints to persons interested. The letters printed above (received in the same mail) are only two out of many inquiries. A full discussion of the subject in our department of Therapeutics, March 5, will contain quotations from Dr. Lambert's articles and others from various sources.

The Public Service

Medical Department of the Army

Changes for the week ended Feb. 19, 1910:

Ashburn, James K., 1st lieutenant, M. R. C., granted 1 month and 20 days' leave.

Graham, George D., dental surgeon, ordered to proceed from Fort Leavenworth, Kan., to Fort Crook, Neb., for temporary duty for such time as his services may be required at that station.

Simpson, James A., 1st lieutenant, M. R. C., ordered to duty with 1st Cavalry, from San Francisco, to Boise Barracks, Idaho.

Hewitt, John M., 1st lieutenant, M. R. C., ordered to duty with 1st Cavalry, from San Francisco, to Fort Walla Walla, Wash.

De Loffre, Samuel M., captain, granted 6 months' leave of absence, with permission to go beyond the sea.

Russell, Frederick F., major, ordered to proceed to New York City, for the purpose of securing from the Rockefeller Institute material for the Army Medical School.

Mills, Robert H., dental surgeon, reported for temporary duty at Fort Jay, N. Y.

Gregory, Junius C., captain, orders to sail from San Francisco, on June 5, 1910, for duty in the Philippine Islands, revoked, and instead will sail Aug. 5, 1910.

Gregory, Junius C., captain, granted 2 months' leave of absence.

Carter, Edward C., lieutenant, ordered to Hot Springs, Ark., for observation and treatment at the Army and Navy General Hospital.

Norris, H. C. R., 1st lieutenant, M. R. C., relieved from temporary duty at Fort Worden and ordered to Fort Casey, Wash., for temporary duty.

Heterick, R. H., 1st lieutenant, M. R. C., left Fort Oglethorpe, Ga., on 15 days' leave of absence.

Sharpe, Herbert H., 1st lieutenant, M. R. C., ordered to proceed from Fort Jay, N. Y., to Fort Adams, R. I., for temporary duty.

Tasker, Arthur N., lieutenant, granted 16 days' leave of absence to take effect about April 15.

Lyon, Wm. C., 1st lieutenant, M. R. C., granted 23 days' leave of absence about March 3, 1910.

Craig, Charles F., captain, ordered to proceed to New Haven, Conn., for the purpose of delivering a lecture before the Yale University Medical School on the subject of the Army Medical Service.

Slater, Ernest F., 1st lieutenant, orders directing him to sail from San Francisco, June 5, for duty in the Philippine Islands, changed to direct him to sail September 10, instead.

Robinson, James L., contract surgeon, reported for temporary duty at Fort Worden, Wash.

McCallum, F. M., 1st lieutenant, M. R. C., on arrival at San Francisco, will proceed to his home and on arrival there will report by telegraph to The Adjutant General of the Army for further orders.

Billingslea, Charles C., captain, and Richardson, William H., lieutenant, on arrival at San Francisco, will report in person to the commanding general, Department of California, for assignment to duty at Army General Hospital, San Francisco.

Halloran, Paul S., captain, on arrival at San Francisco, will repair to this city and report in person to the commanding officer of the Walter Reed General Hospital, D. C., for duty.

Patterson, Robert H., major, leave of absence extended 1 month.

Medical Corps of the Navy

Changes for the week ended Feb. 12, 1910:

Rixey, P. M., surgeon-general, placed on the retired list from Feb. 1, 1910; detached from duty as Chief of the Bureau of Medicine and Surgery, Navy Department, and ordered home.

Hoen, W. S., P. A. surgeon, ordered to the Naval Station, Guantanamo, Cuba, on expiration of sick leave.

Hayden, R., asst.-surgeon, detached from the Naval Station, Guantanamo, Cuba, and ordered to Washington, D. C., for examination for promotion and then to wait orders in that city.

Bertolette, D. N., medical director, detached from command U. S. Naval Hospital, Washington, D. C., and ordered to continue other duties.

Elliott, M. S., surgeon, ordered to command the Naval Hospital, Washington, D. C.

Johnson, M. K., surgeon, detached from the *South Dakota* and ordered to the *Tennessee*.

Angwin, W. A., P. A. surgeon, detached from the *Tennessee* and ordered to the *California*.

Stokes, C. F., surgeon-general, appointed Surgeon-General and Chief of the Bureau of Medicine and Surgery, Navy Department.

Stokes, C. F., surgeon, detached from the Naval Medical School and the Naval Medical School Hospital, Washington, D. C., and ordered to duty as Surgeon General and Chief of the Bureau of Medicine and Surgery, Navy Department.

Changes for the week ended Feb. 19, 1910:

Furlong, F. M., surgeon, ordered to duty at the Naval Hospital, Boston.

Miller, O. J., acting asst.-surgeon, ordered to duty at the Naval Hospital, Washington, D. C.

Fitts, H. B., medical inspector, detached from the Naval Recruiting Office, Indianapolis, and directed to wait orders.

Brownell, C. D. W., surgeon, ordered to command the Naval Hospital, Puget Sound, Wash., and to additional duty at the Navy Yard, Puget Sound, Wash.

Bagg, C. P., surgeon, detached from command of the Naval Hospital, Puget Sound, Wash., and ordered to the *Colorado*.

Kennedy, J. T., surgeon, detached from the *Colorado* and ordered to the *Indiana*.

Dorsey, B. H., P. A. surgeon, detached from the *Washington* and ordered to duty at the Naval Hospital, Puget Sound, Wash., and to additional duty on board the *Philadelphia*.

Wickes, G. L., P. A. surgeon, detached from the Naval Recruiting Station, Denver, and ordered to the Naval Recruiting Station, Cedar Rapids, Iowa.

Fauntleroy, A. M., P. A. surgeon, detached from the *Indiana* and ordered to continue other duties.

Allen, A. H., P. A. surgeon, detached from the Naval Recruiting Station, Pittsburg, Pa., and ordered to Naval Hospital, New York.

Ralson, T. W., P. A. surgeon, detached from the Naval Hospital, N. Y., and ordered to the Naval Recruiting Station, Indianapolis.
Sterne, C. E., asst.-surgeon, detached from the Naval Hospital, Puget Sound, Wash., and ordered to the Washington.

Public Health and Marine-Hospital Service

Changes for the week ended Feb. 16, 1910:

Eager, J. M., surgeon, granted 2 months' leave of absence from Feb. 14, 1910.
Nydegger, J. A., surgeon, granted 3 days' leave of absence from Feb. 17, 1910.
Oakley, J. H., surgeon, granted 2 months' leave of absence from March 1, 1910.
Goldberger, Joseph, P. A. surgeon, granted 1 month's leave of absence from Jan. 29, 1910, on account of sickness.
Mason, Wm. C., acting asst.-surgeon, granted 3 days' leave of absence from Feb. 24, 1910.
Naulty, C. W., Jr., acting asst.-surgeon, granted 3 days' leave of absence from February 17, 1910.
Simonsen, G. T., acting asst.-surgeon, granted 9 days' extension of leave from Jan. 21, 1910, on account of sickness.
Stier, Carl, pharmacist, granted 6 days' leave of absence from Feb. 7, 1910, under Paragraph 210, Service Regulations.

BOARD CONVENED

Board of medical officers convened to meet at the Marine Hospital, Baltimore, for the purpose of conducting a physical examination of an officer of the Revenue-Cutter Service. Detail for the board: Surgeon W. P. McIntosh, chairman; Passed Assistant Surgeon M. K. Gwyn; Acting Assistant Surgeon W. H. Walsh, recorder.

Marriages

E. L. WILLSON, M.D., to Miss Vida Barry, both of Fowler, Ark., recently.

DAVID N. KEE, M.D., to Miss Mary V. Loftus, both of Gladstone, Mich., recently.

ERNEST GEORGE MAIER, M.D., to Miss Lillian Bach, both of Philadelphia, January 25.

EARL V. MACOMB, M.D., to Miss Lillian Cook, both of Menominee, Mich., February 8.

JESSE HALL SIMPSON, M.D., Louisville, to Miss Elizabeth May Zane, of New York City, recently.

ROBERT R. AGNEW, M.D., Jewett City, Conn., to Miss Bessie Griswold, of Ivoryton, Conn., February 9.

JAMES WILBUR SHANKLAND, M.D., St. Louis, to Miss Abbie E. Morse, of Boston, at St. Louis, February 5.

MAX C. HAWLEY, M.D., Logansport, Ind., to Mrs. Josephine Quinn Vawter, of North Madison, Ind., January 10.

CHARLES HOWARD DAVIES, M.D., Madison Neb., to DORA M. JUDKINS, M.D., of Fullerton, Neb., at Omaha, February 8.

JOHN KENNEDY MULDOON, M.D. Humphrey, Neb., to Miss Dora Eckert, of Charter Oak, Iowa, at Omaha, February 3.

WILLIAM SPICKERS, M.D., Paterson, N. J., to Miss Sophia Reed Hutchins, of San Francisco, at New York City, January 29.

WILLIAM CHAPMAN WARMSLEY, M.D., Tuguegarao, P. I., to Senorita Pura Punciano Garay, of Tuao, Cagayan, P. I., January 10.

Deaths

Henry Kirke Cushing, M.D. University of Pennsylvania, 1851; a life member of the Ohio State Medical Association; a resident of Cleveland since 1835; major and surgeon of the Seventh Ohio Volunteer Infantry during the Civil War; for many years professor in the Western Reserve Medical College, his work including the chairs of midwifery, diseases of women and children, surgery, and medical jurisprudence; for several years a trustee of Western Reserve University, which conferred on him the degree of LL.D. in 1884; through whose instrumentality, in great measure, the amalgamation of the Cleveland medical schools was brought about, and in whose honor the H. K. Cushing Laboratory of Experimental Medicine was recently established; died at his home February 12, from cerebral hemorrhage, aged 82.

William Bancroft Stanton, M.D. University of Pennsylvania, 1898; a member of the American Medical Association, College of Physicians of Philadelphia, and National Association for the Prevention of Tuberculosis, physician to the Henry Phipps Institute; White Haven Sanatorium of the Free Hospital for Poor Consumptives, and Department for Tuberculosis of the Philadelphia General Hospital; instructor in medicine in his alma mater; who made a special study of blood-pressure, in

the course of which he devised the instrument with which his name is closely associated; chairman of the section on medicine of the Medical Society of the State of Pennsylvania; author of many valuable articles on blood-pressure and tuberculosis; died in St. Agnes Hospital, February 13, from croupous pneumonia, aged 38.

William H. Taylor M.D. Medical College of Ohio, Cincinnati, 1858; a member of the American Medical Association; for many years connected with the Cincinnati Children's Home, and its president since 1903; president of the staff of the Presbyterian Hospital; one of the founders of the Society of Natural History; a charter member of the Cincinnati Medical Society; for nearly forty years professor of obstetrics in Miami Medical College, and for many years dean of the college; died at his home, February 6, from chronic nephritis, aged 74. At a meeting of the Cincinnati Academy of Medicine, a committee was appointed, consisting of Drs. Nathaniel P. Dandridge, Byron Stanton and Magnus A. Tate to draw up resolutions to be presented at the memorial meeting February 21.

Ernest Wende, M.D. University of Buffalo, 1878; University of Pennsylvania, 1884; a member of the Medical Society of the State of New York; for four terms health commissioner of Buffalo, N. Y.; professor of dermatology in the University of Buffalo, and professor of botany and microscopy in the Buffalo College of Pharmacy; dermatologist to the university dispensary; consulting dermatologist to the Buffalo General Hospital; a fellow of the Royal Microscopical Society and a member of the American Electro-therapeutic Association and American Public Health Association; who made a conspicuous record in improving the sanitation and lowering the death rate of Buffalo; died at his home in that city, February 11, from cancer, aged 56.

William Thompson English, M.D. Jefferson Medical College, 1871; a member of the Medical Society of the State of Pennsylvania and president of the South Side Medical Society, Pittsburg; professor of physical diagnosis to the Western Pennsylvania Medical College, clinical instructor in chest diseases in the Kauffman clinic; consultant in chest diseases in the South Side Hospital; consulting physician to the Passavant Hospital; surgeon of the Eighteenth Infantry N. G. Pa., for several years; died in the Passavant Hospital, Pittsburg, February 8, aged 60.

Charles Paine Thayer, M.D. University of Vermont, 1865; of Boston; a member of the Massachusetts Medical Society; hospital steward during the Civil War; a member of the medical staff of the Northern Pacific Railroad from 1871 to 1874, health officer and city physician of Burlington from 1874 to 1878; from 1893 to 1906, dean and professor of anatomy of the Tufts College Medical School, Boston; and thereafter emeritus professor; died in Atlantic City, N. J., February 1, aged 67.

Philemon D. Harding, M.D. Northwestern University Medical School, 1879; of Evanston, Ill.; a member of the American Medical Association; once president of the Evanston Branch of the Chicago Medical Society; for two terms mayor of Goshen, Ind.; and for 18 years pension examiner; a member of the staff of the Evanston Hospital; died in the Good Samaritan Hospital, Los Angeles, Cal., January 28, from nephritis, aged 71.

Mary E. Greene, M.D. Womans Medical College of Pennsylvania, Philadelphia, 1868; president of the American Household Economics Association; said to have been the first woman to be admitted to the New York Medical Society; a specialist on dietetics; at one time president of the Board of Health of Tulsa, Okla.; died at her home in Seattle, February 9, from heart disease, aged 65.

David Hillis Law, M.D. College of Physicians and Surgeons, Keokuk, Iowa, 1861; a member of the American Medical Association; assistant surgeon of the Thirtieth Illinois Volunteer Infantry during the Civil War; a member of the Lee County Pension Board; and for more than forty years a practitioner of Dixon, Ill., died in a hospital in Brownsville, Texas, February 13, aged 78.

Follen Cabot, M.D. Harvard Medical School, 1894; a member of the Medical Society of the State of New York; assistant surgeon of the Seventh Infantry N. G. N. Y. for several years; professor of genitourinary surgery in the New York Postgraduate Medical School and Hospital; died in Mount Sinai Hospital, New York City, February 13, from septicemia, aged 39.

Howard Whited Phillips, M.D. College of Physicians and Surgeons, New York City, 1868; a veteran of the Civil War; died at his home in Perth Amboy, N. J., February 1, aged 72.

Bernhard Claude Schlatter, M.D. University of Zurich, Switzerland, 1864; surgeon in the Austro-Italian Campaign of 1866; died at his home in Brooklyn, February 5, aged 70.

Edwy Joseph Ogden, M.D. Victoria College, Coburg, Ont., 1855; New York University, New York City, 1855; a member of the American Medical Association; formerly chief surgeon of the Western Lines of the Erie System; died at his home in Chicago, February 14, from an infection of the kidneys and prostatic hypertrophy, aged 80.

Leswie Colton Keerans, M.D. University of Maryland, 1902; a member of the American Medical Association; surgeon-in-chief to Mercy General Hospital, Charlotte, N. C.; professor of chemistry and physiology in St. Mary's College, Belmont, N. C.; died in Belmont, February 7, from pneumonia, aged 32.

William Gregory MacDonald, M.D. Harvard Medical School, 1885; a member of the American Medical Association; one of the medical examiners of Suffolk county, Mass.; dermatologist to the Carney and St. Elizabeth's hospitals; died at his home in Jamaica Plain, February 9, from heart disease, aged 51.

Philip O. Erwin, M.D. Vanderbilt University, Nashville, 1882; University of Nashville, 1883; a member of the Tennessee State Medical Association; local surgeon of the St. Louis and Southwestern Railroad at Big Sandy, Texas; died at his home, February 9, from cerebral hemorrhage, aged 54.

Charles N. Potts, M.D. Eclectic Medical Institute, Cincinnati, 1876; University of Louisville, 1890; formerly of Silverton, Colo., and a member of the American Medical Association; was found dead in his office in Durango, Colo., February 2, from the effects of an overdose of morphin, aged 54.

William Whitridge, M.D. University of Maryland, 1862; a member of the American Medical Association; from 1899 to 1908 president of the Baltimore Society for the Prevention of Cruelty to Animals; died suddenly at his home in Baltimore, February 6, from heart disease, aged 70.

George Griswold Hayward, M.D. Harvard Medical School, 1881; a member of the Massachusetts Medical Society and honorary member of the Bar Harbor (Maine) Medical Society, where he practiced during the summer; died at his home in Boston, February 6, aged 55.

Nicholas M. Hoover, M.D. Jefferson Medical College, 1865; a member of the Medical Society of the State of Pennsylvania; assistant surgeon of the Eighty-seventh Pennsylvania Volunteer Infantry during the Civil War; died at his home in Butler, February 7, aged 75.

Charles Griswold Gurley Merrill, M.D. Yale University, New Haven, 1863; assistant surgeon U. S. Army, during the Civil War; for nearly twenty years connected with the U. S. internal revenue service; died at his home in New Haven, Sept. 23, 1909, aged 73.

James A. Mulhern, M.D. Detroit Medical College, 1870; a member of the Michigan State Medical Society; and an honorary member of the Grand Rapids Academy of Medicine; died at his home in Grand Rapids, February 9, from diabetes, aged 66.

Wills de Hass, for seventy-two years a practitioner of medicine, and a frequent contributor to historic and scientific publications; a veteran of the Civil War; died at the home of his granddaughter in Pittsburg, January 24, from pneumonia, aged 92.

John M. Piper, M.D. Victoria College, Cobourg, Ont., 1880; for many years surgeon-major of the Seventh Regiment, London, Ont.; and later surgeon-major of the Governor-General's Body Guard, Toronto; died at his home in Toronto, February 7.

Oliver Hicks, M.D. Medical College of Virginia, Richmond, 1863; a member of the Medical Society of the State of North Carolina, and president of the Rutherford County Medical Society; died at his home in Caroleen, January 2.

William Masyck Memminger, M.D. Medical College of the State of South Carolina, 1888; of Glasgow, Mont.; died in the Deaconess Hospital, Great Falls, Mont., February 3, from septicemia, due to an operation wound, aged 42.

Richard French Hood, M.D. Jefferson Medical College, 1865; formerly a member of the Kentucky State Medical Association; died at his home in Irvine, February 10, from the effects of strychnin, aged 66.

Godfrey Hess Cline, M.D. Jefferson Medical College, 1860; twice president of the Lycoming County Medical Society; died at his home in Williamsport, Pa., from heart disease, January 8, aged 74.

Herbert C. Bradford, M.D. Hahnemann Medical College, Philadelphia, 1856; for twelve years a member of the school

board of Lewiston, Maine; died at his home, January 24, from leukemia, aged 76.

James H. F. Milton, M.D. University of Pennsylvania, 1860; a veteran of the Civil War; for many years a practitioner of West Philadelphia, died at his home in Mantua, N. J., February 1, aged 78.

George Z. Horen (license, Ky., thirty years practice, 1894); a member of the American Medical Association; died at his home in Graefenberg, Ky., February 12, from cerebral hemorrhage, aged 62.

Henry P. Mayer, M.D. Hospital College of Medicine, Louisville, 1898; a member of the Kansas Medical Society; died at his home in Parsons, February 4, from malignant disease, aged 52.

Laura E. Stockdale, M.D. Chicago Homeopathic Medical College, 1880; formerly secretary of the Denver Homeopathic Club; died at her home in Denver, January 27, from nephritis, aged 68.

Carl Bronson Smith, M.D. University of Buffalo, 1880; of Painted Post, N. Y.; died in the Corning, N. Y., Hospital, January 26, after an operation for the removal of gall-stones, aged 52.

Floyd Johnson Smith, M.D. University of Maryland, 1895; of Barrackville, W. Va.; died at the Cook Hospital, Fairmont, February 6, from pneumonia complicating typhoid fever, aged 38.

Peter Binford, M.D. New Orleans School of Medicine, 1861; formerly of Somerville, Ala.; died at his home in West Nashville, Tenn., February 7, from cerebral hemorrhage, aged 69.

Lawrence Daniel Doyle, M.D. Long Island College Hospital, Brooklyn, 1904; formerly of Bound Brook, N. J.; died at the home of his sister in Plainfield, N. J., February 9, aged 31.

George Hunter Rodger, M.D. New York University, New York City, 1888; of Hammond, N. Y.; died in the Ogdensburg Hospital, February 5, from cerebral hemorrhage, aged 49.

William F. Benefiel (years of practice, Ill., 1877); a veteran of the Civil War; died at the home of his daughter in Atwood, Ill., February 5, from pneumonia, aged more than 80.

Palaemon L. Hilsman, M.D. University of Pennsylvania, 1871; a member of the American Medical Association; died at his home in Albany, Ga., February 3, aged 62.

George E. Brattain, M.D. Medical College of Fort Wayne, Ind., 1882; died in his apartment in Wapakoneta, Ohio, January 29, from hemorrhage of the lungs, aged 51.

Henry Baughman Hamilton, M.D. Transylvania University, Lexington, Ky., 1847; died at the home of his son in Dwight, Ill., January 29, from senile debility, aged 87.

Flint Hart, M.D. Keokuk (Iowa) Medical College, 1892; of West Point, Ill.; died in St. Mary's Hospital, Quincy, Ill., February 6, from heart disease, aged 41.

Max Moskievitz, M.D. Jefferson Medical College, 1890; visiting physician to the Har Moriah Hospital, New York City; died at his home January 4, aged 47.

Charles W. Hickman, M.D. Medical College of Georgia, Augusta, 1873; was robbed, shot and killed in Summerville, a suburb of Augusta, February 2.

James Douglas Terrell, M.D. Tulane University, New Orleans, 1856; died at his home in Blandville, Ky., February 7, from senile debility, aged 79.

David M. McFall, M.D. Jefferson Medical College, 1857; founder of the Memorial Hospital, Mattoon, Ill.; died at his home in that city, February 13.

K. C. Edgell, M.D. St. Louis College of Physicians and Surgeons, 1888; died at his home in Oceana, W. Va., January 28, from angina pectoris, aged 47.

William Poyntell Johnston, M.D. University of Pennsylvania, 1871; died at his home in Fairview, Pa., January 22, from arteriosclerosis, aged 83.

Charles Herbert Mason, M.D. Vermont Medical College, Rutland, 1889; died at his home near Chatham, N. Y., January 27, from nephritis, aged 53.

Batts Overton Schulte, M.D. University of Louisville, 1905; died at his home in Louisville, February 11, from edema of the glottis, aged 26.

Oliver C. Alexander, M.D. Albany (N. Y.) Medical College, 1854; died at his home in Albany, February 9, from arteriosclerosis, aged 80.

James J. Dunleavy, M.D. Yale University, New Haven, 1902; died at the home of his mother-in-law in New Haven, February 6.

Thomas F. Dunigan, M.D. Missouri Medical College, St. Louis, 1874; died at his home in Vichy, Mo., February 1, aged 55.

Frank Richmond Pratt, M.D. Bellevue Medical College, 1891; died suddenly at his home in Manchester, N. Y., February 5, aged 43.

Jesse Lin Boyed Norman (license, Ark., 1903); died at his home in Pangburn, Ark., January 16, from exposure, aged 53.

Medical Economics

THIS DEPARTMENT EMBODIES THE SUBJECTS OF ORGANIZATION, POSTGRADUATE WORK, CONTRACT PRACTICE, INSURANCE FEES, LEGISLATION, ETC.

Bill to Establish a Department of Public Health

The following bill "Establishing a Department of Public Health, and for other purposes" (S. 6049), introduced into the U. S. Senate by Senator Owen, of Oklahoma, has been read twice and referred to the Committee on Public Health and National Quarantine.

This bill creates a separate department and provides for a Secretary of Public Health. While this is ideal and it is to be hoped that such a condition may be ultimately realized, the opposition to the enlargement of the cabinet and to the creation of any new cabinet officers may make it exceedingly difficult to pass such a bill. It is, however, most gratifying as an evidence of the increasing public interest on this subject.

"Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled:

"SEC. 1. That there is hereby established a Department of Public Health under the supervision of the Secretary of Public Health, who shall be appointed by the President a Cabinet officer, by and with the consent of the Senate, at a salary of \$12,000 a year, with like tenure of office of other Cabinet officers.

"SEC. 2. That all departments and bureaus belonging to any department, excepting the Department of War and the Department of the Navy, affecting the medical, surgical, biologic, or sanitary service, or any questions relative thereto, shall be combined in one department, to be known as the Department of Public Health, particularly including therein the Bureau of Public Health and Marine-Hospital Service, the medical officers of the Revenue-Cutter Service, the medical referee, the assistant medical referee, the surgeons and examiners of the Pension Office; all physicians and medical officers in the service of the Indian Bureau, or the Department of the Interior, at old soldiers' homes, at the Government Hospital for the Insane, and the Freedman's Hospital and other hospitals of the United States; the Bureau of Entomology, the Bureau of Chemistry and of Animal Industry of the Department of Agriculture; the hospitals of the Immigration Bureau of the Department of Commerce and Labor; the emergency relief in the Government Printing Office, and every other agency of the United States for the protection of the health of the people of the United States, or of animal life, be, and are hereby, transferred to the Department of Public Health, which shall hereafter exercise exclusive jurisdiction and supervision thereof.

"SEC. 3. That the official records, papers furniture, fixtures, and all matters, all property of any kind or description pertaining to the business of any such bureau, office, department, or branch of the public service is hereby transferred to the Department of Public Health.

"SEC. 4. That the Secretary of Public Health shall have supervision over the Department of Public Health, and shall be assisted by an Assistant Secretary of Public Health, to be appointed by the President, by and with the advice and consent of the Senate, at a salary of six thousand dollars a year, with such duties as shall be prescribed by the Secretary not inconsistent with law.

"SEC. 5. That the Secretary of Public Health shall be authorized to appoint such subordinates as may be found necessary. There shall be a chief clerk appointed at a salary not to exceed \$3,000 a year, and such other clerks as may from time to time be authorized by Congress.

"SEC. 6. That the officers and employees of the public service transferred to the Department of Public Health shall, subject to further action by Congress, receive the salaries and allowances now provided by law.

"SEC. 7. That it shall be the duty and province of such Department of Public Health to supervise all matters within the control of the Federal Government relating to the public health and to diseases of animal life.

"SEC. 8. That it shall gather data concerning such matters, impose and enforce quarantine regulations; establish chemical, biologic and other standards necessary to the efficient administration of said department, and give due publicity to the same.

"SEC. 9. That the Secretary of Public Health shall establish a Bureau of Biology, a Bureau of Chemistry, a Bureau of Veterinary Service, a Bureau of Sanitary Engineering, reporting such proposed organizations to Congress for suitable legislation relative thereto.

"SEC. 10. That all unexpended appropriations and appropriations made for the ensuing year shall be available on and after July 1, 1910, for the Department of Public Health, where such appropriations have been made to be used by any branch of the public service transferred by this Act to the Department of Public Health. It shall be the duty of the Secretary of Public Health to provide, on proper requisition, any medical, sanitary, or other service needed of his department required in another department of the Government.

"SEC. 11. That any other department requiring medical, surgical, sanitary, or other similar service shall apply to the Secretary of Public Health therefor wherever it is practicable.

"SEC. 12. That all officers or employees of the Government transferred by this Act to the Department of Public Health will continue to discharge their present duties under the present organization until July 1, 1910, and after that time until otherwise directed by the Secretary of Public Health or under the operation of law.

"SEC. 13. That all laws or parts of laws in conflict with this Act are hereby repealed."

The Cheerful Reception Room

That a great many physicians' offices are furnished and adorned in execrable taste is the observation of Dr. L. W. Flanders, Dover, N. H. (*Bulletin Beacon Hill Hospital Staff*). He says that if he were a layman, and above all a patient waiting to have a boil lanced, he doubts if he should enjoy the contemplation of Dr. Tulp's dissection in Rembrandt's "Lesson in Anatomy." He once spent a few minutes in a doctor's waiting-room, the walls of which roared "shop" at him. The "Lesson in Anatomy" was there, and worst of all, a photograph of the doctor himself at the operating table of some postgraduate school. The apron, the rubber gloves, the soiled sponges, the scurrying nurses all stood out in sad reality. In the consultation room he was confronted with a glass case full of glittering steel, and he said to himself, how can a patient stay through all this?

In the hospital nowadays the patient never sees the grim preparations of the operating room nor the surgeon in his ghostly panoply. Why not extend the same method to the office? Let the waiting room be bright and cheery, the walls hung with beautiful pictures, the chairs easy and the table furnished with entertaining literature, and above all, let the place be clean. Given a dirty waiting room, it is hard to believe that an aseptic surgeon dwells behind the door of the consulting room. All surgical instruments should be hidden in cabinet drawers, and soiled cotton and dirty sponges be buried in the depths of the waste-box.

Club Practice and State Insurance in Great Britain, Germany, Austria and France

Interest in organization questions and especially in their application to the peculiar problems of the medical profession is not by any means confined to this country. Physicians in Great Britain, Germany and France are also showing much interest in questions relating to medical economics. The London *Lancet* in its issue of January 1, under the title, "The Organization of the Medical Profession: Some Lessons from Abroad," says: "The 'Battle of the Clubs,' under which heading we have often described the struggles of English medical men to obtain a fair remuneration for the contract practice which so many of them are compelled to adopt as the only way of dealing with their poorer patients, is not waged in England alone. The necessity of organization of the profession has become apparent throughout the continent where the questions at issue, however, are somewhat different." The effect on

physicians of the establishment by the German government of compulsory insurance for workingmen has already been discussed in this department (THE JOURNAL, Jan. 15, 1910, p. 225).

Austria, it seems, is now taking up the same question, the government having proposed a scheme for general insurance against sickness which provides that every person earning less than 4,800 kronen (\$1,000) a year, be required to become a member of a sick-club. A meeting of the medical councils was recently held in Vienna to discuss the influence of such a plan on physicians' incomes. Evidently the same conditions regarding the organization of the medical profession exist in Austria that have existed in Germany. The proposed clubs would greatly lower the average medical income as they would not only employ a less number of physicians to care for their members than now care for the same number of private patients, but would also pay medical men totally inadequate salaries for the work which they would have to do. According to the *Lancet*, a physician drawing a salary of from \$500 to \$1,000 a year will be expected to look after from 1,000 to 5,000 patients. Austrian physicians are endeavoring to induce the government to reduce the wage limit for compulsory insurance to \$500, not requiring any one who earns over that amount to take out workingmen's insurance. While this would diminish the number of members of the sick clubs, it is difficult to see that it would in any way benefit those physicians who were selected to furnish medical attendance for the members. In fact, if the clubs were made up entirely of those earning the smallest wages the possibilities are that the compensation would be reduced rather than increased. The *Lancet* states that there are 2,000 medical men in Austria who are unable to make a living under present conditions and that effective organization is the only apparent relief.

In Germany, Dr. Hartmann, of Leipsic, some eight years ago, organized a fighting medical union familiarly known as the *Leipziger Verband*. Members pay an annual due of \$5.00 and are endeavoring to raise a fund of \$125,000. Under the compulsory insurance law, each trade forms a sick benefit association and each member pays from 4 to 5 shillings a year for medical attendance. Of the 400 physicians at Cologne, about 80 are employed as club doctors to attend 120,000 workingmen and 20,000 families, which amounts to about 220,000 patients, or about 2,750 patients for each physician. In 1904, a general medical strike was called at Cologne and the 80 club physicians gave up their positions as a result. The effect was that the club imported about thirty-five other medical men to take their places, but finally the physicians won and a five year agreement was signed. This period has nearly terminated and the struggle is expected to break out again.

In France, insurance companies have sought to impose on the medical men whom they employ, while physicians chosen by the injured workmen are accused by the companies of exaggerating the injuries sustained. Medical clubs have been established in a few districts but have not become general. Instead, the municipalities pay a small sum yearly for each person whose name appears on the physician's list as entitled to free medical relief, the money being provided from the local and county revenue supplemented by contributions from the state. The *Lancet* concludes that hard work and inadequate pay for the rank and file of the medical profession are conditions found everywhere. This situation can only be met by presenting an united front and a moderate but positive statement of the attitude of the profession on this subject so as to secure a living income before the inadequate compensation offered has become crystallized into legislation.

POSTGRADUATE COURSE FOR COUNTY SOCIETIES

DR. JOHN H. BLACKBURN, DIRECTOR
BOWLING GREEN, KENTUCKY

[The Director will be glad to furnish further information and literature to any county society desiring to take up the course.]

Seventh Month—Second Weekly Meeting

DIAGNOSIS OF TUBERCULOSIS (CONTINUED)

SPECIAL AIDS TO DIAGNOSIS: Examination of sputum for bacilli; technic of stain by usual methods; methods of Krönig; value of bacilli in early diagnosis. Differential

stain for human and bovine bacilli. Lymphocyte sputa (Wolff-Eisner); pathological and diagnostic significance of presence of lymphocytes. Elastic fibers in sputa; significance.

TUBERCULIN TESTS: Tuberculin test of Koch; technic, reliability, dangers. Dosage, general reaction, preparations. Cutaneous reaction, von Pirquet. Preparation used, technic, reaction, diagnostic value.

Ophtho-tuberculin, conjunctival, reaction; Wolff-Eisner, Calmette. Preparations, technic, course of reaction. Course of cutaneous and conjunctival reactions in health, in doubtful cases, in different stages of pulmonary tuberculosis, in surgical tuberculosis.

THERMOMETRY: Daily variations, effect of exertion, walks; value of temperature range in early diagnosis.

EXPERIMENTS ON ANIMALS: Animals used, technic, results.

THE ROENTGEN RAYS: Changes occurring in volume of lung in normal respiration; limitations in disease of lung; practical value of x-ray in diagnosis.

Medical Education and State Boards of Registration

COMING EXAMINATIONS

CONNECTICUT: Regular; City Hall, New Haven, March 8-9. Sec., Dr. Charles A. Tuttle. Homeopathic; New Haven, March 8. Sec., Dr. Edwin C. M. Hall, 82 Grand Avenue. Eclectic; 42 Meadow St., New Haven, March 8. Sec., Dr. T. S. Hodge, Torrington.

MAINE: Portland, March 8-9. Sec., Dr. Frank W. Searle, 806 Congress Street.

MASSACHUSETTS: State House, Boston, March 8-10. Sec., Dr. Edwin B. Harvey.

Pennsylvania December Reports

The Medical Council of Pennsylvania reports the written examinations held at Philadelphia and Harrisburg, Dec. 14-17, 1909. The number of subjects examined in was 7; percentage required to pass, 75.

At the examination held by the State Medical Society of Pennsylvania, the total number of candidates examined was 70, of whom 63 passed, 6 failed and 1 withdrew. The following colleges were represented:

College	PASSED	Year Grad.	Total No. Examined.
University of California	(1903)	1
Yale Medical School	(1907)	1
Georgetown University	(1908)	1
George Washington University	(1905)	1
Northwestern University Medical School	(1907)	2
Kookuk Med. College, College of Phys. and Surg.	(1905)	1
Kentucky School of Medicine	(1907)	1
University of Louisville	(1909)	1
Maryland Medical College	(1909)	2
University of Maryland	(1909)	2
Johns Hopkins University	..... (1902) (1903) (1909)		3
Tufts College Medical School	(1907)	1
University of Michigan, College of Medicine	(1909)	3
Detroit College of Medicine	(1909)	1
St. Louis College of Physicians and Surgeons	(1909)	1
University of Buffalo	(1909)	1
Columbia Univ., Coll. of Phys. and Surg.	(1904) (1907)	2
Leonard Medical School	(1909)	2
University of Pittsburgh	(1908)	3
Jefferson Medical College	..... (1906) (3, 1908) (7, 1909)		11
University of Pennsylvania	..... (1883) (6, 1909)		7
Woman's Medical College of Pennsylvania	(1909)	2
Temple University	..... (1908) (2, 1909)		3
Medico-Chirurgical Coll., Philadelphia	..... (1908) (3, 1909)		4
University of Vermont	(1909)	1
Medical College of the State of South Carolina	(1897)	1
University of Kiel, Germany	(1892)	1
University of Rome, Italy	(1907)	1
University of Naples, Italy	(1905)	1
University of Turin, Italy	(1896)	1

College	FAILED	Year Grad.	Per Cent.
Howard University, Washington, D. C.	(1907)	69.3
Medical College of Indiana	(1896)	54.3
Baltimore University	..... (1899) 53.1;	(1905)	61.6
Ohio Medical University	(1905)	69.7
University of Pittsburgh	(1909)	65

At the examination held by the Homeopathic Medical Society of Pennsylvania, the total number of candidates examined was 4, of whom 1 passed and 3 failed. The following colleges were represented:

College	PASSED	Year Grad.	Total No. Examined.
Boston University		(1908)	1
College	FAILED	Year Grad.	Per Cent.
Atlantic Medical College, Baltimore.....		(1908)	57
Hahnemann Medical College of Philadelphia.....		(1908)	66.1, 73.8

At the examination held by the Eclectic Medical Society of Pennsylvania, the total number of candidates examined was 7, all of whom passed. The following colleges were represented:

College	PASSED	Year Grad.	Total No. Examined.
Illinois Medical College.....		(1908)	1
University of Maryland.....		(1909)	1
Baltimore University		(1894) (1904)	2
Atlantic Medical College, Baltimore.....		(1909)	1
Maryland Medical College.....		(1905)	1
University of Pittsburgh.....		(1907)	1

Missouri December Report

Dr. Frank B. Hiller, secretary of the Missouri State Board of Health, reports the written examination held at Jefferson City, Dec. 7-9, 1909. The number of subjects examined in was 12; total number of questions asked, 90; percentage required to pass, 75. The total number of candidates examined was 30, of whom 13 passed and 17 failed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
College of Physicians and Surgeons, Chicago.....		(1907)	82
Rush Medical College.....		(1909)	85
University of Michigan, College of Medicine.....		(1909)	81
St. Louis University		(1908)	84
Barnes Medical College.....		(1909)	75, 80, 81
American Medical College, St. Louis.....		(1909)	81
St. Louis College of Physicians and Surgeons.....		(1909)	75, 75
University Medical College, Kansas City.....		(1908)	75
Kansas City Hahnemann Medical College.....		(1909)	75
University of Pennsylvania.....		(1908)	87

College	FAILED	Year Grad.	Per Cent.
Louisville and Hospital Medical College.....		(1908)	66
St. Louis College of Physicians and Surgeons.....		(1908) 67; (1909) 41, 59, 60, 61, 62.	
University Medical College, Kansas City.....		(1909)	59
Barnes Medical College.....		(1907) 68.7; (1909) 32, 56, 68, 68, 68	
Kansas City Hahnemann Medical College.....		(1909)	65
Homeopathic Medical College of Missouri.....		(1909)	61.5
Meharry Medical College.....		(1907)	62.7

Kentucky December Report

Dr. J. N. McCormack, secretary of the Kentucky State Board of Health, reports the written examination held at Louisville, Dec. 14, 1909. The number of subjects examined in was 14; percentage required to pass, 70, and not less than 60 in any one branch. The total number of candidates examined was 18, of whom 12 passed and 5 failed. One candidate did not complete the examination. Three reciprocal licenses were issued at this examination. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Louisville and Hospital Medical College.....		(1908)	83
University of Louisville.....		(1908) 75, 85; (1909) 75, 75, 75, 76, 76.	
Hospital College of Medicine, Louisville.....		(1906)	82
Medical College of Ohio.....		(1898)	85
University of the South.....		(1907)	95.5
Meharry Medical College.....		(1908)	75

College	FAILED	Year Grad.	Per Cent.
University of Louisville.....		(1909)	52, 55
Louisville and Hospital Medical College.....		(1908)	60, 66
University of Tennessee.....		(1905)	42

LICENSED THROUGH RECIPROCITY

College	Year Grad.	Reciprocity with
Illinois Medical College.....	(1903)	Indiana
Louisville and Hospital Medical College.....	(1909)	Louisiana
University of Michigan, Dept. of Med. and Surg.....	(1908)	Michigan

Minnesota January Report

Dr. W. S. Fullerton, secretary of the Minnesota State Board of Medical Examiners, reports the written and practical examination held at St. Paul, Jan. 4, 1910. The number of subjects examined in was 10; total number of questions asked, 110; percentage required to pass, 75. The total number of candidates examined was 20, of whom 16 passed and 4 failed. Sixteen candidates were licensed through reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Rush Medical College.....		(1902) 84.2; (1909)	82.8
Hamline University		(1909)	76, 84.1
University of Minnesota, College of Medicine.....		(1909) 77, 75.4, 77.6	
Syracuse University		(1908)	75.4
Columbia University, College of Phys. and Surg.....		(1909)	82.8
University of Pennsylvania		(1905)	84.5
Hahnemann Medical College, Philadelphia.....		(1904)	75.2
Jefferson Medical College.....		(1909)	79.6
McGill University, Canada.....		(1909)	76.4
University of Toronto, Canada.....		(1902)	84.7
University of Gottingen, Prussia, Germany.....		(1889)	76
Karolinska Medical Institute, Sweden.....		(1898)	79.7

College	FAILED	Year Grad.	Per Cent.
Northwestern University Medical School.....		(1909)	73.9
Chicago College of Medicine and Surgery.....		(1909)	50.2
Louisville and Hospital Medical College.....		(1908)	55.7
Jefferson Medical College.....		(1909)	72.1

LICENSED THROUGH RECIPROCITY

College	Year Grad.	Reciprocity with
Rush Medical College.....	(1908)	Illinois
Coll. of Med. and Surg., Physio-Med., Chicago.....	(1909)	Illinois
Chicago College of Medicine and Surgery.....	(1908)	Iowa
Northwestern University Med. School.....	(1907) (2, 1908)	Illinois
College of Physicians and Surgeons, Chicago.....	(1900)	Illinois
Medical School of Maine.....	(1904)	Maine
University of Michigan, College of Medicine.....	(1909)	Michigan
University of Missouri.....	(1904)	Wisconsin
Cornell University Medical College.....	(1899)	Michigan
Western Reserve University.....	(1885) Iowa; (1896)	N. Dakota
Miami Medical College.....	(1886)	Ohio
Marquette University, Milwaukee	(1896) (1908)	Wisconsin

Rhode Island January Report

Dr. Gardner T. Swarts, secretary of the Rhode Island State Board of Health, reports the written examination held at Providence, Jan. 7-8, 1910. The number of subjects examined in was 7; total number of questions asked, 70; percentage required to pass, 80. The total number of candidates examined was 9, of whom 4 passed and 5 failed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
College of Physicians and Surgeons, Baltimore.....		(1903)	74
Harvard Medical School		(1907)	80
Dartmouth Medical School.....		(1908)	84
University of Vermont		(1909)	81

College	FAILED	Year Grad.	Per Cent.
Baltimore Medical College.....		(1907)	71.4
Atlantic Medical College, Baltimore.....		(1909)	61.9
Boston University		(1899)	63.4
Laval University, Canada.....		(1904) 61.4; (1909)	67.9

North Dakota January Report

Dr. H. M. Wheeler, secretary of the North Dakota State Board of Medical Examiners, reports the written examination held at Grand Forks, Jan. 4-6, 1910. The number of subjects examined in was 14; percentage required to pass, 75. The total number of candidates examined was 11, of whom 10 passed and 1 took an incomplete examination. Five reciprocal licenses were issued at this examination. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
George Washington University.....		(1908)	87
Chicago College of Medicine and Surgery.....		(1909)	89
Indiana Medical College.....		(1906)	75
University of Minnesota, College of Med. and Surg.....		(1909)	87, 88
University of Toronto, Faculty of Medicine.....		(1907)	75, 86
McGill University, Montreal.....		(1868) 75; (1908)	92
Western University, London, Ontario.....		(1909)	78

LICENSED THROUGH RECIPROCITY

College	Year Grad.	Reciprocity with
Chicago College of Medicine and Surgery.....	(1908)	Illinois
Rush Medical College.....	(1908)	Illinois
Hamline University	(1908)	Minnesota
McGill University, Montreal.....	(1908)	Minnesota

Vermont January Report

Dr. W. Scott Noy, secretary of the Vermont State Board of Medical Registration, reports the written examination held at Montpelier, Jan. 11-13, 1910. The number of subjects examined in was 12; total number of questions asked, 90; percentage required to pass, 75. The total number of candidates examined was 5, all of whom passed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Medical School of Maine.....		(1889)	90
Baltimore Medical College		(1908)	82.4
University of Vermont.....		(1908) 82.7; (1909)	81.3, 84.7

Book Notices

SEVEREST ANEMIAS. By William Hunter, M.D., Fellow of the Royal College of Physicians of London. Vol. I. Cloth. Pp. 226, with illustrations. Price, \$3.25. New York: The Macmillan Co., 1909.

To the student of hematology the name of William Hunter is well-known. Some twenty years ago he described the iron-containing pigment deposits in the liver of pernicious anemia and their relation to processes of blood destruction. A little later he called attention to the occurrence of glossitis as an important clinical manifestation of this disease and to its probable causal relation to gastritis and enteritis with resulting hemolysis in the portal system. Since then he has repeatedly emphasized these views and in 1900 he embodied the substance of his previous communications in a monograph on pernicious anemia.

The present book is announced as the first volume of a work on "Severest Anemias." Hunter's views have become more definitely crystallized and he speaks with no uncertain tone. Pernicious anemias, he says, since the time of Biermer, has been a promiscuous grouping of ill-understood anemias, including several kinds that are etiologically, pathologically and clinically distinct. Ehrlich's emphasis laid on the blood-picture did not clear up the confusion, but rather added to it. From out this heterogeneous mass Hunter declares he can now separate an anemia of a very definite type characterized by a primary specific infective glossitis, gastritis and enteritis, by hemolysis, by secondary compensatory bone marrow changes, often by fever and nervous symptoms. These latter symptoms may be due to secondary infection such as may be the result of "oral sepsis," which complication may at times be removed by appropriate treatment, with corresponding improvement in the patient's condition. This anemia, a disease *sui generis*, he would call Addisonian anemia, as it corresponds to the form first described by Addison.

Hunter takes this stand as the result of more than twenty years' experience with the disease as seen clinically, and at autopsy and also as studied experimentally. He presents some well-executed plates to illustrate the gross and microscopic lesions of the tongue, stomach and intestine. Much, however, of the pathology, symptomatology and treatment is to be considered in the succeeding volume where also will be taken up severe septic anemias that resemble the Addisonian form, are often mistaken for it, but which fail to show the characteristic glossitis, hemolysis and regenerative marrow changes.

One of the most interesting features of this unique and really valuable work is its critical analysis of the literature of pernicious anemia, particularly as expounded by writers who have had the greatest influence, such as Biermer, Immermann and Ehrlich. Biermer's grouping together as pernicious anemia forms due to several different causes is regarded as having been peculiarly unfortunate. And Ehrlich's influence in drawing attention so exclusively to the blood and to the supposedly degenerative lesions in the bone-marrow is severely condemned. Hunter rings the changes on the overimportance attached to the blood-picture and especially to the presence or absence of megaloblasts. "Hematologic methods," he says, "have been a good servant but a bad master."

The book is extremely interesting and instructive, and especially in its historical review of the various opinions that have prevailed concerning the anemia, during the past fifty years. The chronological bibliography will be valuable for reference.

We trust that the succeeding volume will not contain so much that smacks of the controversial. Hunter's attitude is too often that of the advocate striving to prove his case rather than that of the judge aiming to get at the real, scientific truth. We feel that he has a strong case, a very strong one in many respects, but we are also conscious at times that he is not doing full justice to some of the other workers whom he quotes in excerpts that tend to prove Hunter's position, but do not always quite accurately represent the full and complete opinion of the author cited. To be specific, his arguments against Ehrlich's overemphasis laid on the morphology of the blood of pernicious anemia, and the same investigator's conception of the marrow changes as due to a megaloblastic

degenerative process have much to be said in their favor, but should not blind our eyes to the fact that this very emphasis laid by Ehrlich on the morphology of the blood, his technique of blood-staining and his hypotheses as to the cause and essential nature of this strange disease, gave an impetus to the study of the anemias and other blood conditions such as nothing else has done. The interpretations of Ehrlich and his followers may often be faulty, but our mass of accumulated facts concerning pernicious anemia is in large measure owing to the incentive inaugurated by this remarkable worker.

Hunter's work is not for the undergraduate. It deals too much with matters of controversy and opinion, is too full of repetitions, and is lacking in many statements of fundamental facts that may be assumed as known by the specialist in diseases of the blood, but should be included if the book is to be consulted by the undergraduate. Much of this lack will undoubtedly be supplied by the later volume, where we also hope to see more clearly set forth exactly what Hunter means when he says that Addisonian anemia is of "drain source," and what convincing proof there is of this origin; what is the specific germ that is the cause and how is this causal relation convincingly proved; and whether his statement (p. 187) that secondary degenerative changes extend along the sensory nerves to the cord and cause the various peripheral sensory disturbances and the subacute degenerations that are described, is based on careful histologic studies. The maps and schemes in this volume are numerous, but we must confess that we have been obliged to study some of these most carefully before being sure we understood them. Perhaps we have missed the primary conception of some of these plans, but it really seems as though the scheme should be so simple as to be grasped almost at sight; or some explanatory key should be furnished.

DIE INNERE UND DIE CHIRURGISCHE BEHANDLUNG DES CHRONISCHEN MAGENGESCHWÜRS UND IHRE ERFOLGE. (Work Awarded the Alvarenga Prize by the Hufelandsche Gesellschaft.) By Dr. L. Bamberger, Head Physician at the Grunewald Sanatorium. Paper. Pp. 269. Price, 8 marks. Berlin: Julius Springer, 1909.

This little volume of 269 pages contains a *resumé* of the medical and surgical treatment of chronic ulcer of the stomach. It is largely the result of a statistical study of the literature, though the author in reaching conclusions and generalizations is influenced, as he should be, by his own experience with something over 200 cases. A brief introductory consideration of the causation, pathology and symptomatology of ulcer is followed by a consideration of the non-surgical method of treatment, its theory and practical application in cases of bleeding and non-bleeding ulcer and ulcer with complications such as perforation, carcinoma, pyloric stenosis, perigastritis, hour-glass contraction, etc. A lively interest is manifested in the methods of Lenbe and Lenhartz, which methods apparently seem to Bamberger of about equal merit, though in the bleeding ulcer he properly, as we think, prefers the plan of Lenbe, though in other cases statistics often seem to favor the Lenhartz technique. By treatment by internal methods permanent cures are obtained in 70 per cent. of cases. Regulation of diet is the all-important measure. Too little attention is paid to treatment, *i. e.*, diet, after a patient leaves the hospital; many relapses might otherwise be spared.

Bamberger is a firm believer in the doctrine that the treatment of chronic ulcer belongs to the internist. Certain cases, however, are clearly surgical and the advantages of the various surgical procedures are briefly described. Stubborn cases with repeated relapses after dietetic cures should have the benefit of operation. This is especially true of pyloric ulcers, but he regards non-pyloric cases that have proved refractory to properly directed dietetic management, as surgical. Perforation, pyloric obstruction and hour-glass stomach are clearly surgical conditions.

There is, as is so frequently the case in the writings of the Germans, a great preponderance of reference to the work of German writers. Other nationalities are occasionally noted, even America being a few times mentioned, generally, however, the writing having been studied in an abstract or in some stray reference that has been run across accidentally. Yet in spite of some shortcomings the thoroughness with which the subject has been studied in the literature of Germany, the careful sifting of evidence by the author, his logical way of

reasoning, his easily understood tables, his simple, plain style, make it clear why the Hufeland society awarded to this work the Alvarenga prize.

THE PRACTICE OF MEDICINE. By James Tyson, M.D., Professor of Medicine in the University of Pennsylvania and Physician to the Hospital of the University. Cloth. Pp. 1412, with illustrations. Fifth Edition. Price, \$5.50 net. Philadelphia: P. Blakiston's Son & Co., 1909.

This book has been carefully revised and much new matter added, including the prophylaxis and treatment of typhoid, the Flexner-Jobling serum in meningitis, the Wassermann reaction in syphilis and the parasymphilitic diseases, the serum treatment of hyperthyroidism, treatment by the bacterial vaccines and the employment of the opsonic index, the Cammidge reaction, etc. Pellagra is treated briefly. The chapter on parasites is sufficiently complete and up to date and includes an account of *Necator americanus* and hookworm disease. All these things, which are comparatively new, remind us again how rapidly medicine is advancing and changing in its methods of detecting and overcoming disease. At the same time, it is a source of satisfaction to see the confident statements as to the old-fashioned drugs in the treatment of disease in these days of serums and vaccines and antitoxins. The work contains over 1,400 pages. This is a big book, but as a text-book on the practice of medicine is a sort of department-store of medical knowledge we believe that it should have included a few pages at least on the technic of physical exploration, such as the determination of blood-pressure, pulse tracing, etc., which the author in his preface says were omitted as belonging to works on diagnosis. Inasmuch as laboratory methods are discussed in the diagnosis of typhoid fever, tuberculosis and stomach and blood diseases, some information on these other matters would have been helpful and added to the value without much increasing the size of the book. The book contains a number of charts and new illustrations, and remains one of the standard works on practice.

GIRL AND WOMAN. By Caroline Wormeley Latimer, M.D., M.A., Formerly Instructor in Biology, Woman's College of Baltimore. With an introduction by Howard A. Kelly, M.D., Professor of Gynecological Surgery, Johns Hopkins University. Cloth. Pp. 318. Price, \$2. New York: D. Appleton & Co., 1910.

This book is made up chiefly of sane, practical advice concerning the regulation of the life of a normal girl. The author states that psychologic research has made it plain that no period in a woman's life is so important as the transition years of development from childhood into womanhood. As this period of transition is a slow one, occupying several years, she believes that the principles instilled into the mind of the growing girl at this time are of paramount importance. The book commences with a discussion of the physical and mental changes occurring at puberty, some of which (or, at least, their frequency) the author seems to exaggerate. The moral disturbances of this period also are unduly emphasized; comparatively few normal girls—that is to say, girls who are in good health otherwise and who have been properly brought up—contract unauthorized debts, swear, become untruthful, etc., even temporarily, at puberty. The chapter on menstruation is practical and contains good advice; but in a book intended for the laity it seems unwise to advise bromid of potassium for dysmenorrhea as “almost the only thing which can be safely used without a doctor's advice.” It should never be forgotten, moreover, that puberty is a physiologic period of transition and menstruation a physiologic process, and that the majority of normal girls pass through both with little discomfort. The advice regarding personal hygiene is good. The home treatment given for minor ailments is simple and can be carried out under any circumstances.

A TEXT-BOOK OF PHYSIOLOGY. By William H. Howell, Ph.D., M.D., LL.D., Professor of Physiology in the Johns Hopkins University, Baltimore. Third Edition. Cloth. Pp. 998, with illustrations. Price, \$4.00 net. Philadelphia: W. B. Saunders Co., 1909.

Chemical and physical methods of investigation of physiologic processes and phenomena as they become more and more perfected, are constantly replacing or modifying old ideas of vital processes and suggesting, confirming or correcting new theories and observations. The field of investigation in physiology seems unlimited and there is still abundant opportunity for attaining results of the greatest importance, as

the author says. The wealth of contributions to our knowledge or of theories and new points of view in physiology demand of an author of such a work as the present one, wide knowledge of what is being said and done and discrimination in the selection and presentation of the matter. This requirement is well fulfilled in this book. Former statements have been corrected and modified in accordance with present accepted views, new material added, and new theories mentioned where they seemed to be reasonable and important. All the statements are made in a clear and forcible manner and the book is a highly satisfactory presentation of the subject for the medical student and physician for whom it is intended.

BIBLIOGRAPHY OF TRYPANOSOMIASIS. Embracing original Papers published prior to April, 1909, and References to Works and Papers on Tsetse-Flies, especially *Glossina palpalis*, Rob.-Desv. Compiled by G. A. Thimm, Librarian, Sleeping-Sickness Bureau. Paper. Pp. 288. Price, 4 shillings net. London: Sleeping-Sickness Bureau, Royal Society, Burlington House, W., 1909.

This is an alphabetical author-index of published works on sleeping-sickness, the trypanosomiasis of man and animals, and the tsetse fly, containing nearly 2,000 titles, and comprising, the compiler believes, an almost complete list of references to papers on the first two subjects published from 1803 to March 31, 1909. Besides being indexed under the names of authors, the papers are given under the names of journals in which they appeared. A subject-index, now in course of preparation, will be forwarded to subscribers to the present work. References to the literature of the subject subsequent to March, 1909, are contained in No. 6 and succeeding numbers of the *Sleeping-Sickness Bureau Bulletin*. It may be worth while to note that the director of the bureau desires to receive early copies of authors' papers for notice in the *Bulletin*. The bibliographic work appears to be very well done, and the pamphlet should be useful to those who desire to study the literature of trypanosomiasis and related subjects.

LEHRBUCH DER NERVENKRANKHEITEN. Herausgegeben von Dr. Hans Curschmann, dirigierendem Arzt der inneren Abteilung des St. Rochus-Hospitals in Mainz. Cloth. Pp. 977, mit 289 in den Text gedruckten Abbildungen. Price, 24 marks. Berlin: Verlag von Julius Springer, 1909.

This book is made up of twelve divisions, each devoted to a discussion of a certain class of the various diseases of the nervous system. Each part is written by a different author, and the ability and knowledge of the various authors are sufficient recommendations for the book. The subject-matter is put very concisely, making it a work of value to the student as a reference book and to the general practitioner who is desirous of obtaining the important recent advances on the subject of nervous diseases, without having to consult works intended for the specialist. Special mention may be made of the addition of a new chapter without which no text-book on nervous diseases will be complete in the future, namely, that on the operative therapy of nervous diseases. This chapter deals with the topography of the cranium and its contents, the spinal cord and the peripheral nerves. The technic for the various operations on the brain and cord is well illustrated.

LEHRBUCH DER ERNÄHRUNG UND DER STOFFWECHSELKRANKHEITEN FÜR AERZTE UND STUDIERENDE. Von Professor Dr. F. Ueber, Ärztlichem Direktor am Städtischen Krankenhaus in Altona. Paper. Pp. 394, with illustrations. Price, 12.50 marks. Berlin: Urban & Schwarzenberg, 1909.

This work is much more compact than that of von Noorden, less concerned with abstruse and theoretical chemical and metabolic problems, and hence, perhaps better suited to the needs of the general physician who is looking rather to the practical than to the ultra scientific side of the questions involved in this disease. The values of the different foodstuffs are considered and different methods of feeding, as by enemata, the subcutaneous route, the forced feeding by the stomach, etc., are discussed. Obesity, diabetes mellitus and diabetes insipidus, gout, and urinary calculi are handled in a satisfactory, though not extended manner. Good plates help in the understanding of gout and the pancreatic pathology of diabetes.

MANUAL OF THE DISEASES OF THE EYE. Japanese Translation of Sixth Edition. By Charles H. May, M.D., Chief of Clinic and Instructor in Ophthalmology, College of Physicians and Surgeons, Medical Department. Cloth.

We are in receipt of the Japanese translation of Dr. May's "Manual of Diseases of the Eye." THE JOURNAL commented

on the original edition of this book when it appeared in English and, therefore, we are relieved of giving an analytical review of this translation. Curiosity, however, prompted the study of the first page to try to gain an idea of the title of the book in Japanese, but after a while it became evident that we were looking at the wrong place for the title; that the title-page was the last page in the book; and further, that to read it one must read backward. This method of reading being unfamiliar here, the attempt was given up. There are few American books that have been honored by translation into many foreign languages as has Dr. May's; it has been translated into German, French, Italian, Dutch, Spanish, and now Japanese, some of these versions being in the second and third edition.

SURGICAL DIAGNOSIS. By Daniel N. Eisendrath, A.B., M.D., Professor of Surgery in the Medical Department of the University of Illinois (College of Physicians and Surgeons). Second Edition. Cloth. Pp. 855, with 574 illustrations, 25 in colors. Price, \$6.50 net. Philadelphia: W. B. Saunders Co., 1909.

Little can be added to what was said in the review of the first edition of this very excellent book. The text has undergone a thorough revision; new methods of diagnosis are included and old ones are amplified in order to keep pace with progress, and in this, as well as in other things, the author has succeeded well. That portion of the chapter on the head dealing with the localization of the motor centers has been entirely rewritten to conform to what has been shown by more recent investigations to be correct. The sections on acute abdominal conditions and renal lesions have been revised considerably. Many new illustrations have been added; the many good pictures which were such a notable feature of the previous edition cannot fail to be of value and interest to both surgeon and general practitioner.

MEDIZINISCHES TASCHENLEXIKON IN 8 SPRACHEN (deutsch, englisch, französisch, italienisch, japanisch, russisch, spanisch, ungarisch). Bearbeitet und herausgegeben von Dr. J. Meyer, Arzt in Berlin. Flexible leather. Pp. 788. Price, 16 marks 61 pfennige. Berlin: Urban und Schwarzenberg, N. Friedrichstrasse, 105b, 1909.

The editor-in-chief of this book has had the collaboration of colleagues of the various nationalities whose speech is represented. The volume is said to contain about 5,500 words in each of the languages represented (German, English, French, Italian, Japanese, Russian, Spanish and Hungarian), and to include words which, although not strictly medical, are nevertheless frequently used in the description of clinical pictures. It is convenient in size, and appears to be fairly comprehensive in scope. Of course, the attainment of the end in view necessitated rigorous adherence to a plan which forbade all attempt at exhaustiveness and the discriminating comparison or definition of words. No definitions are included, and only one synonym is given in each language.

DISEASES OF INFANTS AND CHILDREN. By Henry Dwight Chapin, A.M., M.D., Professor of Diseases of Children, New York Post-Graduate Medical School and Hospital, and Godfrey Roger Pisk, M.D., Professor of Diseases of Children, University of Vermont. Cloth. Pp. 591, with 179 illustrations and 11 colored plates. Price, \$4.50 net. New York: William Wood & Co., 1909.

The general plan of this new work on pediatrics is commendable; the balance between the various subjects is sustained and the chapter on dietetics is particularly well presented. It can be highly recommended to the medical student and to the general practitioner as an excellent epitome of pediatrics from what might be called the American point of view. If there be any point in the book open to criticism it is the Chauvinistic spirit that pervades much of the English literature of pediatrics. The book is lavishly illustrated with original illustrations that lend a clinical atmosphere to the text.

PRACTICAL THERAPEUTICS AND PRESCRIPTION WRITING. By Daniel M. Hoyt, M.D., Instructor in Therapeutics, University of Pennsylvania. Flexible leather. Pp. 291. Price, \$2.50. Philadelphia: Edward P. Dolbey & Co.

This book presents in clear language an excellent summary of the pharmacologic action and therapeutic uses of drugs. The drugs described are classified according to their uses, while the index is adapted from the "Physicians' Manual of the Pharmacopeia and National Formulary" in such a way as to supply a great deal of information in small space. The book is well printed and bound in flexible covers, and is well fitted both for the student and for the general practitioner.

Society Proceedings

COMING MEETING

Medical Society of the Missouri Valley, Omaha, March 17-18.

MEDICAL SOCIETY OF THE STATE OF NEW YORK

One Hundred and Fourth Annual Meeting, held at Albany, Jan. 25-26, 1910

(Concluded from page 643)

Public Health Education

DR. ROSALIE SLAUGHTER MORTON, New York, read a short paper in which she presented the plan of work of the Public Health Education Committee of the American Medical Association.

Clinical Significance of Subfebrile Temperature in Pulmonary Tuberculosis

DR. ARTHUR T. LAIRD, Albany: Continued or repeated slight elevation of temperature is one of the cardinal symptoms of incipient pulmonary tuberculosis. That it is not pathognomonic is shown by its occurrence in other conditions. It may be due to incipient tuberculosis of the lungs, even when physical signs in the chest are entirely negative, just as there may be no abnormal signs in the chest even though there is definite hemoptysis or though tubercle bacilli are found in the sputum.

Study of Tremors

DR. M. NEUSTAEDTER, New York, read a paper on this subject in which he drew the following conclusions:

1. The difference between the various tremors is of kind, not of degree, and every form of tremor is distinctive of a form or group of diseases.
2. No definite relation exists between one form of tremor and another.
3. The frequency of movements has no bearing on the character of the tracing.
4. There is no material difference between the movements of the two sides of the body.

Lumbar Puncture as a Diagnostic and Therapeutic Agent in General Practice

DR. NELSON G. RUSSELL, Buffalo: From an exact scientific point of view, lumbar puncture as an aid in diagnosis, or as a therapeutic measure, may not have made a place for itself, but as an aid in general practice it merits a much more prominent place than it has yet attained.

DISCUSSION

DR. IRVING M. SNOW, Buffalo: The use of lumbar puncture by the general practitioner will clear up a great many obscure cases. Lumbar puncture, however, is not free from danger. It was my misfortune to see a child seventeen months old who had been ill for ten days with pneumonia, when the child developed meningitis. On my advice the family physician urged lumbar puncture, which was done. A syringe was used to withdraw the fluid. The fluid came out quite freely, drop by drop until about 20 c.c. had been withdrawn. Suddenly the child stopped breathing, although the heart action was good. We worked with respiratory stimulants and injected normal salt solution into the spinal canal, and while respiration was kept up for about twenty minutes the child died; death was due to pressure in the medulla oblongata. These fatalities, however, should not deter us from using lumbar puncture, although the man who resorts to it should thoroughly understand its technique.

DR. N. G. RUSSELL: I am aware that sudden deaths have been reported from lumbar puncture, but most of them have occurred in cases in which a syringe has been used, or in which a larger amount of fluid has been withdrawn than I spoke of, namely, 20 c.c. or more. No accident has occurred when the amount withdrawn has been 15 c.c. or less. If we put the limit at 12 c.c., I think the operation is fairly safe. I have done it in all kinds of cases in the hospital, possibly in two

or three hundred, and the patients have manifested no evidence of discomfort.

Adequacy of the Present Treatment of Syphilis Tested by the Occurrence of Syphilitic Nervous Diseases

DR. JOSEPH COLLINS, New York City: Certain nervous diseases, such as paresis, tabes, myelitis, pachymeningitis and endarteritis are sequels of syphilis often long after infection. Many of those in whom such diseases occur have had what is taught to be adequate treatment for syphilis. The occurrence of these diseases proves its inadequacy. Probably the chief reason why the syphilitic virus is not oftener negated by treatment, and such nervous diseases prevented, is the widespread belief that potassium iodid is an antisiphilitic agent. The utility of mercury in the treatment of syphilitic nervous disease offers proof that mercury, properly administered, may be an adequate antisiphilitic.

DISCUSSION

DR. L. DUNCAN BULKLEY, New York City: For many years I have been satisfied, from what I have seen in my own practice and that of others, that we make a great mistake if we depend to any degree on potassium iodid except to remove certain definite lesions of syphilis. I should say mercury first, mercury last, and mercury all the time. In my clinic I have an assistant who gives mercury by injection with my consent. Sometimes I have the pleasure of showing his cases and my cases and comparing them from the standpoint of treatment. I use internal treatment, while my assistant uses the injection treatment, and I think that I have demonstrated that my results are quite as good. I do not underestimate applications of mercury through the skin, by baths, or by inunction. These are valuable methods, and they save life now and then, but it cannot be done in private practice.

DR. A. A. YOUNG, Newark: What particular form of mercury does Dr. Collins prefer?

DR. JOSEPH COLLINS: In one hospital I use bichlorid of mercury; in another I use salicylate of mercury, and so far as my experience goes one form is just as serviceable as the other if it can be got into the system.

Alcohol in Dermatology

DR. L. DUNCAN BULKLEY, New York: Experimental study has shown that alcohol has a prejudicial effect on cell life both vegetable and animal, and pathologic studies have demonstrated degenerative changes in almost all the tissues of the body as a result of the action of alcohol taken internally. It is natural to suppose that the skin suffers with the rest of the economy, and clinical experience shows that this is the case, often from even the moderate use of alcoholic drinks, although as yet we have not the histopathologic evidence of the fact. Animals intoxicated by alcohol are more susceptible to infection and toxins than are normal animals, and the process of experimental immunization is unfavorably influenced by alcohol. Experiments and observations show that by its sedative action on the vasoconstrictor center of the medulla alcohol causes a slight paralysis of the nerves controlling the capillaries of the skin; and the signs of flushing after its use in any quantity are well recognized. This dilatation of the capillaries leads to a greater flow of blood to the surface of the body and to a greater congestion of diseased portions; this congestion in many dermatoses being most difficult to control. It is a rare exception to find bad ulcerative syphilis in individuals who have always been teetotalers. The most important direction to give to those who have acquired syphilis is that they shall totally abstain from all alcoholic and fermenting beverages indefinitely, for even long after the primary infection alcohol may induce grave syphilitic or parasymphilitic affections. This is especially true in regard to late nervous diseases, like locomotor ataxia, polyneuritis and paresis. Striking illustrations of the effect of alcoholic drinks on the skin are found in the conditions observed on the face. Various suggestions have been made from time to time in regard to the local use of alcohol on the skin, and it has attained a definite position of usefulness as an antiseptic in surgery. Its bactericidal qualities are well recognized, and its antidotal action to carbolic acid is well known.

Tuberculosis of the Bones and Joints

DR. LEONARD W. ELY, New York: There are two general types of the disease: the primary bony and the primary synovial. These types have been generally recognized abroad, but in recent years a custom has prevailed in America of regarding all joint tuberculosis as of bony origin; this has given rise to much confusion. The focus in the bone later may involve the synovial membrane, and *vice versa*. On the other hand, either may exist alone indefinitely. Healing of the adult tuberculous joint usually takes place by the formation of connective tissue. I believe that healing after abscess formation is much more likely to be permanent than that which has been brought about by encapsulation with connective tissue. In rare instances healing takes place by the formation of a bony ankylosis. Tuberculin tests are a reliable means of diagnosis. Treatment is constitutional and local; and the latter may be conservative or operative. Local treatment is the treatment *par excellence* in children. Conservative treatment may also be tried for a few months in the synovial tuberculosis of adults. The treatment of abscesses comes under the head of conservative treatment. In children the only radical operative treatment ordinarily consists of an amputation. The points to be emphasized are: 1. Tuberculosis of a joint, unlike cancer, does not necessitate total eradication. Areas of repair and extension exist side by side, and much of the tissue is practically normal. Motion keeps the process alive. 2. One should spare no pains to make a positive diagnosis before opening a supposedly tuberculous joint. 3. In adults, when it is possible to produce bony ankylosis, Nature should be allowed to clear away the tuberculous soft parts that are left behind. In operating on the knee the surgeon should secure good exposure and be guided by what is found. If drains are used, they should be removed early, and every care taken to avoid secondary infection.

DISCUSSION

DR. REGINALD H. SAYRE, New York: Tuberculous synovitis exists clinically, although some foreign physicians deny its existence except as secondary to osteitis. In certain cases excision is a necessary and useful procedure in tuberculous joints in children, although, as a usual thing, if the disease is diagnosed sufficiently early, the case does not proceed far enough to require excision. As I understood Dr. Ely, he advocated great slowness in interfering with a tuberculous joint, and spoke of cases in which there was a slight amount of disease when the patients were first seen, and yet subsequently there was great destruction of the joints. That is probably true, and many joints are sacrificed by too early interference, which by rest and quiet would have been cured by Nature without any exploration. Many years ago I was much in favor of the radical removal of all tuberculous tissue in so-called tuberculous abscesses; but further experience has convinced me that the pursuance of that course is wrong, and that Nature can look after these joints better than surgeons in the majority of cases. So long as the patient's condition is good, the temperature below 100 F. and the appetite good, many of these joints are vastly better left alone than interfered with, whether by aspiration or by more radical operation.

DR. NATHAN JACOBSON, Syracuse: By the newer methods we can arrest the progression of the tuberculous processes in joints. There was a time when early invasion of the joint was advocated. I do not like the term surgical interference. It is perhaps surgical interference to operate at the wrong time, and in the wrong kind of case, but a surgical procedure which is justified never deserves the designation of surgical interference. There are, however, many methods to-day which we can use in these tuberculous processes which will favor the limitation of the processes, and among them are the method of Bier by producing hyperemia, the use of the x-ray, or the high-frequency current, superficial cauterization, and rest by fixation. All these are measures which can be used and, if employed judiciously, will in many cases arrest the process and obviate the necessity of surgical interference. But the time comes in some cases when surgical attention is required. It is not possible to lay down a radical rule as to whether we shall take away a small or large fragment in all cases; each case must be a law to itself. During the past two

years I have had two cases of extreme invasion in which other surgeons said nothing but amputation would be of any service; in both of these extensive resection has led to union and to good results. In cases in which there is extensive destruction, there should be radical removal of all foci approachable and the satisfactory results will justify a wide removal of the diseased tissue; and bringing the parts together in proper position without any suture will secure firm union, and a useful joint, and not only that, but improvement of general health. Under such treatment these patients take on flesh, and become vigorous, self-reliant and useful citizens.

Duty the Medical Profession Owes Women with Uterine Cancer

DR. WALTER B. CHASE, Brooklyn: In view of the appalling fact that statistics of registration show that 1 out of 11 of all women die of cancer, and that after reaching the age of 35 the mortality increases to 1 in 9; and that as most of these are cases of uterine cancer, the question arises whether the medical profession does not owe an unfulfilled obligation to this most unfortunate class of sufferers. While large benefactions and well-organized efforts are ministering to the comfort of the tuberculous, there is in New York State no systematic humane plan to reach these more terrible cases in which the patients are condemned to helpless suffering and torturing death. There is substantial basis for the belief that earlier recognition of malignancy in these cases would add something to the measure of relief to be obtained by radical or palliative treatment. Among these unfortunate women are large numbers whose resources make it impossible for them to secure proper medical advice or capable nursing. It is also painfully apparent that hospital facilities for incurables are entirely inadequate to meet the needs of society not only in malignant but other diseases.

In view of these facts I offer the following resolution:

Resolved: First, that the medical society of the State of New York shall by its President appoint a committee of four, whose duty shall be to urge on all practitioners of medicine in this state greater care in making early diagnosis in cases of suspected uterine cancer.

Resolved: Second, that this committee be directed to devise some method by which along ethical lines women may be properly informed why they should seek early professional advice in menstrual or hemorrhagic disorders; and that they are further instructed to consider some more comprehensive plan whereby a general diffusion of appropriate and vital knowledge may be promulgated on this very important subject.

Resolved: Third, that this committee be directed to report its recommendations at the next meeting of the society.

Resolved: Fourth, that the treasurer of this society be directed to honor payment of bills incurred for printing and needful correspondence (if not otherwise provided for), and that this committee be empowered to fill vacancies in its membership and to appoint sub-committees if deemed expedient.

Experimental Epidemic Poliomyelitis

DRS. SIMON FLEXNER and PAUL A. LEWIS, New York, presented this paper. The important points have been fully covered in the various articles on the subject by the same authors in THE JOURNAL, Nov. 13, 1909, p. 1639, Dec. 4, 1909, p. 1913, Dec. 18, 1909, p. 2095, and Feb. 12, 1910, p. 535.

The Relationship Between the State Board of Regents and Training Schools

DR. JOSEPH MERZBACH, Brooklyn: The practicing physician ought to make his influence felt in the legislative and administrative measures directed to the problem of educating nurses. In all the meetings of nurses' associations, supervisors' associations and hospital superintendents' associations, a good deal of eloquence is expended in the interest of the nurse and the training school and of the hospital, overshadowing completely the practicing physician, who gives bread and butter to the majority of all graduate nurses. It is not surprising, therefore, that he has found no opportunity to have his voice heard in the board that issues the syllabus and frames the questions for examinations. In fact, the board consists only of nurses, but I believe it will be necessary to call the attention of the State Board of Regents to the monstrous proposition that no other interest is represented in that important body in order to have the defect remedied. I believe that the practicing physicians in the state should have at least one representative on this board. In addition the board should consist of a representative of the training schools of the hospitals, of the teaching bodies of the training schools, so that all interests may be properly protected in the necessary

changes that will have to be brought about in the system of educating trained and registered nurses.

Some Unsolved Problems in Relation to Nurses' Training Schools

DR. CHARLES STOVER, Amsterdam: The nurses' training school presents a more complicated problem in relation to hospital administration than does the medical school. It should be considered, therefore, from the standpoint of the various interests centering in the hospital, and these may be grouped as follows: The public, the trustees or governors, the medical student and the nurses' training school. At the last annual meeting of the American Hospital Association a special training school committee reported on the possibility of standardizing the teaching of nurses, but the result was not very definite owing to the present state of hospital work and the various types and associations of hospitals in cities and towns; another committee was appointed to investigate fully the subject of nursing of people of limited means in their homes and the education of trained attendants for this work. Medical counsel should be sought in reference to training schools for nurses. I move, therefore, that the president appoint a committee on nurses' training schools, consisting of five members, to confer with the state department of education when necessary; to affiliate with the other organizations on matters of common interest; to cooperate with the committee on legislation, and generally to advance the mutual interests of this society and nurses' training schools.

Discussion on the Nursing Problem

DR. DAVID R. BOWEN, Rome: Several years ago, when I was engaged entirely in family practice and had no help from trained nurses, I began to dream of the time when I might do something to mitigate the crying need for nurses for the rural and wage-earning population. Can we supply that need with justice to the nurse and with justice to the patient by having a shorter course of instruction than has been given? I think we can. I think it is possible to train the average wage-earning girl, who can read and write and spell, in one year so that she will be worth \$10 or \$12 a week in such families as a nurse. Certainly, in one year, with proper training, we can raise such a girl to a higher standard than that of the practical nurse who has picked up her training absolutely by herself, and empirically. The training school with which I am connected has been running two years. In that time we have done 1,000 operations, about 60 per cent. of which could be classed as major operations. There have been no cases of sepsis other than stitch abscesses, and no more of the latter than would have occurred with nurses of longer training. There is great need for this class of nurses.

DR. H. W. BARBER, Rochester: There is a crying need for reformation by this society along the line of nursing. Dr. Bowen voices this need for nurses among the middle and lower classes. It is safe to say, that not 20 per cent. of the people of our cities are able to pay the prices charged for trained nursing. I can hardly see, however, how it would be possible to run two classes of training schools in the same hospital. I am afraid the two would not work together; I mean the training of nurses prepared for registered graduation, and the training of, we will say, practical nurses. It seems to me that hospitals could be set aside for this particular purpose. From my observation, not more than 10 per cent. of the people employ trained nurses. But be that as it may, there is a large class of people who really need the services of nurses who are not so well trained, but who are capable of nursing in a practical way, and at much less remuneration.

DR. POTTER: The need for nurses at moderate prices could be overcome if we could draw on an institution for district nurses in case physicians needed help in that line. A certain number of these nurses could be made useful before they graduated. Such nurses might receive \$10 or \$12 a week, and this money could be turned into the nurse fund, and would not only help the hospital, but the physician and poor people.

DR. J. P. CREVLING, Auburn: The worst feature in connection with the system of nursing is that it is driving the better class of girls out of nursing. Take bright girls, with good education and good common sense, and very few will take a

three-years' course in nursing when they understand that, after spending those three years in training, the time of their service will be about ten years, and that perhaps half of that time they will be idle, and consequently will have very little saved at the end of that period. With these facts before them, it is only natural for bright girls to seek some other business.

MR. A. S. DOWNING, State Education Department, Albany: It has been my official duty to study the question of training of nurses, and to deal with the problems involved. I am in sympathy with those who believe that we should provide by statute for a class of nurses, especially known as domestic or practical nurses, who shall go to the middle and poorer classes and give their services at moderate prices, but who, working under the immediate direction of the physician, are competent to perform the ordinary duties required by the physician in the care of the sick. There are many people in moderate circumstances who can afford to pay moderate prices for nursing, but who cannot afford to pay the extreme prices of \$25 or \$30 a week for such services as are rendered by trained nurses. In the consideration of this question the medical profession, the people at large, and the registered nurse must all be protected.

DR. H. L. HULETT, Allentown: In my town we are from 30 to 80 miles from any hospital where we can get trained nurses, and even if all the people could afford to pay the price of the services of trained nurses we could not get them in our section. We need some such system of nursing as Mr. Downing mentioned.

On motion of Dr. Barber, a committee of five was appointed to confer with a similar committee from the board of regents with regard to this matter.

Importance of Care in Closing the Abdominal Incision

DR. LE ROY BROUX, New York: It is the desire of all operators to have as small an amount of absorbable material in the wound to be taken care of as is consistent with safety. I bring the peritoneum together with a running suture of No. 1 plain gut. The muscle is coated with a few sutures of interrupted No. 2 plain gut. In closing the fascia I have discarded the continuous suture and use No. 2 or No. 3 chromic gut, interrupted by over one and a quarter inches. The skin is brought together with a running suture of silk. I follow this plan in all ordinary operations. Lapping the fascia under certain circumstances adds to the security of the wound, but I have never felt that it was necessary except in hernias. The Pfannenstiel incision unquestionably adds much to the firmness and security of the wound. I use it in clean cases, but believe that the dissection required renders it unsafe in cases in which there is possibility of wound infection. Introduction of safety non-absorbable sutures including the skin, fascia and part of the muscle adds to the security of the wound. They are not tied until all layers are sutured. I think it important to apply a firm supporting bandage before the return of the patient to bed. The surgical dressing is covered by firmly applied three-inch adhesive strips extending well over from the loin on one side to that on the other. The strips lap one another one-third and extend well above and below the line of incision. Over all is placed a snugly applied heavy muslin scultetus binder. At the first dressing the adhesive strips are cut down through the center and laid back. This is facilitated by laying over the original dressing a sheet of gutta percha tissue. The adhesive strips are not removed for two weeks, but tightly laced up by the nurse after each subsequent dressing.

DISCUSSION

DR. J. T. W. WHITEBECK, Rochester: I desire to emphasize the importance of not tying the sutures tightly, especially the sutures which pass through the layers. If these sutures are not drawn too tightly and there is no sepsis, they can be left in place for two weeks and I have found in most cases that the sutures do not cut, that they remain dry and may on this account be left in place for two weeks, which in suitable cases enables the patient to sit up after the first week and to have safe union after two weeks.

DR. WALTER B. CHASE, Brooklyn: A strong chain is governed by the strength of its weakest link and so the results

after a median incision following operation depend on securing proper union of the transversalis fascia more than of any other structure. When the incision is not made in the median line and when it involves different layers of the abdominal wall, hernia is more likely to occur than when a median incision is made. I think added security can be given to the abdominal wall by overlapping the layers, particularly the transversalis fascia. In cases in which the abdominal wall is thick there is a possibility in suturing of a tendency to hernia. If blood or serum accumulates there it gives trouble, and in such cases I would advise putting in a small piece or wick of gauze down to the transversalis fascia if there is an accumulation of blood or serum after operation; when that is withdrawn it allows the blood to escape and aids materially in the process of healing. It can be withdrawn at the end of a day or two and it will be found that the wound will heal kindly and there will be additional safety in securing perfect union.

Chauffeur's Fracture

DR. WILLIAM S. THOMAS, New York: The type of fracture most commonly observed among chauffeurs is a subvariety of the ordinary Colles' fracture, which forms a distinct clinical entity. Immobilization of the forearm and wrist in antero-posterior splints is sufficient in a majority of cases. The fingers are left free and the patient is instructed to move them freely for by so doing a return to the normal use of the hand will be enhanced. Massage by one who is skilled in the art is of prime importance and should not be omitted. It may be begun immediately. The prognosis is as good as can be expected in cases occurring in young active adults where the deformity is but slight. The patient is usually able to resume work in three weeks with a wrist-band to be worn for a week or two after release from the splints.

Shall all Fibroid Tumors of the Uterus be Removed with the Knife?

DR. FRANK DE WITT REESE, Cortland: In most women the probable growth of a fibroid is made manifest at the first menstruation which is painful. Of my 82 patients with fibroid 77 suffered with pain at the first menstrual period. Large-sized tumors with small pedicles are better out of the abdomen than in it. Mixed fibroid tumors should be removed at once, because they may contain malignant cells which may be the leaven that will make the whole lump cancerous as the woman approaches the climacteric. A fibroid with a twisted pedicle should always be removed as soon as the condition is discovered. Certain fibroid tumors should not be removed with the knife; they are not curable by any known treatment, but stand out distinctly in a class by themselves. Two of my cases were of this variety, and the patients were operated on after I had advised against it, and both died. Of the 82 patients, 60 per cent. recovered and others are in different stages of improvement. During the period of my observation of these 82 women, I have seen 11 patients with cancer of the cervix and fundus. All but 2 of these were operated on. The findings in 9 specimens showed only 1 case in which the fibroid was associated with a carcinoma, and in this case it was a question whether the small fibroid nodules were not due to the acute irritation derived from the malignant growth. The success of the treatment of fibroid tumors depends first on early and accurate diagnosis. The early diagnostic symptom of a uterine myoma is dysmenorrhea and the decided prognostic symptom is dysmenorrhea at puberty. If local and constitutional treatment of uterine fibroid is successful, it will depend on the faithfulness of the patient and the thoroughness of the physician.

SYMPOSIUM ON VACCINE THERAPY

Human Glanders Treated by an Autogenous Vaccine with Recovery

DR. A. T. BRISTOW, Brooklyn: The practical lesson to be learned from the case reported is that it ought to be the invariable practice in all well-organized and properly conducted hospitals to hunt down each infection to its bacteriologic source. In a few hospitals exceptionally equipped this is done, but it is not the rule, but rather the exception. The principal points of interest in the bacteriologic diagnosis of

glanders in the present case may be summarized briefly as follows: 1. Isolation of *Bacillus mallei*, always in pure culture from the local lesion. 2. Negative blood cultures. 3. The difficulty experienced in demonstrating the bacilli in stained preparations of pus or exudate from the lesion emphasizes the necessity of controlling such smears with cultures. The small number of bacilli present at the site of infection bears evidence of the high virulence and powerful toxin production of this organism. 4. Positive agglutination test both of the bacillus isolated with a known serum and of a known culture by the patient's serum. 5. Positive Straus reaction.

Treatment of Surgical Tuberculosis by Vaccines

DR. JAMES A. McLEOD, Buffalo: After a wide experience in the treatment of the surgical forms of tuberculosis, I am of the opinion that in tuberculin we have a valuable aid. Soon after inoculations are instituted, the general constitutional condition of the patient is materially improved. He feels better, he appears better and he soon shows that he is really better by an increase in his weight. Marked improvements in the local disease are not to be looked for until after several months of inoculation. When operations are performed on patients previously treated with tuberculin the wounds heal as a rule promptly. The danger of secondary infection is much reduced, and when it does occur it quickly responds to the inoculations with the suitable vaccines. The dangers of a general systemic miliary infection and the dangers of lardaceous disease are practically eliminated.

Vaccine Therapy of Surgical Tuberculosis

DR. LEWIS L. McARTHUR, Chicago: Although the tuberculo-opsonic index in the healthy individual is fairly constant, the variations of the same index in the tuberculous patient are influenced by so many factors as to leave the observer in doubt as to its true value. As a diagnostic method the opsonic index is not infallible. Its employment as a therapeutic guide to vaccine dosage, while desirable, is not absolutely essential. In a majority of instances it is useful for both and when feasible should be utilized. Tuberculous cervical adenitis, particularly in children, seems to yield to vaccine therapy. Since this process is always secondary to a preceding tuberculous process above, care is always taken to remove the primary focus, be it the tonsils, adenoids or other tuberculous processes, if evidence obtains of its persistence and activity. Patients with peritoneal tuberculosis with effusion have been cured in the past by operative measures. It seems probable now that a cure is and can be effected by the replacement of old serum, low in opsonins, by a serum of higher opsonic content. If the opsonic content of the blood serum be raised by vaccine prior to operative interference, the efficacy of the procedure is proportionately enhanced. Tuberculosis of the genitourinary tract has furnished to the vaccine therapist some of his most startling results. Interesting observations of such cases have been made by Hektoen. Prior to treatment he found highly purulent urine, with clumps of tubercle bacilli, free in the urine, none in the leucocyte, and great dysuria. After institution of vaccine therapy, bacilli began to be found in the leucocytes, few free, to be followed by no free bacilli, all in the leucocytes. Later fewer bacilli were found in the leucocytes and finally few leucocytes with no bacilli and no dysuria, the patient being symptomatically well. I do not wish to be understood as advocating the use of vaccine therapy to the exclusion of a single means already known to be efficient. On the contrary, known factors for good are to be added to vaccine therapy. Active immunity in an acute infection can best be secured only when the opsonic index is used as a guide. Experience in using vaccine without regard to such control has been discouraging, and throws doubt on the efficacy of the procedure.

Vaccine Therapy in Colon Bacillus Infection of the Urinary Tract

DR. FRANK BILLINGS, Chicago: Colon bacilluria occurs in fully 50 per cent. of cases of bacteriuria. The condition may be unattended with perceptible effect, either local or systemic. It is important to use antogenous vaccines in these cases. Cultures may be made from urine after it has been transported

a thousand miles to a laboratory by one who is properly trained in bacteriologic technic. Autogenous vaccine may be made by heating the culture to 60 C. for thirty minutes. This kills the bacilli. Fresh suspensions of the dead bacillus should be used. Suspensions more than two weeks old may not give the same results. Usually the first vaccination is made with two hundred million bacilli. Subsequent dosage may be increased until a decided local and general reaction occurs. The maximum dose in my work was one billion. Experience has proved that small doses are preferable to large ones with some patients. From five million to one hundred million may produce a sufficient reaction for curative purposes and diminish the risk of a too great reaction. Absolute rest, much of the time in bed, with a copious fluid diet, chiefly milk, shortens the course of treatment, reduces the risk of chill with reaction and makes recovery more certain. The specific effect of autogenous colon bacilli vaccine therapy is proved by the phenomena of reaction, which consists of a local reaction at the point of injection, including redness of the skin, tenderness and swelling over an area from one to two inches square. This begins in 1 or 2 hours after the injection, reaches the maximum in from 12 to 18 hours, and gradually disappears by the end of from 48 to 72 hours. A general reaction occurs in from 2 to 12 hours, manifested by general malaise, aching of muscles, bones and joints, more or less headache, more or less fever, sometimes preceded by a chill and a leucocytosis. If the patient is up and about the reaction is more severe, as manifested by severe chill and fever. In many patients there is irritation manifested by pain, aching, etc., of the kidney, bladder, joints and groups of muscles, respectively, which are the seat of morbid changes, due to the colon infection. The specificity is further indicated by an increase in the opsonic index, and finally by an immunity manifested by the failure of reaction after vaccination and the disappearance of the bacteria from the urine. One should employ at the same time all rational measures to relieve the patient, as general hygiene, personal cleanliness, correction of diarrhea or constipation, hematinics, when necessary, and surgical or mechanical measures to correct anatomic faults which interfere with proper drainage of the urinary tract.

DISCUSSION

DR. NORMAN K. McLEOD, Buffalo: It has frequently been said that the opsonic index is of no value from a diagnostic standpoint, or from a curative standpoint, in regard to the dosage of tuberculin. At one time, in this country, when various serums were sent to various laboratories, it was claimed that there was a variation in the opsonic indices of from 1.5 up to 1.2, 3 and 4. This was entirely adverse to what I found, and Dr. McArthur's work on this subject in placing the index at from 1.8 to 1.2 is entirely in accord with my work. Dr. McArthur's work on the cervical glands agrees with mine, but I would like to know if he has tried inoculations before operating. I have frequently seen patients who have been operated on after several months of inoculations, and I would take these large glands and inoculate them for long periods of time, to find out whether I could stop the breaking down of the glands. In a few cases I have kept the glands from breaking down, and later, when an operation was performed, the glands could be shelled out very easily; this was followed always by primary union.

With reference to Dr. Billing's paper, I have done a good deal of laboratory work on colon bacillus infections of the bladder and urinary tract under the direction of Drs. Stanton and Jones. Recently I saw three cases of infection following confinements, and each simulated an acute streptococcus infection of the endometrium. Two were accompanied by thrombosis, and in each case cultures from the endometrium revealed nothing. I could trace no infection anywhere, except that the urine was loaded with the colon bacillus.

DR. CHARLES N. DOWD, New York: Much of the observations concerning vaccine therapy would seem to hinge on the question of tuberculous lymph nodes. I agree to the advisability of using vaccine therapy in its place, but I also think that, instead of giving vaccine therapy for one or two or three months before an operation, that an operation should be done first; then, if there is any possibility of any remnant or rem-

nants being left, the vaccine therapy may be given on that basis. There is no place in the body that offers as favorable a position for the surgical treatment of tuberculosis as the neck, and tuberculous lymph nodes can be taken out easily. They can be removed so thoroughly that recurrence seldom takes place. I speak from experience, because I have operated on over 300 patients, and have followed them for from 1 to 15 years. After operation, recurrence is not common.

DR. ALLEN A. JONES, Buffalo: Does Dr. McArthur use mixed vaccines, and if so, in what doses? I gather from Dr. Billings' paper that tuberculin is being used in ordinary doses in Chicago, rather than in accordance with the doses advocated by Dr. McLeod.

DR. ROBERT T. MORRIS, New York: At present, we are making investigations in regard to intractable leucorrhea, particularly in school girls, in whom the discharge is not virulent, although it is secretory in character. I find there colon bacillus infection, or as the cause for the disturbance a bacterium occurring in the culture medium which is produced from uteri in women who are engaged in laborious work. I wish to ask if in these cases vaccine therapy would be of service as an addition to other treatment which is not very effective.

DR. J. DAY OLIN, Watertown: I have in mind a case of colon bacillus infection which occurred in my own practice following an operation, with an infarct of the kidney, in which the method that has been mentioned was followed; the local bacteriologist made a vaccine from the culture, which was used with gratifying results. The case was not at all responsive to the ordinary methods of treatment, but was easily treated in this way. I recall another case of ascending cholangitis from an infected gall-bladder, which was going to the bad, and in which the patient was treated with mixed vaccines with very good results. This vaccine treatment is not beyond the reach of general practitioners, even in places somewhat remote from the great medical centers.

DR. L. McARTHUR: I have been following rather closely the dosage advocated by Wright, that is, 1/1,000 of a milligram at the commencement, and gradually increasing up to 1/500 of a milligram of the tuberculin. While the dosage with other vaccines may be raised to an enormous degree, the use of tuberculin in my opinion has not yet justified any such large amounts. I must confess that in cases that I have deemed surgical and required operation I have promptly taken out tuberculous glands in the neck. Those patients who refuse operation, and those who had already been operated on and returned with fistulas, have been treated with tuberculin beneficially. I would like to call attention to the valuable contribution of Dr. Billings, in that he has demonstrated to us as surgeons that old cases of bleeding from the kidney, which we could not determine as being due to a tumor, or as being due to the hematuria of malaria, but which we were led to incise, can be classified now as bacterial hemorrhages and can be cured by the administration of vaccines.

DR. F. BILLINGS, Chicago: No attempt has been made to separate the various changes which may occur from colon bacillus infection of the urinary tract from any other part of the body. Let me utter a word of caution here: I find that some practitioners are colon bacillus infection mad. While colon bacillus infection of the urinary tract is frequent, the number of individuals who suffer from it, as manifested by symptoms, are very few. The longer I study it, the more I am convinced that only a small percentage of people suffer from symptoms of infection of the colon from this bacillus; when such is the case, there is usually some morbid anatomy associated with the urinary tract, or defective drainage, such as failure to empty the bladder, or a defect in the passage or some nervous lesion of the body, which prevents good drainage of the bladder; or there is long-standing infection, such as chronic prostatitis, due to the gonococcus. When the colon bacillus is present in the urinary tract, it is said that it is apt to drive out other bacteria. That may or may not be true. It is a mixed infection, and it becomes pathogenic and aggravates the symptoms due to some other organism. I believe that it produces many systemic effects when it is there, but I do not believe that it produces any

more systemic effects than some other organism in the urinary tract, nor any more than some other organisms in a focal infection elsewhere in the body. Physicians must look into this infection more than they have in the past.

I do not know whether or not this infection will produce thrombosis of the vessels. No attempt has been made to classify the results of such infections, whether local or systemic. With regard to leucorrhea occurring in young girls as the result of colon bacillus infection, I should say that the specificity of the colon bacillus as causing this infection is debatable.

Treatment of Pott's Disease

DR. BRAINERD HUNT WHITBECK, New York: The duration of treatment of Pott's disease depends on its location and extent. Even in disease high up, presenting little or no deformity, at least two years of constant fixation should be the rule. In uncomplicated disease of the dorsal and lumbar regions, four or five years are required. Of course, the patients with no deformity would require support for a shorter time than those with deformity, for in the latter cases the deformity often shows a tendency to increase even years after the disease has become quiescent. It is wise, therefore, to continue the support for several months after all signs of disease have disappeared, and then to leave off the brace or jacket at night first, and then for a part of the day. A good indication for removing support is the disappearance of muscular spasm, which is the last symptom to disappear. Even after several years of apparent cure, recurrences sometimes take place.

Appendicitis in Children

DR. CHARLES N. DOWD, New York: The diagnosis of appendicitis in children is complicated by many factors. It is difficult or impossible to obtain a clear statement of symptoms or an accurate localization of pain, and symptoms which guide us in adults in young children are frequently due to other causes than appendicitis. Children as well as adults give localized rigidity, and its existence must be the main guide in making a diagnosis of appendicitis. The other symptoms are usually also present, and they come in the sequence given by Murphy, but for children they are to be considered as indications to look for rigidity, as guides in part rather than as independent diagnostic features. When abscess formation has occurred, tumefaction is added to the local tenderness. Since the abdomens of children are small and their appendices often relatively long, sensitiveness at a distance from McBurney's point is more common than in adults. Several conditions may easily be mistaken for appendicitis, and among them may be mentioned beginning pneumonia, general peritonitis, tubercular peritonitis, pneumococcus peritonitis, diffuse gonococcus peritonitis, foreign bodies, etc. Many authors have referred to the difficulty of distinguishing appendicitis from hip disease. I have seen one case of acute suppurative coxitis in which the diagnosis could not be made before operation. Diagnosis in children is much more difficult than in adults, but it is not so complicated as a long list of difficulties would indicate. It can generally be made by due consideration of the muscle rigidity and tumefaction and the symptoms which precede and accompany it, according to Murphy's schedule. An important element in determining the success of treatment is simplicity of operation, that is, the incision should be made well to the side, the appendix removed when practicable and the local abscess cavity, if there be one, drained, but the general peritoneal cavity should be left alone, and the intestines not manipulated or disturbed.

Masked Appendicitis

DR. GEORGE E. BREWER, New York: I have no explanation to offer or theory to advance why a chronic lesion of the appendix should manifest itself so frequently by functional disturbances in a remote portion of the gastrointestinal tract or in other viscera. Neither have I any explanation of the fact that definite inflammatory changes are so frequently found in the appendix without a history of some previous acute attack. For many years I refused to operate in such cases, unless I could elicit a history of an acute lesion, believing that these chronic changes could not occur except as a result of acute

infection. Increasing observation, however, has convinced me of the error of this view, for during recent years many cases have been observed with gross, easily demonstrable evidences of chronic inflammation without the slightest history of an acute infection.

Conditions Simulating Appendicitis

DR. A. B. JOHNSON, New York, drew the following conclusions:

1. A large number of conditions may simulate appendicitis.
2. In many of them a careful study of the past history and of present signs and symptoms will render a differential diagnosis possible.
3. In acute cases, with an imperfect history and inability to observe the patients during the earlier hours of the disease, an accurate diagnosis may be impossible. This will be especially true of (a) perforating lesions of the alimentary tract other than appendicitis; (b) of some affections of the tube and ovary on the right side; (c) cases of well-developed diffuse purulent peritonitis from any cause; (d) among the erythema group Henoch's purpura, with abdominal symptoms may so exactly simulate acute appendicitis that no differential diagnosis is possible during the early hours of the disease.

When to Operate in Appendicitis

DR. JOSEPH A. BLAKE, New York: I group cases into those observed in the first twelve hours; in the second twelve hours; in the second twenty-four hours, and those observed from forty-eight hours on. In the first twelve hours it is difficult or even impossible to tell the exact condition of the appendix. In most cases the same conditions prevail during the second twelve hours as have just been outlined for the first twelve hours of the disease. In some cases, however, necrosis will have taken place and infection of the peritoneum will have commenced. When this occurs, rigidity becomes manifest. The pathologic process, however, is still confined in the great majority of cases to the immediate vicinity of the appendix, and operation should be immediately performed before infection of the peritoneum becomes established. In the second twenty-four hours, in the severer cases, necrosis of the appendix and infection of the peritoneum are usually well established. Ileus and meteorism commence and the patient begins to show the effects of a serious infection. Diversity of opinion as to the proper time to operate exists in the period comprised in the third, fourth and fifth days of the disease. It is generally considered to be the most dangerous period for operation, for the mortality following operation is greater than when done in the preceding days. There has been, therefore, a disposition on the part of many to tide the patient over until localization—abscess formation—has taken place. I am not convinced that this is the correct view to take, notwithstanding the favorable reports of those who employ the Ochsner or waiting treatment. I do not think it is correct to say that the Ochsner treatment stops extension and produces localization in all cases. I have employed it carefully in several advanced cases that seemed to me to be poor operative risks, and while some of the symptoms have abated, there has always been an increase in the subjective manifestations, and I have been constrained to operate under more unfavorable conditions. The mortality of late abscess operations is very high. The patients may not die immediately after the operation, but complications, such as sepsis, secondary abscesses, and obstructions are common, and carry them off at a later date.

Discussion on Appendicitis

DR. EDWIN MACDONALD STANTON, Schenectady: Of 274 patients with appendicitis observed by my associate and myself, 117 were operated on during the acute stage of the disease, and of this number we have had 5 deaths, a mortality of 4.2. In analyzing our results some time ago I found that most of the trouble came in these cases at forty-eight hours from the onset of the attack, when we thought that by making a small incision and relieving tension we might shorten the convalescence and save the patients a long stay in the hospital from sepsis, etc. But these cases we have trouble with. All patients put on the Ochsner treatment have done well. The improvement in the physical signs has been just as rapid as in the cases in which we have operated, and the patients are well and alive to-day.

DR. ROBERT T. MORRIS, New York: In children we have the A, B, C of appendicitis diagnosis, namely, AA, acute attack; CC, colic and constipation. Tenderness or hypersensitiveness at the site of the left group of lumbar ganglia is a distinctive feature in diagnosis. Pneumonia may be mistaken for appendicitis. I have had one such case in which I was misled. With pneumonia in the first stage, if there is no hypersensitiveness on deep pressure at the site of the right lumbar ganglia, look for something else than the appendix for the irritation. Tuberculous peritonitis in children is sufficient excuse for operating, and in some of these cases the appendix may be at fault. I have not worked up the point in reference to tenderness of the right group of lumbar ganglia in exoitis, although I believe that is important. The blood count is apt to be misleading in these cases of acute infection. The Ochsner treatment simply means preparation for operation.

DR. A. JACOB, New York: Dr. Brewer has told us that he has made several mistakes in diagnosing the class of cases under consideration. In many instances the diagnosis is not made accurately even by eminent surgeons. If we could have statistics of mistaken diagnoses, it would help a good deal, and it would justify the mistakes that are made by general practitioners. At a session of the American Medical Association, held at Atlantic City, when the difficulty of making an accurate diagnosis of appendicitis in children came up, I reported a case in which half a dozen eminent physicians were called in consultation, and the only man who insisted on operation was a physician, not a surgeon. Operation was refused. The patient died, and autopsy revealed a general septic peritonitis, with perforation of the appendix, and a large amount of pus in the peritoneal cavity. I have frequently found the diagnosis of appendicitis difficult to make in children. Small children are much disposed to appendicitis, and we should not forget that there is a great deal of difference anatomically between the small infant and the adult. The small infant has a great many more lymph vessels, lymph ducts and lymph bodies than the adult. Moreover, there is plenty of opportunity in their appendices for accumulation of these very small lymph bodies. The length of the appendix in a small child is about one-tenth the length of the colon in that same child. In the adult, the length of the appendix is about one-twentieth the length of the colon. The appendix is more funnel-like in the child, and in a great many cases behind the funnel there is a contraction, so that when there is a foreign body in the appendix in the shape of mucus or other material it cannot get out. There are many reasons why small children should have appendicitis. If the masters of surgery will teach general practitioners how to make perfect diagnoses, there will not be so many chances for blaming us for not calling them in to operate more promptly. The fault does not always lie with the general practitioner.

DR. WILLIAM W. SKINNER, Geneva: There is one point in diagnosis which has helped me in many cases. If one carefully observes the skin over the entire abdomen, especially by stretching it slightly in different directions to obliterate the little corrugations which render the skin partially opaque, thus increasing its translucency, it will be found over the inflamed appendix that the veins are darker, as compared with the veins in other regions of the abdomen. The veins which are particularly affected are those just internal to the anterior superior spine of the ilium, running upward and slightly inward, almost parallel with the outer border of the rectus muscle. This sign alone has enabled me many times, in the absence of definite signs of localized tenderness, rigidity, and the other classical signs, to make a differential diagnosis between pelvic inflammation and inflammation of the appendix.

Surgical Considerations of Acute Diffuse Phlegmonous Gastritis

DR. RICHARD WARD WESTBROOK, Brooklyn: This disease is rare; it is a streptococcus infection of the stomach wall analogous to cellulocutaneous erysipelas. No authentic case of recovery has been reported so far. The ease of recovery reported by Mikulicz is not to be taken as correctly diagnosed. He reported a case that came under his own observation, the first to be diagnosed at operation. He believes that early partial gastrectomy is a possible means for operative success.

Medicolegal

Admissibility of Evidence of Declarations and Acts of Patients

The Court of Appeals of Kentucky says, in *Chesapeake & Ohio Railway Co. vs. Wiley* (121 S. W. R., 402), a personal injury case brought by the latter party, that it is a familiar rule of evidence that statements of a party not under oath, and which are favorable to his cause, are not receivable. They are deemed self-serving, and are known to be unreliable evidences of the truth in general. His conduct of the same character, done for the same purpose, is, for the same reason, not receivable in evidence. The question is not whether what he said was true, or whether what he did was a natural, unstudied act, but whether the principal fact may be proved in that way. Illustrating by the case at the bar, that the plaintiff was sleepless, nervous, weak, and had pains, might all be proved, but the question was, how?

Hearsay evidence is generally irrelevant; but there are many exceptions to the rule. The exceptions are in the main based on the experience of jurists as well as of men in general that in the particular matter the statement was made under such circumstances as warrant a belief in its truth.

One of the exceptions to the general rule is that in a case where pain, or a state of health, is a fact at issue, the natural, spontaneous, and usual expressions indicating pain and suffering may be shown, as generally that is the only way in which, aside from the testimony of the sufferer, the existence of pain may be proved. So of other mental states: but it is the invariable rule that the expression should accompany immediately and naturally flow from the pain then being suffered, otherwise it becomes a narrative of a past event, and is not receivable in evidence in court to prove that the pain had existed. Such expressions or manifestations of pain or any mental state which is at issue in the case may be shown by any observer, whether physician or not.

Another exception, though it belongs to the same class, is that where one suffering from an ailment seeks medical assistance or advice, it is competent to show what he then told his physician as to his symptoms, but never as to the cause of an injury, because it is believed that the motive for telling the physician the truth as to his sensations of pain, suffering, or history of his ailment, so as to enable him to relieve the suffering, or save the life of the patient, is greater than could be the motive of making a merely self-serving statement to be used in his behalf by the man in some other affair. This allows more than if the same statement had been made to one not a physician or nurse, from whom the patient was expecting aid or physical relief, because in the instance of the physician or nurse there is present a motive for telling the truth that is not present when the same matter is told to one from whom the relief is not sought. If the act or statement is the natural, ordinary, and probable expression of one in that condition, it is deemed to be probably true, and is receivable as evidence of the state which it indicates, and because from the nature of the matter it may be the only evidence of the fact.

There is another ground on which the evidence of the character discussed (that is exclamations indicating pain, or emotion, and declarations as to sensations, as well as the conduct of a person whose pain or sickness is at issue) is receivable; that is, when it is part of the *res gestae*, or essential elements of the case. If it is relevant to show the physical condition of the person, such as that he was injured or made sick, not only what a witness has seen and testifies to is relevant, but the exclamations or statements of the person which are the natural spontaneous expressions ordinarily made by one who suffers such pain or illness, are receivable as verbal acts; and on the same principle, his actions, such as naturally and spontaneously result from such injury or illness, may be proved. They are the best evidence obtainable of his condition, and in many instances the only evidence of it aside from his own testimony, should he testify. They may be even more convincing evidence of the main fact than the opinion of an observer, or even the opinion of the declarant himself.

But this court, to which the question was presented for the first time in this case, is against extending the exception to

the general rule of evidence which excludes hearsay to include the statements and conduct of a party not made under the conditions which have been discussed above. More particularly, it holds that it was error to admit the testimony of three physicians who examined the plaintiff, but did not treat him, when none of the physicians dissociated his opinion based alone on objective evidences in the patient as to his condition from what he had received from the plaintiff of a character held inadmissible.

Mental Weakness Due to Physical Infirmary is Not Mental Unsoundness—Condition at One Time Not Evidence as to Another

The Supreme Court of Iowa says, in the will case of *Speer vs. Speer* (123 N. W. R. 176), that the disease of which the testator or maker of the will died was described by the witnesses as bronchopneumonia with pleurisy, with which he had been seized about five days before the will was executed, and of which he died the second day after its execution. As his sickness was wholly physical, proof of his condition as to lethargy, suffering, or unconsciousness on days preceding or following the execution of the will was entitled to very little consideration; the sole question being whether at the time of its execution he was conscious and able to understand what he was doing. Only two of the witnesses saw him on the day when the will was executed. Neither of them was present at the time of its execution, or attempted execution. They spoke of his physical weakness, his failure to recognize them, and his apparent inability to converse as to his condition or his affairs. The court is unable to find anything in the record substantially tending to show that the testator may not have been in such condition when the will was in fact executed that he could understand what he was doing and express his deliberate purpose as to the disposition of his property.

Mere mental weakness, not due to mental disease, but solely to physical infirmity, does not constitute mental unsoundness. On the other hand, it is well settled that there may be testamentary incapacity without actual insanity or unsoundness of mind. But mere weakness of mental power will not render a person incapable of executing a will. It is not necessary that the testator should be competent to make contracts or transact business. Old age and failure of memory do not necessarily take away a testator's capacity to dispose of property.

Statements of a witness as to the testator's condition, relating to the day following that on which the will was executed, as that he "seemed to be suffering," "seemed to be in a stupor," and did not talk to her that day "because he was too sick," could not, under the circumstances of the case, be considered as showing what his condition was on the preceding day. He was suffering from a progressive illness, and he may well have been in a much worse condition than when he signed the will. Likewise, what a witness said as to the condition of the testator two days before the will was executed could under the circumstances have been entitled to no weight, for, as already said, the testator was seriously sick, and there was no presumption that his mental faculties, as affected by such sickness, were not in entirely different conditions on those two days. In short, here was a case where a man suffering from disease, but of perfectly sound mind, so far as the evidence tended to indicate, was at times conscious, recognizing those about him and fully aware of his conditions and surroundings, while at other times he was in a stupor or apparently asleep, and the court thinks that the opinion of a witness based on the testator's condition at a time other than that at which the will was executed would have no probative force with reference to his condition when the will was made.

Commission of Crime of Rape by Boy Under Fourteen

The Supreme Court of Mississippi reverses, on the appeal of *Geason vs. State* (50 So. R. 488), a conviction of a boy under 14 years of age of the crime of rape. The ground for this was that there was no evidence of the boy's mental capacity to entertain a criminal intent, or of his physical ability to commit the crime of rape. A criminal intent, the court says, is an essential element of every crime. Such an intent cannot be entertained by an infant until it has developed sufficient intel-

ligence and moral perception to enable it to distinguish between right and wrong and to comprehend the consequence of its act. Under the age of 14, an infant is presumed not to have reached this state of development, and to be incapable of entertaining a criminal intent. But as in fact the age at which children reach this state of development varies, this presumption between the ages of 7 and 14 is only presumptive, and can be overcome by proof. Under the age of 7 this presumption is conclusive. In the crime of rape, in addition to mental capacity to entertain a criminal intent, there is also involved the element of physical ability to commit it, and this physical ability cannot exist until the infant has arrived at the age of puberty. In most jurisdictions, an infant under the age of 14 is conclusively presumed not to have arrived at the age of puberty, and hence incapable of committing rape. But the rule, and this court thinks the safer rule, in some jurisdictions is that this presumption is only a *prima facie* one, and can be overcome by proof.

Saving Clause Necessary for Completion of Prosecutions After Repeal of Law

The Supreme Court of Washington says that the defendant in the case of *State vs. Hanover* (104 Pac. R. 624) was charged with practicing medicine without a license, convicted and sentenced to pay a fine. The prosecution was under the act of 1890. The information alleged that the offense was committed on Oct. 26, 1908. The trial was had in the month of April, and the judgment was entered on May 1, 1909. But between the date when the offense was charged to have been committed and the date of the trial, the state Legislature passed a new act regulating the practice of medicine and surgery, repealing prior acts, which new act took effect on its approval, namely, March 18, 1909. This act, however, contained no saving clause for the prosecution of offenses committed under the old law, and therefore it is held that, under well-settled principles of law, there was no authority at the time of the trial for the prosecution of the defendant on the offense charged, and the judgment rendered against him must be reversed. As said by this court in another case, the repeal of a statute pending a prosecution thereunder, without any saving clause as to such prosecution, will prevent its being further prosecuted, and this rule applies as well after judgment and sentence, pending an appeal duly taken therefrom, as before the final determination in the trial court.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

Medical Record, New York

February 12

- 1 *Pneumonia in the Aged. Treated with Pneumococcus Vaccine; Recovery. H. A. Craig, New York.
- 2 Hyperchlorhydria. F. B. Turck, Chicago.
- 3 Rôle of Cerebral Lesions in Infancy and Childhood in the Causation of Epilepsy. M. L. Perry, Parsons, Kan.
- 4 Noma Followed by Cicatricial Contraction of the Jaws. W. C. Lusk, New York.
- 5 *Quick Method of Examining Stools; its Significance for Diagnosis and Treatment of Some Intestinal Disorders. M. Gross, New York.
- 6 Early Diagnosis of Carcinoma of the Sigmoid. G. A. Friedman, New York.
- 7 Examination of Urine at the Bedside. G. Richter, St. Louis.
- 8 *Letters to a Neurologist. J. Collins, New York.

1. **Pneumonia Treated with Pneumococcus Vaccine.**—Craig says that practically all the inmates in the Sailors' Snug Harbor Hospital are over 60 years of age, with the result that the usual mortality from pneumonia has been 66 per cent. Recently, however, all lobar pneumonia cases have been treated with an autogenous vaccine obtained from the pneumococci in the patients' sputum. Since this treatment was introduced there have been 8 cases; the patients varied in age from 66 to 83 years, and all recovered.

5. **Quick Method of Examining Stools.**—Gross emphasizes that it is important to examine the stools after a mixed diet,

after the use of castor oil, and after a test diet used for three days, in order to compare results. The normal stool is light brown, odorless and neutral, or slightly alkaline. Fatty stools are light, foamy and acid. Fat drops show, and fatty acids in crystals are seen, besides soap crystals. These are found in icterus, disturbed pancreatic secretion, and changed intestinal secretions. Meat stools show fibers and light yellow muscle remnants. Connective tissue stools show white particles. Mucus may be seen in transparent spots and masses. This always indicates irritation and catarrh. Large deposits may be referred to the large intestine; finer ones come from the small intestine. Carbohydrate stools are of a sour, pungent odor, and acid reaction. The starch is found in filled cells or granules. They are colored blue by iodine. Bacteria are present in large numbers. These show disturbances of the small intestine and pancreas. Reagents are given for testing the different kinds of stools. The author treats all these disturbances by easily digestible food with little irritating material, avoiding the materials that are badly digested.

8. **Letter to a Neurologist.**—Collins receives a letter from a self-centered woman who has dwelt on a supposed injury from childhood, allowing it to separate her from her parents and home, and magnifying it until it has impaired her powers of work and of happiness. He prescribes for her a life for others and the forgetting of her injuries. Another element in his prescription is a happy marriage and energies bent on the care of her household.

Boston Medical and Surgical Journal

February 10

- 9 Prevention and Inhibition of Peritonitis, with Special Reference to the Harm Done by Cathartics in Incipient Peritonitis. A. J. Ochsner, Chicago.
- 10 *Suggestion: The Mainspring of Hypnotism and Psychotherapy. J. S. Lewis, Buffalo.
- 11 The Falsetto Voice and its Relation to Spastic Aphonia. A. Myerson, Boston.

10. **Suggestion in Therapy.**—The author claims that the average physician may employ suggestion at its full value without charlatanism, without mysticism, without deception, in common-sense suggestive treatment. The patient who leaves a hospital with the delusion that he has been drugged to sleep by virtue of a capsule containing powdered sugar is in a sense no better off than the one who leaves with a discharging sinus or a crutch. Lewis says that it should be our endeavor to supplant the bread pill, the "bluff wafer" and the sterile water hypodermic injection by verbal suggestion, or, if time be lacking, use these helps only until such time as we can tactfully give to the patient the key to his functional disorder. Lewis would use these means to distinguish between what is functional and what is organic. But once the condition is clear, the patient should be given the use of that power with which suggestion has invested the bread pill or the water "hypo." For the competent, there is still hypnotism when the weaker suggestion fails. Is it vain to hope, asks Lewis, that this generation shall see many hypnotists in this country, who, like anesthetists, devote their time to this specialty and in particular to the difficult cases? There is need of men who can write and talk intelligibly to their colleagues.

New York Medical Journal

February 12

- 12 Contractile Elements in the Connective Tissue. J. Wright, New York.
- 13 *Gall-Stones with Reference to Cancer of the Gall-Bladder. A. Vander Veer, Albany.
- 14 Diseases of the Colon. E. Martin, Philadelphia.
- 15 Medical Aspect of Diseases of the Colon. L. Weber, New York.
- 16 *Problems Involved in a Case of Typhoid in Pregnancy. S. M. Brickner and B. S. Oppenheimer, New York.
- 17 Cancer of the Intestine. J. G. Sherrill, Louisville, Ky.
- 18 Gall-Stones as an Etiologic Factor in Chronic Pancreatitis. J. A. Kelly, Philadelphia.
- 19 Perforation and Rupture of the Gall-Bladder. F. T. Meriwether, Asheville, N. C.
- 20 *Congenital Absence of the Gall-Bladder. J. J. Hoffman and J. A. Jackson, Indianapolis.

13. Abstracted in THE JOURNAL, Jan. 15, 1910, p. 233.

16. **Typhoid in Pregnancy.**—The case reported by Brickner and Oppenheimer was a normal pregnancy, with the exception of an intercurrent typhoid. Prochownic diet was given. Pre-

mature labor took place at 8 months. It was a dry labor, necessitating the use of low forceps for a prolonged second stage. From the obstetric standpoint there are two elements in the case aside from the technical interest, which are of special moment. The first of these is the fact that despite continued high temperature, the patient did not spontaneously miscarry, although for a few days in the early part of her illness, she had frequent contractions of the uterus. The other point of interest lies in the demonstrated fact of the impermeability of the placenta to the typhoid toxins. Although the mother's blood at the moment of birth was distinctly positive to the Widal reaction neither the placental blood nor the infant's blood gave any reaction.

20. Congenital Absence of the Gall-Bladder.—In this case, the gall-bladder was absent, but the common duct was continuous from the intestines into the liver substance, passing through the normal location of the gall-bladder. In the region of the gall-bladder it was wide and tortuous. By careful dissection it was seen to divide and subdivide. One of the subdivisions of the duct led into a globular mass, on the inferior surface of the upper portion of the left lobe near the esophageal region, size of an orange, which was an abscess filled with about three ounces of grayish pus. The walls were irregularly ragged, having a fibrous base. It also contained some degenerated material. The common duct measured at the mucous surface of the duodenum two centimeters in diameter; at the outer surface of pancreas it measured four centimeters.

Northwestern Lancet, Minneapolis

February 1

- 21 *Unnecessary Blindness. F. C. Todd, Minneapolis.
22 *Etiology and Prophylaxis of Ophthalmia Neonatorum. J. C. Litzenberg, Minneapolis.
23 What Cases of Tuberculosis are Suitable for Treatment at the State Sanatorium? W. J. Marckley, Walker, Minn.

21, 22. Abstracted in *THE JOURNAL*, Nov. 20, 1909, pp. 1849, 1850.

Medical Fortnightly, St. Louis

January 25

- 24 Work in the Laboratories of Europe. L. H. Warner, Brooklyn.
25 Recent Advances in the Surgery of the Accessory Sinuses of the Nose. R. H. T. Mann, Texarkana, Ark.
26 *Acquired Syphilis Occurring in an Hereditary Syphilitic. C. D. Scott, St. Louis.

26. Acquired Syphilis in a Hereditary Syphilitic.—The patient in question suffered at the time of birth and up to a period (the exact date of which it is impossible to determine) from hereditary syphilis as evidenced by the characteristic tibial deformity (saber tibia), enlarged radial heads, Hutchinson's teeth, stunted growth; and perhaps by the family history, which although not yet fully investigated, discloses the facts that a brother and sister died of some unknown cause within a few days following birth, and that his living brother, in childhood was affected with similar (saber) tibiae, from which, at present, he has in a large measure recovered. The patient, at some period, at present unknown, emerged from the immunity conferred by his congenital syphilis, and in time sustained a second infection with syphilis, this time with the acquired type, as manifested by the orderly appearance of a characteristic initial lesion, generalized adenopathy, papular eruptions, pharyngitis, and a mucous patch on the upper gum, from which *Spirochæta pallida* were demonstrated. These conclusions being accepted, Scott believes he is justified in stating that a complete recovery from hereditary syphilis has occurred.

Journal of Nervous and Mental Diseases, Lancaster, Pa.

January

- 27 *Errors in Diagnosis of General Paresis. E. E. Southard, Boston.
28 Type and Distribution of Sensory Disturbances Due to Cerebral Lesion. C. D. Camp, Ann Arbor, Mich.
29 Tumor of the Pons. P. Zenner, Cincinnati.

27. Errors in Diagnosis of General Paresis.—Two hundred and forty-seven cases of insanity were observed by Southard in the Danvers daily clinics and later autopsied in the pathologic laboratory during the years 1904 to 1908 inclusive. Sixty-one of these 247 cases, namely, 25 per cent., were diagnosed with more or less certainty as cases of general paresis; 41 of these 61 cases were regarded as clinically certain,

since every one present at the clinic committed himself to the diagnosis. Seven of the cases may be regarded as clinically probable, since the majority of staff members favored the diagnosis. Thirteen cases are classified as clinically dubious, since, although the diagnosis of general paresis was prominently considered, other diagnoses were also possible. The clinically dubious group includes also cases in which diagnostic doubt was expressed by several staff members.

Seventy per cent. of the cases in which general paresis was certain, probable, or even prominently considered, proved histopathologically cases of general paresis. Less than 1 per cent. of a series of 186 cases in which the diagnosis of general paresis was not considered, proved to be instances of general paresis. The lesions probably responsible for the errors in diagnosis were: (a) meningomyelitis and subcortical encephalitis (luetie?), one case; (b) tabes dorsalis and non-paretic cerebral disease, two cases; (c) arteriosclerotic brain disease with severe cerebellar involvement (dentate nuclei), two cases; (d) cerebral sclerosis (type, perivascular, gliosis), one case. Although at first sight a probable error of 15 per cent. in the diagnosis of general paresis might suggest difficulties in possible medicolegal cases, it is obvious that, were the diagnosis confined to "incurable insanity" or even to "organic brain disease," the error would disappear. However, two cases proved to be general paresis (on the plasma-cell criterion) in a series of 186 cases similarly examined in which the diagnosis of general paresis was not considered. Southard suggests that improvements in our diagnostic ability could perhaps be introduced by lumbar puncture and cytologic examination in a greater proportion of cases.

Woman's Medical Journal, Cincinnati

January

- 30 Genesis of Genius. L. G. Rabinovitch, Paris.

Journal of Ophthalmology and Oto-Laryngology, Chicago

January

- 31 Impressions of a Visit to New York. J. S. Fernandez, Havana, Cuba.
32 Extirpation of the Tonsil. M. Iverson, Stoughton, Wis.

Wisconsin Medical Journal, Milwaukee

January

- 33 *Relations of Occupations to Medicine. D. L. Edsall, Philadelphia.
34 *Vaginal Hysterectomy: New Operative Technique to Establish a Sound Pelvic Floor and to Prevent Cystocele. R. Elmergreen, Milwaukee.
35 *Resection for Tuberculosis of Hip-Joint. H. Greenberg, Milwaukee.
36 *Detection of Tubercle Bacilli in the Blood by Rosenberger's Method. M. P. Ravenel and K. W. Smith, Madison.

33, 35, 36. Abstracted in *THE JOURNAL*, Aug. 21, 1909, pp. 648, 649.

34. This article appeared in *THE JOURNAL*, Oct. 23, 1909, p. 1355.

United States Naval Medical Bulletin, Washington, D. C.

January

- 37 *Chronic Non-Suppurative Osteoplastic Periostitis of Traumatic Origin. G. Pickrell and L. M. Schmidt, U. S. Navy.
38 Shooting Glasses for Riflemen. C. S. Bogert, U. S. Navy.
39 Suggestions on Taking Finger Prints. J. D. Hall, U. S. Navy.
40 Meat Poisoning in the Navy. L. W. Curtis, U. S. Navy.
41 *Runner's Cramp: A Peculiar Occupation Neurosis. L. M. Schmidt, U. S. Navy.
42 Venereal Prophylaxis. W. J. Zalesky, U. S. Navy.
43 Medical Conditions in the Fiji Islands. R. A. Bachman, U. S. Navy.

37. Chronic Non-Suppurative Osteoplastic Periostitis.—Three cases of this affection are recorded by Pickrell and Schmidt which were due to a single severe crushing injury. The tumors produced varied greatly in size and shape. In one the summit was broad and extended far beyond the base which formed a pedicle and gave the entire mass an anvil appearance. In another, the tumor was shaped like a thick piece of rope, with ridges like strands of rope twisted one about the other. The third was an even, oval enlargement. The periosteum in each case was thick, adherent and very vascular. The surface of the bone in two cases was extremely irregular and in one comparatively smooth.

The internal structure of the tumors varied greatly. The large anvil-like growth had an outer hard compact shell of

about one-eighth inch, inside of which was a structure-like cancellous bone which contained numerous cavities filled with dark bloody fluid. This part of the growth was very vascular and bled freely. Near the base of this growth was another portion of compact tissue which also had the shape of an anvil. The other two tumors were of a dense compact structure throughout. The microscopic picture of the first growth in each case was similar. It showed areas of fairly typical bone interspersed with areas of round cells. These round-cell areas could not be distinguished by the pathologists from the round cells of sarcoma and in each case were classed as suspicious, and radical operation advised in case of return of the growth. The microscopic picture of the recurrences depended on the disposition made of the periosteum at the previous operation. Where the periosteum has been preserved and replaced, the recurrent growth had a structure similar to that of the first. Where the periosteum had been destroyed the return growth had the microscopic structure of lime infiltrated scar tissue.

In all three cases the original injury to the thigh was severe and temporarily disabled the victim. In all cases prompt and almost complete recovery from the concussion followed. Only after some weeks or months did there occur local symptoms to indicate that anything more serious than a bad bruise had resulted from the impact. Pain began to be noticed in the affected thigh. It was worse at night and of a dull, boring character. A local tenderness appeared. Walking began to produce discomfort and there was associated a limping gait. The general health in all patients became impaired. In all cases after removal of the first growth there was complete relief of pain, and each man began to gain in weight and the pallor disappeared. With the return of the tumor, weight was lost, pain, especially at night, was severe, and the former pallor returned. The authors advise early operation to limit the extension of periosteal involvement, and that the periosteum involved should be destroyed completely. Iodin and carbolic acid are not sufficiently destructive and the actual cautery should be used. Every effort should be used to prevent accumulation of blood clots adjacent to the bone, following operation.

41. Runner's Cramp.—While attempting his daily practice for a mile run the patient experienced pain across the arches of both feet; he continued running that day, but the pains became worse and when he had completed about a mile he could no longer stand on his feet, and was compelled to sit down, still suffering severely from pain across the arches and now extending to the anterior part of the legs. He discontinued running for the day. On rising, next day, the pains had subsided and he had no trouble in walking; when he attempted to run, however, every attempt to rise on the toes was accompanied by severe pain similar to that of the previous day; there was still no pain while walking.

About the third day, when attempting to run, a severe cramp occurred in the right leg, involving the calf and toes. The cramp soon disappeared but soreness persisted for several days. He steadily developed more pain on attempting the toe position, and finally mild pains persisted during the periods of rest; when he remained entirely off his feet for a day all symptoms subsided. The toes were dorsiflexed, so that no part of them touched the floor when the patient walked; the extensor tendons of the toes were very prominent and evidently held the toes in this awkward position; the feet were well arched; a very thick callous existed under the ball of each foot. Rest in bed for two days caused all pain to disappear, but the toes were still hyperextended. Soreness in the arch of foot persisted for some time, but did not interfere with walking. Eventually recovery was complete.

Therapeutic Gazette, Detroit

January

- 44 Recognition and Treatment of Malignant Disease of the Uterus. E. E. Montgomery, Philadelphia.
- 45 Treatment of Gastric Complications of the Earlier Stages of Pulmonary Tuberculosis. R. G. Torrey, Philadelphia.
- 46 Advantages of Alynin Anesthesia. F. M. Fernandez, Havana, Cuba.
- 47 Gastropnoia. A. M. Calloway, Asheville, N. C.
- 48 Surgical Treatment of Incomplete Abortion. J. E. Cannaday, Charleston, W. Va.

Surgery, Gynecology and Obstetrics, Chicago

January

- 49 *Serotherapy of Purulent Processes. E. Gergö, Budapest, Hungary.
- 50 *Production of Shock by Electric Stimulation of the Abdominal Sympathetic Ganglia. W. B. Fowler and R. N. Parker, Chicago.
- 51 *Incontinence of Urine Following Labor. G. B. Miller, Washington, D. C.
- 52 *The Subinvolved Uterus. R. R. Smith, Grand Rapids, Mich.
- 53 Multilocular Cysts of the Jaws. D. D. Lewis, Chicago.
- 54 *Diagnostic Value of Distention of Renal Pelvis Through the Ureteral Catheter. L. Freeman, Denver.
- 55 *Premature Menopause. M. M. Stark, New York.
- 56 Changes in the Normal Endometrium During Menstrual Life Based on Study of 100 Cases. C. C. Norris and F. E. Keene, Philadelphia.
- 57 Pulsating Exophthalmus: Ligation of Internal Carotid. A. E. Halstead and A. J. Bender, Chicago.
- 58 The Saccular Theory of Hernia. A. MacLennan, Glasgow, Scotland.
- 59 *Noma. M. F. Porter, Fort Wayne, Ind.
- 60 Bier Treatment in Tuberculous Joint Disease. L. W. Ely, New York.
- 61 History and Technic of Extraperitoneal Cesarean Section. T. J. Doederlein, Chicago.
- 62 *Treatment of Abortion. H. M. Stowe, Chicago.
- 63 Plastic Surgery of Abdominal Wall. R. C. Coffey, Portland, Ore.
- 64 Unusual Case of Congenital Malformations. H. L. Kretschmer, Chicago.
- 65 Injuries of the Elbow Joint. J. E. Owens, Chicago.
- 66 Bullet Extracted from Hip-Joint. E. H. Ochsner, Chicago.

49. Serotherapy of Purulent Processes.—One hundred and sixty carefully observed cases form the basis of Gergö's communication. In the treatment of abscesses of the soft parts (128 cases) repeated injections and aspirations of the abscess cavity with serum are made, thereby thinning the thick pus and allowing a more thorough cleansing. The abscess cavity is then injected with clean serum—a quantity amounting to from one-third to one-half as much as the aspirated pus. The point of puncture is then covered with gauze and adhesive plaster. Healing proceeds rapidly and definitely. In infiltrating suppurations or more diffuse inflammations, *e. g.*, felon, phlegmon, carbuncle, diffuse phlegmonous mastitis, etc. (16 cases), healing can be accomplished only after the infiltrating process has gone on to a well-circumscribed abscess. Otherwise, the only value of the method in these cases lies in the fact that wherever the serum comes in intimate contact with the wound, the secretion ceases, the exudate and necrotic tissue become separated within a few days, and the wound soon becomes clean. In bone suppurations (4 cases) the laying open of the bone focus followed by many weeks of progressive treatment with serum irrigations, serum packs, or serum injections resulted in nothing more than a cleansing of the soft parts of the wound. Bone fistulas (5 cases) are subject to the same criticism as bone suppurations. Fistulae of the soft parts (7 cases) especially when they were large and superficial and therefore suitable for serum tamponade, soon showed a narrowing, a diminution of their discharge and a filling of the fistula with clean granulations.

50. Shock by Electric Stimulation.—Fowler and Parker found by experimentation that a dog by the loss of 2 per cent. of its body weight in blood is rendered susceptible to death when its abdominal sympathetic ganglia are stimulated with a 20 milliamperere galvanic current. They offer the following explanation of the death of the animals: A dog has a limit of endurance and when that limit is exceeded he dies. While the loss of 2 per cent. of the body weight in blood is not sufficient to destroy the average dog, it so weakens him that the application of a moderate electric current to his abdominal sympathetic ganglia is sufficient to turn the balance in favor of death.

Their experience convinced them that undue manipulation of the abdominal viscera and exposure of the animal to cold during the operation makes for the same result. They believe that it is immaterial whether the method of weakening the animal is by means of peritonitis, hemorrhage, or any kind of trauma that produces the requisite shock, and that it is immaterial whether the final and fatal shock is from an electric current applied to the abdominal ganglia or to any other part of the body, or whether the shock is produced in any other way, the result will be fatal when the dog's limit of endurance has been reached.

51. Incontinence of Urine Following Labor.—That the incontinence which comes on immediately after labor due to swelling, etc., of the urethra and bladder neck, as a rule, soon sub-

sides without treatment is Miller's experience. Later, he says, one should make a careful examination of all the pelvic organs, replace a retroposed uterus when necessary, hasten involution of the pelvic structure by donches, tampons, pessaries, etc. In persistent or increasing incontinence some operative procedure is usually necessary. The nature of the operation should depend on the condition of the urethra and bladder neck. The Frank operation, combined with an anterior and posterior colporrhaphy, in cases in which there is a relaxed and gaping vagina, and some appropriate operation for retroversion, when this exists, will, in Miller's opinion, cure the average case of incontinence coming on after labor, and of not too long standing. In cases in which there is a marked dilatation of the urethra of long standing, or cases in which from necrosis the muscular wall of the neck of the bladder and urethra are wanting, Miller found Gersuny's operation to offer the best hope of cure.

52. Subinvolved Uterus.—Smith briefly sketches the life history of the uterine musculature; gives an outline of the pathology of subinvolution and the general plan for its treatment, and reports 23 cases treated by hysterectomy. Of the 23 patients, the youngest was 35, the oldest 55. Nine of the 23 were losing so much blood at or between menstrual periods as to be serious. Five had profuse flowing, enough to warrant active interference. In 9 the flow was practically normal, if present at all; they were suffering simply from the marked pelvic discomfort to which such patients are subject. In 12 of the patients the position of the uterus was practically normal; in 6 there was retroversion, in four there was some tendency to prolapse, in one there was a considerable amount of prolapse with retroversion, but the uterus was very large and this formed the chief indication for its removal. There was no mortality in this list nor unusual convalescence from operation. The patients have all been practically free from every symptom referable to the pelvis. Smith thinks that we have been too conservative with such patients, and urges that hysterectomy be done more frequently than is now commonly practiced. On the other hand, no hysterectomy should be done without careful weighing of every point *pro* and *con*. The things that have the most weight in Smith's mind are: (1) the long continuance of the symptoms; (2) severe loss of blood; (3) the non-relief by simple procedures; (4) the age of the patient; (5) the size and condition of the uterus.

54. Diagnostic Value of Distention of Renal Pelvis.—Freeman cites several cases in which this procedure justified itself. A woman was referred to him with a movable right kidney producing, supposedly, much disturbance in the right side which incapacitated her for her various duties. There seemed to be little, if any, question regarding the diagnosis; but, largely for the sake of mere experience, Freeman dilated the renal pelvis with a solution of boric acid. When the distention became great enough to produce pain this was totally different from that usually experienced by the patient, her habitual pain being lower down, in the region of the appendix. Hence Freeman concluded that the trouble was not in the kidney but in the appendix, this view being confirmed by subsequent operation.

In another case, a woman complained of a very annoying intermittent pain in the left iliac region, extending up into the back toward the kidney. A renal difficulty being suspected, the ureter was catheterized and the pelvis of the kidney distended with normal salt-solution. The pain produced was entirely different from her usual discomfort and was located in the back over the kidney itself. This resulted in a pelvic operation with the removal of a diseased tube and an ultimate cure.

Freeman says that as with other means of diagnosis, excessively nervous or hysterical individuals may be difficult to deal with, and it is possible that erroneous conclusions might be reached; but this does not occur often and affects the general usefulness of the procedure but little. With children many difficulties exist, relating to the use of the cystoscope, the impossibility of controlling the patients, and the unreliability of their statements. A woman had been excessively annoyed for a long time with pain rather low down in the right side of the abdomen, combined with irritation of the neck of the

bladder. Examination of the urine, an *x*-ray picture of the kidney, and a skin test for tuberculosis revealed nothing of importance. She had been in the hands of several excellent physicians who had variously diagnosed ovarian trouble, a tubal lesion, and appendicitis, while one had frankly confessed himself completely at sea. Freeman dilated the renal pelvis, which contained vastly more than normal, and immediately all the symptoms were reproduced, just as they had always presented themselves, thus demonstrating the presence of intermittent hydronephrosis.

The technic of the procedure is simple enough and is devoid of danger, providing the ordinary rules of asepsis are observed. The end of the catheter must be inserted completely into the renal pelvis and not simply into the ureter. The solution must be warm and should be injected slowly so as not to cause renal colic prematurely. If the fluid is strongly tinged with methylene blue, the mouth of the ureter may be obscured through the cystoscope during the process of injection so as to make sure that too much of the solution does not escape around the catheter, which, however, is seldom the case. In injecting the solution, a syringe may be used with a metal plunger to facilitate sterilization, and with a small pointed tip that will fit accurately into the ureteral catheter. It should be of considerable capacity and graduated in cubic centimeters.

55. Premature Menopause.—Stark collected 59 cases in which the menopause set in from the ages of 17 to 30. Eleven of these cases were observed by Stark himself.

59. Noma.—Porter reports a case of noma that recovered without perforation. The patient, a girl of 15, was kept in bed with the windows wide open, and during the day she was kept on the porch. She was given a liberal diet and in addition to the regular meals she was given a glass of milk, with an egg and two drams of rum, three times daily. She was also given the juice of three lemons daily. Every three hours the mouth was washed with peroxid of hydrogen. Four injections of *B. fusiformis* were given. The ulcer extended until it reached the corner of the mouth, but in no other direction was there any extension of the nomatous process after she entered the hospital. Shreds of necrosed tissue were washed away or gently removed by the forceps daily. Forty-two days after the onset of the disease the girl was discharged with the ulcer entirely clean of necrosed tissue and rapidly healing.

62. Treatment of Abortion.—Particular attention is called by Stowe to the following points in the treatment of abortion: 1. The importance of treating all cases of uterine hemorrhage accompanied by intermittent pelvic pain in a woman of child-bearing age as acute abortion. 2. The value of absolute rest in bed in the treatment of threatened abortion until all pain and bleeding have ceased. 3. The necessity of saving as much blood as possible to avoid a long period of anemia and prostration. 4. The selection of cotton pledgets in lieu of gauze strips as material for vaginal tamponage. 5. The use of finger curettement and manual removal of uterine contents whenever possible. 6. The performance of Hoening's abdomino-vaginal compression when the conditions are present. 7. The difficulty of complete sterilization of laminaria tents. 8. The danger of perforation of the uterus with steel dilators and sounds. 9. The great danger of uterine perforation with the steel curette in acute abortion, and the value of the instrument in chronic abortion. 10. Curettement should be raised to the dignity and seriousness of a surgical operation and be performed under the same surroundings and with necessary equipment. 11. The importance of refraining from curetting after the complete emptying of the uterus. 12. The use of ergot after the uterus is empty. 13. Local interference in septic abortion when the infection is limited to the uterine cavity. Less tendency to interfere when the adnexa or peritoneum are involved in the septic process.

Journal of Advanced Therapeutics, New York

January

- 67 Treatment of Arteriosclerosis, or General Arterial Fibrosis with the D'Arsonval Current. J. C. Walton, Richmond, Va.
- 68 Treatment of Tuberculous Glands of the Neck by Roentgen Rays. F. A. Davis, Boston.
- 69 Radium Therapy in Inoperable Tumors. W. H. Dieffenbach, New York.

Dominion Medical Monthly, Toronto

January

- 70 What is Certified Milk? How it may be Obtained for Patients. H. T. Machell, Toronto.
 71 Severe Tetanus; Recovery. A. Bell, Toronto.
 72 *New Treatment for Abdominal Surgical Shock. J. R. Hopkins, Denver, Colo.

72. **Treatment for Abdominal Surgical Shock.**—The treatment advocated by Hopkins is said to be especially suitable for shock during the few hours or days following an abdominal operation, when the patient is not under an anesthetic, although it is probably beneficial when the patient is anesthetized, but not to so great a degree. It is described as follows: Take out two skin sutures as near the umbilicus as the wound will permit, then pry apart the continuous sutures in the fascia and peritoneum. One can then see if hemorrhage is present. This procedure is not difficult or very painful, because when patients are in shock they are more or less insensible to the causes of ordinary pain. Have ready very hot and cold normal salt solution; the reservoir should be equipped with four feet of rubber tubing, together with a glass tube or cannula six to eight inches long. Both rubber and glass tubes should have a diameter of from $\frac{1}{3}$ to $\frac{1}{2}$ inch. Place a quart of saline solution at 112 F. in a reservoir hung three feet higher than the abdomen. Have the wound held open; see that the tube and the cannula are full of the hot solution, then insert the long cannula beneath the omentum, if possible, pushing it upward so that the glass tube penetrates to the posterior peritoneum up behind the transverse mesocolon to the neighborhood of the posterior wall of the stomach, getting as near to the solar plexus as possible. The solution still at 112 F., is allowed to run in as rapidly as it will. Probably a pint will fill the abdomen and be enough.

The irritation of the splanchnic nerves and sympathetic ganglia produced by the heat and pressure at once cause contraction of the intestinal arteries, veins and portal vein, and thus a marked rise in blood pressure. Really a shock is produced by the sudden pressure of this hot solution on this great and important part of the vasomotor nerve mechanism, but this shock is a sudden reversal of the phenomena of surgical shock. The radial pulse returns or its pressure is markedly increased. The glass tube is taken out quickly; a small piece of gauze is laid over the wound, and a strip of adhesive plaster applied, then a tight abdominal binder to sustain the pressure. If this treatment should not succeed, Hopkins strongly advises repeating it in one or two hours. In addition to the above treatment he also advises hot salt solution by rectum, ten ounces every two hours, principally on account of getting the heat near the hypogastric plexus and splanchnic nerves, also full glasses of hot water to drink for similar purposes; otherwise the patient should not be disturbed with hypodermics or even by raising the foot of the bed, but should just be kept warm and as comfortable and peaceful as possible.

Vermont Medical Monthly, Burlington

January

- 73 Recent Advances in our Knowledge of the Blood. R. C. Cabot, Boston.
 74 Venereal Disease in Vermont. W. W. Townsend, Rutland.
 75 Care of the Child in the Puerperium. G. S. Clark, Montgomery.
 76 Features of Infantile Paralysis. J. H. Bainton, New York.

Yale Medical Journal, New Haven

January

- 77 Alcohol as a Food. M. M. Scarbrough, New Haven.
 78 Alcohol as a Poison. T. D. Crothers, Hartford, Conn.
 79 *Therapeutic Use of Alcohol. O. T. Osborne, New Haven.
 80 *Extrauterine Pregnancy. P. H. Ingalls, Hartford, Conn.
 81 *Importance of More Careful Surgical Diagnosis and the Aid Afforded by Various Tests. H. F. Brownlee, Danbury.
 82 *Heredity and Crime: A Study in Eugenics. W. H. Carmalt, New Haven.

79. **Therapeutic Use of Alcohol.**—In Osborne's opinion, the positive value and advantages of the proper use of alcohol as a drug in acute disease when the condition indicates the necessity for physiologic action similar to its activity, cannot be gainsaid. But, he says, alcohol should not be used because a patient is ill or has a fever, though frequently nothing in the drug line, in his opinion, will take the place of alcohol in medicine. He believes that a dose larger than from one to

three teaspoonfuls, once in three hours, is probably never indicated, and if given should certainly not soon be repeated. As a food alcohol may save the burning of some tissue during the acute fever when the nutriment is not sufficient, or is not metabolized sufficiently, to save fat and muscle. Hence, in fevers it has a distinct food value, but probably no better than that which would be obtained from sugar. In continued cardiac failure or depression, whether in patients suffering from chronic disease or in patients with acute disease, alcohol is contraindicated, strychnin being generally the best medicinal treatment. Consequently, strychnin should not be begun early in acute disease, but should be reserved until it is needed and becomes a life saver. As a nutriment in chronic diseases alcohol is uneconomical and generally a positive disadvantage to the system.

As a vasodilator in chronic high arterial tension it should ordinarily not be used. This indication for treatment is present in arteriosclerosis and gout, and is a symptom and sign in late middle life of old age. If arteriosclerosis is present and the patient is well along in life, and is accustomed, and has been accustomed, to take alcohol regularly in doses that do not intoxicate, it may be unwise to stop the vasodilating effects of the alcohol, until it has been ascertained that some other treatment will be as conducive to well-being. In other words, the physiologic relief from high tension which the patient has been accustomed to acquire by taking alcohol cannot be stopped abruptly without due consideration of the consequences of withdrawing the drug. Alcohol has been largely used and frequently ordered, and the laity often resort to it to abort acute colds. Hot baths, combined with hot lemonade, or hot tea, or other hot non-alcoholic liquids, or a dose or two of a coal-tar sweat-producing drug, or a Dover's powder, and the quickly acting saline cathartics, will accomplish as much in aborting colds as will alcohol, and therefore it is rarely necessary to resort to alcohol in such a condition.

80, 81, 82. Abstracted in THE JOURNAL, June 26, 1909, p. 2126.

Ophthalmic Record, Chicago

January

- 83 Retinitis Proliferans with Pigmentation, Following Hemorrhage from Bowel. E. C. Ellett, Memphis, Tenn.
 84 Intracranial Glioma of the Optic Nerve, Macroscopic and Microscopic Findings. A. A. Foucher, Montreal.
 85 Total Ophthalmoplegia (Hysterical) Cured by Psychotherapy. A. G. Bennett, Buffalo, N. Y.
 86 Rupture of Sclerotic, with Subconjunctival Dislocation of the Crystalline Lens. G. F. Keiper, Lafayette, Ind.
 87 Melanotic Sarcoma of the Orbit. J. B. Haden, Galveston, Tex.
 88 Varix or an Angioma Venosum of Orbit Cured by Alcohol Injections. J. F. Klinedinst, York, Pa.
 89 Monocular Hemianopsia Due to Ethmosphenoidal Disease. F. Krauss, Philadelphia.

American Journal of Urology, New York

January

- 90 *Large Iodoform-Gauze Tampon in Bladder for Nearly Ten Months. Y. G. Veeki, San Francisco.
 91 Why is Faradic Treatment Superior to Massage in Prostatitis? M. Porosz, Budapest, Hungary.
 92 Urethral Calculi. J. R. Hayden, New York.
 93 Obstructive Calculous Anuria. F. S. Watson, Boston.

90. **Iodoform-Gauze Tampon in Bladder.**—A man, 67 years old, had for 8 years more or less difficulty in emptying his bladder. In December, 1908, he submitted to prostatectomy. The operation was performed successfully, but while the patient did not die, his real pains and suffering began from that time. The urine became fetid, escaping through a suprapubic fistula, the bladder became absolutely intolerant and had to be emptied every hour day and night, and the pain at the end of micturition was "terrible." This history spoke for a stone in the bladder. The cystoscope showed a foreign body in the bladder that looked like the head of a brain coral. The beak of the cystoscope, when entering, gave the characteristic stone-sound, but when touching the surface of the coral-head-like formation, gave no sound and no feeling of resistance. Suprapubic cystotomy was performed. It was at once clear that the foreign body, soft at its upper surface, and stone-hard at its lower one, was a piece of gauze left over from the former operation. This was extracted. The patient made an uneventful recovery. The tampon had been in the bladder for ten months.

Medical Herald, St. Joseph, Mo.

December

- 94 *Diagnostic and Therapeutic Points in the Management of Renal Tuberculosis. F. Kreissl, Chicago.
95 Inguinal Hernia. C. G. Geiger, St. Joseph.
January
96 *Diagnosis and Treatment of Gastric Ulcer with Special Reference to the Lenhart Diet. L. Crummer, Omaha, Neb.
97 Tuberculosis of the Fallopian Tubes. E. Lanphear, St. Louis.
98 Mlle. Christine: An Anatomic Curiosity. S. G. Burnett, Kansas City, Mo.
99 Internal Secretion as the Autoimmunizing Agent of the Body. J. F. Owens, St. Joseph.
100 Prevention of Venereal Disease. T. M. Paul, St. Joseph.

94. Renal Tuberculosis.—Kreissl discusses some diagnostic and therapeutic points in the management of renal tuberculosis.

96. Abstracted in THE JOURNAL, Sept. 25, 1909, p. 1048.

Atlanta Journal-Record of Medicine

January

- 101 The Legitimate Practitioner and the Quack. J. R. Simpson, Atlanta, Ga.
102 Surgical Shock. J. G. Earnest, Atlanta.
103 Fracture of the Skull. S. B. Little, Colbert, Ga.
104 Treatment of Delirium Tremens. G. E. Petty, Memphis, Tenn.
105 Complicated Fracture. J. H. Miller, Cross Hill, S. C.
106 Anesthesia. W. W. Jarrell, Thomasville, Ga.
107 Fractures of Patella and their Modern Operative Treatment (continued). A. P. Helneck, Chicago.
108 *Prophylaxis of Pellagra. C. H. Lavinder, U. S. P. H. and M.-H. S.

108. Abstracted in THE JOURNAL, Nov. 20, 1909, p. 1770. The article was also published in the *Southern Medical Journal*, November, 1909.

American Journal of Surgery, Philadelphia

January

- 109 Fractures. J. E. Blake, Brooklyn.
110 *Use of the Photoscope for Demonstrating Operations to a Large Number of Visitors. C. H. Duncan, New York.
111 Acute Dilatation of the Stomach. S. R. Hopkins, Omaha, Neb.
112 Results of the Use of Bismuth Paste in Tuberculous Sinuses at the Sea Breeze Hospital. L. W. Ely, New York.
113 Roentgen-Ray Diagnosis of the More Common Injuries and Diseases About the Hip-Joint. C. Eastmond, Brooklyn.
114 Surgical Treatment of Goiter. J. E. Cannaday, Charleston, W. Va.
115 Intestinal Obstruction with Gangrene of Meckel's Diverticulum, Due to Twisting. E. A. Parker, Brooklyn.

110. Another article on this subject, by the same author, appeared in THE JOURNAL, Feb. 12, 1910, p. 534.

Journal of the Tennessee State Medical Association, Nashville

January

- 116 Ocular Complications of Nephritis. H. Wood, Nashville.
117 General Considerations in the Surgery of the Mastoid. R. McKinny, Memphis.
118 Melancholia. H. Padgett, Nashville.
119 Therapeutic Suggestion. J. W. Stephens, Nashville.
120 Bacteriology of Typhoid. W. Litterer, Nashville.

Annals of Ophthalmology, St. Louis

January

- 121 Physiology of Pupillary Movements. C. Lafon.
122 Transferred Ophthalmitis. C. A. Oliver, Philadelphia.
123 Visual Requirements of Transportation Employees. N. M. Black, Milwaukee.
124 Relief of Glaucoma through Subconjunctival Injections of Sodium Citrate. H. G. Thomas and M. H. Fischer, Oakland, Cal.
125 Do Diseases of the Accessory Sinuses Cause Keratitis Parenchymatosa? E. J. Bernstein, Kalamazoo, Mich.
126 Parinaud's Conjunctivitis with Unusual Complications. F. Krauss, Philadelphia, and M. P. Boyle, Glenside, Pa.
127 Modified Knapp Roller for Expression in Trachoma. W. N. Whitney, Tokio, Japan.

Southern California Practitioner, Los Angeles

January

- 128 Gonorrhea in Young Women: Research Work and Conclusions in Vaccine Therapy. J. C. Hollister, San Diego.
129 Typhoid Carriers. I. R. Bancroft, Los Angeles.
130 Acute Anterior Poliomyelitis. A. J. Rosenberry, Jerome, Ariz.
131 Prevention of Communicable Diseases. J. I. Clark, Santa Ana, Cal.
132 Digitalis. W. I. Linn, Prescott, Ariz.
133 *Retroperitoneal Hemorrhage—An Unusual Case. H. H. Lissner, Los Angeles.
134 Does the Correction of Physical Defects of Juvenile Criminals Improve their Moral Conduct? J. A. Collier, Los Angeles.

133. Retroperitoneal Hemorrhage.—After eating three-fourths of a pound of raisins a man aged 30, was awakened by severe cramps in the abdomen, at 3 a. m., with which he suffered during the remainder of the night. On the morning of the same day Lissner saw him and his condition was as follows: Temperature normal, pulse 72, cramps in abdomen. Pain not localized, but generally distributed, constant, with

occasional exacerbations; pressure with both hands over the abdomen relieved pain somewhat. Tympany present all over abdomen, obliterating liver dullness; no palpable tumor; no localized tenderness over McBurney's point; slight rigidity over abdominal muscles, below umbilicus, more on left than on right side; bowels constipated. Hot water bag was ordered applied to abdomen and calomel and salts were given; the patient obtained relief from acute pains and was comfortable after having had several copious bowel movements.

Although he had more or less dull pain in the abdomen, the man continued uninterruptedly at his work, that of a solicitor, for a week, when he returned for examination. There was marked rigidity over lower abdomen, much greater on left than on right side. Palpation over left iliac fossa revealed a mass of some kind. It was dome-shaped and extended from one inch below umbilicus, and to left of median line toward pubes and iliac fossae. All the rest of abdominal surface was decidedly tympanitic. Bowels were constipated. Two days later, pain during the night was very severe. No nausea or vomiting occurred at any time during the illness. Patient was sent to hospital in the morning. On the evening of the same day temperature was 101 F., pulse 120, and patient's expression was anxious. Pain became more paroxysmal in character, and was localized to region two inches in diameter with umbilicus as center.

A median incision was made and immediately on opening the peritoneum pure blood from the abdominal cavity presented at the wound. Beneath the intestines and mesentery on each side of the vertebral column, a tumor mass presented, which was doughy to the touch, did not fluctuate, and was retroperitoneal. It proved to be organized blood clot; one clot on each side of spinal column connected by a lamina of fibrin. Each clot was about the size of a fetal head. After removing these clots and the other less organized blood, two bleeding points presented, one, an artery, small in caliber, the other seemed to be more of an oozing. The location of the vessel or origin of the hemorrhage was not identified because the condition of the patient did not warrant any further proceedings or manipulation. The vessel was tied and the oozing controlled by hot packs soaked in adrenalin solution. At the end of two weeks the patient was allowed to return to his home and was instructed to remain in bed. Liquid diet was prescribed. On the Saturday following his return home the patient arose and walked about the house, and feeling hungry ate liberally of beefsteak and German fried potatoes. He was again attacked by violent pains in the abdomen and he went into a condition of shock rapidly. Autopsy disclosed a retroperitoneal adenocarcinoma.

St. Louis Medical Review

January

- 135 *Specific Treatment of Tuberculosis. G. C. Crandall, St. Louis.
136 Pertinent Facts About Tuberculosis. O. H. Brown, Mt. Vernon, Mo.
137 Problem of Uterine Cancer. G. Gellhorn, St. Louis.
138 Malignant Tumors of the Eye. A. Alt, St. Louis.

135. Specific Treatment of Tuberculosis.—Crandall reports 21 patients now on tuberculin treatment, as follows: Twelve pulmonary tuberculosis, 2 tuberculous adenitis, one of whom had tuberculous conjunctivitis, 2 tuberculous knee, 2 tuberculous spine, 2 tuberculous rectal fistula, 1 tuberculous elbow, 1 tuberculous kidney. All are improving very satisfactorily except three patients with advanced pulmonary tuberculosis, and in two of these the disease appears noticeably retarded. Crandall believes that tuberculin, if properly given, exerts a beneficial effect in the majority of cases, materially aiding in making some active processes latent, and, in some of the less favorable ones, retarding the progress of the disease. Patients who have not responded favorably to general treatment, or in whom the condition has remained stationary, appear to be given an impetus toward recovery; and they also seem to be safeguarded in a measure against the untoward effects of intercurrent diseases or other physically depressing influences. In the main, Crandall is using human O. T. B. E. and B. F., regardless of the type of infection. But he is beginning to use with some cases either the human or bovine tuberculins, according to which type of infection the tuberculin test indicates.

Northwest Medicine, Seattle

January

- 139 Conservatism in Surgery. H. B. Luhn, Spokane, Wash.
- 140 Incidence of Echinococcus Disease in British Columbia. R. E. McKechnie, Vancouver, B. C.
- 141 Nephritis and its Comparative Frequency over the Pacific Northwest. E. P. Pickel, Medford, Ore.
- 142 Newer Conceptions Regarding the Action of the More Important Diuretics. J. R. Brown, Tacoma, Wash.
- 143 The Much Abused Nose. A. M. MacWhinnie, Seattle, Wash.

Old Dominion Journal of Medicine and Surgery, Richmond

January

- 144 Surgery of the Kidney; Fifteen Cases of Nephrectomy. F. Martin, Baltimore.
- 145 Pyloroplasty. H. H. Trout, Roanoke, Va.
- 146 Casts—Their Origin and Significance. G. Banghman, Richmond.

American Journal of Physiology, Boston

February

- 147 *Physiology of Lymph: Comparative Electrical Conductivity of Lymph and Serum of the Same Animal, and Its Bearing on the Theories of Lymph Formation. A. B. Luckhardt, Chicago.
- 148 Physiology of Lymph: Fractional Coagulation of Lymph. H. O. Lussky, Chicago.
- 149 Regeneration of Nerve and Muscle in the Small Intestine. W. J. Meek, Madison, Wis.
- 150 *Acapnia and Shock: Failure of Respiration After Intense Pain. Y. Henderson, New Haven, Conn.

147. **Physiology of Lymph.**—Luckhardt starting from the results of the work of Carlson, Greer and Luckhardt, which showed that the lymph contained more chlorids than the serums, attempted to confirm these findings by determining the electric conductivity of the lymph. He reaches the following conclusions:

1. The work of Bottazzi and that of the present paper confirm the work of Hamburger, Carlson, Greer, and Luckhardt on the excess of chlorids in the lymph by showing that lymph is a better electric conductor than the serum.

2. The protein, egg-albumin, depresses the conductivity of an electrolyte. Since the serum is more concentrated in proteins than the lymph, the greater conductivity of the latter might possibly be explained on the basis of its smaller protein content. It was, however, shown that the depression of 0.9 per cent. sodium chlorid solution by egg-albumin even when in high concentration is slight and inadequate to explain the great difference in conductivity found between lymph and serum.

3. The fat droplets contained in chylous thoracic lymph depress the conductivity of this lymph by physically offering a resistance to the passage of the ions.

4. A 10 per cent. increase in the sodium chlorid content of a physiologic saline solution causes an increase in the electrical conductivity of the solution which is comparable to the increased conductivity of the lymph over the serum.

5. Why there is an excess of chlorids in the lymph and how this condition is brought about awaits an explanation. Hamburger's suggestion that the lymph gives up its carbon dioxid ions which it has received from the tissue cells to the blood in exchange for twice the amount of chlorin ions is in harmony with the facts that the lymph contains more salts and is a better electrical conductor than the serum, and that the per cent. and tension of carbon dioxid are less in the lymph than in the venous blood.

6. The excess of chlorids in the lymph, together with the greater conductivity of the latter, appears to be incompatible with a purely mechanical theory of lymph formation.

150. **Acapnia and Shock.**—Henderson has shown in previous articles that rapid respiration with ensuing ventilation of the lungs and removal of carbon dioxid is productive of shock. The rapid respiration or hyperpnea if continued sufficiently long is followed by apnea which may be fatal. In the present article he endeavors to show by experiment and clinical observation that a similar hyperpnea is produced by irritation of the sensory nerves and is the cause of shock, resulting from severe pain. In the animal experiments consciousness was abolished by the use of ether and morphin so that the term pain used in describing the experiments refers to the irritation of the sensory nerves and not to the conscious feeling of pain. The results show that the effects of pain are not due to the consciousness of suffering but to the nerve irritation. It appears, therefore, that the consciousness of suffering is a mere accompaniment and not a causal element in the development of shock. Henderson reports a case of hyperpnea in a man who sprained his ankle and also quotes a report of fatal apnea in a man injured by the laceration of the left hand and left chest wall over the heart by the explosion of a giant fire cracker. The death of this man was similar in nearly every detail to the fatal apnea vera of the experiments. He concludes as follows:

The hyperpnea induced in intense afferent irritations involves excessive pulmonary ventilation. The condition of acapnia which results is identical with that produced by forced breathing in man, and by excessive artificial respiration in animals.

When the quantity of carbon dioxid in the blood has been reduced below the threshold of the respiratory center and the irritation is considerably diminished, apnea vera occurs. If the acapnia is intense, apnea may continue until death results from oxygen starvation of the heart. The fatal process usually occupies eight minutes, but if the arterial blood stream is greatly diminished it may occur in less than two minutes.

During the anoxemia of prolonged apnea, asphyxial acidosis develops. If the acapnia is not intense, these products of incomplete tissue combustion induce isolated gasps followed by Cheyne-Stokes breathing, and prevent immediate death.

After intense bodily suffering failure of respiration is the usual form of death. It is only when the pain is sufficiently continuous to prevent apnea that the slower process of failure of the circulation develops.

The administration of carbon dioxid gas in proper dilution, during apnea after pain hyperpnea restores spontaneous breathing. The administration of oxygen prolongs apnea, but cures the fundamental abnormal conditions—acidosis and acapnia.

Because of the influence of ether as a respiratory stimulant moderate ether anesthesia tends to prevent apnea (in dogs) unless neutralized by morphin.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

Lancet, London

January 29

- 1 Chronic Mastitis and its Relation to Carcinoma. C. B. Lockwood.
- 2 Tuberculous Diseases of the Skin and their Treatment. J. L. Bunch.
- 3 *Pontine Tumor Producing Dissociated Hemianesthesia. W. P. Herringham and C. M. H. Howell.
- 4 Acute Primary Phlegmonous Gastritis. J. E. Adams.
- 5 Acute Dermatitis Due to Bichromate of Potassium. R. P. White.
- 6 Spinal Meningocele: Operation when 40 Hours Old: Recovery. R. L. Ley.
- 7 The Circulatory System (continued). H. Campbell.

3. **Pontine Tumor Producing Dissociated Hemianesthesia.**—The authors assert that theirs is the only case reported in which hemianalgesia and hemithermo-anesthesia were produced by a tumor, while the sense of touch was preserved (dissociated hemianesthesia), and it carries the localization of the track of sensations of pain and of heat higher up the central nervous system than has yet been reached.

A man, aged 36, had had a sore on the penis seven months previously, but no secondary symptoms. He was treated by iodid of potassium and mercury, pushed to salivation, but fruitlessly. One year ago he was treated for neuralgia. Six months ago he began to attend in the out-patient department for left facial paralysis. He then swayed when standing and had unequal pupils and diplopia. While in the ward he had: (1) Persistent occipital headache; (2) repeated vomiting; and (3) the following localizing symptoms:

Tactile sensation was preserved everywhere, except on the left side of the face and on the mucous membranes of the mouth and nose. The superficial sensation of pain (pin-prick) was entirely lost over the whole of the right half of the body from the crown of the head to the sole of the foot, with the exception of the penis and scrotum and a small area around the anus. Here pin-prick was felt naturally. A small area round each of these parts showed relative analgesia. The deep sensation of pain was apparently also lost on the same side, for pressure which produced pain on the left half of the body and on the left limbs produced no pain on the right. The vibrations of a tuning fork were either not felt at all on the right side, as at the knee and on the crest of the ilium, or were felt less or for a shorter time than on the left side. The sensation of heat was completely lost, and that of cold was only recognized as producing a stinging pain over the whole of the right side, with the exception that on the scrotum and penis the extremes of heat and cold were distinguished as hot and cold. The sense of position of the limbs was natural.

The sensory condition of the face and mouth was peculiar. It was explained by a second tumor which had not been suspected during life. Tactile sensation was lost over the left face and cheek from the eyebrow to below the mouth, and was weak over the forehead, temple and lower jaw. The sense of pain and the thermal sense were preserved over these areas. The mucous membranes of the nose, cheek, palate, tongue and lips were anesthetic on the left side, but not on the right, to the touch of cotton-wool. Of the mucous mem-

brane of the cheeks and lips the left side was analgesic, though the skin on the left cheek felt pain, while the right side felt pain, though the skin of the right cheek did not. There was anesthesia to cold on the dorsum and on the under surface of the left half of the tongue, but anesthesia to heat was complete over the whole dorsum and partial over the whole of the under surface. Cold was felt inside both cheeks, and on both lips, but heat was not felt inside either cheek and was delayed on the lips.

Equilibrium was lost. The patient swayed greatly when standing or walking. There was weakness of the left sixth nerve and diplopia was produced by looking to the left. There was nystagmus in every direction, except downward. The right pupil was always larger than the left, but each pupil reacted naturally to light and to accommodation. There was some weakness of the left external pterygoid, none of the masseter. There was slight weakness of the facial muscles on the left side of the mouth. The eyes closed naturally and the frontalis muscle also acted naturally. The tongue was protruded straight; swallowing and speech were natural; the palate and the vocal cords moved equally and well. There was no muscular wasting. The power of the right arm and leg was equal to that of the left, and when lying in bed, coordination was natural on both sides. The right knee-jerk was the greater; there were ankle clonus and extensor response of the great toes on the right side.

Vision was natural with each eye separately. The fields were not contracted. The optic discs were examined several times and found natural. Hearing was bad. A watch was not heard beyond eight inches from the right ear and four from the left. But in this ear the membranes were normal and bone conduction was unimpaired. Taste was lost over the left half of the tongue.

When the brain was removed post-mortem, a rounded growth was seen occupying the position of the sella turcica, but not infiltrating the brain in any way, though its posterior part was to some extent compressing the ventral aspect of the pons. A second tumor, partly solid and partly cystic, was also observed, apparently embedded in the left lateral aspect of the pons.

British Medical Journal, London

January 29

- 8 *Appendix Dyspepsia. B. G. A. Moynihan.
- 9 *When to Operate for Appendicitis. R. P. Rowlands.
- 10 *Treatment of Gastric Ulcer. J. Craig.
- 11 *Analysis of a Series of Cases of Perforated Gastric and Duodenal Ulcers. J. Morton.
- 12 *Diagnosis and Treatment of a Common Form of Dyspepsia and of Early Tuberculous Infection in Children. A. Dingwall-Fordyce.
- 13 Dried Milk as a Food for Infants. C. K. Millard.
- 14 Therapeutic Value of Carbon-Dioxid Snow in Treatment of Vascular Nevii, Moles, etc. J. M. H. MacLeod.
- 15 Results Obtained from Local Application of Solid Carbon Dioxid. E. R. Morton.
- 16 Clinical Estimation of "Acidosis." A. E. Barnes.

8. **Appendix Dyspepsia.**—During the last few years Moynihan says that he has been brought by degrees to recognize that in many of the intractable cases of indigestion, in which a lesion of the stomach, duodenum or gall-bladder might not unreasonably have been supposed to exist, no structural alteration could therein be found. On further investigation an appendix obviously diseased was discovered, and its removal was quickly followed by a complete relief of all former disabilities. Moynihan concludes that the symptoms of both gastric and duodenal ulcer, especially the former, may be exhibited with great fidelity in cases in which no structural lesion can be found in these parts. In many of the cases of "gastric ulcer" in which the symptoms pain, vomiting, hematemesis are present, and in many cases of intractable dyspepsia of a capricious kind, the only pathologic change discovered during operation is a chronic inflammation of the appendix. Removal of the inflamed and obstructed appendix is generally followed by a complete and instant relief of all former dyspepsia. The cessation of symptoms may, however, come only by degrees and with the lapse of many weeks.

Moynihan emphasizes the fact that no operation for supposed gastric or duodenal ulcer is complete until an examination has been made of the appendix, small intestine and mesenteric glands (that is of the midgut). If in such an operation no lesion can be found in the stomach or duodenum,

it is not permissible to perform any operation such as gastroenterostomy. This operation yields results not surpassed by any other when performed in strictly appropriate cases. It is worse than useless in chronic appendicitis.

Moynihan believes that the mimicry of the symptoms of gastric ulcer in these cases is due to an exaggerated action of the pylorus. This tumult of contractile activity can be recognized when the stomach is inspected. Investigation is necessary to ascertain the frequency with which the mucous erosion of the stomach (the "acute" or "medical" ulcer) is dependent on a primary lesion in the appendix or intestine.

9. **When to Operate for Appendicitis.**—Rowlands says that it is wise to remove the appendix in the quiescent period after one definite attack of appendicitis. The best treatment of acute appendicitis in his opinion is an operation at the earliest possible moment, if a good surgeon is available.

10. **Treatment of Gastric Ulcer.**—Craig employs the Lenz treatment in gastric ulcer.

11. **Perforated Gastric and Duodenal Ulcer.**—Morton's cases bear out the generally accepted view that duodenal ulcer is more common in men, and gastric ulcer in women. All the duodenal cases, 4 in number, occurred in males, while of the 7 gastric cases, 6 occurred in females. One of the latter was really a malignant tumor of the pylorus, which gave way suddenly while the patient was in the hospital, with the usual sudden acute symptoms of a perforating lesion; while another was a perforated "peptic ulcer" at the line of junction between stomach and jejunum, in a patient on whom a gastroenterostomy had been performed four months previously. The ages of the patients varied from 21 to 65 years, the average being 39 years. The site of the ulcer in all but 2 cases—that is, in 82 per cent, of the whole—was close to the pylorus, and in the whole series was situated on the anterior wall of the organ.

The ulcer presented in most of the cases a more or less definite punched-out appearance, with characteristic hard edges, and varied in size from a very tiny opening to one-fourth inch or more in diameter. Excluding, for obvious reasons, the malignant case referred to, 10 patients were operated on, of whom 7 recovered, and 3 died—a mortality of 30 per cent.

12. **Early Tuberculosis Infection in Children.**—Dingwall-Fordyce's impressions as regards the administration of tuberculin in obviously glandular infections—mainly abdominal or cervical glands—or in cases which by the previous methods of diagnosis are: 1. That this treatment is very unsafe when large doses are employed or when the temperature is unsteady. 2. It is safe in minute doses, when commenced with a practically normal temperature and when the patient is kept under observation. 3. In many cases tuberculin treatment appears to have no definite effect on the condition one way or another. 4. In cases in which treatment by rest, climate, feeding, and careful nursing can be employed, improvement by these means alone is usually so marked that it is impossible to attribute to tuberculin, when given in these cases, its due meed of praise or to judge whether it takes any part whatever in the improvement. 5. However, when treatment by rest, climate, feeding and careful nursing cannot properly be adopted, tuberculin is often of marked value. These are the patients who otherwise do badly, and tuberculin treatment is with them of the greatest importance. 6. T. R. is, as a rule, preferable to P. T. R. 7. For routine use the method of hypodermic injection is superior to that of oral administration; the effect of giving tuberculin by the mouth varies very much. These impressions are derived from the treatment of about 100 cases during the past three years.

Clinical Journal, London

January 19

- 17 Intestinal Stasis. W. A. Lane.
- 18 Cases Illustrating Mutism. J. A. Ormerod.
- 19 Examination of Bodies Found in the River. F. G. Crookshank.
- 20 Cholecystoduodenostomy for Acute Emaciation Following Formation of a Biliary Fistula. J. D. Malcolm.

January 26

- 21 Acute Poliomyelitis. W. P. Herringham.
- 22 Paralysis in Children in Some of Its Clinical Aspects. G. Rankin.

Medical Press and Circular, London

January 26

- 23 *Common Acne: Its Cause, Symptoms and Treatment. D. Walsh.
 24 *Pelvic Hematoma of Ovarian Origin. C. Lockyer.
 25 *Pseudoflexion of Uterus as Sign of Pregnancy at the First Month. S. Stritch.
 26 Facial Spasm and Tic Torticollis: Diagnosis and Treatment. T. A. Williams.

23. Acne.—Speaking of vaccine therapy in acne, Walsh says that the use of a polyvalent vaccine (prepared from cultures of *Staphylococcus albus*, *citricus* and *aureus*) answers well enough in most cases, especially when there is much pustulation. When the chief feature is the comedone, an acne bacillus vaccine is indicated. A mixed vaccine of 200,000,000 polyvalent staphylococci and 8,000,000 acne bacilli is what he has used in recent cases. The dose must be gradually increased to the maximum with about ten days' interval, and the effects very carefully watched. He has found the treatment to yield brilliant results in some cases, while in others the condition recurs shortly afterward, or shows no appreciable improvement.

24. Pelvic Hematoma of Ovarian Origin.—Lockyer cites the cases of two patients operated on for supposed acute appendicitis, but in which the lesions proved to be pelvic hematoceles in which there was no evidence of pregnancy. In both instances the Fallopian tubes were intact and not damaged; in both an ovarian blood cyst had ruptured and was the cause of the internal bleeding. In a third case, after the left tube had been removed for ruptured ectopic gestation, a pelvic hematocele formed on the right side, due to ovarian bleeding. In this case and in one of the other two cases, Lockyer sought by microscopic investigation to find proof of ovarian gestation, but failed.

25. Pseudoflexion of the Uterus as Sign of Pregnancy.—In trying to determine the existence of pregnancy, Stritch made bimanual examinations, and felt a relationship of the parts suggestive of an antelexion of the uterus. At first Stritch thought that the antelexion was artificially produced by the pressure used in approximating the hands. By removing the outside hand and only examining with the internal finger he discovered that such was not the case, inasmuch as the condition remained unaltered. He then assumed, for the sake of argument, that the uterus is, as it were, abnormally ante-flexed at the first month of pregnancy.

Journal of Tropical Medicine and Hygiene, London

January 15

- 27 Porocephaliasis in Man. L. W. Sambon.
 28 Peculiar Fracture of the Radius. A. G. H. Smart.

Annales de Gynécologie et d'Obstétrique, Paris

January, XXVII, No. 1, pp. 1-64

- 29 *Lactosuria during Pregnancy. (Recherches sur la lactosurie pendant la grossesse.) E. Gérard and M. Oui.
 30 *Diagnostic Importance of Differences in Temperature in the Legs in Phlegmasia Alba Dolens. (Différence de température des membres inférieurs dans la phlegmatia alba dolens.) M. Delestre.
 31 *Metastatic Oöphorosalpingitis. (Les oophoro-salpingites métastatiques.) J. Okinczye.

29. Lactosuria in Pregnant Women.—Gérard found evidence of lactosuria in only 5 out of 41 pregnant women approaching term. When found it proved transient in all but one case. This woman had from 4 to 11 gm. lactose to the liter of urine and she was suffering from distressing general pruritus. The latter subsided on an exclusive milk diet, but she was unable to nurse her child.

30. Difference in Temperature of the Legs with Phlegmasia Alba Dolens.—Delestre reports nine cases of phlegmasia alba dolens which show that the temperature of the diseased leg is much higher than that of its sound mate; the difference may be from 1 to 4 degrees Centigrade. This difference is evident, and reaches its maximum during the first days of the affection. By the end of five or six weeks the difference subsides, but the curves afford no information as to when the women can be allowed to get up. In five other cases, painful varices with fever suggested phlegmasia alba dolens at first, but the lack of difference between the temperature of the legs failed to confirm this diagnosis, as also the course of the cases. He states that there is always liable to be a differ-

ence in temperature between the two legs, even in health, but it never surpasses 1 degree C. in health (1.8 degree F.). In one case the symptoms of the phlegmasia were so slight that the diagnosis was uncertain until the difference in the temperature of the legs confirmed its existence.

31. Metastatic Inflammation in the Adnexa.—Okinczye discusses the oophorosalpingitis observed with scarlet fever, measles, smallpox, mumps, tonsillitis, typhoid, pneumonia, influenza and other infections, as also those with syphilis and helminths, reviewing 127 communications in the literature. In mumps and tonsillitis the ovaritis subsides under repose and ordinary measures, but when of other origin operative treatment is generally necessary.

Annales de Médecine et Chirurgie Infantiles, Paris

January 1, XIV, No. 1, pp. 1-36

- 32 The Blood in Inherited Syphilis and its Modification under Mercurial Treatment. (Hématologie et syphilis héréditaire.) G. Sisto.

Archives de Médecine des Enfants, Paris

January, XIII, No. 1, pp. 1-80

- 33 *Measles plus Scarlet Fever in Children. (Infection double par rougeole et scarlatine chez les enfants.) Brudzinski.
 34 *Advantages and Disadvantages of Trip to Country for City Wage-earners' Children. G. Détré.

33. Scarlet Fever Plus Measles.—Brudzinski reports from the hospital for children at Lodz, Poland, 12 cases of scarlet fever plus measles, and discusses the cases of mixed infection on record, studying the way in which each infection is modified by the other. His experience does not indicate that one infection predisposes particularly to the other. The mortality with the double infection was only 8.3 per cent., while it was 24.4 per cent. of the total of 319 cases of scarlet fever during the year. Complications did not seem any more frequent with the double infection, except possibly otitis media. This was observed in 16.6 per cent., while in a total of 340 scarlet-fever patients in 1906 only 14 per cent. had otitis. Desquamation of both types seemed to be more intense with the mixed infection and to last much longer. Koplik's spots were of great service in revealing the superposed measles in some cases. One child developed measles on the thirty-seventh day of scarlatinal infection; both diseases were mild, but desquamation still persisted seven weeks after disappearance of the scarlet fever and three weeks after the measles. In hospitals and schools it is important to bear in mind the possibility of these double infections. Especially dangerous is it when children recovering from measles develop scarlet fever, as it is seldom recognized in these conditions and the children are allowed to return to school supposedly free from infection. Desquamation can be discovered in the palms if sought for.

34. The Country for City Children During the Summer.—Détré has observed in his dispensary work that after a summer in the country the smaller children brought to the clinic have suffered from the change instead of gaining. In 103 children specially examined for the purpose, only a very small proportion returned in better health than when they left. He now warns the parents in wage-earning families that the bad hygiene, the lack of supervision and the dangers of contagion outbalance the benefits of a stay in the country for very young children unless the mother can go, too. Even when the mother can go, he is inclined to advise against the country trip for the infants of the poor. But all is different when children are six years old or over; they have everything to gain, and nothing equals the life-giving influence of country air and freedom for them. The benefit is the greater the older the child, he declares; 53.3 per cent. of the children under the age of 2 returned worse off than when they left town, as did 34 per cent. of those between 2 and 6, sent to relatives or boarded out in the country. Moving about and long journeys seem to be particularly injurious for infants.

Bulletin de l'Académie de Médecine, Paris

January 18, LXXIV, No. 3, pp. 59-102

- 35 Principles of Treatment of Pulmonary Tuberculosis. (Principes de la réminéralisation organique. Essai d'antisepsie pulmonaire directe. L'orientation du traitement de la plétisie pulmonaire.) A. Robin.

Lyon Médical, Lyons

January 2, XLIII, No. 1, pp. 1-56

36 *Systematic Oxygen Treatment of Bronchopneumonia in Children. Weill.

36. Inhalation of Oxygen in Bronchopneumonia in Infants.—Weill lauds the therapeutic inhalation of oxygen as a simple, harmless and reliable method of treating bronchopneumonia. It has to be used almost constantly to produce the best effect, and to be applied early. He orders oxygen as a routine measure now in every case of simple bronchitis in an infant when there is reason to fear extension of the inflammation to the lungs. Bronchitis thus combated rapidly subsides without complications. Especially urgent is the indication for the oxygen when signs of bronchopneumonia develop, even when there are still no physical signs, but merely an unexpected rise in temperature, accompanied by dyspnea, with abnormal respiration, persisting during sleep, inspiratory effort, the nails a little blue, distress and a special cough of the "moniliform type." He uses oxygen under high pressure; several hundred liters are compressed into a tank, taking from this for use as needed in rubber bags with a capacity of 30 liters that can be filled several times during the day. With 4 or 5 such bags the child can be kept supplied for several hours. He connects the bag with an apparatus which passes the oxygen through water, purifying and moistening it; it is then brought to the little patient, the ebonite tip of the tube is placed in the mouth or replaced by a triangular funnel that fits over the mouth and nose. Under the influence of the inhaled oxygen the lips grow red, the pulse decreases in frequency and the child breathes more easily and slowly and usually falls asleep. The oxygen not only relieves the symptoms, but acts directly on the infection. The temperature curve generally reflects the process in the lungs, and its definite drop under the oxygen demonstrates the beneficial influence of the inhalations. The oxygen is most liable to prove effectual if commenced early, and he urges its application without waiting for certain signs of the bronchopneumonia. He has gradually abandoned all other measures, although in desperate cases he leaves no stone unturned. His mortality from this disease has fallen to 20 per cent., but he does not regard statistics as of much significance in this disease. Of greater import is the enthusiasm among those who witness the effects of the oxygen treatment, also the way in which other physicians are now adopting the method.

Presse Médicale, Paris

January 19, XVIII, No. 6, pp. 44-48

37 *Surgical Treatment of Chronic Edema. (Lymphangioplastie ou drainage capillaire par fils.) M. Guibé.

38 Experimental Acute Poliomyelitis. (Les expériences de Flexner et Lewis sur la poliomyélite expérimentale.) C. Jarvis. (Essais de culture du parasite de la paralysie infantile.) C. Levaditi.

37. Lymphangioplasty in Treatment of Chronic Edema.—Guibé reviews the work that has been done in this line by Handley, Mitchell, Lexer and Draudt. This method of silk drainage for lymphatic obstruction was described in THE JOURNAL, April 11, 1908, page 1225. The silk can be passed under the skin for long distances, the needle being drawn out at intervals and introduced again in the same hole. The operation gives good results in solid edema or, rather, elephantiasis; the only mishap liable is from possible infection of the thread. In some of the cases on record the threads were withdrawn on this account, but after the lymph had become sterile they were reinserted with ultimate success. In one of Lexer's cases the solid edema followed recurring erysipelas, but no infection of the silk drains followed. In one of Draudt's cases 12 silk threads were introduced and carried from the leg to the iliac fossa, with others in penis and scrotum draining into the groin.

Revue de Chirurgie, Paris

January, XXV, No. 1, pp. 1-134

39 Operative Treatment in 3 Cases of Volvulus of the Large Intestine. P. Lecène.

40 Lesions Resulting from Action of Hemispora. (Hémisporose humaine—nouvelle mycose.) Gougerot and Caraven. Commenced in No. 12.

Semaine Médicale, Paris

January 26, XXV, No. 4, pp. 37-48

41 Extraperitoneal Cesarean Section to Date. R. de Bovis.

Berliner klinische Wochenschrift, Berlin

January 10, XLVII, No. 2, pp. 45-88

- 42 Appendicitis in Sweden. (Zusammenstellung des Appendektismaterials aus dem Allg. Krankenhaus in Malmö.) F. Bauer.
43 Disturbances in Motor Functioning and Reflex Excitability in Palate, Throat and Larynx of Hemiplegics. (Störungen der Kinese und der Reflexerregbarkeit in Gaumen, Rachen und Kehlkopf der Hemiplegiker.) Graefner.
44 Shape of the Spine in Relation to Development of Curvature. (Form der Wirbelsäule.) M. Böhm.
45 Production of Complement-binding Antibodies by Fats and Lipoid Substances. (Bildung komplementbindender Antikörper durch Fette und Lipoidkörper.) H. Kleinschmidt.
46 Variability of Inoculation Tumors and their Spontaneous Cure. (Impftumoren und ihre Spontanheilung.) E. Saul.
47 *Tincture of Iodin for Sterilization of the Skin. (Zur Desinfektion der Haut mit Jodtinktur.) E. Unger.
48 Perforation of Living Child from Legal and Religious Standpoints. (Perforation des lebenden Kindes.) E. Holländer.

47. Iodin Sterilization of Field of Operation.—Unger has used Grossich's technic in 25 laparotomies and 50 other operations, and states that the simplicity, ease and good results have made him a friend of the method. He warns that the field of operation must be kept as dry as possible, for ascitic fluid, etc., washes away the tincture to some extent. In 15 cases of early diffuse peritonitis he mopped each tier of the suture well with the iodine, and healing was by primary intention in each case.

Correspondenz-Blatt für Schweizer Aerzte, Basel

January 20, XL, No. 3, pp. 57-88

49 *Graphic Tracings of the Pulse. (Zur Technik der Pulsregistrierung.) A. Jaquet.

50 *Later Course of Traumatic Neuroses. (Nachuntersuchung bei traumatischen Neurosen.) O. Nägeli.

49. Graphic Tracings of the Pulse.—Jaquet gives the comparative tracings with various sphygmographs and with sphygmochronographs of his own devising. His findings speak in favor of his own apparatus.

50. Later Course of Traumatic Neuroses.—Nägeli has been examining recently 138 persons who had been awarded an indemnity on account of an industrial traumatic neurosis. In direct contrast to the medical certificate in many cases, the later condition was found unexpectedly good. None presented evidences of permanent injury from the neurosis. The indemnity had been based on the assumed loss of from 30 to 80 per cent. of the earning capacity on account of the traumatic neurosis, but the earning capacity in all, except those with organic disease, was found equal to that before the accident and many were earning higher wages. The difference between his findings, in Switzerland, and those of physicians in Germany, he ascribes to the different mode of settling such claims. When the claim is settled definitely, once for all, the traumatic neurosis promptly subsides and the earning capacity is restored so far as the neurosis is concerned. It never recurred in any of the cases examined, and never developed into a psychosis. He declares that in future we can assure such patients of a speedy and permanent cure with a confidence which we have not hitherto possessed. This in itself will ward off neuroses in many cases. He appeals to others to inform him in regard to all cases of traumatic neurosis encountered, as he wishes to continue his research on the subject, hoping thus to establish a basis for this phase of industrial accident legislation.

Deutsche medizinische Wochenschrift, Berlin

January 20, XXVI, No. 3, pp. 105-152

- 51 *General Principles of Treatment of Poisonings. (Allgemeine Behandlung von Vergiftungen.) E. Harnack.
52 *Two Fatalities under Scopolamin-Morphin Anesthesia. (Todesfälle bei Skopolamin-Morphin-Narkose.) Rinne.
53 Acute Anterior Poliomyelitis. (Spinale Kinderlähmung.) F. Eichelberg.
54 Hysterectomy in Placenta Praevia. S. Weinmann.
55 Potassium Chlorate not Serviceable in Serodiagnosis of Syphilis. (Kann das chlorsaure Kali bei der Wassermannschen Reaktion das Immunhämolyse ersetzen?) A. L. Garbat and F. Munk.
56 *Treatment of Syphilis in Light of Latest Research. F. Lesser.
57 Interpretation of Findings with Muscle-nucleus Test. (Zur Bewertung der Schmidtschen Kernprobe.) A. Hesse.

51. Treatment of Poisoning.—Among the special points emphasized in this general study of the subject of poisoning is the fact that the attempt may be made to mislead in regard to the poison used, not only with murder from poisoning, but also with suicides and poisoning from neglect. The rapidity of the toxic action is an important element; inhalation is especially dangerous, but there are certain poisons

whose effects are not felt after inhalation for some time, allowing a period of incubation. The mucosa of the vagina and uterus is an especially dangerous point of application for the metallic poisons and for iodoform. The mode of application is important, as means to get rid of the poison depend on this knowledge. A case of poisoning makes the highest demands on the knowledge, skill and presence of mind of the physician. No time should be wasted on half measures. While waiting for the stomach pump, large amounts of tepid water or milk containing a little soap are useful as emetics to dilute the poison, although with the drawback that they favor its solution. Medical emetics increase the weakness and muscular collapse, which is also liable with the stomach pump. The irritating emetics are the least appropriate; apomorphin seems to be the most reliable, given subcutaneously, but it has its drawbacks, and cannot be used for small children. The emetic does not dispense with the stomach pump; it may be necessary to resort to general anesthesia to introduce the stomach tube, so that a trained assistant should always be summoned in case of serious intoxication. Harnack urges the importance of rinsing out the stomach with a mucilaginous fluid; this protects and soothes the irritated mucosa and prevents absorption, and he warns that the rinsing out of the stomach is just as necessary even when the poison was not taken into the stomach, as many drugs are eliminated partly through the gastric mucosa. The mouth, throat and nose should also be irrigated with the mucilaginous fluid, as all the mucosae possess marked absorbing properties. Warm castor oil seems to be the best laxative; it can be introduced through the stomach tube, but when the poison is soluble only in oil, a saline laxative should be preferred. Another point to bear in mind is that the respiration is so hindered in gas poisoning that artificial respiration may be needed and inhalation of pure oxygen may prove useful. Of extreme importance is venesection combined with saline infusion. Hydrogen dioxid may induce pulmonary embolism with subcutaneous injection, but the nascent oxygen may prove valuable in industrial hydrocyanic acid poisoning and should be accessible where such poisoning is liable. He discusses the dual antagonism between certain poisons, the antagonist not only stimulating, but also checking the action of the paralyzing poison; it is easier to paralyze an abnormally excited organ than to stimulate one already paralyzed. For instance, in general anesthesia the vomiting center is paralyzed and apomorphin injected has no emetic action, but it begins to show its influence as the effect of the anesthetic subsides. On the other hand, the respiration center is not paralyzed in general anesthesia and can be intensely stimulated by apomorphin, even in the midst of the anesthesia. The whole question of antagonism is not a simple sum, but a combination of stimulating and paralyzing actions which combine to form a peculiar picture, as he describes in detail. With an unconscious patient a mustard paste may be forgotten and lead to necrosis; all minor measures are inadvisable in severe cases. In case of great pain or excitement, injection of morphin is liable to bring on convulsions anew by reflex action; morphin is liable also to reduce the respiration still more and may transform the agitation into a dangerous paralysis. In chronic intoxication, potassium iodid and warm sulphur baths are certainly of some effect, although their action leaves much to be desired.

52. Fatalities of Scopolamin-Morphin.—Rinne's experience confirmed the advantages of this method of preparing the patients for an operation until two fatalities within three days warned him of its dangers. The cardiovascular system in these fatal cases was below par, and henceforth he will use a smaller dosage in such cases.

56. Treatment of Syphilis According to Latest Research.—Lesser has charge of the serodiagnostic tests at the Berlin clinic for skin diseases, and his experience has revealed some interesting facts in regard to the final cure of syphilis. In 525 cases the Wassermann test showed that 49 per cent. of the patients had thrown off the constitutional disease, judging from the repeatedly negative findings. Syphilitics never treated with mercury gave a positive reaction in all but 15 cases, while negative findings were obtained in 39 per cent. of those who had taken a single course of mercurial treat-

ment soon after infection. The proportion of negative responses constantly increased with the number of courses of treatment, but the maximum seems to be reached with four courses (from 55 to 65 per cent. negative responses), and this proportion was not increased by more numerous courses. His experience has shown that the Wassermann test is a reliable index for treatment, the findings showing the dosage necessary in the individual case and the requisite duration of the course. A positive seroreaction invariably indicates, he affirms, the presence of still active spirochetes. A negative reaction in the early stage is of no import, but later, corresponding to the age of the syphilis, the evidence is favorable for a cure, and with increasing probability as the findings are repeatedly negative. It is not wise to have any routine practice of dosage nor length of treatment. One patient may have the positive findings transformed into negative with 30 mercurial injections, another with only 15, another with 40. The mercury is not able to abort constitutional syphilis, but it seems to paralyze the spirochetes. The peace of mind that comes with a permanent negative reaction is one of the greatest benefits of the seroreaction. He obtained a positive reaction in 76 of 112 cases of tabes and in all of 95 cases of progressive paralysis; he calls these the quartan stage of syphilis and awaits with impatience further testimony as to whether tabes and paralysis can develop in a patient long giving a permanently negative response to the Wassermann test. In 2 out of 112 cases of tabes, it developed immediately after severe trauma. In 28 cases syphilis was expressly denied and no mercury had been given, but the Wassermann test gave positive findings in 86 per cent., while the findings were positive in only 63 per cent. of the 82 tabetics with a manifest history of syphilis. It seems beyond question that this paradox is due to the mercurial treatment that had been undergone by the patients in this latter group. His experience has shown that the fifth year is the earliest limit at which negative findings, especially repeatedly negative, suggest the probability that the syphilis is cured; specific treatment should therefore be continued until a negative reaction is obtained, if obtainable without forcing. Lesser has never witnessed any harm from the more energetic courses of mercurial treatment. The Wassermann test is applied immediately after the close of the course of treatment, and he continues the treatment for a brief period, even after a negative response has been obtained.

Deutsche Zeitschrift für Chirurgie, Leipsic

December, CIII, Nos. 1-2, pp. 1-202

- 58 Bilateral Mammary Tumors in Two Men. Familial Type. F. Gangitano.
- 59 Two Hundred and Eight Herniotomies. Schemmel.
- 60 Appearance of Pus Cells in the Blood Not Pathognomonic for Surgical Lesions. (Vorkommen von Eiterkörperchen im Blut und deren diagnostische Bedeutung bei chirurgischen Krankheiten.) R. Chiarolanza.
- 61 Radical Operation for Non-Incarcerated Hernia. L. Imfeld.
- 62 Fracture of Head of the Tibia. (Brüche des Schienbeinkopfes.) T. Gümbel.
- 63 Obturator and "Prevascular" Femoral Hernia. (Zur Kenntnis der Hernia obturatoria und der Hernia cruralis "prae-vascularis.") A. Zinner.
- 64 *Bone Autoplastic Operation to Close Defects in Skull. (Verfahren der Knochenautoplastik zur Ausfüllung von Substanzverlusten der Schädelknochen.) N. Leotta.
- 65 Incarceration of Loop of Small Intestine in Prolapse through Cecal Fistula. (Seltener Fall von Inkarceration einer Dünndarmschlinge im Prolaps der hinteren Darmwand einer Cæcumfistel.) K. Usterl.
- 66 Treatment of Fracture of Spine, Dislocation and Compression. (Behandlung der Luxationskompressionsfrakturen der Wirbelsäule.) K. Robertson.

64. Bone Autoplastics for Gaps in the Skull.—Leotta enters a flap including the periosteum and small thin slices of bone chiselled up from the bone below and still adherent to the periosteum. The aim is to have these chips square, about 1 cm. on each side. The free end of the flap is cut to correspond to the contour of the gap to be covered and it is stretched and smoothed along to cover it, which can be easily done, as he shows by illustrations. The flap can be cut in single horseshoe shape, or double, rectangular on both sides of the gap, the two flaps sutured together in the center. He has performed 17 double operations of the kind and 7 with single flaps, on 24 dogs, and the rapid regeneration of bone soon healed over the defect, the results surpassing, he asserts, anything of the kind observed with other technics.

Fortschritte der Medizin, Leipsic

January 13, XXVIII, No. 2, pp. 33-64

- 67 Operative Treatment of Puerperal Thrombophlebitis. (Operative Behandlung der Thrombophlebitis septica im Wochenbett.) Osterloh.
- 68 Facial Paralysis after Extraction of Teeth. (Zahnextraction und Fazialislähmung.) D. G. Zesas.
- 69 Improved Technic for Ehrlich's Dimethylaminobenzaldehyd Reaction. E. Münzer.

Jahrbuch für Kinderheilkunde, Berlin

January, LXXI, No. 1, pp. 1-122

- 70 *Importance of Mineral Salts in Malnutrition in Infants. (Bedeutung der Mineralsalze bei den Ernährungsstörungen des Säuglings.) L. F. Meyer.
- 71 Percussion of Spine in Diagnosis of Tracheobronchial Tuberculous Glands in Children. (Verwertung der Wirbelsäulenperkussion bei der Diagnose der Tracheo-Bronchialdrüsentuberkulose im Kindesalter.) M. Michalowicz.
- 72 Favorable Influence of Serotherapy on Course and Mortality of Scarlet Fever. (Einfluss des Moserschen Serums auf den Verlauf und die Mortalität des Scharlachs.) S. J. Fedinski.
- 73 *Later Fate of 28 Children with Chorea. (Nachuntersuchung nach 15-20 Jahren in 28 Fällen von Chorea minor.) G. Forssner.

70. Metabolism of Mineral Salts and Malnutrition in Infants.—Meyer discusses the importance of the mineral salts for the vital processes, emphasizing the fact that while plants seem to be able to dispense with sodium, it is indispensable for animals. It may possibly be necessary for the rapid processes of contraction in the action of the heart and respiration which are one of the main points of difference between animals and plants. The article issues from Finkelstein's service at Berlin and states that extensive research has confirmed the different action of the various salts; it seems to be a specific ion action. Sodium induces an accumulation of water so that the weight increases under its influence, while potassium and calcium either have no influence in this line or reduce the weight. The various salts also act differently on the temperature; sodium chlorid, bromid and iodid, by the mouth, send up the temperature after from two to four hours, reaching its acme about the sixth hour and gradually declining between the twelfth and twenty-fourth hours. The calcium salts seem to reduce the temperature; some of them may even be responsible for collapse. What has already been learned in regard to the metabolism of the mineral elements and nutritional disturbances opens new perspectives, he says, in regard to rachitis and tetany in children, the origin of fever and treatment of nephritis. Finkelstein classifies the disturbances in infants for which the food is responsible into the two great classes, "alimentary intoxication" and "alimentary decomposition," and he urges the adoption of these or similar terms in order to insure a uniform nomenclature to facilitate study of the problems involved. During alimentary decomposition and the disturbances which lead up to it, fats form soaps with the alkalies and an excessive proportion of mineral salts is eliminated in the "fat-soap stools." An exclusive starch diet also seems to be accompanied by a loss of salts, especially chlorids and sodium. No chlorids were found in the urine on a starch diet, not even for several days after being fed salt, showing the salt starvation from which they had been suffering and the avidity with which the salt was taken up by the tissues. This salt starvation must prevent secretion of normal gastric juice, which in turn prevents proper digestion of the food. The only means to arrest this waste of alkaline elements and malnutrition is to change at once to breast milk, which gradually rights conditions. The beneficial action of breast milk seems to be the property of the whey.

73. Later Fate of 28 Children with Chorea.—A previous article by Forssner on the later history of a number of children with acute articular rheumatism, heart disease and chorea, examined from 15 to 22 years later was summarized in THE JOURNAL, Aug. 28, 1909, page 754. He here discusses the present status of the 28 children with chorea minor, the ultimate findings suggesting that chorea attacks preferably children of weakly constitution. Out of the 23 children who lived to the age of 15, not less than 14 now present some chronic constitutional disease, tuberculosis, exophthalmic goiter, nephritis or some serious stomach affection, none a complication of the chorea. In 5 cases there are signs of pronounced heart disease and 7 of the children succumbed early to some cardiac lesion. On the other hand, among 35

children with articular rheumatism, only 4 have developed constitutional disease; 7 have died from heart disease and 3 from an intercurrent infection, but 21 are in good health, which is the case with only 1 of the 28 children who had chorea. Heart disease developed in 17 of this group. He summarizes the details; most of the children were under 10 at the time of their chorea. Only one child had reached the age of 14 and this patient is the one still in good health 22 years later, notwithstanding a recurrence of the chorea and an attack of acute rheumatism a year later. In 3 of the cases reported the chorea developed immediately after scarlet fever, pleurisy or hemorrhagic purpura.

Medizinische Klinik, Berlin

January 16, VI, No. 3, pp. 85-126

- 74 *Diagnosis of Pancreatic Disease. (Diagnostik der Pankreaserkrankungen.) C. Klieneberger.
- 75 Recent Hamburg Diphtheria Epidemic. III. H. Much.
- 76 Early Operation Advisable in Appendicitis in Wage-Earners. (Das soziale Moment der Frühoperation bei Appendicitis acuta des Arbeiters.) Esau.
- 77 Periodic Icticanuria in Manic-Depressive Insanity. F. Tanbert.
- 78 Bacteriologic Findings in Certain Gastrointestinal Disturbances. (Einige bakteriologische Befunde bei Magen-Darmerkrankungen.) R. Latzel.
- 79 *Etiology and Treatment of Arteriosclerosis. M. Herz.

74. Diagnosis of Pancreatic Disease.—Klieneberger's article is addressed to the general practitioner and urges the importance of early differentiation of disturbances in pancreas functioning. In the first place the urine must be examined repeatedly for sugar and especially the tolerance for carbohydrates should be tested after a test dose of 100 gm. glucose. The stool should be examined for muscle fibers and fat, and it may also be useful to test whether the general condition improves materially under ingestion of a pancreatic ferment. Further aids in differentiation are the Sahli and Schmidt tests and examination of the stool with the casein method for the presence of a tryptic ferment. The Sahli test is the ingestion of a capsule, made of gelatin hardened in formalin, which is supposed to be dissolved only by the pancreatic juice in the intestine. The capsule is filled with iodine or methylene blue or salicylic acid, refund in the saliva or the urine. The Schmidt muscle-nucleus test is the ingestion of cubes of meat tied up in a little bag of ganze. The absence of the digestion of the nuclei in the muscle fibers in the bag speaks for lacking pancreatic digestion. The casein test for trypsin is simple and exact: 10 c.c. of the filtrate of the stool previously diluted with 3 parts of a 1 per thousand soda solution is mixed with 100 c.c. of a 0.5 per thousand solution of casein. The mixture is kept at 37 C. (98.6 F.) and examined from time to time for the presence of caseose by testing a portion with 1 per cent. acetic acid. The other tests for pancreas functioning, the Cammidge reaction, etc., are scarcely to be recommended to the general practitioner.

79. Worry and Ambition as Cause of Arteriosclerosis.—Herz states that he is becoming more and more impressed with the fact that his patients with arteriosclerosis are almost invariably those who take life too seriously and either from ambition or exalted sense of duty lead an especially strenuous life. His arteriosclerotic patients seldom include the care-free, self-centered people who enjoy life from day to day, without worrying. These seem to escape arteriosclerosis unless they acquire it indirectly by the syphilis route. He regards all this as an important guide for treatment and especially for prophylaxis of arteriosclerosis. By emphasizing more than ever the dangers of worry and undue strenuousness, and urging patients to take greater advantage of the sunshine of life and to refrain from a too serious view of responsibilities and care for the morrow, he is convinced that much arteriosclerosis can be warded off.

Monatsschrift für Kinderheilkunde, Berlin

November, VIII, No. 8, pp. 449-512

- 80 Spinal Ganglia in Children. (Spinalganglien im Kindesalter.) J. Zappert.
- 81 Elimination of Milk-Sugar after Subcutaneous Injection. (Versuche über Milchezuckeranscheldung nach subkutanen Injektionen.) J. L. Leopold and A. von Reuss.
- 82 Taking on of Fat with Natural and Artificial Feeding. (Ansatz bei natürlicher und künstlicher Ernährung.) A. Orgler.
- 83 Determination of Acidosis in Infants with Digestive Disturbances. (Ueber den mikrochemischen Nachweis der Azidose bei Ernährungsstörungen des Säuglings.) G. Koch.

- 84 Indifferent Experiences with Carrot Soup in Infants' Digestive Disturbances. (Zur Behandlung akuter Ernährungsstörungen bei Säuglingen mit Karottensuppe.) M. Klotz.
85 No Connection Demonstrable between Eczema in Infants and Retention of Salt. (Mineralstoffwechsel und Säuglingsekzem.) A. W. Bruck.

Münchener medizinische Wochenschrift

January 18, LVII, No. 3, pp. 113-168

- 86 *Infant Mortality at Birth and Means to Reduce it. (Kindersterblichkeit unter der Geburt und ihre Bekämpfung.) L. Seitz.
87 Transformation of Human Tubercle Bacilli into the Bovine Type. (Umwandlung vom Menschen stammender Tuberkelbazillen des Typus humanus in solche des Typus bovinus.) A. Eber.
88 *Cure of Old Abscess in Lung by Surgical Pneumothorax. (Fall von seit 6 Jahren bestehendem durch künstlichen Pneumothorax behandeltem Lungenabszess.) C. Forlanini.
89 *Prophylaxis of Typhoid in Institutions. (Zur Bekämpfung und Prophylaxe des endemischen Typhus besonders in Internaten.) W. Eccard.
90 Operations on Tonsils and Disturbances in Speech. (Rachenmandeloperationen und Sprachstörungen.) Nadolcezy.
91 Tubercle Bacilli from Swallowed Sputum in Stool. F. Klose.
92 Ascites in New-Born Infant. Recovery under Repeated Tapping. P. Sittler.
93 *Intravenous Anesthesia. (Zur Frage der intravenösen Narkose.) P. Janssen.
94 Tuberculosis Mortality in Munich. (Zur Statistik der Tuberkulosesterblichkeit in München.) J. Weigl.
95 *Pessary Treatment of Anal Fissure. (Aus der Praxis.) Heidenhain.
96 Surgical-Orthopedic Treatment of Spinal Infantile Paralysis. (Behandlung der spinalen Kinderlähmung.) Machol.

86. **Reduction of Infant Mortality at Birth.**—Seitz has been investigating the causes of the fetal mortality among the 50,000 maternity cases at the Munich clinic in the last forty years. He found that in only 20 per cent. was the mortality due to the small size of the pelvis; in 5 per cent. disease or deformity was responsible, and in 10 per cent. unfavorable presentation, etc. But in 65 per cent. the cause of the fetal mortality was essentially the insufficiently dilated soft parts, either abnormal narrowness and rigidity of the os or vagina, or, with normal soft parts, some complication requiring immediate delivery. This includes the cases of placenta prævia, eclampsia, prolapse of the cord and oblique presentation. From study of this material he draws the conclusions that many more children could be saved by the more frequent application of forceps in institutions. Comparison of the statistics from hospitals with frequent obstetric operations with others where there is less interference, shows that a large number of children succumb to asphyxia that might have been saved by earlier use of forceps. In the clinics recording numerous operations the pure asphyxia deaths are extremely rare. In general practice the indications are less frequent; he calculates that the possibility of danger for the child from primary obstruction from the soft parts is encountered with multiparæ only one-fourth as often as with primiparæ. When the fetal heart sounds become slower, this is a certain sign of serious danger but acceleration of the heart sounds has no such significance. When the second stage of labor is unduly prolonged the interests of the child may indicate forceps, especially when the position of the fetus interferes with the control of the heart sounds. In the last two years he has been able to reduce the total fetal mortality by 10 per cent.—down to 19.4 per cent.—especially with placenta prævia, by delivering the woman at once by vaginal hysterotomy. The undilated os is responsible for the fatality in half of all the deaths from prolapse of the cord and oblique presentation. By vaginal hysterotomy it is possible to reduce this mortality by fully 20 per cent. The fetal mortality in the last 5,000 deliveries has been 2.28 per cent., which is still far too high in comparison with the fetal mortality of only 3.9 per cent. in 21,800 births at the clinic between 1859 and 1882. He is convinced that more frequent use of forceps and of vaginal hysterotomy may reduce the mortality to 1 per cent.

88. **Surgical Pneumothorax for Abscess of the Lung.**—Forlanini reports a case in which an abscess in the lung, developing after croupous pneumonia, had persisted for six years, rebellious to all measures. It was then cured in a few months by compression and immobilization of the lung by injection of nitrogen. The cure has persisted for three years to date. This case in addition to his other experience confirms the advantages of frequently repeated small injections, so as to keep up the immobilization unchanged. His experi-

ence has also shown that after the artificial pneumothorax has accomplished its purpose, in the absence of tuberculosis or with healed lesions, the pleura is able to resume its functioning undisturbed. In one of his cases the pneumothorax dates from April, 1902, and the tuberculous process rapidly healed but he still maintains the pneumothorax, having kept up the injections of nitrogen during the eight years to date.

89. **Prophylaxis of Typhoid in Institutions.**—Eccard has been able to stamp out endemic typhoid in an asylum by search for the bacillus carriers and measures to render them harmless. He found eight, all insane women, and he enforced special hygienic measures to combat uncleanly habits. Two nurses were entrusted with the care of these eight carriers who were isolated, kept in bed as much as possible, trained to defecate at regular hours, after which the anal and vaginal regions were cleansed by the nurse with cotton dipped in a disinfectant or a disinfecting compress was worn permanently. The hands, the nails, and the service at meals are also in the nurses' charge. By this combination of hygienic measures and keeping the patients isolated in bed as if they were very ill, the danger of dissemination of bacilli is materially reduced.

93. **Intravenous Anesthesia.**—Janssen refers to Burkhardt's announcement in regard to intravenous anesthesia mentioned in THE JOURNAL, Jan. 8, 1910, p. 169, and states that he has been conducting extensive research in this line, using various anesthetics and technics. Theoretically it is an ideal method, especially when the anesthetic can be instilled into the vein a drop at a time as he succeeded in accomplishing. But the death of one of the dogs from embolism in the lung revealed the dangers of this method which he has now entirely abandoned.

95. **Non-Operative Treatment of Anal Fissure.**—Heidenhain has cured two patients by introducing into the anus a hard rubber hemorrhoid pessary for an hour or two. Either there is no pain or the pain rapidly subsides; in from ten to fourteen days healing is complete. Laxatives are given to insure soft, regular stools.

Wiener klinische Wochenschrift, Vienna

January 20, XXIII, No. 3, pp. 83-118

- 97 *Operative Treatment of Injury of the Meniscus in the Knee. (Verletzungen der Bandscheiben des Kniegelenkes.) H. Schloffer.
98 *Treatment of Placenta Prævia. J. Richter.
99 Experimental Research on Acute Anterior Poliomyelitis. II. C. Leiner and R. v. Wiesner.
100 Individual Strains of Colon Bacilli in Children. (Die individuelle Koliflora im Kindesalter.) L. Jehle and M. Pincherle.
101 Putrefactive Properties of Normal Infant Stools. (Studien über Darmflora.) A. Rodella.

97. **Operative Treatment of Meniscus Disturbances.**—Schloffer reports the ultimate outcome in 28 cases of old injury of the meniscus of the knee including 16 cases of loss of substance, 2 with tearing out from the tibia and 1 from the capsule, 6 with chronic inflammation of the meniscus and 3 with merely abnormal movability. He removed the meniscus in 23 cases and in 3 the immediate results were extremely favorable but the patients have not been seen since. In 16 of the remaining 20 very favorable results were obtained and in only 2 cases was the outcome unfavorable. In another the affection was of tuberculous origin. Functional capacity was regained although in no instance was it quite normal. The removal of the meniscus prevents further injury but does not cure that already existing although the functioning is perfect enough for all practical purposes. Kneeling is still difficult. He prefers to expose the meniscus with an incision around the patella and leaves a little gap in the suture to permit escape of secretions, but does not drain otherwise.

98. **Treatment of Placenta Prævia.**—Richter has analyzed the 467 cases of placenta prævia at Schauta's clinic since 1892 to determine if Cesarean section would have given better results than the technic followed. Out of the whole number there was not a single case in which it could have been applied. It is contraindicated when the woman has been examined before entering the institution and thus possibly infected, if she has lost too much blood, and also if the child is not at term and viable.

Zentralblatt für Chirurgie, Leipsic

January 15, XXXVII, No. 3, pp. 73-112

- 102 *Improved Iodin Sterilization of Field of Operation. (Modifizierung der Hautdesinfektion des Operationsfeldes nach Grosslehn.) A. Bogdan.
103 Provision of Sterile Water for Hospitals. (Beschaffung sterilen Wassers für Krankenhäuser.) M. Heldenhain.

102. Improved Iodin Sterilization of the Field of Operation.—Bogdan urges more general adoption of the simple and effectual method of sterilizing the field of operation with tincture of iodine. He has modified the technic somewhat by cleansing the field beforehand with 1 per 1,000 iodized benzoin. This takes the place of the usual scrubbing with soap, while it is a relief to feel that the field has been prepared for the tincture of iodine. He has applied this technic in 800 cases; the operator himself does or supervises the sterilization, which is complete in four or five minutes as the benzoin evaporates so rapidly. He applies the benzoin for one or two minutes, mopping with two or three wads of cotton. The tincture of iodine is applied with a small wad of cotton with which he first presses down the skin to form a depression into which the tincture is poured and then mopped over the desired area. He repeats this several times, keeping the skin moist with the tincture for a few minutes to allow it to sink well into the pores.

Zentralblatt für Gynäkologie, Leipsic

January 15, XXXIV, No. 3, pp. 65-96

- 104 *Justification of Pubiotomy. (Berechtigung der Hebesteotomie.) K. Reifferscheid.
105 Operations for Deformities of Female Genitalia. (Operationen bei Bildungsfehlern der weiblichen Genitalia.) Puppel.
106 Disadvantages of Obstetric Vaginal Douches. (Akute Lysolvergiftung durch vaginale Irrigation und der therapeutische Wert der Irrigationen überhaupt.) A. Chvojka.

104. Pubiotomy.—Reifferscheid reports the ultimate outcome of pubiotomy in 36 cases with later childbirth in 9. In one case the pubiotomy was repeated twice, but a third child was delivered without further intervention. One woman succumbed to pulmonary embolism; the children were all delivered alive, except in one case in which the operation came too late. Slight fever was noticed in 7 cases and high in 1 case from slight suppuration in the incision. No threatening hemorrhage occurred in any instance. He states that his experience impels him to commend the operation as enabling prolonged expectant treatment; its special field is in all cases of moderately contracted pelvis up to a true conjugate of 7.5 cm. in multiparæ. With a diameter less than this, extra-peritoneal Cesarean section is preferable.

Gazzetta degli Ospedali e delle Cliniche, Milan

January 16, XXXI, No. 7, pp. 65-80

- 107 Encouraging Serotherapy of Mediterranean Fever. L. Morpurgo.
January 18, No. 8, pp. 81-88

- 108 *Hypertrophy of Trabeculæ in Bladder Early Sign of Tabes. (Vescica a colonne nei tabici e sua importanza diagnostica.) C. Rinaldo.

January 20, No. 9, pp. 89-96

- 109 *Visceral Equivalents in Epilepsy. (Equivalenti viscerale in un caso di epilessia da cerebropatia.) G. Vidoni.

108. Hypertrophy of the Trabeculæ in Bladder as Early Sign of Tabes.—THE JOURNAL, Jan. 30, 1909, summarized Böhme's article calling attention to the hypertrophy of the bladder wall as an early sign of tabes, the bladder seeking to compensate by extra muscular effort for the difficulty in voiding its contents. Rinaldo here reports a case which confirms the diagnostic importance of this finding. His patient was a man, of 48 with some retention of urine for which no mechanical cause could be discovered. There was no history of syphilis or trace of syphilitic infection; the pupil and tendon reflexes were normal and the Romberg, Westphal and Babinsky tests were negative but the patient had suffered for a few years with pains in the legs supposed to be of rheumatoid nature, and there had also been transient diplopia at one time and vertigo. The cystoscope showed the trabeculæ in the bladder much enlarged and the Wassermann test elicited a positive response, confirming the presumptive diagnosis of tabes. After ineffectual local medication, he relieved the patient with suprapubic cystostomy, supplemented by application of electricity, and some benefit seems to have been

realized, the bladder mucosa apparently having regained sensibility to a slight extent, as the patient now perceives the desire to urinate.

109. Epileptic Equivalents in the Viscera.—This is the explanation offered by Vidoni for certain attacks observed in a woman of 39 who had been healthy until the age of 31. She then developed apoplexy followed by motor aphasia, right hemiplegia, and occasional epileptiform seizures. During the menstrual periods she is liable to present an epileptic equivalent consisting in sudden cyanosis with loss of consciousness, stertorous breathing and signs of acute edema of the lung. After about 20 minutes the seizure subsides and the patient expectorates large amounts of a blood-stained serous sputum; but she rouses with delirium, intelligence only gradually returns in the course of 24 hours. The circulatory and respiratory equivalent for the classic epileptic seizure in this case confirms the fact that disturbances may occur in the vegetative sphere as well as in the psychic functions as part of the epilepsy syndrome.

Policlinico, Rome

January 23, XVI, No. 4, pp. 99-130

- 110 *Ocular Crises in Tabes. (Tabes superior con crisi oculari.) A. Piazza.

110. Tabes with Ocular Crises.—The patient in the case reported was a man of 31 whose father at the age of 20 acquired syphilis followed by the loss of the right eye which was enucleated. At the age of 60 the other eye became blind. The mother and brothers and sisters are robust. The son acquired syphilis likewise at 20 but took a brief course of mercurial pills at the time and annually for a few years. At the age of 28 he complained of intense pain at times in the depths of the orbit, the attacks coming on suddenly; soon after their onset vision gradually declined in one eye. The lancinating pains in the eyes were accompanied by transient congestion, lachrymation and photophobia. There were intervals of comparative improvement in vision but the condition grew worse at each attack. Exclusion of all other causes confirmed the diagnosis of tabes, sustained further by the abducens paralysis noted, the Argyll-Robertson sign and the progressive atrophy of the optic nerve. The great peril in these cases of tabetic amaurosis seems to be the liability to progressive general paralysis observed in some cases on record. Mercurial treatment after the onset of the ocular crises induced marked aggravation of symptoms in this case as also in 3 cases of tabes previously reported by this writer. No benefit was derived from pilocarpin or other measures. Treatment henceforth can be only symptomatic in this case.

Riforma Medica, Rome

December 20, XXV, No. 51, pp. 1401-1428

- 111 Transmission of Vibrations in Chest in Pathologic Conditions. (Di alcune particolarità della trasmissione sul torace delle vibrazioni respiratorie in condizioni patologiche.) S. Livierato.
112 Two Cases of Dilatation of Saphenous Vein at Junction with Femoral Vein. (Dilatazione sacciforme della safena presso il suo sbocco nelle vena femorale.) C. Mantelì.

Hospitalstidende, Copenhagen

January 5, LIII, No. 1, pp. 1-40

- 113 *Transplantation of Patient's Fibula in Place of Upper Two-Thirds of Humerus. (Tilfælde af fri knogletransplantation til Erstatning af Overarmens øverste to Trediedele ved Hjælp af Patientens Fibula.) T. Røvsing.

113. Transplantation of Fibula into Shoulder and Upper Arm.—Røvsing's patient was a mechanic, aged 26, whose shoulder met with a comparatively slight accident, followed by swelling and pain. The assumed hemorrhagic effusion in the shoulder was treated with massage and passive movements through four months but the persistence of disturbances led to Roentgen examination which revealed a morbid process and new growth in the head and neck of the humerus. The Wassermann test gave negative findings and the proliferation of bone was accepted as excluding tuberculosis. It proved to be an osteosarcoma. As sarcoma seems to spread mostly towards the periphery, and as the process was restricted to the humerus alone, Røvsing anticipated a radical cure by resection of the upper two-thirds of the bone with the attached ends of muscles and fascia, leaving the rest of the soft parts undisturbed. This was done and the missing bone

replaced by a corresponding part of the patient's own fibula; the head of the fibula was made to articulate with the glenoid cavity while the lower end of the bone was implanted deep in the marrow part of the remaining third of the humerus. Now, two months after the operation, the patient is able to use his arm to feed himself and even to brush his hair while the movements of the forearm are practically normal. His earning capacity is restored for light work and his general health leaves nothing to be desired. The loss of the fibula does not affect his gait and the leg does not seem weaker than its mate to date. The case confirms the possibility of free transplantation of bone for various purposes provided that the bone is freshly removed, still enclosed in its periosteum, and derived from a healthy human being, and that the new bone can be effectually adapted to what is left of the old. The article is accompanied by several illustrations including skiagraphs.

Hygiea, Stockholm

December, LXXI, No. 12, pp. 1249-1376

- 114 Surgery of Heart, with Report of Case of Firearm Wound. (Fall af skottskada å hjärtat.) E. Key and H. Liden.
115 *Thrombophlebitis of the Orbit After Syringing out the Lacrimal Sac. (Thrombo-phlebitis orbitæ efter tåråcks-sköljning.) G. Lamm.

115. **Thrombophlebitis of the Orbit After Attempts to Sterilize the Lacrimal Sac.**—Lamm's case is the tenth he has found on record. The case histories emphasize the danger for the eye of any infection in the lacrimal sac. Total blindness resulted in 7 of the 10 cases, with a fatal termination to the infection in 1 case. Schwendt found amaurosis in nearly 80 per cent. of 49 cases of phlegmon of the orbit in the literature. Lamm gives a number of rules to be borne in mind in treating affections of the lacrimal passages in order to refrain from spreading the disease.

Ugeskrift for Læger, Copenhagen

December 30, LXXI, No. 52, pp. 1437-1448

- 116 Advantages of Potassium Permanganate Method for Municipal Disinfection. (Lidt om Desinfektion af Boliger.) Struckmann.
January 6, LXXII, No. 1, pp. 1-28
117 *Dietetic Treatment of Nephritis. A. Fløystrup.
January 13, No. 2, pp. 29-58
118 *Diagnosis of Gastric Cancer. (Om Diagnosen af Cancer ventriculi.) Kramér-Petersen.

117. **Dietetic Treatment of Nephritis.**—Fløystrup expatiates on the great importance of recent acquisitions in medical science in respect to the elements that favor nephritis. It is evident that the dietetic regulations must be different according as the nephritis is acute or chronic parenchymatous or chronic interstitial nephritis. These three main groups of nephritis differ in their pathologic anatomy, the functional capacity of the kidneys and the treatment required, but the difference is most marked, perhaps, in regard to the diet indicated in each. Experience has demonstrated that uremia is most liable with interstitial nephritis, contracted kidney, while dropsy is most liable to accompany the parenchymatous form. The development of uremia is promoted by ingestion of albumin while dropsy is promoted by ingestion of salt. The indications therefore with interstitial nephritis are to restrict as much as possible ingestion of meat, eggs and albuminous substances in general, while with parenchymatous nephritis all that is necessary in this line is to limit the intake of salt. In acute nephritis there is a tendency to both parenchymatous and interstitial disturbances, and consequently the diet should exclude both albuminous substances and salt. Milk is useful on this account, but he warns expressly that a strict milk diet is injurious if kept up for more than 6 or 8 days at longest. It may also prove useful in the acute exacerbations observed in the course of chronic nephritis, but it must be borne in mind that it represents always undernutrition which cannot be relied on for more than a brief period to tide the patient past some acute phase.

118. **Diagnosis of Gastric Cancer.**—Petersen comments on the difference in the symptoms presented when the cancer is at the pylorus, the cardia or between these points. When at the pylorus the most striking symptoms are the cramps and stiffening of the stomach walls, evidences of retention in the fasting stomach and occult hemorrhage. When the cancer is at the cardia there are disturbances in swallowing and the

stomach sound clears up the diagnosis. When the cancer is located elsewhere than at these two points there is generally occult hemorrhage, and microscopic examination of the content from the fasting stomach reveals large numbers of blood corpuscles and tumor particles. Salomon's test also gives positive findings as also the tests for the presence of ferments. The main point in the diagnosis of cancer is that the general practitioner thinks of its possibility when confronted with a case of gastric disturbances. In Petersen's 60 cases slight hematemesis was observed in only 2 instances and melena in 2—thus in only 7 per cent. Chronic constipation was the rule in all but 3 of the patients. Long-continued constipation with loss of appetite and flesh suggest cancer without other signs. His patients were between 34 and 79, and he failed to diagnose the malignant disease in the youngest patient, although the pains, fever, and loss of 30 pounds in weight in three months might have suggested the true diagnosis. Colic two years before had been ascribed to lead poisoning. The appetite was persistently good, bowel functioning was normal, there was no glandular enlargement and nothing could be palpated although pressure at the cardia revealed slight tenderness. The Bourget test for the motor functioning gave negative findings and after an Ewald test meal no free hydrochloric acid, lab ferment or pepsin could be found. There was no hematemesis but the test for blood was positive and operation revealed malignant disease. The first symptoms of abdominal pain and fever had been observed only two months before. The colics diagnosed as due to lead poisoning had occurred several years before and during the interval since the patient was in good health. In another case Petersen's diagnosis of cancer proved to be erroneous. This patient was a man of 54 with pains in the epigastrium for three months, occasional vomiting and diarrhea. He digested light food without apparent trouble; there was no gastric hemorrhage; but he had lost considerably in weight. A tumor as large as a hen's egg could be palpated on the umbilical line to the right of the median line, movable, not tender. The Bourget test for motor functioning gave positive findings at one time but later it was negative. There was no free hydrochloric acid and no blood in the stomach content or stool but lactic acid was present in the stomach. Operation for the supposed cancer disclosed merely a large ileocecal invagination, no malignant disease, and the patient has been in good health since the resection of the invaginated portion of intestine.

Books Received

All books received are acknowledged in this column and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender. A selection will be made for review in the interests of our readers and as space permits.

TRANSACTIONS OF THE NATIONAL ASSOCIATION FOR THE STUDY OF EPILEPSY AND THE CARE AND TREATMENT OF EPILEPTICS. William P. Spratling, M.D., Baltimore, Permanent Editor, and J. F. Munson, M.D., Sonyea, N. Y., Associate Editor. Eighth Annual Meeting, Indianapolis, Nov. 10, 1908. Vol. VI. Paper. Pp. 149. 1909.

THE CATTLE TRADE OF WESTERN CANADA. Special Report by J. G. Rutherford, Veterinary Director, General and Live Stock Commissioner. Dominion of Canada Department of Agriculture Branch of Live Stock Commissioner. Paper. Pp. 23. Published by direction of the Hon. Sydney A. Fisher, Minister of Agriculture, Ottawa, Ont., 1909.

A PRACTICAL GUIDE TO THE ADMINISTRATION OF ANESTHETICS. By R. J. Probyn-Williams, M.D., Senior Anesthetist and Instructor in Anesthetics at the London Hospital. Cloth. Pp. 228, with 44 illustrations. Price, \$1.60. Second Edition. New York: Longmans, Green & Co., 1909.

THE OXIDASES AND OTHER OXYGEN-CATALYSTS CONCERNED IN BIOLOGICAL OXIDATIONS. Hygienic Laboratory Bulletin No. 59. P. H. and M.-H. Service. By J. H. Kastle. Paper. Pp. 164. Washington: [Superintendent of Documents], Government Printing Office, 1910.

AN ENGLISH HANDBOOK TO THE PARIS MEDICAL SCHOOL. By A. A. Warden, M.D., Visiting Physician to the Hertford British Hospital, Paris. Paper. Pp. 52. Second Edition. Price, 2 shillings. Philadelphia: P. Blakiston's Son & Co., 1910.

ANNUAL REPORT OF THE STATE BOARD OF HEALTH OF MARYLAND FOR THE YEAR ENDING DECEMBER 31, 1907. [Dr. M. L. Price, Secretary, Baltimore.] Paper. Pp. 234, with illustrations. Baltimore, 1910.

THE QUEST. By Thomas A. Stoddard. Cloth. Pp. 167, with illustrations. Price, \$1.50. New York: Cochrane Publishing Co., 1909.

REGULATIONS RELATING TO ANIMALS' QUARANTINE, 1909. Authorized by Canadian Department of Agriculture, Ottawa, Ont., Nov. 30, 1909. Paper. Pp. 27.

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Original Articles

SOME THERAPEUTIC ADAPTATIONS OF CECOSTOMY AND APPENDICOSTOMY

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My own experience for some time and that of other surgeons for longer periods indicate not only that ostiomatic operations on the intestinum cecum and the appendix vermiformis have already attained a considerable range of application, but that they are destined to be even more extensively employed especially as adjuncts of medical treatment in several very important diseased conditions. The application of these strictly surgical measures, now being undertaken with increasing frequency at the instance of strictly medical men for the purpose of assisting them in the treatment of hitherto intractable cases, seems, indeed, to be founded on very logical considerations. The practice is based primarily on a recognition of the fact that there are certain conditions which are strictly local to the colon and which are consequently better treated by measures addressed exclusive to the colon—the word “colon” being here employed to designate the whole of the large bowel from the ileocecal juncture to the rectum. This conception takes into account two additional facts of great practical importance, viz.: first, that the attempt to medicate the colon locally by way of the rectum is painful, tedious and generally unsatisfactory; and, second, that the attempt to medicate the colon by way of the stomach is fraught with uncertainties due (a) to unknown and undeterminable chemical change of medicaments in the stomach and upper intestines; (b) to resulting interference with digestion, both gastric and intestinal, and (c) to consequent impairment of the general health. It is recognized, furthermore, that, by direct access through the cecum by an entirely safe operation, not only are these objections entirely obviated, but that certain signal advantages are obtained. Among these advantages may be mentioned (a) the hygienic control of the large intestine; (b) the ability to apply treatment, medicinal, bacterial or dietetic, directly to the colon; and (c), by absorption therefrom, to influence the general system without reference to the condition of the stomach or of the upper intestine.

SOME ANATOMIC FACTS

But before I take up the various therapeutic indications for which this relatively new surgical measure is being employed, I ask attention to a few anatomic facts that have a particular bearing on the choice of operation—that is, as between cecostomy and appendicostomy. Thus it is a matter of some significance (a) that the large pouch or convolution of the intestinum cecum is

the part that lies in direct contact with the anterior abdominal wall; that consequently (b) it is from an inch to two inches nearer the parietal peritoneum than is the base of the mesoappendix, and (c) that it occupies a position directly opposite the valvula coli—a matter that I shall show to be of practical importance. Relative to the appendix vermiformis it is of some importance to remember (a) that its lumen is of variable diameter and, in certain cases, is entirely obliterated; (b) that the sickle-shaped fold of mucous membrane, the valvula processus vermiformis, at the cecal orifice of the appendix is sometimes absent; (c) that the meso-appendix is of variable length and is relatively inelastic; and (d) that the walls of the appendix proper are of variable thickness and are but poorly supplied with elastic tissue. Then, too, it should be kept in mind that the autonomic algæ areas of the cecum and appendix vermiformis correspond to the distribution of the tenth dorsal nerve to the obliquus internus, obliquus externus and transversus abdominis muscles and, in exceptional cases, to the distribution of the iliohypogastricus nerve in the groin—all, of course, on the right side.

THE CHOICE OF OPERATION

I have mentioned these usually disregarded facts, because they have more or less bearing, first, on certain phenomena both preceding the following operation; and, second, on the choice of operation. With respect to the choice of operation I fear that I shall seem a trifle heterodox when I state that, all things being equal, I prefer the older procedure of cecostomy to the newer one of appendicostomy. If my colloquialism of “all things being equal” shall be interpreted to mean the average normal conformation of, respectively, the cecum and the appendix and the absence of pathologic states that make the appendix the logical avenue of ingress—and I confess I do not know which pathologic states should be so regarded—then I believe the force of the anatomic features to which I have called attention will incline to a decision on the side of cecostomy. Thus (a) the proximity of the presenting pouch of the cecum to the parietal peritoneum permits of its fixation in the operation wound practically *in situ naturalis*; (b) it can be utilized for either a small opening or a larger one as may be indicated; (c) it permits an opening through which a catheter may be passed at any time through the valvula coli into the small intestine; (d) it is free from undue tension after fixation, thus avoiding the possibility of breaking up the anchorage prematurely or causing painful adhesions following the operation; and (e), if properly managed, it is no more liable to be the source of fecal extravasation or the avenue for bacterial infection than is the appendix.

On the other hand, the remoteness of the appendiceal base (a) makes its fixation not infrequently a source of painful tension, which with (b) the pressure of its walls

by a catheter causes (c) the whole appendix, relied on as a "tube," to perish—as a matter of fact the majority of appendices do perish within a few days after operation, leaving (d) the remaining condition one of cecostomy with an opening at an undesirable point; (e) the adhesions resulting from appendiceal implantation are, indeed, frequently very painful owing to the constant traction, thus making a secondary operation necessary. There is likewise a tendency to induce (f) closure of the fistula earlier than may be desired—a natural consequence of the undue traction to which I have alluded.

The relation of both the cecum and the appendix to the autonomic nervous system has been demonstrated by Langley. Through the dorsolumbar division of this system, hyperalgesias are given definite and recognizable expression in the abdominal wall. In this way we are enabled to reduce conditions involving these structures to a more definite basis for diagnosis and to control the pain originating in them, either before or after operation, without overwhelming the sensorium with powerful narcotics. And, now, having said this much by way of introduction, permit me to pass to the application of my observations to the following conditions:

IN AMEBIC DYSENTERY

The necessity for bringing the entire colon within the range of local medication, and the painful difficulty if not actual futility of doing so by injections through the rectum in the majority of cases of amebic dysentery, was the indication that first prompted the opening of the cecum as an elective operation in the otherwise medicinal treatment of this disease. The names of Skene Keith, White¹ and Murray are associated with the earliest development of this practice, which dates back only to 1895. Since that time the operation of cecostomy has been done for this purpose many hundreds of times, especially in the tropical countries in which the disease is prevalent. It has also been employed by John Bell² at the Government Civil Hospital, Hong Kong, for the treatment of dysentery caused by another but unnamed parasite peculiar to New Guiana. It was in a case of dysentery of possible amebic variety that prompted Weir³ in 1901 to attempt a cecostomy when, according to his own account, "as the cecum was exposed the appendix rose so naturally that I determined to employ it to make the desired fistula." This was the beginning of appendicostomy, subsequently so called by Willy Meyer⁴ of New York. The case did not prove to be amebic, but one of chronic mucous colitis, which was cured by the subsequent medication applied through the appendiceal tube.³ The results achieved by this method of treatment in the strictly amebic variety of the disease, especially when of long standing, stamps it as the treatment of choice for a malady that too frequently defies all strictly medicinal resources.

CHRONIC CATARRHAL OR MUCOUS COLITIS

The natural history of chronic catarrhal or mucous colitis and its resistance to all other forms of treatment and the comparative uniformity with which it yields to colonic lavage when applied and kept up through the cecum for periods varying from several weeks to several months, points to it as the one disease occurring in our climate that logically demands this form of intervention, especially in cases that

have defied other treatments. This holds true whether the disease is simple or ulcerative. Some of the most satisfactory results have, indeed, been realized in cases such as one that recently occurred in my own practice, in which large mucous casts were shed and in which on examination by the sigmoidoscope the whole surface of the descending colon and of the sigmoid seemed to be granular. Keetley⁶ reports a successful case in which no evidence of disease could be seen through the sigmoidoscope, but in which pain was experienced and mucous casts were shed from a localization of the disease evidently farther up than the splenic flexure of the colon. The value of the surgical treatment as compared with the former routine medical and dietetic treatment in the ulcerative variety of the disease is strikingly shown by two very contrasting reports. Murrell reported five cases of ulcerative colitis with four deaths and an average duration of ten months under polymedication. Holton C. Curl,⁷ quoted by Keetley, reported 11 cases with 8 recoveries and 3 deaths (1 from chronic nephritis and the other patient moribund at time of operation), the average duration being much less than Murrell's cases, all having been treated by lavage through the cecum.

Keetley himself reports ten cases with nine cures. My own experience has been limited to 4 cases with 3 cures—the fourth patient having voluntarily discontinued the treatment before results were realized. I have not had time to collect the statistics of the operation in these cases at the hands of representative operators, but from other data at hand I am sure that the figures given are fairly representative of the whole. There ought to be no primary deaths from this operation in favorable cases, and I have seen no record of fatality attributable to it. I wish, however, to be emphatic that the operation is not one to be carelessly undertaken, or in other than the best aseptic surgical surroundings.

CHRONIC CONSTIPATION

Constipation, especially of the atonic type and not complicated with enteroptosis, has yielded excellent results to colonic lavage through cecal irrigation. I may be pardoned if I refer briefly to a typical case in my own practice. A woman, age 42, was sent to the Good Samaritan Annex in April, 1909, with symptoms of intestinal obstruction. She gave a history of constipation extending over nearly her whole lifetime, the intervals between spontaneous defecations being sometimes as long as twelve days. The sigmoid was heavily laden, but the unloading of it by enemas and instrumental means did not relieve the symptoms of obstructions. I accordingly did an exploratory incision and found another focus of fecal accumulation—a virtual impaction—in the transverse colon near the splenic flexure. This was moved on into the descending colon by manual manipulation. Scybulous deposits could be felt in practically every convolution of the intestine. I thereupon opened the cecum and began the infusion of a very weak solvent and laxative solution, consisting of one ounce of magnesium sulphate to one gallon of water at 105 F. This was very slowly infused at intervals of every six hours until by the end of the second day the incredible amount of fecal discharge indicated that the colon had been thoroughly unloaded. The treatment was then continued by flushing the colon once daily with hot normal salt solution, the heat acting as a stimulus to provoke vigorous contractions of the bowel. This was

1. White, W. Hale: *Lancet*, London, March 2, 1895, p. 537.

2. Bell, John: *Lancet*, London, Jan. 16, 1909.

3. Weir, Robert F.: *Med. Rec.*, New York, Aug. 9, 1902.

4. Meyer, Willy: *Med. News*, Aug. 26, 1905.

6. Keetley, C. B.: *Brit. Med. Jour.*, Oct. 7, 1905.

7. Curl, Holton C.: *Ann. Surg.*, 1906, p. 543.

the central feature of a more comprehensive treatment, chiefly dietetic, that was continued for the next two months. The patient, with the tube *in situ*, went about her usual tasks after the second week following the operation. It was finally removed after seven weeks. The fistula closed spontaneously. Reports by other operators, notably Keetley,⁶ indicate not only that my experience is not unique, but that the treatment should be one of choice in all cases of chronic constipation due to atony and not complicated with coloptosis and in which other treatment has failed to bring permanent relief.

ACUTE SEPTIC PERITONITIS

The adaptation of a cecal opening for postoperative treatment of acute septic peritonitis is accomplished by the method that I have termed "coloclysis" and is illustrated by two cases that occurred in my service in the Cincinnati Hospital in May of this year, and recently reported to the Cincinnati Obstetrical Society. One patient, referred to the service by my colleague, Dr. E. W. Mitchell, was admitted five days after evident rupture of a pus tube, with temperature 103.5, pulse 130, respiration 26, general tympanites, white count 17,000. She was operated on immediately by incision on the right side, and a leaking pus tube was removed, as was the appendix vermiformis. The other tube was not involved. The patient required an intravenous salt infusion during the course of the operation, which I concluded by fixing the cecum in the incision, opening it and in the opening snugly adjusting a large-sized catheter. The patient was hurriedly returned to bed, a thick but short rectal tube was inserted and the cecal tube was attached to a reservoir of water at 105 F. In this way the colon was speedily filled, becoming in effect a hot-water bottle on the inside of the abdomen. As soon as reaction had been thus promptly induced and the colon had been thoroughly washed out, the treatment was kept up by the continuous infusion of normal salt solution through the cecal tube by the drop method. Later the patient was nourished through the tube. She made a prompt recovery. A second case occurred on the same service the week following and in all essential particulars as to the condition, operation and results was sufficiently like the preceding one to make a longer reference unnecessary in this connection.

The eligibility of coloclysis as compared with rectoclysis is, I believe, apparent. I may, however, emphasize the following points: 1. Coloclysis permits the immediate application of heat on the inside of the abdomen precisely at the place and at the time that it is most needed. 2. It at the same time thoroughly washes out the colon, thus removing not only the fecal content but the toxins with which it is laden. 3. It permits the immediate and indefinitely sustained infusion of normal saline solution into the colon at a point whence it cannot be expelled, voluntarily or involuntarily, by the patient and whence it must traverse the entire absorbent area by which can be and, in my experience, uniformly is taken up before it reaches the anus. 4. It permits the nourishment of the patient by the administration of liquid nutritives by the same method, under precisely the same conditions, and entirely independent of the tolerance of the rectum or the state of the stomach. 5. It makes possible the catheterization of the small intestine through the valvula coli and the consequent flushing of the upper bowel when necessary for the relief of either tympany or volvulus occurring in that division following operations.

INTUSSUSCEPTION

The association of ideas prompts me next to mention the eligibility of ostiomatic operations on the cecum in cases of intussusception. That this is the correct form of intervention in many, if not a majority, of these cases seems to be indicated by the phenomenal experience of Mr. Charles Clubbe,⁸ of Melbourne, in 144 operations performed in fourteen years. In the majority of the cases the trouble began in the ileocecal connection. The beneficial influence of the direct application of heat to a bowel wall that is injured on both its mucous and serous surfaces and that may be near the perishing point from long interference with its circulation is too obvious to require discussion. It is known, furthermore, that there is a tendency to early if not immediate recurrence in these cases and this tendency, it would seem, can be materially controlled by irrigating the cecum at will with considerable volumes of water. This contention has been resisted by Mr. Cardwine.⁹ As his objection is based on a single case of recurrence six months after the operation and presumably almost as long after the closure of the appendiceal fistula, I cannot concede that his point is well taken, except in so far as it shows that fixation of the cecum is not a guarantee against recurrence of the intussusception at some more or less remote period. On the other hand, that the tendency of such an anchorage of the cecum, in the event of recurrence, is to reduce the invagination to the minimum and to keep the trouble in the right lower quadrant where it can be more easily reached is certainly a fair deduction from the plain principles of physics that are involved. This is, furthermore, confirmed by the fact that the cases so far treated by this method point to its high efficiency.

DEFECTIVE FLORA OF THE COLON

The condition of defective flora of the colon is here specified because it is believed, first, that there is an approximately normal flora of the colon and, second, that bacterial deficiencies in the colon are sometimes responsible for the impairment of its functions. This was shown in a case in which I did an appendicostomy in January, 1909,¹⁰ and in which the study of the flora of the colon was begun by Dr. W. H. Strietmann of the bacteriologic department of the University of Cincinnati. Standardization bouillon and agar-agar were used and inoculations were made from the feces, both through the wound in the cecum and as they were discharged by the rectum. After the cultures were incubated plates were poured. These observations showed no anaerobes, while the plates revealed only a pure culture of a bacillus with rounded ends, non-motile, which produced acid and gas and coagulated milk and was probably *Bacillus lactis aerogenes*.

Ten days later it was found that one of the plates revealed a single colony of *B. coli communis*. Later cultures modified this finding but slightly. Those from February 3 to 6 showed greenish coloration in the bouillon, while the hanging-drop revealed a motile bacillus and a non-motile one of different size. Agar plates showed the same green color and this same bacterium in Gram-positive. It was probably *B. pyocyaneus*, which may have reached the colon through the appendicostomy wound.

8. Clubbe, Charles: Brit. Med. Jour., June 15, 1907.

9. Cardwine, S.: Brit. Med. Jour., Jan. 16, 1909.

10. Reed, Charles A. L.: Direct Bacterial Treatment of the Colon through the Vermiform Appendix, THE JOURNAL A. M. A., Feb. 23, 1909, III, 636.

These revelations, indicating the practically complete absence of the usual flora of the colon, suggested a change of treatment. Milk cultures of the *B. lactis aerogenes*, *B. bulgaricus* and the *Streptococcus lacticus* were accordingly thrown through the tube directly into the colon. This on two occasions was fortified with the *Saccharomyces cerevisiae*. The trend of the case was in the direction of a more normal average flora according to the standard established by Herter, when the patient discontinued the treatment. I urge these observations as suggestions for a further trial by other operators.

AUTOINTOXICATION OF INTESTINAL ORIGIN

The series of facts established by Herter, namely, first, that oxygen exists only in the small intestines; second, that bacteria in the large intestines must, therefore, be anaerobic; third, that these anaerobes elaborate a toxin, and, fourth, that this toxin is absorbed from the colon into the system, is a logical explanation of many abnormal conditions affecting the general system.¹¹ Hollis, Ditmar and Burch,¹² accepting this theory of causation of pernicious anemia, have successfully treated that disease by colonic lavage through the cecum. Laplace¹³ has reported cure in a case of idiopathic epilepsy that had existed from childhood in a patient of 23 and that had developed into daily seizures of great severity. The patient had no seizure after the first day following operation for the establishment of lavage through the cecum. The irrigations were continued for ten months. Armstrong has reported¹⁴ the successful treatment of rheumatoid arthritis by the application of the same principle. Bennett,¹⁵ Ewart¹⁶ and Maunsell¹⁶ have called attention to the advantage in dealing in this way with the toxins elaborated in the course of enteric fever. Dr. R. W. Thomas,¹⁷ of the Cincinnati Hospital, to whom I am indebted for much research on this question, has developed the physics involved in the application of this method to the irrigation of the small intestines in typhoid.¹⁸

CONCLUSION

I wish in conclusion to emphasize a few facts which, I believe, have become apparent from this brief survey¹⁹ of an extensive subject as follows:

11. Dr. J. M. T. Finney, Baltimore, in the discussion of this paper, urged that this method of treatment deserved more serious consideration as the treatment of election in cases of neurasthenia dependent, of course, on auto-intoxication of intestinal origin, and alluded to some successful experiences at his own hands.

12. Burch, Lucius E.: Appendicostomy in Pernicious Anemia, THE JOURNAL A. M. A., March 13, 1909, lii, 888.

13. Laplace, Ernest: Preliminary Report of the Treatment of Idiopathic Epilepsy by Appendicostomy for Colonic Irrigation, THE JOURNAL A. M. A., June 2, 1906, xlvii, 1678.

14. Armstrong, W.: Lancet, London, Feb. 13, 1909.

15. Bennett, Sir W. H.: Lancet, London, Feb. 17, 1906, p. 419.

16. Ewart, William: Lancet, London, May 12, 1906.

17. Personal letter to the author.

18. Dr. W. M. Polk, New York, in the discussion of this method as applied to the treatment of "typhoid reservoirs," i. e., persons who having had typhoid fever and having thus become immune and in whom the typhoid bacillus has become a permanent feature of their intestinal flora, continue to disseminate the disease through their dejecta. He instanced "Typhoid Mary," a somewhat notorious example of this form of pestilential center, to whom many cases of typhoid had been traced, and who had finally been quarantined for the protection of the community.

19. Additional contributions to which, in a general way, I am indebted for my conclusions on this subject, are:

Allen, R. W.: Brit. Med. Jour., Nov. 28, 1908.

Barry, C. C.: Indian Med. Gazette, June, 1908.

Bolton, Percy R.: Ann. Surg., May, 1901.

Bushnell, F.: Brit. Med. Jour., Nov. 28, 1908.

Dawbarn, Robert H. M.: Ann. Surg., 1903, p. 613.

Dawson, J. B.: Brit. Med. Jour., Jan. 9, 1909.

Gant, S.: New York Med. Jour., Sept. 8, 1906.

Glover, S. G.: Lancet, London, Jan. 9, 1909.

Gray, H. M. W.: Brit. Med. Jour., March 3, 1906, p. 596.

Gray, Oscar: Tr. Ark. State Med. Assn., 1908.

Pottenger, J. A.: Lancet, London, Dec. 28, 1907.

Stritton, J. L.: Lancet, London, March 14, 1908.

Willis, W. Morley: Lancet, London, April 28, 1906.

Tuttle, James P.: Appendicostomy, THE JOURNAL A. M. A.,

Aug. 11, 1906, xlvii, 426.

1. The establishment of colonic irrigation through the cecum, whether by cecostomy or appendicostomy, is a procedure which, when properly done under safe surroundings, is attended with the minimum of surgical risk.²⁰

2. The application of the operation as an adjunct of medical treatment, under the conditions indicated, is based on the principle of direct treatment of the colon for conditions that are local to the colon.

3. The operations of (a) coloclisis in septic peritonitis; cecal access to the colon (b) for purposes of nutrition following operation, (c) for irrigation and medication in amebic dysentery, (d) for chronic mucous colitis and (e) for other conditions of the mucosa of the colon not amenable to other treatment, stand on a basis of logical and clinically demonstrated value.

4. The treatment of various toxemias due to auto-intoxication of intestinal origin offer a field for the legitimate trial of ostiomatic operation on the cecum as a means of bringing the colon under control and eliminating its toxic content.

5. The results so far realized justify the continued use of the operation and the more extended application of the principle that it embodies.

60 The Groton.

THE VALUE OF BLOOD-CULTURES IN THE DIAGNOSIS OF TYPHOID FEVER *

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The aspect of typhoid fever which has aroused most interest within the past few years is the presence of the bacillus in the blood. Although it had not infrequently been recovered, the impression was general, until five or six years ago, that the typhoid bacillus rarely invaded the circulating blood. In an exhaustive review of the bacteriology of the blood in 1903, Rosenberger¹ showed that this view must be modified. He collected the records of all the examinations to date, numbering 518, in which the bacillus was recovered 419 times. Although it was thus proved that invasion of the blood-stream is frequent, the belief remained that in typhoid, as in diphtheria, bacteriemia is a mere incident of the infection and by no means requisite to the production of the clinical picture.

In 1907 Coleman and Buxton² published an analysis of 1,602 examinations, including 123 of their own, of which 75 per cent. were positive. These were made at all stages of the disease and by different methods. That the number of positive results by no means represents the true frequency with which the bacillus is present in the blood is shown by the higher percentages of many of the workers, some finding the bacillus in every case examined. Coleman and Buxton conclude that "the typhoid bacillus is present in the blood in every case of typhoid fever, and that failure to recover it is due to error of technic," and they advance the theory

20. Dr. G. S. Hanes, in discussing this paper, stated that he had treated many cases of amebic dysentery by irrigating the colon through the rectum but that he had been unable to do so satisfactorily without opening the cecum—I think by appendicostomy—for the purpose of permitting the displacement of the gas always present in the colon.

* Read before the Medical Society of the City and County of Denver, Oct. 19, 1909.

1. Rosenberger: Am. Jour. Med. Sc., 1903, exxvi, 234.

2. Coleman and Buxton: Am. Jour. Med. Sc., 1907, exxxiii, 896.

that the disease is "caused by destruction of vast numbers of bacilli in the blood, with liberation of their endotoxins and the consequent reaction on the part of the host. Where the endotoxins are liberated elsewhere in the body, e. g., in abscesses, the symptomatology is not that of typhoid fever."

During these purely scientific studies of the bacteremia of typhoid it became evident that blood-cultures might be turned to practical account in clinical work. If, as seems probable, the presence and destruction of bacilli in the blood are the essential factors in the causation of the disease, a bacteriologic examination of the blood is a rational procedure and should offer a means of making an absolute diagnosis, being limited only by insurmountable difficulties in technic. If, on the other hand, the bacteremia is a mere incident of the infection, more or less accidental even though frequent, the method is an empirical one, and its value can be determined from the records of a considerable number of cases. Nearly all the work in the past few years has, accordingly, been directed to these practical ends: (1) simplification of technic, so that the method might be available for routine work; and (2) determination of its value and limitations when so applied. Results attained in clinical work, where simple methods and quick returns are imperative, would presumably be less reliable than those reached in research with elaborate and time-consuming methods.

The greatest advance in technic was the introduction by Conradi,³ Kayser⁴ and others of the bile culture media. The older cumbersome and time-consuming methods which constituted the chief bar to the general use of blood-cultures were done away with, and the method at once became available for clinical work. Further advances have been along the line of showing how easily the work can be done, as, for example, that excellent results can be had with blood from a simple puncture of the skin like that required for a blood-count.

In discussing the practical value and limitations of the method, a number of points must be considered: the frequency of positive results and the stage of the disease in which they are obtained; the value of the method compared with the Widal agglutination test; the time required; and certain details of the technic.

I. FREQUENCY OF POSITIVE RESULTS

The 1,602 examinations yielding 75 per cent. positive results, which were collected by Coleman and Buxton, have already been mentioned. These authors state that they themselves have recovered the bacillus from all of the 24 cases examined since their adoption of the bile medium. Epstein,⁵ using various media, obtained positive results in 70.5 per cent. of 122 examinations, but mentions that more of his cases were studied late in the disease than has been the case with other workers. Joslin and Overlander⁶ reported 30 examinations, of which 70 per cent. were positive. Very recently Lyons⁷ has recorded 20 examinations, 90 per cent. of which were positive. The total frequency of positive results is thus about 75 per cent.; but this by no means represents the value of the blood-culture in diagnosis. The important fact is that the highest percentages appear

early in the disease, when other methods of diagnosis are least reliable. Thus, Coleman and Buxton's collected cases gave 89 per cent. positive in the first week; 73 per cent. in the second; 60 per cent. in the third; 39 per cent. in the fourth; and 26 per cent. after the fourth. Epstein recovered the bacillus from 7 out of 8 cases in the first week; 39 of 44 cases in the second; 25 of 42 cases in the third; and 8 of 15 cases in the fourth. In 23 relapses, he recovered the bacillus 16 times. Joslin and Overlander's cases are classified as follows: first week, 5 cases, all positive; second week, 19 cases, 11 positive; third week, 2 cases, both positive; later, 4 cases, 3 positive, including two in relapse, both positive. Of Lyons' 20 cases, 11 were in the first and second weeks, and these were all positive. All of these workers obtained the blood from a vein.

Conradi was the first to indicate that a large quantity of blood is not imperative, and that excellent results can be had with blood from an ordinary skin puncture. He used 0.5 to 2 c.c. of blood from the ear and isolated the specific organism in 50 per cent. of 56 cases of typhoid and paratyphoid. This simple manner of securing the blood was subsequently neglected until Peabody,⁸ early in 1908, confirmed and emphasized its usefulness. He reported 33 examinations: 5 cases in the first week, all positive; 19 cases in the second week, 78.9 per cent. positive; 9 cases in the third and fourth weeks, 44.4 per cent. positive. Taft and Maybee⁹ studied a total of 98 cases by this method. They recovered the bacillus in 95 per cent. of 20 cases in the first week; 17.7 per cent. of 71 cases in the second week; and 14.2 per cent. of 7 cases in the third week.

Very recently I have made blood-cultures in 32 cases of suspected typhoid fever, some at the County Hospital, some in private work; and, although the series is small, it well illustrates the usefulness of this method of diagnosis. Nine of the patients proved not to have typhoid, and in none of these was any organism recovered from the blood. Of the remaining 23 cases, 17, or 73.9 per cent. gave the typhoid bacillus, and 6 gave no growth. In a few cases, early in the disease, the blood was obtained from a puncture of finger or ear; in most cases it was obtained from a vein; but as the results were identical they are included together in the tabulated analysis.

TABULATED ANALYSIS OF BLOOD-CULTURES

	—Blood-Culture—			—Widal—		
	No. Cases.	No. Positive.	%	No. Cases.	No. Positive.	%
First week . . .	5	5	100	4	3	75
Second week . .	10	9	90	9	7	77.7
Third week . . .	8	3	37.5	7	6	85.7
Total	23	17	73.9	20	16	80

All of the nine examinations made prior to the tenth day of the disease were positive.

It is thus clearly evident that the blood-culture offers an almost certain means of diagnosis in the first week and is very helpful, though progressively less so, later in the disease; and that it is a valuable aid in distinguishing a true relapse from a febrile complication. In the first week it is probably a matter of indifference whether the blood be obtained from a vein or a skin puncture. The simplicity of the latter procedure removes the only remaining obstacle to the general use of blood-cultures in typhoid—the general reluctance to

3. Conradi: *Deutsch. med. Wchnschr.*, 1906, xxxii, 58.

4. Kayser: *München. med. Wchnschr.*, 1906, lili, 823.

5. Epstein, A.: *Am. Jour. Med. Sc.*, 1908, cxxxvi, 190.

6. Joslin and Overlander: *Boston Med. and Surg. Jour.*, 1908, clviii, 667.

7. Lyons, Randolph: *The Clot-Culture in Conjunction with the Agglutination Test in Typhoid*, *Arch. Int. Med.*, 1909, iv, 64.

8. Peabody, F. W.: *The Diagnosis of Typhoid Fever by Cultures from the Blood of the Ear*, *Arch. Int. Med.*, 1908, i, 149.

9. Taft and Maybee: *Boston Med. and Surg. Jour.*, 1908, clviii, 863.

undertake a formal vein puncture—and should ensure their employment in every suspected case.

II. COMPARISON WITH THE WIDAL TEST

The blood-culture and the Widal agglutination reaction are in a certain sense complementary. The former becomes less reliable as the disease progresses, while the reliability of the latter steadily increases. This is to be expected when one considers that increased production of the antibodies on which the agglutination phenomenon depends must result in increased destruction of bacilli in the blood. Even though living bacilli be present, their vitality may be so reduced that they will not grow. On theoretical grounds, then, one would expect best results with blood-cultures when the Widal test is negative, and this accords with the empirical facts. The Widal is commonly negative in the first week of the disease, whereas the bacilli can be recovered in practically every case at this stage. My own cases sufficiently illustrate this: Of seven examinations before the tenth day, where the two tests were made together, the bacillus was recovered in 7 (100 per cent.), while the Widal was positive in four (57 per cent.). Early diagnosis is the goal in all clinical work and is especially important in typhoid fever in view of the now recognized contagiousness of the disease in the first week; and for this the blood culture is pre-eminently the method of choice. Bacilli have been recovered from the blood four days before the appearance of symptoms. Combination of the two methods will establish the diagnosis with certainty in nearly every case at any stage.

A simple and useful outgrowth of the formal blood-culture is the "clot-culture" used as confirmation and elaboration of the Widal test. Various European workers have recovered the bacillus from the clot remaining after a Widal examination—representing often less than a drop of blood. The examinations reported by Müller and Gräf,¹⁰ Fornet,¹⁰ Kurpjuweit,¹⁰ and Conradi¹¹ total 539, the bacillus being recovered in 160, or about 30 per cent. Clot-cultures have been seldom used in this country. Recently Lyons⁷ reported 20 examinations and made an interesting comparison. The clot-culture was positive in 12 cases (60 per cent.), the Widal in 10 (50 per cent.), and the two coincided in only 5 cases. By combining the clot-culture with the Widal the diagnosis was established in 85 per cent., which almost doubled the value of the latter used alone.

Another advantage of the culture is its definiteness. Although there is some variation in the time necessary to reach a conclusion, the final result is definitely negative or definitely positive. Any one who has made a considerable number of Widal examinations knows the frequency of doubtful reactions, where the personal experience of the worker is the chief factor in their interpretation.

Still another advantage of the culture method is in paratyphoid infections, which resemble typhoid clinically, but usually fail to give the agglutination reaction with typhoid bacilli. Here cultures are as valuable as in true typhoid, the paratyphoid bacillus being distinguished from the typhoid chiefly by its action on certain sugars. These cases are not very frequent, but may lead to much confusion because of the persistent absence of the Widal test.

III. TIME REQUIRED

This is always an important consideration in a clinical method. Taft and Maybee were able to find the bacillus within twelve hours in many cases; in other cases eighteen or twenty-four hours were required. Only once, when the bacilli were present at all, did I fail to find them within twenty-four hours. This exception occurred in a mild case when only ten drops of blood were used.

IV. TECHNIC

Briefly, the method is as follows: The blood is obtained from a skin puncture or a vein, and is put as soon as possible into a test-tube containing the special culture medium. This is incubated for six to twelve hours, and tubes of bouillon or solidified blood-serum are inoculated. These also are incubated, and at intervals stained and hanging-drop preparations are made and searched for bacilli. If motile, Gram-negative bacilli are found, they are presumably typhoid bacilli, but cultures on special media are required to identify them positively.

Certain details require special mention.

Where the procedure can be carried out properly, it is preferable to secure the blood from a vein. By furnishing a larger quantity of blood it increases the likelihood of finding the bacillus; and it prevents contamination by bacteria from the skin. The skin at the bend of the elbow is prepared as for any minor operation, or it may be simply well rubbed with 80 per cent. alcohol; a bandage is applied to the upper arm; and, when the veins are sufficiently distended, a hypodermic needle attached to a syringe is introduced into any one that is prominent. Blood generally begins to rise in the syringe at once. When a sufficient quantity is obtained, the bandage is loosened, the needle withdrawn, and the blood allowed to run into the culture-tube. It is usually easy to secure 2 to 5 c.c. of blood, often more. The chief disadvantage of the method is that it requires a nurse or other assistant, and that the preparations may disturb a nervous patient. The operation itself causes surprisingly little inconvenience, seldom more than an ordinary hypodermic injection. There is usually little difficulty in entering the vein, except in children and in adults when the arm is fat and the veins are small. Instead of a syringe one can use a large glass tube which has been drawn out at the ends and ground to fit a "slip-on" hypodermic needle. These little instruments cost only about fifty cents, and several of them can be kept on hand in test-tubes sterilized ready for use.

In the other method a puncture of the ear is made exactly as for a blood-count, and the blood is pressed out and allowed to drop directly into the culture tube. This is open to the objections that only a small quantity of blood is secured—seldom more than 1 or 2 c.c.—and that the likelihood of contamination is great. It has been clearly proved, however, that results are little, if at all, inferior, in the first week, to those with the more elaborate method, and that, while contamination is always possible, it does not greatly interfere with detection of the bacillus when bile medium is used. This simple procedure is applicable to all cases in the first week, and may be used during the second week when conditions are not favorable for the more formal method, as is usually the case in private houses.

The medium which is now used by the majority of workers is simple ox-bile or pig-bile sterilized in an

10. Cited by Lyons: *Arch. Int. Med.*, 1909, iv, 64.

11. Conradi, H.: *Bacteriologic Early Diagnosis of Typhoid*, München. med. Wchnschr., 1907, liii, No. 49; abstr. in *THE JOURNAL A. M. A.*, 1907, xlviii, 375.

autoclave. I use a 12 or 15 per cent. solution of Squibb's inspissated ox-gall and sometimes add 1 or 2 per cent. of peptone. Advantages claimed for the bile medium are that it prevents coagulation of the blood and consequent increase of its bactericidal power; that it allows the use of small quantities of medium which can be handled in test-tubes; that it furnishes a most excellent medium for the growth of the bacillus, which is an important consideration in view of the probability that most of the bacilli in the blood may be much reduced in vitality, and that it retards the growth of most contaminating organisms. Certain workers have thought that the advantage of the bile lies solely in its prevention of coagulation of the blood. Epstein,⁵ after a careful study of various media, reports even better results with his oxalate solution.

When a Gram-negative, motile bacillus is found, it may be reported at once as very probably the typhoid bacillus. In every case in which I recovered an organism with these characteristics, it proved on further study to be the typhoid bacillus. Others, however, have recovered paratyphoid and colon bacilli, so that further tests should always be carried out, such as gas formation in dextrose media and indol production. The agglutination test for the identity of the bacillus is not available in routine work, since, as is well known, freshly isolated bacilli do not agglutinate well.

CONCLUSIONS

1. Bacilli are present in the blood in every case of typhoid fever throughout its course, and their destruction with liberation of endotoxins is the probable cause of the disease.

2. Bacteriologic examination of the blood offers a means of making a positive diagnosis in practically every case during the first week. Its usefulness decreases as the disease progresses, but is still great during the second and third weeks.

3. The blood-culture is in a sense complementary to the Widal test, the one decreasing as the other increases in reliability; but the former is the more useful in that it allows of earlier diagnosis, and that its results are not liable to misinterpretation. The two methods, used together, will establish the diagnosis in nearly every case at any stage.

4. Bacilli disappear from the blood in convalescence and reappear in a relapse; and a culture is thus useful in distinguishing a true relapse from a febrile complication.

5. The technic is so simple that the blood-culture is applicable to routine clinical work, and should be employed in every suspected case. The most reliable results are secured when the blood is withdrawn from a vein, and this method should be adopted whenever practicable. When the blood is obtained from a skin puncture, results in the first week are slightly, if at all, inferior; and this method may be used when the other is not feasible.

6. The time required for detection of the bacillus is usually twenty-four hours.

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Achondroplasia in a Twin.—Achondroplasia in a female twin aged 18 months is reported by Hutchison (*Proc. Royal Soc. Medicine*, December, 1909). The other twin, a boy, was normal. The children were born at full time. The health of the mother during pregnancy was good. There had been two miscarriages.

SOME EFFECTS OF SODIUM BENZOATE *

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INTRODUCTION

This research was undertaken because of strikingly different experiences with sodium benzoate when taken by mouth in the following ways: (a) pure, as dry crystalline salt, or in aqueous solution; (b) in neutral or alkaline solutions, or in mixtures rich in fat, carbohydrate or protein, e. g., milk; (c) in acid vegetables or fruit, either warm, as in tomato soup, or cold, as in canned plums, peaches, tomatoes, etc.; (d) in beverages containing large percentages of organic acids, e. g., cider, lemonade, grape juice, etc.; (e) in mixtures containing inorganic acids, e. g., artificial gastric juice.

Brunton¹ has compiled data that show the comparative arresting influence of various drugs on the action of ferments (Table 1). From these data it is evident that the inhibiting action of a given amount of benzoic acid in combined form, e. g., sodium benzoate, is very much weaker than when the benzoic acid is free.²

TABLE 1

Comparative effects of benzoic acid and sodium benzoate on ferments in aqueous solution. The numbers indicate the dilution in which one part of the substance is effective in stopping the action of the enzyme.

	Emulsin.	Myrosin.	Diastase.	Invertin.	Ptyalin.	Pepsin.	Pancreatin.	Rennet.
Benzoic acid.....	2100	1100	1025	400	2600	200	2600	300
Sodium benzoate.....	100	20	100	65	86	...	....	50

Comparative effects of benzoic acid and sodium benzoate on the development of anthrax bacteria. The numbers indicate the dilution in which one part of the substance is effective.

	(Lacroix) Prevents.	(Brunton) Hinders.	(Brunton) Kills.
Benzoic acid.....	2800	2000	400
Sodium benzoate.....	....	200	...

Lehmann³ quotes Fleck as saying that the inhibiting power of benzoic acid on yeast fermentation decreases with increase of associated protein. Lehmann states, on the basis of his own experiments, that in the presence of relatively large quantities of albumin, or where the reaction is alkaline, neutral, or weakly acid, sodium benzoate is not a good preservative.

In Doepner's experiments,⁴ physiologic salt solutions, containing also, respectively, 1 and 2 per cent. of sodium benzoate, were inoculated with *B. enteritidis* and stored in a refrigerator. Samples of these solutions were withdrawn from time to time and smeared on slant agar. The tests showed, after forty-eight hours, that there had been neither destruction of the bacteria nor any retardation of their growth. Similar tests at room temperature,

* From the Laboratory of Biological Chemistry of Columbia University, at the College of Physicians and Surgeons. This paper was read by invitation before the Society for Experimental Biology and Medicine, May 26, 1909 (Proceedings—abstract—1909, vi, 122); also before the Association of State and National Food and Dairy Departments in Denver, Aug. 26, 1909.

¹ Because of limitation of space, this article is here abbreviated by the condensation of several tables and the omission of others. All the tables appear in full in the author's reprints.

1. Brunton: Text-Book of Pharmacology, Therapeutics and Materia Medica, London, 1878, Ed. 3, p. 78.

2. Ordinary commercial sodium benzoate (C_6H_5COONa , H_2O) contains about 75 per cent. of the radical of benzoic acid (C_6H_5COO-), but whereas 1 part of benzoic acid in 2,100 parts of water arrests the action of emulsin, 21 parts of sodium benzoate must be present in a like volume to produce the same effect. A similar subordinate relation to benzoic acid is shown by sodium benzoate when comparative toxicity to other enzymes and bacteria is considered.

3. Lehmann: Chem. Ztg., 1908, xxxii, 949.

4. Doepner: Aerztliche Sachverst.-Ztg., 1909, xiii, 501.

however, with solutions containing 0.5 per cent. or 1 per cent. of sodium benzoate, gave evidence of a slight retardation of growth of this bacterium.

Fleck found that benzoic acid, in concentration equal to 0.6 or 0.7 per cent., caused marked inhibition of yeast fermentation, and that the arresting action was materially diminished by an increase in the amount of protein present. Lehmann observed that meat extract putrefied in the presence of 1 per cent. to 2 per cent. of sodium benzoate, but that a smaller proportion of benzoic acid was more strongly antiputrefactive in its action when the reaction of the extract was markedly acid. He also found that the action of benzoate under strongly acid conditions was practically the same as that of an equivalent amount of benzoic acid, but that it was diminished with decrease of the associated acidity.

EXPERIMENTAL

About a year ago I observed that, although no irritating effect was produced in the mouth, throat, esophagus, stomach or intestines by certain proportions of sodium benzoate when taken in cold, fresh milk, on the other hand, a very pronounced action followed the ingestion of the same proportions of that substance in warm tomato soup. The observations were made during a lengthy series of experiments in which I took sodium benzoate in milk at meal time. I drank the benzoated milk intermittently during the meals.

Pure sodium benzoate has a sweet, non-irritating taste, and, when added to fresh milk, imparts to the milk a sweet, bland taste, which is not rendered disagreeable by amounts of sodium benzoate equal to from 3 to 4 per cent. I have observed, however, that even very small proportions of sodium benzoate, e. g., 0.1 per cent. to 0.2 per cent. induce a decided effect on the flavor of warm tomato soup. Thus, in such soup, these slight proportions of sodium benzoate produce the burning, acrid irritation, specially noticeable in the posterior part of the buccal cavity, characteristic of benzoic acid. Sometimes even smaller proportions produce, in specially susceptible subjects, the sensation and effects of benzoic acid, such as burning in the esophagus and stomach, followed by nausea, gastric pain, cutaneous warmth, fulness of the head and muscular weakness. This is especially true when the benzoate is taken in warm, strongly acid, fruit juices or extracts.

These and similar observations led me to endeavor to answer the following questions:

1. Is benzoic acid toxic?
2. Is sodium benzoate toxic?
3. What is the degree of antiseptic action or toxicity of sodium benzoate, as a vehicle for benzoic acid, when the benzoic acid is liberated from it and allowed to act in the free state?
4. Has sodium benzoate an undesirable effect when consumed in fruits or other acid foodstuffs commercially preserved with sodium benzoate?
5. What are the influences of various diets on the effects of benzoic acid and sodium benzoate?

I. EFFECTS ON MICRO-ORGANISMS

1. Influence on the Fermentation of Fruit and Vegetable Juices

About fifty samples of juice from various fruits and vegetables were obtained and treated as follows: The material to be examined was reduced to a pulp, the juice was expressed from half (A) of the mass and filtered. Specimens of this juice (50 c.c.) were placed in beakers

(usually 4 to 14). To each of half the number of samples in a set (a) was added 0.5 gm. of sodium benzoate (1 per cent.).⁵ The mixtures were thoroughly stirred and set aside, uncovered, on a shelf in the laboratory. The remaining samples in each set (b) were used as controls. The unfiltered juice from half (B) of the original pulp in each case was subjected to the same treatment as that given the filtered half (A, a and b).

Tomatoes, apples, oranges, plums, lemons and carrots were used, with the following results: *Unpreserved* pulp, from each of the sources indicated, spoiled in from twenty-four to forty-eight hours, as was shown by discolorations and the presence of mold colonies. The unfiltered and unpreserved juices tended to spoil more promptly than did the corresponding filtered juices. Molds soon appeared on the surface of the unpreserved filtered juices as well as on the pulps and unfiltered juices; at first as a delicate, whitish growth, but later as a heavy olive-green, felt-like mass. The mold seemed to consist chiefly of *Penicillium*. In the *preserved* specimens clear, shining crystals, found to be benzoic acid, separated on the surfaces of the juices with the strongest acid reactions and in the substance, as well as on the surface, of the pulp specimens. No mold or discoloration occurred in the preserved specimens by the end of twenty days.

Specimens of carrot-pulp, which were neutralized with sodium carbonate, spoiled within twenty-four hours, despite the presence of 1 per cent. of sodium benzoate.

Special experiments were conducted to determine the action of sodium benzoate on the fermentation of apple-juice. Pure apple-juice ferments markedly within thirty-six hours, under ordinary conditions of exposure. Five liters of pure apple-juice, to which had been added sodium benzoate to the amount of 0.1 per cent. and cane-sugar to the proportion of 1 per cent., did not seem to ferment before the twenty-sixth day. The evolution of carbon dioxid continued slowly after the twenty-sixth day for two weeks. Several months thereafter the juice was sour, tasted slightly of benzoic acid, but was not appreciably alcoholic.

Pure apple-juice, treated with sodium benzoate to the amount of 0.1 per cent. and kept in uncovered beakers, developed mold in five to nine days. Under the same conditions, commercial preserved apple-juice failed to develop mold or become turbid.

2. Influence on the Fermentation of Milk

Fifteen 50 c.c. samples of a given supply of fresh milk were placed in as many beakers.

Samples 1 to 6 were set aside, untreated and uncovered, on a shelf in the laboratory. Each of these six specimens became quite thick in twenty-six hours, contained bubbles of gas and tasted sour. At the end of twenty-eight hours, to one of these sour samples 0.5 gm. of sodium benzoate were added. The sour taste disappeared, but a slight taste of benzoic acid was distinguishable after the mixture had been thoroughly stirred. The sodium benzoate taste was also marked. At the end of seven days no mold had appeared on this specimen, which, at that time, also tasted of both benzoate and benzoic acid. The five remaining unpreserved specimens were moldy at the end of forty-eight hours. By the end

5. Dr. Hortvet, State Chemist of Minnesota (Rep. of Chemist, Dairy and Food Dept., Minnesota, 1908; from Twelfth Biennial Report of the Commissioner, 1909, p. 23), found that out of 33 samples of acid commercial foodstuffs examined, none were free from sodium benzoate. In 29 of the specimens the amount of contained benzoate ranged between 0.10 and 0.67 per cent. In four the amounts of sodium benzoate were 0.06-0.09 per cent.

of the third day a mixture of reddish and greenish felt-like molds had grown on the surfaces of the unpreserved milk specimens. At the end of nine days the heavy felt-like layer was removed. The clabber below tasted sour.

Samples 7 to 11 were treated with 0.5 gm. of sodium benzoate in each case (1 per cent.) and allowed to stand under conditions identical with those to which Samples 1 to 6 were subjected. They had the characteristic taste of sodium benzoate, but no taste of benzoic acid was apparent until after the lapse of twenty-four hours. The samples then began to develop a benzoic acid taste. At the end of ten days they had not thickened, but appeared to be more fluid than they were originally. At that time the fat had separated out in a solid cake on the surface, but no mold had appeared on any of the samples, which tasted *slightly* of benzoic acid and strongly of benzoate. The sweetish taste was followed by a burning sensation ten to twenty seconds after the material had been swallowed.

To Sample 12 was added 5 c.c. of litmus solution, 10 c.c. of very dilute ammonium hydroxid, and 0.5 gm. of sodium benzoate. It was allowed to stand with the other samples. It remained neutral throughout the first day. When the specimen was observed on the second day it was acid in reaction and tasted of benzoic acid. It did not thicken or get moldy.

To Sample 13 was added 0.5 gm. of litmus, 2 c.c. of 5 per cent. sodium carbonate solution and 0.5 gm. of sodium benzoate. It was allowed to stand with the other samples. It became acid in twenty-four hours. The fat cake on the surface of the specimen was red. The samples did not thicken, but a heavy mold developed, although the taste of the benzoic acid was noticeable.

Sample 14, to which powdered litmus was added, became sour in twenty-four hours under the external conditions to which all the samples of the series were subjected. Clabber formed in forty-eight hours, and there was a heavy growth of mold on the sixth day.

Sample 15, to which 5 c.c. of 0.5 per cent. sodium carbonate was added, became acid on the second day, but did not thicken. A cake of fat formed on top and a slight growth of mold appeared on the sixth day; heavy mold developed later.

In similar experiments on 30 samples of various kinds of fresh milk, e. g., certified, pasteurized, kosher, and plain market milk, the above observations have been confirmed.

One specimen of pasteurized milk, containing 1 per cent. of sodium benzoate and kept at room temperature, thickened on the seventeenth day. One such preserved specimen kept in a refrigerator developed mold on the eleventh day. One milk specimen containing 1 per cent. of sodium benzoate, and placed in a refrigerator, did not develop the taste of benzoic acid in seventeen days, but had a sweetish taste and smelled putrid.

3. The Action of Free Benzoic Acid on Fresh Milk

When 1 per cent. of benzoic acid is present in fresh milk, thickening of the specimens is delayed very little, if at all. It was observed that, in a very short time after such proportions of benzoic acid were mixed with fresh milk, all taste of benzoic acid disappeared, the specimens assuming a modified benzoate taste, which persisted until a few hours before the general thickening occurred, when the benzoic acid taste again became evident. It seems probable that some constituent or constituents of the milk are capable of combining with free benzoic acid

and thus preventing the irritating action of benzoic acid on the mucous membranes of the alimentary tract, as well as modifying its taste, when swallowed in milk. The proteins, as well as the alkaline phosphates, may have this property. An inquiry into this matter was made in the following experiment:

Into each of twelve test-tubes 10 c.c. of sweet milk was poured, and 0.01 gm. of sodium benzoate (0.1 per cent.) was then added to each of ten of these portions of milk. Decreasing amounts of benzoic acid were then added to seven of these mixtures. The twelve tubes then contained the following:

Tube No.	Benzoate.	Benzoic Acid.	Tube No.	Benzoate.	Benzoic Acid.
	Gm.	Gm.		Gm.	Gm.
1	0.01	1.0	7	0.01	0.05
2	0.01	0.8	8	0.01	none
3	0.01	0.6	9	0.01	none
4	0.01	0.4	10	0.01	none
5	0.01	0.2	11	none	none
6	0.01	0.1	12	none	none

The time of precipitation and thickening are indicated in Table 2, from which it is evident that sodium benzoate tends to delay coagulation. The data in that table also show that benzoic acid tends to counteract the retardation of coagulation in proportion to the amount added, and even to hasten the thickening of milk when added in large amounts. It was noted that Sample 1 tasted of benzoic acid throughout the experiment; Sample 2 developed that taste on the second day; Samples 3, 4, 5 and 6 had a very slight taste of benzoic acid on the second day as well as a strong taste of sodium benzoate; while Samples 7, 8, 9 and 10 tasted only of benzoate, and Samples 11 and 12 (controls) had the ordinary taste and souring set in at the usual period.

From these and the previously mentioned results it may be concluded that one or more constituents of milk have the power of combining with relatively large amounts of benzoic acid, detoxifying it so as to render it comparatively non-inhibiting to the lactic acid ferment (?) and non-irritating to mucous membrane, until the fermentation acidity is developed to a strength sufficient to enforce the presence of free benzoic acid.

II. EFFECTS ON MEN

1. Influence When Administered in Acid Fruit-Juices, Vegetables, and Milk

Samples of milk and of the pulp of tomato (warm and cold), orange, lemon, apple, plum and carrot, containing 1 per cent. of sodium benzoate, were tasted by fourteen different persons. Not more than 0.1 gm. of benzoate was taken at a time in this way in about three tests per day. Each subject noted a distinctly acid, astringent, irritating taste. In one subject, suffering from coryza, there was an increase of the nasal secretion, accompanied by laceration and coughing. In most cases there was belching and passage of gas by rectum. In one subject who had been suffering from a gastro-intestinal derangement for several days these effects were especially marked. The sodium-benzoated material caused slight nausea accompanied by abdominal uneasiness for four hours in one individual. This subject, a man of scientific training and experience, pronounced the material (orange-juice containing 1 per cent. of sodium benzoate) "vicious stuff." Only one test could be obtained on this subject. It was noted throughout these tests that the irritating effect varied with the degree of acidity of the vegetable product.

The observed effects on taste may be summarized as follows: Acid fruit-juices containing 1 per cent. of

sodium benzoate had a biting taste, an effect due to liberated benzoic acid. Milk or vegetables rendered alkaline and treated with sodium benzoate (1 per cent.) did not taste of benzoic acid at any time during the first twenty-four hours after the treatment, but after about twenty-four hours acid fermentation began, in spite of the presence of 1 per cent. of sodium benzoate, and the mixtures tasted slightly of benzoic acid. In samples of carrot-pulp the stinging taste of benzoic acid was not so evident as with the more highly acid materials. Small volumes of orange-juice (1 c.c. at a time), containing 1 per cent. of added sodium benzoate, caused burning in the posterior part of the mouth, the throat, the esophagus and stomach.

Apple-juice to which a *small* amount of sodium benzoate is added becomes sweeter but astringent and stinging to the taste and irritating to the mucous membranes. The presence of 0.5 per cent. of sodium benzoate renders cider unpalatable, but the presence of 0.1 per cent. may be overlooked by subjects not acquainted with the taste of pure apple-juice.

One subject who had tasted the various fruit and vegetable materials, as well as pure sodium benzoate and benzoic acid, at various times during three days (taking an amount equivalent to about 1 gm. of benzoic acid per twenty-four hours) eliminated urine which, on the third day of the ingestion, contained a trace of albumin. The benzoate ingestions were immediately discontinued. The subject's urine had been examined four times in the previous eight months, twice by several eminent physicians, and the last two times in this laboratory, several days previous to the initial dosage with the benzoate. At all these prior examinations the subject's urine was free from albumin. The subject was a medical student. There was no reason to suspect that he had had any kidney trouble previous to the sampling of the benzoate. Several days after discontinuing the ingestion of benzoate the albumin disappeared from the subject's urine.

After repeatedly ingesting small amounts of fruit-pulps treated with sodium benzoate (1 per cent.) two subjects experienced fulness of the head, headache, a feeling of fatigue and depression. The samples were taken into empty stomachs. The data show that in the majority of fourteen subjects benzoic acid, liberated from sodium benzoate by acid fruits and vegetables (and contained in them), was sufficiently irritating to cause considerable gastro-intestinal disturbances, as well as general systemic symptoms, even when taken in minute amounts, and especially on a stomach containing but little else than the ingested benzoated materials.

These preliminary observations were followed by an effort to determine some of the possible effects of food products preserved with benzoate as allowed by law⁷ and as customarily consumed, e. g., *cider* containing 0.1 to 0.5 per cent. of added sodium benzoate and taken principally between meals.²

Cider was used in this part of the study. The quantity of cider generally offered was a volume equal to

the average quantity of pure apple-juice consumed within a period of one-half to two hours under normal conditions by the subjects. This "normal" amount was determined by placing freely at the disposal of the subjects 5 gallons of unpreserved, untreated Baldwin apple-juice from cold storage at 32 F., "pressed" and stored one month previous to its use, and which was in a state of perfect preservation. Assistants in this laboratory and various attachés of the college, twenty in number, drank freely of the cider. It was requested of them that a careful record be returned of the amount each consumed. Question-blanks regarding symptoms and effects were filled in by all the subjects and returned on the second day. The average amount of cider taken during an afternoon, often at one time, by men who were busy with their regular work, was 1,200 c.c. Amounts up to 1,500 c.c. were consumed rapidly as a rule, while those who drank as much as 2,500 c.c. usually consumed the total volume in two main portions at intervals of two to three hours.

2. The Effects of Pure Apple-Juice

The cider, 40 gallons of which were used in this investigation,⁸ was a bland, acid liquid. It did not produce a stinging sensation in the throat when swallowed.

The pure apple-juice when consumed in volumes larger than 500 c.c. promptly caused considerable diuresis. The specific gravity of the urine was greatly decreased when a liter of pure cider was consumed. Volumes of cider larger than 1,000 c.c. gave in some cases moderate laxative effects. Several subjects who in each case drank 2,000 c.c. experienced no special laxative effects, although this volume usually caused laxation. One subject drank 2,500 c.c., but experienced no laxative effects. Constant diuretic and occasional laxative effects were noted, with probably a slight subsequent improvement in physical condition. The average amount of pure apple-juice consumed (in the second test with pure apple-juice) during three-hour periods by adult males (17 subjects) who had free access to it, was 1,370 c.c. (Table 3).

3. The Effects of Benzoated Cider. (A) First Experiment

Twenty-four subjects were observed in the first experiment. For convenience of publication the tabulation of data has been arranged in groups according to dosage of the subjects. Twelve received pure apple-juice. Twelve received samples of the same apple-juice containing 0.1 per cent. of added sodium benzoate.⁸ As none of the subjects knew that they were to receive at that time anything but pure apple-juice, unfavorable psychologic influences were eliminated from the experiments. Each subject received three question-blanks to be filled out by himself daily, so long as any symptoms lasted, which I am assured was done faithfully in all but two instances. The data obtained in the observations are recorded in Tables 4, 5 and 6.

The question as to how much benzoated cider the unsuspecting subjects might be safely permitted to drink was tested carefully on a number of the assistants and

7. "Pending the determination by the Referee Board of the wholesomeness or unwholesomeness of benzoate of soda, its use will be allowed under the following restrictions: Benzoate of soda, in quantities not exceeding one-tenth of one per cent. may be added to those foods in which generally heretofore it has been used. The addition of benzoate of soda shall be plainly stated on the label of each package of such food." Food Inspection Decision 101, U. S. Dept. Agric., Dec. 26, 1908.

"It having been determined that benzoate of soda mixed with food is not deleterious or poisonous and is not injurious to health, no objection will be raised under the Food and Drugs Act to the use in food of benzoate of soda, provided that each container or package of such food is plainly labeled to show the presence and amount of benzoate of soda." Food Inspection Decision 104, U. S. Dept. Agric., March 3, 1909.

8. The pure cider used in this experiment had a total free acidity of 2.716 gm. per liter, calculated as acetic acid, and 3.254 gm., calculated as malic acid. Of this pure juice, 100 c.c. yielded to ether 0.002 gm. of sticky extractives. Of an aqueous 0.1 per cent. solution of sodium benzoate, 100 c.c. yielded to ether 0.0007 gm. of oily extractive, but 100 c.c. of cider, containing 0.1 per cent. of sodium benzoate, yielded to ether 0.0827 gm. of extractive. The extractive was a white crystalline product. Amounts of benzoic acid (0.847 gm.) equivalent to those in 100 c.c. of cider, containing 0.1 per cent. of sodium benzoate, but dissolved in 100 c.c. of water and neutralized with NaHCO_3 , yielded to ether 0.003 gm. of sticky extractive material.

TABLES 3, 6, 7 AND 9.*—CLINICAL ANALYSIS OF OBSERVED EFFECTS OF APPLE-JUICE: PURE AND ALSO CONTAINING VARIOUS PERCENTAGES OF BENZOATE OF SODA

Percentage of Benzoate of Soda.	Number of Observations.	Average Body Weight, Pounds.	Average Age.	Average Amount of Cider Ingested, c.c.	Taste of Cider.	Average Time Since Last Meal, Hours.	Data Pertaining to the Bowels (Movements).										Stomach.					Head.		Respiratory Apparatus.		General.	Appetite.
							Usually Physicked.		Average Normal Daily Movements.	Total Number.	Solid. (Total No.)	Fluid. (Total No.)	Griping. (Total No.)	Duration of Laxative Effects; hrs.	Flatulence.	Effects On Mouth.	Fulness.	Belching.	Burning.	Nau- sea.	Vomiting.	Ache.	Fullness.	Cough.	Expectoration.		
							Easily.	Not Easily.																			
Pure juice..... (Table 3.)	25 on 17 subjects.	145	20	1570	Nothing disagreeable.	3¼	14	5	1.1	24	10	13	2	1-24	7	0	20	11	0	1	1	4	1	1	0	No depression.†	No bad effects.‡
0.1..... (Table 6.)	22 on 20 subjects.	145	26½	1090	Abnormal.....	2½	2	7	1.2	28	6	16	7	2-24	11	10	16	12	8	7	10	13	1	1	11	General depression.†	Decreased.‡
0.2 to 0.3..... (Table 7.)	6 subjects.....	161	27½	940	Very abnormal...	1½	3	3	1.7	5	0	5	3	0-72	4	6	5	4	4	4	0	3	0	0	3	Irrig. bowels in 11.	No effect.
0.3 to 0.5..... (Table 9.)	1 subject, H. W..	150	24	1000 (0.3%)	Sweet, strong	1	+	....	2	0	0	0	0	0	0	0	+	+	+	0	0	0	0	0	+	1 case for 3 days.	No effect.
	1 subject, D. R. L..	140	28	1000 (0.5%)	Astringent.....	¾	+	....	1	0	0	0	0	0	0	Burn- ing.	+	+	+	+	+	+	0	0	+	Tremor.....	Lost.

* Tables 3, 6 and 7 are given in abstract, and Table 9 in full. The sign + means "present" or "yes."

† Without exception each subject noted a very considerable increase in the secretion of urine, commencing in one-half or three-quarters of an hour after drinking the apple-juice. ‡ One subject was suffering from influenza before the experiment was commenced. The nausea, vomiting and headache recorded in the table were experienced on the second day but were possibly the result of the influenza.

TABLES 4, 5, 8 AND 10.*—CLINICAL ANALYSIS OF OBSERVED EFFECTS OF APPLE-JUICE: PURE AND ALSO CONTAINING VARIOUS PERCENTAGES OF BENZOATE OF SODA

Percentage of Benzoate Added.	Number of Observations.	Average Weight, lbs.	Time Since Last Meal, Hours.	Volume of Cider Ingested, c.c.	Dose of Benzoate, gm.	Character of Effect on Bowels.	Perspiration.	General Clinical Observations.				Urine.												
								Blood-Pressure, mm. Hg.	Pulse.		Temperature.	Volume After, c.c.	Color.		Specific Gravity.	Albumin.		Reduction of Fehling Solution.		Amount of Indican.				
									Before.	After.			Before.	After.		Before.	After.	Before.	After.	Before.	After.	Before.	After.	
None..... (Table 4.)	10	142	2.25	1240	0	Laxative (4 cases). No effect (6 cases).	0	131	126	89.5	60.5	97.7	97.5	7 subjects, 3 hours; 402.8.	.....	Marked decrease in color.	1021	1011	0	0	0	0	.....	Amount decreased.
0.1..... (Table 5.)	19	116	2.1	1120	1.13	Marked irregularity. Diarrhea or constipation.	8	117	116	93.0	90.0	97.5	97.5	Average of 14 who had no laxative effect, 3 hrs.; 259, 122.7	.....	Decrease in color not marked.	1020	1019	2; trace.	6; trace.	4; slight.	5; slight.	7; slight.	5; slight loss; increase, 4.3
0.2-0.3..... (Table 8.)	6	161	1.5	940	2.5	No effect, (3 cases). Loose (2 cases). Constipated (1 case).	Slight, 1. Marked, 2.	115	108	86.0	89.0	97.8	97.5		.....	Increased.	1019	1027	1½	6; trace.	2; slight.	6	1	
0.3 to 0.5..... (Table 10.)	1 subject, H. W.	150	1	1000 (0.3%)	3	No effect.	Slight.	150	125	106	96.0	98.8	98.8	3 hours; 550.	Amber.	Decreased.	1024	1009	Faint trace.	Marked.	0	0	0	0
	1 subject, D. R. L.	140	0.75	1001 (0.5%)	5	Irritation next day.	Yes.	120	100	78	66.0	98.3	96.8	3 hours; 110.	Amber.	Increased.	1027	1030	0	0	Slight.	Very marked.	0	0

* Tables 4, 5 and 8 are given in abstract, and Table 10 in full.

† In this subject there was persistently abnormal thirst, and excretion of urine. Repeated examination failed to reveal the presence of any sugar.

‡ The one subject showing albumin in his urine before the inauguration of this test had been a subject two months previously in an experiment in which elder containing only 0.1 per cent. of sodium benzoate was administered. No albumin had been detected in his urine immediately after that experiment.

* H. W. has had polyuria for years. The volume and specific gravity of his urine is exceptional.

attachés in this laboratory. The volume that could be taken without inducing more than slightly unpleasant effects was found to vary greatly with the different individuals.

Twelve men who received the pure juice during the first experiment noted on their blanks collectively the following symptoms: belching, flushing of face, slight headache and griping.⁹ The average amount of cider taken was¹⁰ 1,200 c.c.

The twelve men who took the cider containing the added 0.1 per cent. of sodium benzoate noted on their question-blanks collectively the following symptoms: astringent peppery taste, fulness of head, frontal headache, nervousness, belching, griping, passage of gas by rectum, nausea, dry mouth, excessive perspiration, itching of skin and scalp, pain in the stomach, vomiting. There was also irregularity of the bowels (constipation often), decreased secretion of urine, increased specific gravity of the urine, reduction of Fehling solution and albuminuria. Most of the subjects showed several of these symptoms, except vomiting (Table 3). The average amount of benzoated cider taken (20 subjects) was 1,090 c.c., and the corresponding amount of ingested sodium benzoate (benzoic acid?) was 1.09 gm. or 0.82 gm. of benzoic acid. Excessive amounts of hippuric acid were eliminated, especially during the first few hours after ingestion of the benzoated apple-juice, coincident with the tendency to decreased secretion of urine.

It can be stated with certainty from the results of this test that 1,000 c.c. of benzoated cider (0.1 per cent.) caused distinctly undesirable effects in some cases, the symptoms and positive chemical findings being very slight in some, but sufficiently marked to be termed toxic in others. The proportion of benzoate in the cider (0.1 per cent.) was less than the smallest proportions of that preservative which it is believed are used by the great majority of manufacturers who employ it,² but the absolute amount taken was greater in each case than the ordinary dose of benzoic acid for medicinal purposes. The benzoic acid was ingested in a most potent state, i. e., in solution.

B. Second Experiment

The second experiment on 17 subjects was carried out for the purpose of studying the comparative effects of different proportions of sodium benzoate ingested in cider. The most robust individuals were given high percentages. All received benzoated cider, the percentages of benzoate ranging from 0.1 per cent. to 0.3 per cent., save in my own case, in which the proportion was 0.5 per cent. (Tables 7, 8 and 9).

The record in Table 11 gives the clinical findings in observations on a subject who, on widely separated dates, drank 1,000 c.c. of cider containing, respectively, 0.1 per cent. and 0.2 per cent. of added sodium benzoate. The data show strikingly how even the healthiest subjects may be seriously affected by only 0.2 per cent. of added sodium benzoate (2 gm.) in cider. In this case the subject was practically unaffected by the cider containing 0.1 per cent. of added sodium benzoate.

From careful analysis of all the data it is apparent that small proportions of benzoic acid in cider regularly caused unusual variations, decrease in the normal volume of urine secreted in the first three hours after ingestion, and corresponding increase in the specific gravity, in spite of the ingestion of the great volume of fluid.

Albumin appeared in the urine in 10 out of 17 cases within three hours. Only 8 of the 10 individuals whose urine contained albumin consumed 1,000 c.c. containing 0.1 per cent. to 0.3 per cent., while two ingested less. The urines of 14 of the subjects showed marked reduction of Fehling solution, which is recognized evidence of intoxication by benzoic acid.

One thousand c.c. of filtered cider, containing 0.2 to 0.3 per cent. of sodium benzoate, caused albuminuria within three hours almost without exception in the largest and soundest picked subjects. I myself, however, was able to ingest 1,000 c.c. of apple-juice containing 0.5 per cent. of added sodium benzoate without any albuminuria arising. The amount of hippuric acid in my urine was very large for the first few hours thereafter. The secretion of urine was very much reduced for twelve hours, while I suffered from some of the other symptoms above mentioned, although as a subject in a former investigation I ingested, without the slightest discomfort, larger amounts taken in milk and on a full stomach.

Small doses of sodium benzoate added to acid substances aggravated albuminuria already present, and in one subject caused alarming symptoms, classical of nephritis, for six days thereafter.

III. EXPERIMENTS ON DOGS

Chassevant and Garnier¹¹ found that 1.4 gm. of benzoic acid per kilo was fatal to guinea-pigs in from five to seven hours. Somewhat larger doses (2 gm. per kilo) did not necessarily kill guinea-pigs more quickly. I have given similar doses to dogs in the experiments described below.

1. First Experiment

A dog weighing 3.5 kilos fasted twenty-four hours. It was then given 1 gm. of sodium benzoate decomposed with the exact amount of hydrochloric acid theoretically necessary to convert benzoate into free benzoic acid and sodium chlorid. In thirty minutes the animal showed evidences of muscular weakness and nausea; lay quietly and breathed in a laborious manner. This condition continued for six hours. On the following day, twenty-four hours after the previous dose, the animal was given 4 gm. of sodium benzoate, in an amount of hydrochloric acid just sufficient theoretically to decompose it completely into free benzoic acid, together with 120 c.c. of 0.2 per cent. citric acid. The dog was allowed to see and smell fresh meat in order to encourage gastric secretion. The animal became very weak in one hour; respirations were reduced to nine per minute and were labored. Tonic and clonic convulsions began in one hour and fifteen minutes after the dosage. The animal, after several hard convulsions, died in two hours and twenty minutes after the administration of the benzoate.

The autopsy showed very pronounced congestion of the kidneys, stomach and intestines; with ulceration in places. The liver and lungs showed evidences of hemorrhage.

2. Second Experiment

Two dogs had been fed on dog biscuits and water for several weeks. They then fasted for thirty-six hours.

Animal 1 weighed 3.5 kilos and received a dose containing 3.5 gm. of sodium benzoate plus 0.65 c.c. of concentrated hydrochloric acid (sp. gr. 1.19) in 50 c.c. of water and 100 c.c. of citric acid (0.2 per cent.). The animal became uneasy after the treatment. At the end

9. See footnote appended to Table 3.

10. As the notes of two of these subjects appeared to be unreliable save for the volume consumed, the other data in their cases were omitted from consideration.

11. Chassevant and Garnier: Arch. internat. de pharm. et de therap., 1905, xiv, 117.

of an hour it showed muscular weakness and tremor. It then gradually improved.

Animal 2 weighed 4.25 kilos and received a dose consisting of 0.85 c.c. of concentrated hydrochloric acid (sp. gr. 1.19) in 50 c.c. of water and 100 c.c. of 0.2 per cent. citric acid. This dog was entirely unaffected by the treatment.

These experiments were repeated the next day and the results were practically the same; the animal receiving the free acid-benzoic acid mixture, however, was more prostrated than on the previous day and showed general stiffness of the muscles. At the end of six hours it was chloroformed and an autopsy performed, when it was found that the stomach contained "coffee-ground" material. There were ecchymotic areas and also ulcerated patches here and there throughout. The grumous material contained in the stomach and intestines was undoubtedly modified blood from the alimentary tract, as blood from extraneous sources had been guarded against by the preliminary treatment. The liver and lungs showed considerable congestion with some evidences of hemorrhage. The kidneys were cyanotic, the cortex very much congested, while the medulla was pale and anemic.

Additional experiments in these particular connections will soon be concluded.

DISCUSSION

The results of this investigation show that sodium benzoate is a poor preservative under some conditions. My observations in this regard confirm the findings of Lehmann and others.

Many of the results of these experiments accord with my personal experiences and observations when I was a subject in the reinvestigation of the effect of sodium benzoate on man by the Referee Board of Consulting Scientific Experts, some of which are referred to, only in a general way, however, in the report by the board. In the experiments of that board, in which I was a subject, sodium benzoate, in aqueous solution, was added to milk, and such benzoated milk was ingested from time to time during meals. Under those conditions there were no pronounced effects aside from a feeling of malaise. During the course of the investigation I happened to change my method of taking the benzoate by adding a portion of the benzoate solution to acid portions of the food, such as tomato soup, plums, peaches, etc., which were eaten at the beginning of some of the meals. After a few days of this procedure, I began to notice sharp pains, which would set in about thirty minutes after each meal and continue for one or two hours. These pains were aggravated by any muscular efforts, such as the carrying of a satchel. About this time, shortly after the regular test meal was eaten and stomach contents removed, I experienced considerable gastric pain which lasted several days, whereupon I returned to the previous method of ingesting benzoate, i. e., in milk. The symptoms of gastric irritation then gradually entirely disappeared, in spite of the fact that about three days afterward the dose of benzoate was increased from 2.5 to 3 gm. per day for three days. These symptoms were reported to the acting director of the investigation, but it was assumed by him that they were not due to the benzoate treatment. As I desired to continue the work until it was completed, however, I did not repeat the ingestion of large doses in acid food. During the succeeding three days the daily dose of benzoate was increased to 6 gm., taken on a full stomach in milk, without causing the slightest discomfort.

The important general difference between my results and those of various previous observers is due, I believe, to the fact that in my research free benzoic acid was the more active factor, whereas in others the benzoate was not appreciably decomposed into free benzoic acid, or, if thus decomposed, was accompanied by materials which rendered the benzoic acid relatively inert.

Such a deduction is in harmony with what we know of the comparative effects of salicylates and free salicylic acid, for example; the acid is much more irritating in its effects than the salt.

Sodium benzoate in small quantities is particularly efficient as a preservative only when it yields free benzoic acid. The influence of benzoic acid, therefore, is the essential question in a study of the effects of sodium benzoate as a food preservative.

SUMMARY OF GENERAL CONCLUSIONS

Sodium benzoate in proportions equal to about 1 per cent. was found to be a poor preservative of neutral or weakly acid media.

Sodium benzoate in proportions equal to about 0.1 per cent. is a fairly good preservative of strongly acid products. In acid-reacting media the benzoate is decomposed into free benzoic acid, which exerts most, if not all, of any preservative action exhibited.

Benzoic acid, liberated from sodium benzoate by strongly acid fruits or vegetables and taken in them, even in small amounts, into an empty stomach, is sufficiently irritating to cause gastrointestinal disturbance as well as systemic symptoms.

In men, volumes of a liter or more of pure apple-juice caused constant diuretic and occasional laxative effects, an immediate feeling of fulness and often belching.

Similar volumes of cider containing 0.1 to 0.2 per cent. of added sodium benzoate usually caused many of the following symptoms or effects: astringent peppery taste, fulness of head, frontal headache, nervousness, belching, griping, passage of gas by rectum, abnormal perspiration, dry mouth, pain in stomach, nausea, vomiting, irregularity of the bowels (often constipation), decreased flow of urine, increased specific gravity of the urine, albuminuria, and urinary reduction of Fehling solution. Excessive amounts of hippuric acid were eliminated especially during the first few hours after ingestion of the benzoated apple-juice (coincident with the tendency to decreased secretion of the urine).

The lethal dose of sodium benzoate for dogs is not relatively large if it be given on an empty stomach and secretion of gastric juice is encouraged. The lethal dose under such conditions is apparently less if given in an appropriate acid medium.

In the proportions in which sodium benzoate is efficient as a preservative of acid food materials it may also be toxic in its effects on men.

When large quantities of protein, fat or alkaline food materials are ingested with sodium benzoate there is a diminution in the toxic action of the drug.

Further investigation is in progress, especially on the influence of nephrectomy, on the toxicity of sodium benzoate and benzoic acid.

I am indebted to many of my associates in the Purdue University Alumni Association of New York City for volunteering as subjects in this investigation and thus making it possible for me to carry out experiments on a large number of individuals. The secretary, Mr. Leslie Hustable, also Mr. Ray C. Ewry, Mr. R. W. Parks, Mr. F. M. Waltz, and Mr. H. Worsham of that organiza-

tion, have given me special assistance in various ways. I am also indebted to Drs. A. E. Olpp and Matthew Steel and Messrs. Herzfeld and Bisch for cooperation and to Drs. Foster, Mosenthal and Rosenbloom for assistance. Professor Gies has given me all the facilities of his laboratory for conducting this research, as well as valuable criticism and suggestions.

NOTE.—In addition to the authorities previously cited, the following authors have published facts of interest on the subject:

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Broadway and One Hundred and Sixty-eighth Street.

THE SURGICAL ELEVATION OF THE STOMACH IN GASTROPTOSIS BY SUTURE OF THE GASTROHEPATIC OMENTUM

A FURTHER REPORT OF RESULTS

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PHILADELPHIA

The operation of elevation of the stomach to normal position, through either direct suture of the stomach or suture of its ligaments, is a comparatively new one in surgery.

The first description of an operation devised and practiced for this purpose was published by Duret¹ of Lille, France, in 1896. The patient was greatly emaciated and in a condition described as cachectic. The operation was suggested and carried out only as a last resort, it was thought, as the only possible means of saving the patient's life. The description of this surgical procedure attracted no attention, and, although two years afterward, the operation having been performed in March, 1894, the patient had gained 25 pounds in weight and was greatly improved in health, there is no further report of a wider experience by this writer.

In the succeeding fifteen years, up to the present time, as far as can be learned from the literature, the operation has been performed by but few surgeons—Davis, Coffey, Martin, Mayo, Noble, Hodge, Clark, LaPlace and myself in this country, Rövsing in Copenhagen, Hartmann in Paris, Bier and Gelpke in Germany, and Eve in London. With the exception of Rövsing, Bier, Gelpke and myself, the experience of each surgeon has been limited to one, two or three cases. The total number of operations performed and described I have estimated to be not more than 130, and, of these, 75 were performed by Rövsing and 26 by myself.

The operation, designated as gastropexy, which was carried out by Duret, consisted in suturing the stomach at the lesser curvature to the parietal peritoneum just below the xiphoid cartilage. The stomach was thus firmly fixed to the anterior abdominal wall.

Davis² in 1897 sutured the gastrohepatic omentum near its attachment to the stomach to the parietal peritoneum of the abdominal wall.

Rövsing³ in 1899 elevated the stomach by passing three rows of interrupted sutures from right to left through the serosa and muscularis of the anterior wall of the stomach and all the structures of the abdominal

wall. The first row was placed just below the line of the lesser curvature of the stomach, the second row 2 cm. below this one, and the third row 3 cm. above the greater curvature. The gastric peritoneal surface between sutures and the parietal peritoneum were scarified. When the sutures were secured a broad surface (6 cm.) of the anterior wall of the stomach was permanently fixed to the anterior abdominal wall near the xiphoid cartilage. Rövsing⁵ recently (1906) reports a total of 75 patients operated on by this method. He has modified the operation to the extent that the three rows of sutures are placed closer together, so that the lower one-third of the stomach is left free. In 13 the operation was combined with nephropexy, and in 22 hepato-pexy was also performed. He states that without exception these patients have gained good health.

Hartmann⁶ described a case in 1899 in which, because of dilatation and vertical dislocation of the stomach, he plicated the pyloric portion of the stomach and then fixed this end of the organ to the parietal peritoneum of the diaphragm beneath the left ribs with the plication sutures.

Coffey⁷ (1902) operated in 2 cases of gastroptosis in which he elevated the stomach by suturing the great omentum at a point one inch below its attachment to the transverse colon to the anterior abdominal wall about one inch below the umbilicus.

Gelpke⁸ (1906) describes an operation carried out in 7 cases, in 5 of these combined with pyloroplasty, in which the median portion of the anterior wall of the stomach was sutured to the costal margin.

Eve⁹ of London (1907) elevated the stomach by attaching the lesser curvature to the surface of the liver at the attachment of the gastrohepatic omentum, combined with the suture of the great omentum to the anterior abdominal wall.

During the years 1897 and 1898 the late Dr. William Pepper and Dr. Alfred Stengel had under their care at the University Hospital a patient suffering with the severe symptoms of gastroptosis, in which every medical and mechanical treatment, including a prolonged rest-cure, had been faithfully applied without benefit. At this time, March, 1898, Dr. Pepper suggested to me that some surgical operation might be undertaken to restore the stomach to normal position in this patient. I was not aware that any surgery (that of Duret and Davis) had been applied in this condition. After a careful investigation of the anatomic relations and ligamentary supports of the stomach on the cadaver, and considering the importance of the preservation of the physiologic mobility of a hollow viscus, particularly the stomach, I devised and practiced for the first time in April, 1898, the following operation:

The patient was placed on the Bolt operating-table in a position opposite to that usually employed for operations through the lower portion of the abdomen. The object of this position was to permit the elevation of the thorax and upper abdomen, which would allow the gravitation and easy displacement of the intestines and stomach out of the field of operation and give the greatest operative space, in order, in other words, to gain the every advantage of the Trendelenburg position. An incision about three inches in length was made through the linea alba, midway between the xiphoid cartilage and umbilicus. This incision exposed the lesser curvature and cardiac end of the stomach, the gastrohepatic ligament or

1. Duret: *Rev. de chir.*, 1896, p. 430.

2. Davis: *West. Med. Rev.*, October, 1897, p. 291.

3. Rövsing: *Arch. f. klin. Chir.*, 1899, lx, 812.

5. Rövsing: *Samml. klin. Vortr.* Leipsic, 1906, New Series, xv, No. 431.

6. Hartmann: *Bull. et mém. Soc. de Chir.*, Paris, April, 1899.

7. Coffey: *Philadelphia Med. Jour.*, Oct. 11, 1902.

8. Gelpke: *Arch. f. klin. Chir.*, Berlin, 1906, lxxx, 1021.

9. Eve: *Brit. Med. Jour.*, London, 1906, i, 784-786.

omentum, gastrophrenic ligament and the right lobe of the liver. The table was then elevated to the Trendelenburg position and the stomach displaced further downward and out of the wound by means of gauze sponges. This act caused the gastrohepatic omentum to be slightly stretched and separated from the underlying structures, which permitted an accurate determination of the length of the omentum and very much facilitated the operative manipulations. The gastrohepatic ligament was found to be composed of the two layers of delicate peritonium, increasing in thickness and strength toward the right or pyloric end of the stomach, and above at the attachment of the liver. The gastrophrenic ligament appeared as a few thin connective tissue bands supporting the cardiac end of the stomach. Retractors were introduced and the liver held aside by placing a flat gauze sponge beneath a retractor. Three rows of interrupted silk sutures were then introduced so as to plicate and thus shorten the gastrohepatic omentum in the following manner: The first row, beginning in the gastrophrenic ligament and extending across the gastrohepatic ligament to a point almost opposite the pylorus or hepaticoduodenal ligament, was introduced so as to form a plication in the center of these ligaments, and included from above downward or vertically about 4 cm. of tissue. They were small mattress sutures including sufficient of the delicate tissue, gathering the tissue up in the grasp of the curved needle, where no blood-vessels were present, to insure against their tearing out. Four or five sutures, about one inch apart, were introduced from right to left and caught in a hemostatic forceps. The second and third row of sutures were introduced in a similar manner, the third row including the tissue of the ligament near the attachment to the liver above, and below grasping the tissue just above the blood-vessels of the lesser curvature of the stomach. The sutures were strictly confined to the normal ligamentary supports and the distance between the rows from left to right was increased with the length of the ligament, being greater toward the right. I need not point out that the important blood-vessels in relation with the right border of the ligament are to be carefully avoided, so that they are not injured or constricted in the suturing. The gauze sponges were then removed, the stomach brought into the wound and carried upward toward the diaphragm as the first, second and third row of sutures were tied. The stomach, particularly the pyloric end, was thus elevated to about normal position. If, after the sutures were secured, there remained any portion of the stomach abnormally low or there was a depression or kink along the lesser curvature, this was corrected by an additional suture. The abdomen was then closed by the layer suture method, combined with two or three silkworm gut through-and-through sutures.

The plan of operation described is that followed in the early cases in which I have operated, with the belief that it was necessary, in order to gain a broad surface of adhesion and a strong support, so as to prevent cutting out of the sutures and a recurrence of the displacement, that the ligaments be shortened by folding on themselves and that they be secured with three rows of sutures. With growing experience, however, I have very much simplified the operation in the last eighteen cases by introducing but a single row of sutures from above downward across the gastrohepatic omentum. The strength of the suture support and attachment above has been increased by introducing each suture through the distinctly thicker and stronger one-fourth of tissue forming the attachment of the ligament to the liver. The gastrohepatic ligament at the attachment to the liver for a distance of one-fourth to one-half inch is found formed into a strong, white connective tissue band, a structure holding the suture without danger of cutting out and forming a fixed point above against which to draw the lesser curvature of the stomach.

The first suture is introduced, beginning above, in the strong tissue of the attachment of the ligament to the liver, that described, the needle including considerable

tissue, and then grasps the more delicate tissue at short intervals from above downward until a position just above the gastric vessels is reached at the lesser curvature. Four to six such sutures are inserted in this manner, being perhaps an inch apart.

The suturing toward the right, opposite particularly the prolapsed pyloric end of the stomach, is carried as low and as high in the ligament as is possible, well avoiding the vessels and ducts at the right border, so as to insure the greatest elevation where it is most indicated.

When these sutures are secured the stomach, the lesser curvature, is carried in contact or almost in contact with the under surface of the liver at the attachment of the gastrohepatic ligament and is firmly fixed in this position. It is apparent to the operator at the termination of the operation that it would require considerable tearing force to displace the organ again and it is evident that a recurrence of the ptosis cannot occur.

The modification also secures a much higher position of the stomach than was possible by the original plan of suturing. I seek to have the greater curvature of the stomach above the umbilicus, at the point as demonstrated by the x-ray in the normal position of the stomach.

The operation is easily accomplished in twenty to thirty minutes, and in no instance has been associated with any degree of shock. There have been no deaths or complications following. The convalescence is easy, the patients being particularly free from nausea and vomiting, and the suffering is not greater than after a simple exploratory celiotomy. The bowels are opened at the end of forty-eight hours by enema. The patient is kept on small amount of liquid food for two or three days, then given semiliquid food and quickly solid food. He is confined to bed in the recumbent position for two weeks.

The principle of this operation is that by placing interrupted sutures from above downward through the gastrohepatic omentum, or gastrohepatic and gastrophrenic ligaments, the normal ligamentary supports of the stomach are shortened and the stomach elevated to normal position without in the least disturbing the physiologic mobility of the organ. With the elevation of the stomach any ptosis of the transverse colon is likewise corrected to a considerable—I believe sufficient—extent.

A report of the first operation performed by this method was made before the Fellows of the College of Physicians of Philadelphia by Dr. Alfred Stengel and myself on April 5, 1899. I published accounts of further experience¹⁰ in February, 1903, and October, 1904.

Since the description of my first case Bier¹¹ of Greifswald, Germany, has reported four cases in which the operation was done in a somewhat similar manner. Three or four sutures were placed through the gastrohepatic ligament from left to right so as to form two plications, one above the other, in the ligament. The first suture attached the serosa and muscularis of the pyloric end of the stomach, at the lesser curvature, to the capsule of the liver, the other included only the ligament. Also, in two of the cases the shortening of the gastrohepatic ligament was supplemented by the passing of two sutures through the serosa of the lesser curvature of the stomach and then through the capsule of the left lobe of the liver.

10. Beyer: Univ. Penn. Med. Bull., February, 1903; Am. Med., 1904, viii, 629-634.

11. Bier: Deutsch. Ztschr. f. Chir., 1900, lvi, 374.

In the operation of Duret, Rösing and Gelpke the stomach was firmly fixed to the anterior abdominal wall by the passing of sutures through the serosa and muscularis of the stomach and the various layers of the abdominal wall. The fixation of the stomach to the anterior abdominal wall by adhesion, particularly to the extent practiced by Rösing, would seem, at least in part, to destroy or hinder the physiologic mobility of the organ and result, in a greater or less number of cases, in a disturbance of the function of the organ. Likewise there is the danger of the production of the very painful affection frequently seen associated with adhesions to this organ.

The suturing of the lesser curvature to the liver and the greater curvature to the anterior abdominal wall, as practiced by Eve and LaPlace, is subject to the same criticism. Further, in a patient so operated on who afterward came under my care, pneumonia developed as a postoperative complication, and from the constant coughing a large hernia of the stomach resulted. That the greater curvature of the stomach was anchored to the abdominal wall below the incision, I believe, was an important factor in the production of this ventral hernia.

The operation of Davis, attaching the lesser omentum near the upper curvature of the stomach to the abdominal wall, would seem a better procedure, but the stomach would be distorted and abnormal adhesions formed.

The securing of the greater omentum at a point just below the transverse colon to the anterior abdominal wall one inch above the umbilicus, the operation of Coffey, elevates the stomach to a considerable extent and relieves any dragging on the stomach from below caused by the transverse colon and great omentum. Another point of possible value, according to Sailer and Clark, is that this operation corrects the associated ptosis of the transverse colon, and that it relieves the constipation from which they believe these patients suffer. The operation, however, markedly changes the anatomy of the stomach and transverse colon, and, since an artificial adhesion is formed between the great omentum and anterior abdominal wall, there would be the danger of more extensive adhesions being formed than is planned, involving the transverse colon and stomach and resulting in an incurable condition. Intestinal obstruction is a very possible complication. I am, however, inclined to believe that the operation might be of value and warrantable where there existed extreme hepatoptosis, the liver being so low in position that, although the lesser curvature of the stomach were brought in contact with the under surface of the liver, the stomach would still remain vertical in position and the duodenal kink persist to cause symptoms. Here it would be a more simple operation than any hepatopepy devised.

As to the question of ptosis of the transverse colon causing constipation and necessitating greater elevation of the colon than is gained by bringing the lesser curvature of the stomach in contact with the liver, I have sought information by written communication. I have replies from 23 of the patients operated on. Seven state that they did and 16 that they did not suffer from constipation before operation, and 6 do and 17 do not now suffer from constipation. Therefore, in my experience, constipation has not been a sufficiently prominent symptom to warrant the additional operation, certainly not that of resection of the colon, as is recommended by

Clark. I did elevate the colon by this method in one instance, because the patient complained of pain over the prolapsed colon after the stomach had been restored to position. In another case in which marked ptosis of the colon existed, the kink was corrected by simply narrowing the gastrocolic omentum over this area, thus bringing the colon almost in contact with the stomach. I have, however, noted no special advantage of the operation.

Regardless of the theoretical criticisms of the fixation operations, it is to be noted that from the published reports of the operators who have performed them, in a total of 82 cases, no such disturbances of function of the stomach or other complication is mentioned, except in an early case of Rösing's. Rösing, now with an experience of 75 cases, 50 of which he has had an opportunity to observe from one to eight years, asserts that none of his patients have after operation had retention of food or have developed a disturbed function of the organ. Nyrop,¹² however, discredits the good results reported by Rösing, saying he has observed and reported cases in which such adhesions did produce pain. I have had communicated to me verbally the history of one such case in which the patient, because of the fixation operation, became a hopeless invalid. Thus, even with the small amount of data available, it is evident that the forming of adventitious adhesions to a hollow viscus, directly or indirectly, is bad surgery and conducive to harmful results.

The operation I have devised, as I have said, simply shortens the anatomic ligamentary supports of the stomach, elevates the organ to a position where it is in contact with the liver at the point of attachment of the gastrohepatic ligament, and thus the anatomic conditions of normal mobility and physiologic function are completely preserved. The operation must, therefore, be considered anatomically, physiologically and surgically ideal.

Since the report of the first operation in April, 1898, I have operated in 25 additional cases; in all I have performed the operation 26 times. Martin, employing this method, has operated in 5 cases, Noble and William Mayo each 2, and Hodge 1. Martin, in one of his cases, also performed the Coffey operation, and in both of Mayo's cases Finney's pyloroplasty was performed. Including the four cases in which Bier operated, the operation has been performed 39 times.

All of the patients coming under my care had suffered with the characteristic and severe symptoms of gastroptosis for from three to fifteen years. In 4 a right prolapsed kidney had been operated on without relief of symptoms, and in 3 cases a floating kidney still exists, not causing symptoms after the reposition of the stomach. Regarding the presence of hepatoptosis I am unable to make any definite statements. Of the last 14 cases the skiagraph showed some ptosis in 10, and in one the descent of the liver was extreme. In this latter case, skiagraphed several months after operation, the stomach was seen with its lesser curvature well up beneath the liver, but still in a prolapsed position because of the hepatoptosis. I believe that more or less hepatoptosis was present in all of my cases. Dr. Henry Pancoast of the x-ray department of the University of Pennsylvania, suggesting that the greater part of the ptosis of the liver is due to a right lateral downward rotation of this organ, in the last two cases in which we have operated I have sought to correct this by suturing

12. Nyrop: *Ann. de chir. Gastro-intest.*, April, 1907.

the round and falciform ligaments to the upper end of the abdominal incision, thus carrying the liver upward and toward the left. No second skiagraphs have up to the present time been made in these cases.

Twenty-five of the patients were greatly emaciated, weighing between 77 and 120 pounds. In 16 the upper curvature of the stomach was outlined by means of the skiagraph or by inflation and auscultatory percussio*n* one and a half to two and a half inches below the umbilicus, in 9 three inches below the umbilicus (the stomach reaching well into the pelvis), and in 1 one inch below the umbilicus. The latter was a small tubular stomach, vertical in position, the *x*-ray showing a marked kinking in the duodenum. In three an associated dilatation of the stomach was diagnosed, but, as is common, the dilatation was not appreciable at operation. In two there was a pronounced dilatation of the stomach demonstrable at operation. In none of the cases was there present a diastasis of the recti muscles or great relaxation of the abdominal walls, although seven of the women had borne children. All of the patients operated on suffered from retention and fermentation of food, were chronic invalids and most of them incapacitated for any occupation or social duty. Operation was determined on in every instance only after a long course of medical and mechanical treatment had been carried out by a competent internist and the treatment had failed to give permanent relief. Several had been transferred to the care of an internist for the purpose of giving the medical treatment a thorough trial. In every instance the patient had been treated faithfully with medicine, hygiene, diet, bandaging, binder or a corset, and the majority had had a six weeks' rest cure. They were all willing and anxious because of their suffering to risk the danger of operation for the sake of a possible cure.

In one instance in which the stomach was prolapsed so that the upper curvature was two inches below the umbilicus and the organ dilated to perhaps twice its normal size the woman was emaciated until she weighed but 77 pounds. Further, she apparently suffered from autointoxication as a result of the gastric and intestinal fermentation process, to such a degree as to produce every two or three weeks a rise of temperature reaching 102 to 103 F. She was in extreme condition, the operation dangerous, but demanded by the family physician. This patient has gained 30 pounds in weight, has become pregnant and borne a child since, all symptoms have disappeared and she enjoys perfect health. Six of the patients were males, one a physician who had given up practice and had devoted several years of his life to seeking relief in various parts of the country.

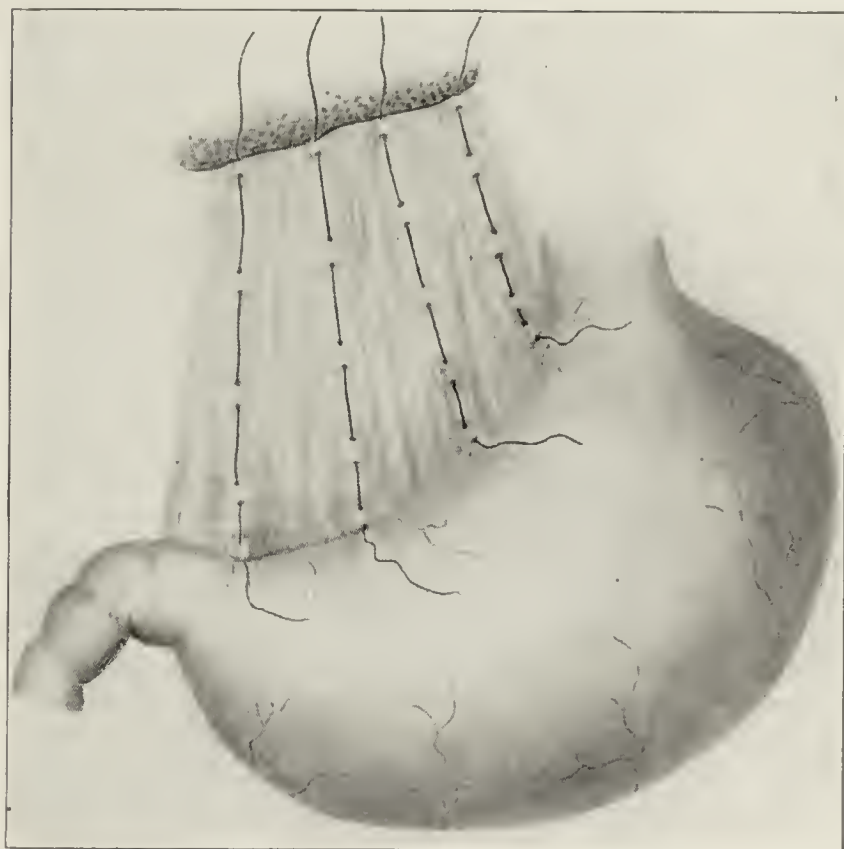
The 26 patients on whom I have operated have now been observed from four weeks to eleven years. In order to gain an accurate report as to the result of the operation I have recently communicated with these patients by circular letter. A reply was received from all.

In every instance, except Patients 11 and 18 and one patient recently operated on, the improvement in health had been most remarkable and the relief of symptoms complete. The dyspeptic and neurasthenic symptoms are entirely relieved, there is no retention or fermentation of food, and food of any character is taken without restriction. All have gained in weight from 8 to 40 pounds, the average gain in weight being 20 pounds. The gain in weight and state of improved

health has been maintained regardless of the time that has elapsed since operation.

Patient 11 was operated on in June, 1907. She immediately gained ten pounds in weight and was relieved of her symptoms. She then relapsed into the old condition, suffering as much as before operation and now practices lavage daily and before going to sleep at night it is necessary that her physician replace a prolapsed right kidney. Preceding operation she was under the care of Dr. John K. Mitchell at the Orthopedic Hospital, who carried out a thorough rest-cure and medical treatment without the least benefit. I had previously refused to operate on this woman, but, it being again suggested by Dr. Mitchell because of the failure of the rest cure, the operation was carried out, although I felt at the time that there was little chance of its giving relief. This also is the case referred to in which there was an extreme hepatoptosis.

Patient 18, operated on in March, 1908, a young man of no occupation, is free from symptoms referable to the stomach and transverse colon, both being elevated, and



Suture of the gastrohepatic omentum to secure elevation of the stomach in gastroptosis.

has gained 10 pounds in weight, but still complains of pain in the lower abdomen. It is his belief that this pain is due to a separation or tearing away of the mesentery of the small intestine, following a severe strain.

In Case 4 the patient was markedly benefited for a time, and then after nursing two sisters through a course of typhoid fever became profoundly neurasthenic; after a rest-cure she is again enjoying good health.

These three cases are simply instances in which there exists, associated with the gastroptosis, essential neurasthenia, as occurs with other conditions and disease. The patients are little, if at all, benefited by medical or surgical treatment and are sometimes made much worse by the latter.

The patients operated on by Martin gained from 20 to 30 pounds in weight and are relieved of their previous symptoms. Those operated on by Noble, I am told, are relieved of their symptoms. The patient whose case was described by Hodge I saw a short time ago and

she has gained in weight and has good health. The four patients operated on by Bier have all gained in weight, from 11 to 25 pounds, and, he states, enjoy good health.

The immediate and lasting complete relief of symptoms, improvement in nutrition and gain in weight in all but two of the 39 patients operated on by simply shortening the gastrohepatic omentum would prove that the gastric symptoms were induced by the abnormal position of the stomach in gastroptosis, and that the neurasthenia is, as a rule, not an essential but an induced condition. The completeness of relief and remarkable benefit following invalidism which had existed for years in 95 per cent. of the cases, the simplicity of the operation (which restores the stomach to normal position without removal of tissue or the formation of abnormal adhesions) and the fact that it is practically free from danger (we would estimate the danger as not being more than one-fourth of 1 per cent.) must strongly recommend this surgical treatment in every case of gastroptosis in which the suffering is great.

It has been my experience that in no class of cases coming to me for treatment do the patients receive more benefit or are more grateful than those here referred to. The mechanical and medical treatment at best only secures partial relief of symptoms. (The x-ray has now positively determined, as stated by Pancoast, Sailer and Worden,¹³ that no form of binder, bandage or corset elevates the stomach to the smallest extent.) It entails constant treatment, diet, hygiene and the wearing of a cumbersome bandage or irritating adhesive straps, while the operation promises at once to restore completely and permanently the patient's health.

It is true that the patients thus far operated on represent but one class, those with gastroptosis occurring independent of relaxation of the abdominal walls or diastasis of the recti muscles. Experience alone can teach what influence the operation can have where a relaxation of the abdominal wall is active in the production of the displacement of the stomach. I believe, however, that the new attachment would be sufficiently strong to maintain the organ in normal position and the result would be quite as satisfactory. I do not believe that the operation devised by Webster would be necessary.

In cases in which there exists an associated and even marked dilatation of the stomach, as in two of our cases, the dilatation is dependent on the gastroptosis with kinking of the duodenum and motor insufficiency of the gastric walls, and therefore with the relief of the kink or obstruction through the elevation of the stomach the stomach drains itself, the motor activity is restored and the dilatation must soon disappear. Such is amply proved in my case in which dilatation was extreme, caused autointoxication and the patient after operation gained 30 pounds in weight. The stomach has returned to normal size.

I see no indication for the combination of pyloroplasty with elevation of the stomach or the performance of pyloroplasty alone in gastroptosis, unless there be present a true organic stricture of the pylorus. The operation of gastrojejunostomy as practiced by Walker, Hammer and Deaver I would consider unnecessarily mutilating, dangerous and in no sense indicated in this disease.

I would again call attention to my experience that in performing the operation the stomach cannot be carried too high upward beneath the liver to relieve the duodenal kink and compensate for the coexisting ptosis of the liver.

The operation here described has been subjected to a certain amount of criticism by three writers. It is stated by Rösing and Eve that the gastrohepatic omentum is such a frail, delicate tissue that sutures cannot be introduced into it, that even though sutures were thus introduced they would cut out and the displacement of the stomach recur, and that the operation therefore is an impracticable one. It likewise appears that Bier, Noble and LaPlace in performing the operation were not satisfied to rely on the simple suture of the gastrohepatic omentum alone, but supplemented the operation by passing sutures between the lesser curvature of the stomach and capsule of the liver, or greater curvature and abdominal wall. The gastrohepatic omentum is thin and delicate; in two of our cases particularly it was very thin, but, as far as my experience goes, in all 26 cases there has been no difficulty in finding sufficiently strong tissue not only to hold the sutures but to make a much more than efficient elevation and attachment of the organ, particularly with the modification here described. As stated, in every instance it would have required much tearing force at the termination of the operation to separate the stomach. A still better proof is the fact that there have been no recurrences.

Rösing and Deaver have offered the criticism that, because of the presence of numerous blood-vessels, particularly veins, in the gastrohepatic omentum, these vessels would easily be injured or constricted and the operation made a dangerous one. The field of operation is plainly before the operator, the gastrohepatic omentum transparent, and therefore these vessels are readily seen and avoided, and only a very careless operator would endanger the life of his patient through such complication. Also, no important vessel is ever constricted if the operation is carried out with ordinary care.

Finally, I wish to point out that there exists in gastroptosis a physical displacement of a most important organ; the whole cause of the patient's illness results from this mechanical displacement; or in a general visceral ptosis it is the stomach which causes the greater part of the symptoms. The gastromotor insufficiency, the dilatation and their symptoms are the direct result of the malposition of the stomach. The medicinal and mechanical treatments give relief in a large percentage of cases, the severe symptoms disappear and, I might say, the patients are comfortable. This relief is gained by constant careful feeding, regulated rest after taking food or the full rest treatment and the wearing of a bandage or application of adhesive straps. The binder gives relief by increasing the intra-abdominal pressure and not by elevating the stomach. With the removal of the binder, the taking of food of normal amounts and character and the assuming of any occupation, the symptoms gradually return, for the cause of the suffering is in no sense relieved. At least this has been my experience in every instance in which the patient was first referred to an internist for treatment. Therefore, if the suffering of the patient is great, I can only come to the conclusion that the surgical treatment is the only logical one.

13. Worden: Tr. Coll. Phys., Philadelphia, 1906, Series 3, xxviii, 151-196.

SURGICAL TREATMENT OF CHRONIC
ARTHRITIS

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In considering the surgical treatment of chronic arthritis it is of prime importance to distinguish the different types of arthritis, because I believe that a remedy which may be very beneficial in one type may be useless in another and even harmful in still another. I believe that much of the confusion and many of the failures can be traced to the lack of careful differentiation. Before the time of the discovery of the pus micro-organisms by Ogston, the tubercle bacilli by Koch and the gonococcus by Neisser this subject was in a chaotic condition, and even now much confusion exists in the minds of most medical men.

Within the limits at my disposal it is manifestly impossible to discuss in detail all the different types of chronic arthritis. I have consequently concluded to pay especial attention in these remarks to a consideration of one of the most common, distressing and fatal types, namely, arthritis deformans. Arthritis deformans is most commonly confused with septic, tuberculous, gonorrheal and syphilitic arthritis, gout, flat-foot and chronic articular rheumatism.

As stated above, in order that we may treat this affection satisfactorily, we must, first of all, have a fairly clear conception of each of these forms of arthritis, so that we may differentiate this particular form from the others in at least the great majority of cases which may present themselves to us.

In septic arthritis the onset is more acute; it is always accompanied by considerable pyrexia, usually with a chill, nausea, vomiting, malaise and severe pain; and, while occasionally several joints are involved simultaneously, the number affected in the end is not so great as in most cases of arthritis deformans. If the infection is due to one of the staphylococci, there is usually marked effusion into the joint, local heat, redness, pain and loss of function. The joint affection is probably always secondary to a primary affection, which can generally be located. There is always a marked leucocytosis.

I mention staphylococcus arthritis because I have had a number of chronic cases in which on aspiration I found staphylococci in pure culture in one or more of the joints, cases which had previously been diagnosed as arthritis deformans by capable observers.

Tuberculous arthritis, while running a chronic course, is distinctly more acute than arthritis deformans, more painful, at the onset accompanied with more fever, usually mono-articular, and, if when the patient first comes for examination several joints are involved, the history will practically always show that a considerable interval existed between the involvements of the different joints. There are other points, such as the von Pirquet cutaneous reaction, opsonic index and many more, which might be cited, but if reasonable care is practiced a mistaken diagnosis between tuberculous arthritis and arthritis deformans should not occur.

With gonorrheal arthritis the danger of a mistake in diagnosis is considerably greater, as I have seen several old cases of gonorrheal arthritis which had been repeatedly diagnosed as arthritis deformans. Gonorrheal arthritis is generally mono-articular, sometimes multiarticular and only rarely panarticular. These latter cases are sometimes confusing, but the history will always bring

out the fact that the onset was sudden and severe and that all the joints were involved simultaneously or nearly so. Often a history of gonorrheal infection can be obtained and sometimes the specific micro-organism can still be found on careful search.

I have never seen a case of syphilitic arthritis which could possibly be mistaken for arthritis deformans, but the possibility of such an error is mentioned by several writers, and I believe that on careful examination a sufficient number of unmistakable inetic signs and symptoms, the great number of which I need not cite here, can always be found to make a differential diagnosis between syphilitic arthritis and arthritis deformans. If any doubt exists, a careful course in antilnetic remedies should be instituted before a final diagnosis is made.

Several authors make the statement that gout is sometimes confused with arthritis deformans. If one takes the trouble to get a careful history, this mistake can always be avoided, because in gout we shall always obtain a history of one or more severe acute attacks with intervening periods of complete remission.

While it is true that an abduction deformity simulating flat-foot is often found in the later stages of arthritis deformans, simple flat-foot, no matter how severe, should never be confused with arthritis deformans. I have seen this mistake made several times, but even a superficial knowledge of these two affections should make this error impossible.

The principal source of confusion seems to arise from the fact that even prominent authors and clinicians fail to differentiate between that form of chronic arthritis which develops subsequent to acute articular rheumatism and true arthritis deformans; thus, for instance, Strümpell¹ says that a clear differentiation between the two cannot be made. To this statement I cannot subscribe; on the contrary, I believe that arthritis deformans is a disease as distinct from chronic rheumatism as is syphilis from tuberculosis and as easily distinguished from it. While we shall all agree that it is sometimes impossible to make a differential diagnosis between syphilis and tuberculosis, still we would scarcely describe the two affections in a text-book on internal medicine under the same heading; and yet, I believe, we should be just as much justified in doing this as are the text-book authors who describe chronic rheumatism and arthritis deformans under the same caption.

As stated above, this differentiation is very important because the two types of arthritis respond to entirely different treatment. True chronic articular rheumatism is always secondary to acute articular rheumatism, of which there may have been one or more attacks, each acute attack being ushered in by a severe illness, great pain, pyrexia, swelling, redness and tenderness of the affected joints. The joints to be affected during any one attack are usually all affected at the same time. Arthritis deformans, on the other hand, is insidious in its onset, chronic from its very beginning, as several years may elapse from the appearance of its first symptoms until it causes any considerable degree of disability. Thus, for instance, I have in mind a case in which the first symptoms appeared in 1892 and in which serious symptoms did not appear until 1897 and the disease had not reached its height until 1899.

While arthritis deformans may primarily be limited to one joint and often begins in one or two joints, one joint after another usually becomes involved until all or nearly all of the movable joints of the body are affected.

1. Strümpell, Adolf: *Lehrbuch der speciellen Pathologie und Therapie*, Ed. 15, ii, 517.

At this point I wish to call attention to a fact which will often give the key to the right diagnosis, namely, that within the first two or three years of the disease it is usually possible to find one or more joints just beginning to be affected, others in which the inflammatory process is at its height, and again others that have reached the quiescent or terminal state with its atrophies, exostoses and contractural deformities.

In chronic articular rheumatism are found the final results of an acute and subacute inflammation of the synovial membrane with little involvement of the extra-



Fig. 1.—Arthritis deformans of medium degree of severity, two years after the beginning of the onset.

articular structures, and if deposits occur they are usually found more or less free within the joint capsule. In arthritis deformans the process seems to be largely confined to the joint cartilages and the extra-articular structures, with little, if any, involvement of the synovial membrane. This difference in structural involvement results in the production of two utterly dissimilar, but very characteristic pictures. In arthritis deformans the involvement of the cartilages and the extra-articular structures causes contractures, and the joints become permanently rigid and fixed, as illustrated in Figures 1 and 2. Thus Figure 1 is taken from a case of arthritis deformans of medium degree of severity two years after the beginning of the onset. In three of the joints the process is at its height, while in another the terminal contracture is beginning to develop. Figure 2 is taken from an old case showing these terminal contractures still more fully developed. It will also be noted that quite a number of these terminal contractures are contractures of hyperextension, a form of contracture which I have never seen in a case of chronic articular rheumatism. Figure 3 represents a case of chronic articular rheumatism.

On examining this last picture it will be noted that all of the fingers are in a position of slight abduction and slight flexion and none of the joints in hyperextension. If such a hand is carefully examined the joints will be found flaccid, the capsular ligaments longer and looser than normal; there will be no bony ankylosis and the deposits found will be within the synovial membrane.

Patients with chronic articular rheumatism are greatly benefited by hot baths, sweats and Bier's active

hyperemia, while arthritis deformans patients are made markedly worse by these remedies.

The differences in the history of development, the characteristic deformity and the therapeutic test make a differential diagnosis possible in practically every case.

I regret exceedingly that I am unable to furnish absolutely positive proof as to the etiology of arthritis deformans, but I believe that it is the result of long-continued autointoxication as distinguished from single, repeated or long-continued autoinfection, as illustrated by nearly all of the other acute and chronic inflammatory joint affections. In other words, so far as the joint process itself is concerned, I believe that it is a chemical rather than a microbial process. I fully realize that in the present state of our knowledge, or rather lack of knowledge, of *intra-vitam* chemical tissue changes the preceding statement is not susceptible of positive proof. I wish, however, briefly to outline some of the facts and observations and deductions on which my belief is based.

So far as I am able to determine, there are no authentic cases on record in which a specific micro-organism, or, for that matter, any micro-organism has been found in true cases of arthritis deformans. On careful analysis of the reported cases of chronic arthritis in which micro-organisms have been found in the joints it is usually easy to determine that the affection was really not a true arthritis deformans, but one of the other types of chronic joint involvement. So far as I am able to determine, patients with true arthritis deformans never show leucocytosis; they never have marked pyrexia, not even as



Fig. 2.—Well-advanced arthritis deformans, showing the terminal contractures. Note especially the hyperextension of some of the joints.

new joints become involved, unless they are suffering at the same time from some intercurrent febrile affection. There is little, if any, increase in synovial fluid, the swelling being confined almost exclusively to the capsule and periarticular tissues.

The first case that led me to differentiate between a chemical and microbial process was that of a patient who was suffering from very severe hemorrhoids and numerous rectal fissures, who admitted that she rarely had a bowel movement oftener than once a week and frequently

went two weeks. For several months she absolutely refused to take a cathartic from dread of the pain which a bowel movement would cause. She finally submitted to an operation, and the material that was found in the rectum at the time of operation and that was subsequently evacuated by the use of cathartics, for foulness and stench beggared all description. I have never seen anything like it since. I also recall three cases of coprostasis due to adhesions from old appendices and one case of beginning arthritis deformans in a case of very badly lacerated, ulcerated and eroded cervix. The three cases of arthritis deformans complicated with chronic appendicitis were very different from acute articular rheumatism following acute appendicitis, as first described by Finney and now familiar to all of us.

To my mind there is absolutely no evidence in favor of the supposition that arthritis deformans is of a nervous origin. The few cases that have come to autopsy and have been subjected to careful microscopic examination show no changes whatever in the nervous system, and, while the great majority of organic nervous diseases, excluding tumors, occur in males, the great majority of cases of arthritis deformans occur in females. These are facts which should surely make us slow in ascribing arthritis deformans to some obscure nervous origin. The repeated statements in text-books that it is probably due to a nervous lesion recalls the fact that for decades past when authors were unable to find any plausible explanation for a disease they were prone to ascribe it to a miasm or to some obscure nervous lesion,



Fig. 3.—Well-advanced chronic articular rheumatism.

and I believe that this supposed nervous origin of arthritis deformans is only a similar superstition.

Even a very superficial consideration of the methods of treatment that have been in vogue in the past brings out some very startling and interesting facts, many of which would be amusing, if they were not pathetic. I will not cite any of the remedies that have been recommended heretofore, because I believe the less one knows about them and the quicker one forgets them, the better it will be for ourselves and our patients. A rather extensive perusal of the literature on arthritis deform-

ans, which, because of the great amount that has been written, must necessarily be incomplete, gives the information that one hundred and twenty-seven different remedies are being recommended for this condition. The number of times that I found each of these remedies advised varied from one to forty-two. Many are only tentatively suggested; again others are very strongly recommended. This is a condition of affairs very similar to that which existed in the treatment of diphtheria prior to the introduction of antitoxin, and the fact that all of these remedies are recommended simultaneously in the literature of a decade is rather strong presumptive proof that none of them are of any real value, because

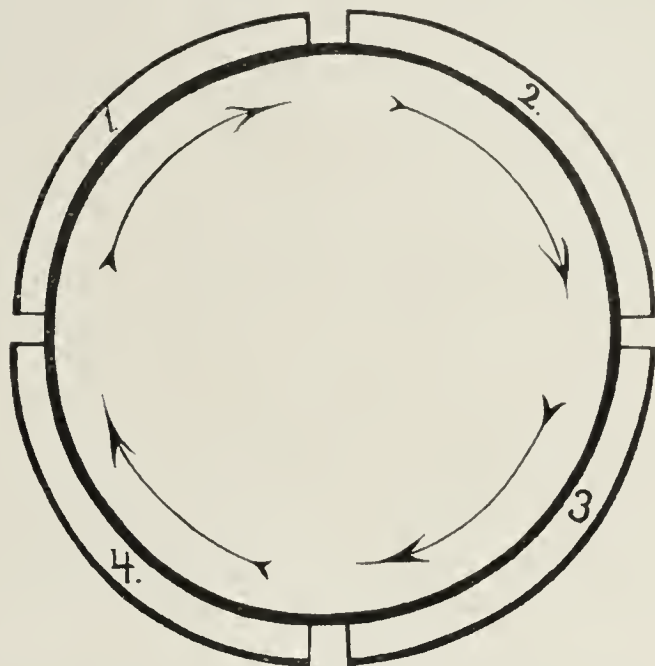


Fig. 4.—Diagram showing graphically the components of the vicious circle.

if any one approached a specific in its action the others would soon be discarded entirely.

To me a case of arthritis deformans presents the following picture: We have, to begin with, some factor which causes articular and periarticular irritation. This, in turn, causes more or less constant pain, which results in malnutrition and loss of resistance. If the process is not brought to a halt, this soon results in a vicious circle, which I have tried to illustrate by a schematic drawing (Fig. 4), one factor causing the next until the patient finally becomes so exhausted that she or he becomes a bed-ridden cripple and finally an easy prey to an intercurrent affection. An analysis of the remedies recommended gives the impression that students of this disease have more or less vaguely comprehended the situation, but because of the lack of definite knowledge as to its etiology their attempts to relieve it have been practically futile. Here, as in all other affections, we should make every effort to prevent the development of the disease, and I believe that this is actually being done and many cases of arthritis deformans are being prevented by surgeons all over the country every day when they remove foci of chronic infectional obstruction, thus preventing chronic toxemia.

Next in importance to prophylaxis is the early recognition of the cause and its removal if possible. I now recall three early and yet typical cases of arthritis deformans, the further progress of which was stopped by the prompt removal of offending appendices; two very advanced cases in which the patients were distinctly benefited by the excision of the affected appendices, but in which the disease had advanced so far that only a relative cure was accomplished; one patient suffering

from recurrent appendicitis and hemorrhoids, who refused operation and has become progressively worse; one advanced case, the patient suffering with hemorrhoids and anal fissures, in which the disease was arrested and great improvement resulted after the rectal trouble was relieved.

If the case is an advanced one in which the original cause has ceased to be operative or in which we are unable to locate the primary lesion, it becomes necessary to devise some other means by which we can obtain at least partial relief. For a number of years I have made a critical study of this and allied affections, and have treated a number of such cases with what I consider reasonable success. I believe that I am now in a position to outline a plan of treatment which will relieve these patients of their most distressing symptoms, save them from the mental and physical distress of being dependent, bed-ridden invalids and make them comfortable, often self-supporting members of the community.

In analyzing the remedies previously employed one will find that the effort has been made, consciously or unconsciously, to break in on the vicious circle at various points. The right cause not having been found, it was, of course, impossible to destroy the vicious circle at this point, and for this reason also none of the remedies previously recommended seemed able to break the vicious circle at the next point, the point of irritation of the joint itself, so most of the remedies have been directed at the next two points, pain and malnutrition, but, so far as I am able to determine, rarely, if ever, with success. Opium and all of its derivatives and many of the coal-tar preparations have been recommended as anodynes in this affection, but we all know that while certain of these remedies will temporarily relieve distress they all further impair the nutrition and thus make the patient less and less able to bear the subsequent pain; consequently they make the patient worse rather than better and have been generally discarded by the best practitioners, except in the extreme terminal conditions of the disease. Many of the remedies are given with the hope of improving the general nutrition, but it is impossible to improve the nutrition of a patient so long as she is continuously suffering pain. I know of no one thing that more surely reduces the resistance of a patient and prevents improvement in nutrition than does long-continued pain. This fact convinced me that if we could by some natural means—that is, without the use of opiates and other drugs—stop the pain, we could then secure good nutrition and thus break in on the vicious circle and save our patients.

It occurred to me that the one way we could accomplish this was by securing absolute rest of the affected joints, but this was not so easy of accomplishment, because in some of these cases nearly every movable joint sooner or later becomes affected and I have had several late cases in which practically all of them were affected simultaneously. An additional obstacle was the fact that most of these joints are partially ankylosed, with either flexor or extensor deformity with one or the other group of muscles at a distinct mechanical disadvantage, and the mere application of a retention dressing, no matter how secure or rigid, would not relieve the muscle spasm completely so long as this deformity was allowed to persist. During my work with tuberculous joints I discovered that the relief of pain in an inflamed joint involved the recognition of two separate and distinct principles: first, the application of an absolutely

rigid, close-fitting retention dressing; second, the application of this dressing with the limb in such a position that the antagonistic muscles surrounding the joints are in absolute equilibrium, so that the extensors shall have no mechanical advantage over the flexors nor the abductors over the adductors. If this ideal position is secured by absolute immobilization, pain in any chronically inflamed joint will cease from within a few hours to a week. The treatment of these old cases of arthritis deformans in which the above vicious circle has been fully established and in which the primary cause can either not be found or has become non-operative (as I believe it has in many cases), practically resolves itself into the relief of pain by natural means without the use of opiates and other drugs, and consists in the application of a snug, firm, absolutely immobilizing retention dressing with the antagonistic muscles at equilibrium. If the contractures are very pronounced and the limb or limbs cannot be brought into the desired position without causing extreme pain, the patient is anesthetized, the contractures broken up, and if necessary the tendons lengthened by tendoplasty, the limbs placed in plaster-of-Paris dressings in the desired position and allowed to remain there until the pain and irritation have entirely subsided.

If it has been necessary to use a great deal of force or to do an open operation a plaster-of-Paris mold is applied over cotton. When the reaction has subsided or the wound has healed, a new plaster-of-Paris mold reinforced with basket splints and wheat gluten bandages is applied over stockinet. In this manner a splint can readily be constructed so that it will be comfortable, absolutely rigid, light and durable, the four essentials in a retention dressing of this kind.

For immobilizing the joints of the upper extremity a small pad is placed in the axilla and a shoulder-cap applied; this is fastened to the chest with a soft roller bandage. The elbow is placed at a little less than a right angle, the forearm rotated inward slightly, so that the anterior surface looks directly toward the body, the thumb slightly extended, the fingers held perfectly straight and a mold applied in this position. For immobilizing the hip I use a plaster-of-Paris spica extending from the umbilicus to the pubis and to within an inch above the knee with the thigh abducted 10° , ventral flexion 5° . The knee is immobilized at an angle of 175° and the ankle at 85° .

The above-described positions are chosen because they are the ones which secure muscle equilibrium and fortunately at the same time are also the positions giving the muscles the best opportunity subsequently to limber up the joints and in case any of the joints should be permanently ankylosed it leaves the limbs in the most useful position.

What now is the prognosis of these cases thus treated as compared with the prognosis in the past? So far as I am able to determine, patients with true arthritis deformans treated by the usual methods in vogue in the past have generally become progressively worse, so that they have become bed-ridden invalids in from three to seven years after the onset of the disease. During all of this time they have suffered a great deal of pain: a considerable part of the time they have been unable to support themselves, and the last year or more they have required the constant personal care and attention of one or two attendants. When they once become bed-ridden they become utterly helpless, require at least one personal attendant and are either a great financial burden

to their relatives or to the community. If the treatment above outlined is instituted early, if the cause can be found and removed, this unfortunate condition can often be prevented, as the following brief history will illustrate:

CASE 1.—On March 14, 1907, a woman, aged 47, presented herself suffering from beginning arthritis deformans which began with an involvement of the proximal phalangeal joint of the ring finger of the left hand three years previously. At the time of examination most of the metacarpophalangeal and phalangeal joints of both hands were involved, also wrists and knees. The patient's complexion was muddy and anemic; nutrition fair. In the history she gave the information that nineteen years previously she had had an attack of typhoid fever. The patient was examined repeatedly with negative results. Finally one day, on examining her, a tenderness was discovered at McBurney's point. On closer questioning it was found that she occasionally felt pain in this region, and on analyzing the history carefully it was determined without question that the previously mentioned attack of typhoid fever had really been a severe unrecognized attack of appendicitis. The appendix was exposed by a McBurney incision, was found 7 cm. in length, curled up, universally adherent, lumen markedly constricted near its proximal end, the distal end filled with fecal matter. The appendix was removed in the ordinary manner, the patient made an uneventful recovery so far as the operation was concerned, her nutrition began to improve, a healthy complexion replaced the previous muddy anemic one, the joint irritation slowly subsided, and for the past year or more she has been in perfect health.

The question arises what shall be done with those patients who are not yet helpless, but in whom we are unable to find the cause. For the present, I shall have to give the advice that they be left alone, unless they are thoroughly familiar with the disease, know what is in store for them if they follow the ordinary methods of treatment, and are willing to persist in the treatment above outlined until relatively cured. The only cases in which I have suffered defeat have been those of patients who have come in the intermediate stage when the cause could no longer be ascertained and before they were absolutely helpless.

If the patient does not come under treatment until she is bed-ridden much can still be done for her. She can be relieved of all of her pain, much of her deformity and malnutrition; often she can be rendered self-supporting and always enabled to look after her own personal wants.

As an illustration of the above I wish to give briefly the history of one of the worst cases of arthritis deformans I have ever treated.

CASE 2.—An unmarried woman, aged 29, came to me in the summer of 1897. She was scarcely able to walk a distance of two blocks; she was greatly emaciated and gave the history of first experiencing slight pain at the point of insertion of both tendons of Achilles five years previously. Gradually and insidiously one joint after the other became involved, so that when I first saw her nearly every movable joint of the body was affected. In the meantime she had consulted many physicians, including several prominent specialists and also numerous quacks, including faith-healers, etc. During the next two years I tried various remedies then advised in the treatment of this affection, including the application of hot air and wet compresses. The patient, however, became progressively worse, more and more helpless, bed-ridden, so that by 1899 she was absolutely helpless. She could not walk, stand, lie or sit, but had been resting in a semirecumbent position on a specially constructed couch. Finally she became so helpless that she could not even turn the leaves of a book which was resting before her on a reading table; even her jaws and spine were partially ankylosed. In 1900 she was sent to the hospital; on admission she weighed 78 pounds. She was anesthetized, the contractures broken up, immobilized as previously out-

lined and slowly began to improve. The last time I saw her, about five years ago, she weighed 140 pounds, and was up and around; to be more precise, she was stirring the batter for a cake. She informed me that she was doing considerable housework, nursing her aged sick mother, and was able to attend to her own personal wants with the exception of putting on her own shoes and stockings. For the last five or six years she has sent me a piece of her own needlework every Christmas.

While such a condition is not to be looked on as a perfect cure, it is surely a very much less deplorable condition than that which existed before this treatment was instituted. I have several patients who had been bed-ridden for years who are now making their own living.

In concluding, I should like to emphasize the following points: first, that a clear differentiation is absolutely necessary to the successful treatment of these chronic joint affections; second, that beginning cases of arthritis deformans should be carefully studied, the cause ascertained and removed whenever this is possible; third, that for the present at least it is well to be rather cautious in the treatment of the intermediary cases; and, finally, that even in the very late and apparently hopeless cases the patients can usually be greatly benefited by proper treatment.

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NITROUS-OXID-OXYGEN ANESTHESIA BY THE METHOD OF REBREATHING

WITH ESPECIAL REFERENCE TO THE PREVENTION OF
SURGICAL SHOCK

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The following article gives the results of a trial of nitrous-oxid-oxygen anesthesia in the service of Professor Halsted at the Johns Hopkins Hospital. My object at the outset was to develop a method of administering these gases so simple, cheap and effective as to make possible their more general use. As nitrous-oxid and oxygen are expensive and are to be obtained only in heavy cylinders, it seemed to me that the solution of the question of their administration, so far as cost and convenience are concerned, must lie in using them over instead of wasting them after one inhalation. I have, therefore, studied the effects of rebreathing these gases with a view to determining to what extent this may be permitted without injury to the patient. My results have led me to believe that within certain limits the method is not only harmless but beneficial.

For the sake of clearness I shall consider the facts to be presented under three headings, namely: (1) the apparatus employed; (2) the method of administration; (3) the clinical results.

THE APPARATUS

This consists of a holder for the cylinders of gas, a rubber bag, a face-piece, and the connecting tubing. The holder, as will be seen from Figure 1, consists of a basket of iron, triangular on cross-section, into which two cylinders of nitrous oxid and one of oxygen may be placed. Small set-screws hold them in position. One of the lateral bars of the basket is made into a handle for carrying it about. In the operating-room we have a special stand for this holder. Such a stand is unnecessary, however, as the holder may be placed on a table or chair. To the upper part of the holder is bolted an L-shaped tube, each arm of which is about 2

inches long and 1 inch in diameter. Three small tubes through which gas is admitted from the cylinders enter the upper part of the L tube. Each of these is connected with its cylinder by means of a short piece of rubber tubing and an ordinary collar of the kind sold with the cylinder.

A rubber bag of 6 to 8 liters' capacity is attached to the vertical arm of the L tube, and a rubber pipe one inch in diameter and $2\frac{1}{2}$ feet long to the horizontal arm. This pipe is wrapped with wire to prevent kinking. It leads to the face-piece. If so desired, the rubber bag may be attached directly to the face-piece. It is more convenient, however, to have it on the holder. There is no obstruction to breathing through a tube an inch in diameter. As the face-piece (Fig. 2) is the most important part of the apparatus, it merits a somewhat careful description.

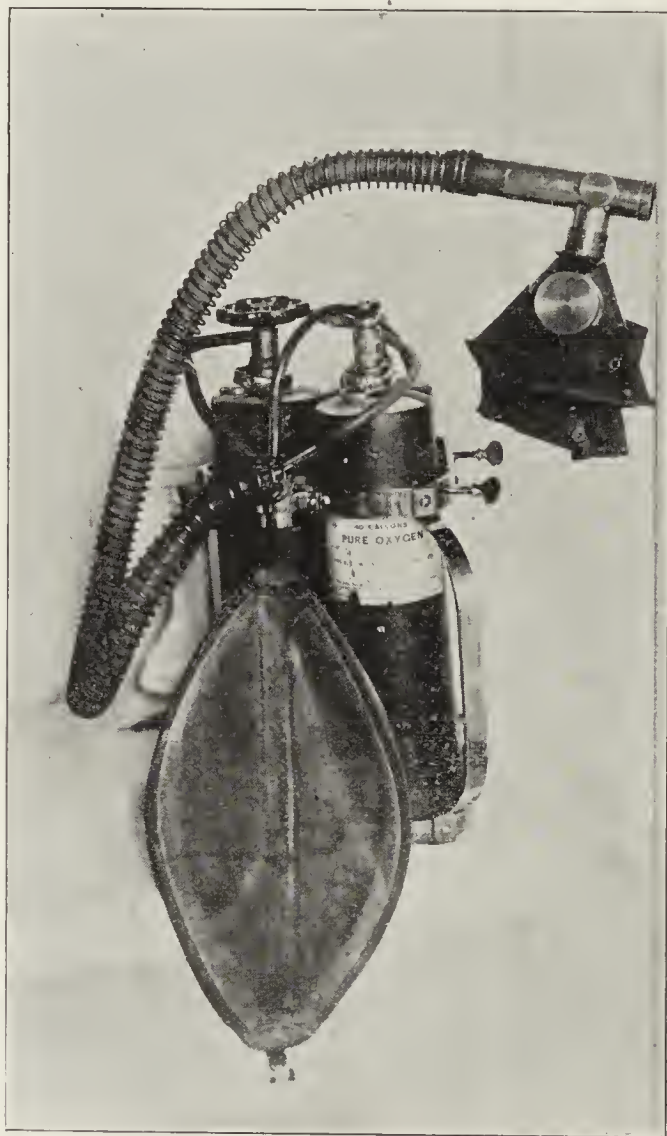


Fig. 1.—The complete apparatus.

It consists of a valve box (VB) and a mask (M). The valve box is made on the principle of a trombone and has an outer and inner tube. By sliding the latter to a given one of three positions, the patient may be made to breathe air in and out through valves, or gas (with oxygen if desired) in and out through valves, or gas to and fro into the bag.

In Figure 2, OC is the outer tube, IC the inner, and VC a valve cartridge which slips into IC, and may be taken out at will to permit repair of the valves. Nitrous oxid and oxygen are admitted at the end marked "From Gas-Bag." The other end is covered by a detachable diaphragm (D) perforated by wide openings around its border. These are closed by a rim on the valve cartridge when the latter, together with the inner tube (IC) is shoved to that end of the outer tube (OC).

The outer tube has two lateral openings: an air-vent ("Air") and a large orifice (FO) leading to the mask. The inner tube has three lateral openings, O_1 , O_2 and O_3 , placed as shown.

The valve cartridge is open at both ends, and has a lateral opening which fits over the orifice O_3 in the inner

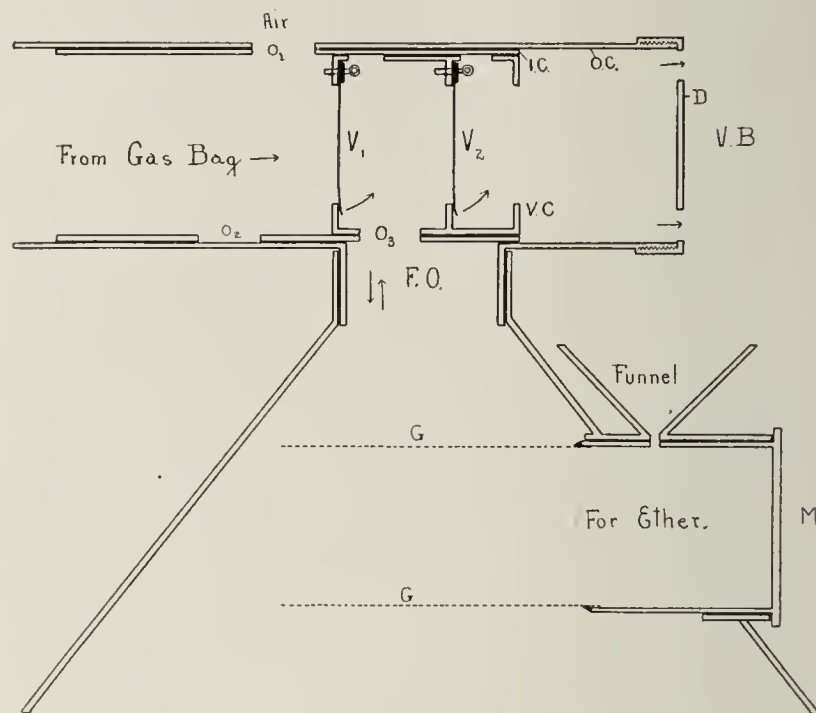


Fig. 2.—Longitudinal section of the valve-box and mask.

tube. It has two valves of rubber (V_1 and V_2) which open in the direction indicated by the arrows.

The inner tube may be pushed into three different positions: The first is shown in Figure 2; in the third its end is against the diaphragm D, while in the second position it is halfway between these extremes. When in the first position, air enters the valve box through the air vent, and is breathed inward through the valve V,



Fig. 3.—Adjustment of the cuff to the face, and method of using ether.

and the opening O_3 , and outward through O_3 , valve V_2 , and the holes in the diaphragm D. Gas is usually not given when the air vent is open. In the second position, the air-vent is closed and gas is breathed inward and outward just as air is breathed in the first position, the only difference being that the orifice O_3 in

IC is over the opposite end of the large opening, FO, in the outer tube. In the third position, the air vent is still closed, and O_2 comes over FO while the valves are thrown out of action. Gas is then breathed to and fro into the bag.

The mask is attached directly to the valve-box, as shown in Figures 1, 2 and 3. It is essential that this fit the patient's face so as to be absolutely air-tight. The ordinary face-piece is fitted with an inflatable rubber rim. As such a mask cannot possibly fit every face, a set of graduated sizes must be employed. Even then a mask cannot always be found which will fit the face of an edentulous patient or of one with a beard or a prominent nose. As these face-pieces do not fit under the chin, they are usually brushed away by any sudden movement of an unruly patient. Furthermore, it is very tiresome to hold such a mask accurately in place during a long anesthesia.

I have hit on a simple device which does away with these difficulties. This consists of a mask provided with a rubber cuff, and big enough to fit the largest face. The cuff is pulled up over the margin of the mask (Fig. 3). To adjust the cuff to the face the free portion of the cuff is turned back over the margin of the mask, and the latter is put on the face so as to take in the nose and chin. The cuff is then turned down, when it firmly grasps the chin, cheeks and nose. It may be made to fit any face. I have used it on a child 2 years old. The cuff allows dental props, gags, etc., to be put into the mouth without admitting air.

One other part of the mask—the ether attachment—remains to be described. This (Fig. 2) consists of a cylinder of wire gauze (G_1) an inch and a half in diameter, fitted at one end to a short metallic cartridge ("For Ether," Fig. 2). The latter fits accurately the inside of a tube passing through the wall of the mask. Tube and cartridge are perforated by small openings which may be superimposed by rotating the cartridge. The wire cylinder is packed with gauze, on which ether is dropped through the orifice H. The latter is provided with a funnel, inside of which is a perforated plate which prevents any splashing of ether when the patient expires. Because of the heat inside the mask, the ether is rapidly evaporated from the gauze, and very small amounts are required. It need hardly be said that chloroform should never be given with such an apparatus.

The main features of this apparatus may be summarized as follows:

1. It is simple and is made to withstand hard usage. It cannot easily get out of order, and, if it does, it may be quickly taken apart and repaired.

2. It is light and easily portable. Exclusive of the cylinder, it weighs only 6 pounds; with two cylinders, 26 pounds. Packed in a bag of canvas or leather it may be taken anywhere.

3. It may be quickly sterilized by boiling. To spare the rubber we usually sterilize the bag and tubing with a solution of bichlorid of mercury which is rinsed away with water.

4. It is economical in the use of gases, as the cuff prevents all leakage.

5. There is so little mechanism to be considered and the administration is so simple that the anesthetizer has plenty of time for observation of his patient.

6. It is inexpensive. The total cost of the apparatus is about \$25.

METHOD OF ADMINISTRATION

With the air-vent open the cuff of the mask is fitted to the patient's face, care being taken to prevent the admission of air at the sides of the nose. In some cases it may be necessary to lay a piece of gauze across the bridge of the nose and draw the cuff over it, or to hold the cuff there with the finger. The inner tube of the valve-box is pushed to its mid-position and nitrous oxid admitted to the bag. The patient now inhales this gas and expires into the outer air, thus washing out, as it were, all the air from his lungs. This process is continued until he becomes very slightly cyanotic. Then the inner tube is pushed to its final position and the patient breathes to and fro into the bag. At this moment a small puff of oxygen is admitted to the bag, just enough to restore the natural color of the face. The patient now rebreathes a mixture of nitrous oxid and oxygen until the inner tube of the valve box is moved back to its mid-position. He then exhales each breath into the air until the bag is empty. The anesthetizer then fills it with a fresh mixture of gases, which the patient again rebreathes. No attempt is made to measure the exact percentage of oxygen given. This we regard as unnecessary. It is perfectly easy to add directly from the oxygen cylinder exactly the right amount of this gas to each bag of nitrous oxid. The patient's color is an extremely delicate indicator of the amount of oxygen he is getting. Our rule is to give just enough oxygen to keep the patient's color free of the least tint of cyanosis. The most elaborate device for regulating the percentages of the two gases can do nothing more than this.

The question now arises whether rebreathing in the manner I have just described is injurious. Many writers have attached great importance to certain volatile organic poisons in the expired air. This has caused several inventors of apparatus for giving nitrous oxid and oxygen to do away entirely with rebreathing. Hewitt's apparatus, although its inventor states that rebreathing is probably not harmful, does not permit rebreathing. Dr. H. Warren Buckler, anesthetist for Dr. H. A. Kelly, has used the method of rebreathing for several years and has noted no ill effects therefrom. I have sought from the first to determine to what extent rebreathing is permissible. Prof. W. H. Howell¹ has reviewed the experimental data bearing on the question of the harmful products of expired air. His conclusion, which is based on the experimental work of Haldane and Smith,² is that it is highly improbable that any volatile organic poisons exist in the breath, and that the only harmful products of respiration are water vapor and carbon dioxid. He says:

Individuals, kept in a confined space for a number of hours, give no symptoms of evil effects except when the accumulation of carbon dioxid has reached a concentration of over 4 per cent. At this concentration rapid breathing is apparent, and if the carbon dioxid rises to 10 per cent. great distress is felt, and the face becomes congested and blue.

If we accept these conclusions as correct, we may make a rough calculation based on them to determine the number of times a patient may rebreathe a given quantity of gas without injury. The average volume of an expiration for an adult is 500 c.c. This contains 4 per cent., or 20 c.c., of carbon dioxid. Therefore an adult patient can breathe the contents of a bag containing 8 liters of gas sixteen times before the carbon dioxid content of the same will reach 4 per cent.

1. Howell, W. H.: Text-Book of Physiology, Ed. 2, p. 614.

2. Haldane and Smith: Jour. Path. and Bacteriol., 1893, 1, 108, 318.

At first I adhered pretty closely to this rule, as I feared that too high a percentage of carbon dioxide would be injurious. I also tested frequently, usually in the course of the same anesthesia, the effect of rebreathing and of a continuous administration without rebreathing. The latter procedure has always been the less satisfactory one. With it the patient's respiration soon becomes shallow and his pulse more rapid, even when his color is good and the anesthesia deep and satisfactory. With rebreathing, on the other hand, the respiration becomes deep and full and the pulse rate usually falls. This result, until I had familiarized myself with the recent work of Dr. Yandell Henderson on "Shock," I attributed entirely to the stimulant action of carbon dioxide on the respiratory center. Henderson's work, however, indicates that this compound has also a direct action on the venous system.

"Failure of the circulation in shock," he states, "is due primarily to abolition of venous, not arterial, tonus." "The hypothesis is presented that acapnia (diminished carbon dioxide in the blood and tissues resulting from hyperpnea and from exhalation of carbon dioxide from exposed viscera) is the cause of surgical

respiration, slowing of the pulse, and increase of blood-pressure.

It is evident, if this theory be correct, that rebreathing to a certain extent, during nitrous-oxid-oxygen anesthesia, is not harmful, but beneficial. The respiratory rate with this form of narcosis is very rapid—frequently from forty to sixty a minute. Such overventilation of the lungs must rapidly take carbon dioxide from the blood. I shall briefly present certain observations which lend support to Henderson's theory.

1. Rebreathing, provided enough oxygen be given to prevent cyanosis, can be permitted for a surprisingly long time without any appreciably injurious result. I have tested this by having healthy adults breathe to and fro the contents of a six-liter bag of oxygen. This may be done from four to eight minutes without the slightest change in pulse or blood-pressure. The gas in the bag becomes hot, moist and disagreeable to breathe, and there is some sweating; otherwise there is no discomfort from this experiment.

2. The pulse, respiration and blood-pressure, once anesthesia is well established, are very little affected by the trauma of the operation. I have twice given this anesthetic during the evulsion of large peripheral nerves and neither time was there the least change in the patient's condition. Likewise there is no change during the most vigorous manipulations of ankylosed joints. The chart (Fig. 4) shows how little effect is produced by trauma and exposure of the intestines. This would seem to be favorable to Henderson's contention that trauma produces shock chiefly by increasing the ventilation of the blood in the lungs. Rebreathing prevents such ventilation.

3. A pulse, rapid before operation, is nearly always slowed when rebreathing is permitted for some length of time. Very sick patients, with rapid pulse and quick, shallow respiration, actually seem benefited by this form of anesthesia. A young man with gangrene of the bowel had a pulse-rate before operation of 160. During the operation, which lasted forty-five minutes, his pulse varied from 90 to 120 and was of a distinctly better quality than before. If the anesthesia is unsatisfactory, or if rebreathing is not permitted to any great extent, I have always noted an acceleration of the pulse. This observation is in accord with Hewitt's statement,³ that "the pulse is invariably accelerated." It is to be noted that Hewitt's apparatus does not permit rebreathing.

On two occasions I have observed a sudden and marked slowing of the pulse, in one case from 90 to 60 and in another from 80 to 50. In both cases the tension was also markedly increased. Both patients were of a good color and both had been rebreathing for rather long intervals. I attribute a fall of this kind to a sudden stimulation of the cardio-inhibitory center by an excess of carbon dioxide in the blood. On washing out the lungs with a fresh supply of gas, the pulse-rate immediately rose. The blood seems to free itself of an excess of carbon dioxide with great rapidity.

4. There is usually a well-marked and sustained rise of blood-pressure during this form of narcosis. In the case of the patient whose chart is shown in Figure 4 the rise was from 100 to 120. I have a number of charts which illustrate this fact. According to Henderson, carbon dioxide has a direct stimulant action on the vasomotor center.

The carbon dioxide is not the only product of expiration the effect of which must be studied with regard to

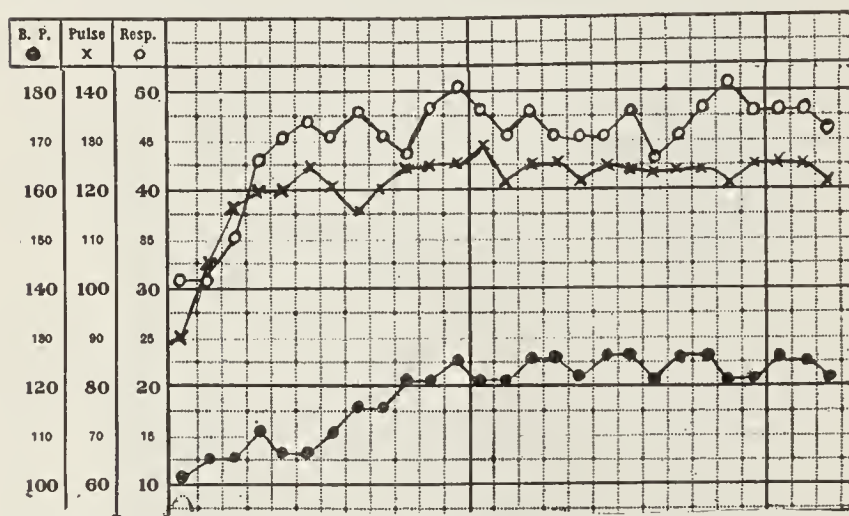


Fig. 4.—Chart of the pulse (line with crosses), respiration (line with circles), and blood-pressure (line with heavy dots), during anesthesia of two hours and fifteen minutes' duration. The patient was a woman of 65 with carcinoma of the sigmoid. The operation was closure of a fecal fistula by double lateral anastomosis, repair of an old wound in the abdominal wall, and colostomy. Note the constant level of the pulse and the maintained rise of blood-pressure. The temperature rose from 98.6 to 99.9. The recovery was excellent.

shock." Carbon dioxide, he believes, is the normal stimulant of the venous wall. If the amount of this gas in the blood decreases below a certain level, the veins dilate and the blood accumulates in them until not enough blood is returned to the heart properly to support the circulation. Shock would thus only indirectly be the result of trauma. When it occurs in the course of anesthesia or after a painful injury it would be due to over-ventilation of the lungs, which diminishes the carbon dioxide content of the blood. Henderson was able, merely by regulating "the rate of pulmonary ventilation" to adjust the heart to any desired rate of beat. He believes that carbon dioxide exerts a stimulative action, not only on the respiratory center, but on the vasomotor and cardio-inhibitory centers as well. The respiratory center is, however, much more sensitive to the action of carbon dioxide than the others, and not until the departure from normal of the carbon dioxide content of the blood becomes fairly well marked is the pulse slowed or the blood-pressure elevated. Thus a reduction of the carbon dioxide content of the blood causes, as a rule, shallow, feeble respiration, a rapid pulse, and low blood-pressure, while excess of carbon dioxide causes deepened

3. Hewitt: *Anesthetics*, Ed. 3, p. 316.

rebreathing. The heat of the exhaled gases has also an important action. Normally the body loses a large amount of heat in the expired air. This loss is prevented by rebreathing. Therefore there is a rise of body temperature. This I have almost always found to be over half a degree in anesthetics of thirty minutes or more. During an administration of three hours the temperature rose 1.3 degrees.

Rebreathing is thus a most effective method of heating the gases, which are cold on being freed from their cylinders.

The body also loses considerable moisture by way of the lungs. Water vapor accumulates in the rebreathed gases, but this, so far as I have observed, has no ill effect on the patient.

It is best and cheapest not to admit any air during the administration. Satisfactory anesthesia is impossible with enough air to prevent cyanosis, because of the large amount of nitrogen in the air.

CLINICAL RESULTS AND OBSERVATIONS

We have given nitrous oxid with oxygen by the method of rebreathing without mishap to about 700 patients. Records of the pulse, respiration and blood-pressure have been kept during the more important administrations, and postoperative examinations of the urine made. From the data so obtained I shall attempt to answer three questions: 1. Is this form of anesthesia safe and free from bad after-effects? 2. Is it deep and smooth enough to be satisfactory to the surgeon? 3. Is the administration sufficiently cheap and convenient to be generally used?

It would be foolish to assert that there is no danger. The danger lies, however, not at all in the anesthetic, but entirely in the way it is given. There are three danger signals: cyanosis, slowing of the pulse, and vomiting. With a good color, a pulse of 70 or above, and regular breathing, there is no danger. Vomiting is not a cause of trouble when the patient has been properly prepared for operation. It is to be feared if he has just eaten, or if he has intestinal obstruction. At the first sign of retching the mask is to be removed. As the patient regains consciousness very quickly, he is not liable to aspirate vomitus.

For an adult man, rebreathing can be permitted for two-minute intervals, and for three-minute intervals for women and children.

I have met practically no bad after-effects. A few patients have vomited during or just after the administration. A few have had slight headache. A boy with extensive burns was anesthetized daily for twenty to fifty minutes on three successive days without the slightest appreciable evil result. He could take food immediately after the administration. Although a very large percentage of our patients have been seriously ill at the time of the operation, many of them with advanced pulmonary or renal disease, we have had no fatalities or postoperative complications attributable to the anesthetic.

In answer to the second question I may state in a general way that for the cases for which this anesthetic is especially indicated it is as satisfactory to the surgeon as ether. Almost every abdominal and peripheral operation, except craniotomy and operations on the female pelvic organs, has been performed under it. Fifty of the cases have been laparotomies. The list has included drainage of the mastoid cells, drainage of the antrum of Highmore, excision of tuberculous glands of the neck, drainage of empyema, removal of the breast for benign

and malignant disease, operations on the gall-passages, intestinal anastomosis, appendectomy, cystostomy, nephrectomy, repair of typhoid perforation of bowel, cure of hernia, castration, amputations of leg and arm, exploration of great joints and evulsion of nerves. One administration lasted three hours; three others have been for more than two hours. Most failures are to be traced to a poorly fitting mask. A very small amount of air will spoil the anesthesia. It would be claiming too much, however, to assert that this form of narcosis is always as satisfactory as that of ether. Certain patients cannot be kept properly relaxed without a disagreeable degree of cyanosis. With such cases it is wisest not to go on very long with nitrous oxid, but to give ether at once, either very small amounts in the mask or by the drop method. Ether should never be given for a long time by means of the mask. By the aid of a few drops, however, there is rarely a patient who cannot be carried through the more difficult periods of the operation.

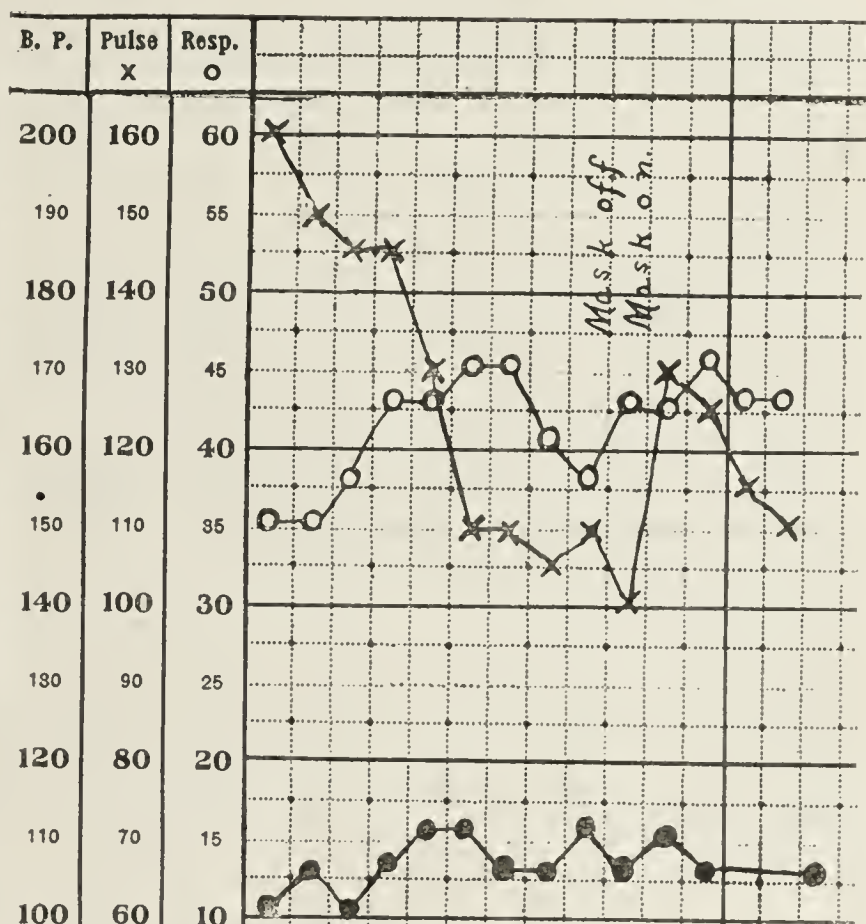


Fig. 5.—Chart of the pulse, respiration and blood-pressure during an operation for recurrent sarcoma of the humerus. The rapid pulse at onset was probably due to nervousness.

To the third question I can at once answer in the affirmative. For the following reasons this form of anesthesia is very convenient:

1. It is pleasant to the patient; many patients will consent to operation under "laughing gas" who would refuse if ether were to be used.

2. Consciousness is quickly lost and quickly regained. The patient does not have to be watched by the anesthetizer for more than a brief period after the operation, and may be allowed to come out of the anesthetic at any time should his cooperation be necessary to the surgeon. Very few patients have any excitement on recovery.

3. The anesthetic is so nearly harmless that one does not hesitate to give it to the same patient over and over again, at frequent intervals, or to use it for painful dressings, manipulations, etc.

4. The apparatus is cheap, easily portable, simple and not difficult to use.

5. The cost is not great. The patient whose chart is shown in Figure 4 consumed one cylinder of nitrous oxid (cost \$1.75) and ten to fifteen gallons oxygen (cost about 40 cents) in two hours and fifteen minutes. Roughly, the cost is about $1\frac{1}{2}$ cents per minute of anesthesia. The cost is greatly lessened by the method of rebreathing.

Besides being safe and convenient, this form of anesthesia has, I believe, a unique characteristic which makes it especially valuable for very sick patients. I refer to its remedial action for shock. This effect, which has already been discussed, may make of the anesthetic an aid instead of an evil. Furthermore, I have seen no cases of postoperative collapse following its use. Patients who cannot be easily anesthetized by nitrous oxid alone may first be etherized to a moderate depth and the anesthesia then continued with nitrous oxid. The therapeutic effect of rebreathing may thus be secured for all cases.

SUMMARY

1. Nitrous oxid with oxygen may be successfully given by a very simple and easily portable apparatus.

2. It is unnecessary to measure the percentage of oxygen given.

3. There are no harmful organic substances in expired air.

4. Rebreathing to a moderate degree is harmless.

5. In many cases rebreathing is beneficial, as it causes increased depth of respiration, slowing of the pulse, a rise of the blood-pressure and a rise of temperature. It seems probable that all but the last of these results may be attributable to the action of carbon dioxide.

6. Evidence is presented which indicates that surgical shock in the absence of hemorrhage may be caused in part by excessive pulmonary ventilation.

7. The method has met the requirements of a thorough clinical test.

8. The ether-nitrous-oxid sequence is suggested for certain cases.

I desire to thank Professor Halsted and Prof. W. H. Howell for criticism of this article and Professor Halsted for the use of the clinical material on which it is based.

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THE HISTORY, PREVALENCE AND PREVENTION OF RABIES AND ITS RELATION TO ANIMAL EXPERIMENTATION *

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One cold, stormy, January night a poor, weather-beaten, tired and bedraggled dog appeared at a farmhouse some twenty miles from Boston. He had evidently traveled a long road and was sheltered and fed and treated with the usual kindness that any one with a heart in him would show to such a waif. The next morning he "made friends" with the neighbor's dog Pete, and, dog-like, the two exchanged a few bites in the process. During the day he seemed morose and unfriendly, and snapped at people, and, from a fear that

he might bite the children, he was shut up in an out-building. The next morning he was found dead.

In February the neighbor's dog made a vicious attempt to bite a horse driving into the yard. Amazed at such unusual conduct, the farmer drove the dog away with a whip, and the animal disappeared down the road, never to be heard from again except that an animal answering his description was seen to attack two puppies in the near-by village. These two puppies died a few weeks later with symptoms of rabies.

It was Pete's custom to sleep in the barn; and in March two cows in this barn, and a week later two more cows, died showing unmistakable symptoms of rabies, in the opinion of a veterinarian in the employ of the State, who has had much experience with this extraordinary disease.

The explanation was simple: the poor waif had been suffering from rabies, his friendly (?) bite had infected Pete, who had in turn bitten the pups and the cows, and all had died of rabies.¹ There had been no rabies in or about this town before the advent of this waif.

Such strange tales as this, and more strange, were told by our fathers and by their fathers, and each generation back through the centuries has no doubt heard similar stories; and, if we go back as far as the fourth century before the Christian era we find the first record of this disease in the words of Aristotle: "Dogs suffer from madness that puts them in a state of fury, and all animals which they bite, when in this condition, become also attacked by madness."

And, if we return through the ages, following the literature, we find reference to rabies in the works of Virgil, Horace, Ovid and Plutarch. The disease in human beings was first recorded by Cornelius Celsus in the first century A. D., who was also the first to use the word "hydrophobia." Dioscorides recommended the extirpation of the wound as protection against the disease, and Galen in the second century A. D. stated special remedies for rabies. Furthermore, Pliny the younger, Columella and C. Aurelianus may be mentioned among the early authors who referred to the disease. Nothing comes to us on the subject from the middle ages. In 1591 Bauhin in his "Memorabilis historia luporum aliquot rabidorum" speaks of the infection of human beings by rabid wolves. There was an epizootic of rabies in 1604 in Paris (Andry); toward the end of the seventeenth century in Italy (Baglio, Rammazzini); in 1708 in Suabia;² in 1719-23 in France and Germany; in 1754-1760 in England; in 1779-1807 in America, especially in West Indian Islands and Peru. Toward the end of the eighteenth and the beginning of the nineteenth century rabies had spread all over Europe. From 1803 to 1830 there was an epizootic of rabies among the foxes in Southern Germany and Switzerland (Köchlin and Franque). The saliva of the rabid dog was demonstrated by inoculation experiments to be infectious by Zinke (1804) and Gruner and Salm (1813); that of herbivora by Berndt (1822), and that of human beings by Magendie.

In 1814 and 1815 accurate experimental investigations regarding the disease were made by Viborg in Copenhagen and Waldinger in Vienna. The clinical knowledge was especially enriched in 1817 and 1818 by Delabère-Blaine and Greve (England). In 1822

* This article is one of a series issued in pamphlet form by the Council on Defense of Medical Research of the American Medical Association for circulation among the public. Nine of these pamphlets are now ready, taking up the relations of animal experimentation to ethics, diagnosis, cancer, vaccination, the live stock industry, tuberculosis, typhoid, dysentery, rabies, etc.

1. To prove the matter beyond peradventure, the brain of the waif (still in fair condition owing to the cold weather) and one of the cows were sent to me for examination, and Negri bodies were easily demonstrated, proving the disease to have been rabies.

2. Camerarius and Scharff: *Dissertatio inaugural de Alysso elave, Tübingen*.

the epizootic prevailed in Holland, in 1823-1824 in Berlin and Prussia, in 1824 in Sweden and Russia. During the outbreak from 1823 to 1830 Hertwig published³ a large number of carefully carried-out inoculation experiments on animals which greatly advanced our knowledge. Virchow showed the fallacy of the spontaneous origin theory in 1854.

Galtier of the Lyons veterinary school gave us a method of transmitting the disease to rabbits, thus establishing the often necessary proof that a given suspicious case was truly one of rabies. He also made experiments to confer immunity with saliva and brain matter (1880-1881). The marvelous researches of Pasteur and his coworkers Roux, Chamberland and Thuillier (1881-1889) demonstrated the location of the purest and most concentrated virus in the central nervous system and gave to the world the wonderful protective inoculation which has reduced the mortality in man to a fraction of 1 per cent.

It was imperative that these investigators should use in their studies many animals, and those of different kinds, or no advance in knowledge would have been made. Animal experimentation always has been and always will be absolutely necessary to acquire accurate knowledge of any infectious disease, regarding its cause, means of dissemination, lesions produced, treatment and methods of prevention and eradication.

With the hope of being able to discontinue the necessity of inoculating animals (usually rabbits or guinea-pigs) in order to prove the existence of rabies in a given suspicious case, investigators have endeavored to find definite microscopic evidence equally reliable. Great advances in this direction were made by Van Gehuchten and Nelis in 1900 and by Babes at about the same time by their discovery of characteristic cellular lesions occurring with much regularity in certain portions of the central nervous system of animals and people that had died of rabies, but, as these lesions cannot be considered specific—there being a possible error of perhaps 2 per cent.—animal inoculations were still necessary in most instances. Since 1903, however, they have been rendered much less necessary by the discovery by Negri of very definite microscopic “bodies” in the nerve-cells of various portions of the brain in cases of rabies. In these bodies, which bear the name of the discoverer, we are probably close to the long-sought cause of rabies, and their presence having been demonstrated in a given case it no longer seems necessary to resort to animal inoculation to establish the existence of the disease.

As before stated, the disease had become widely spread over Europe during the early part of the nineteenth century. So we read of outbreaks continuing in 1838-40 in Austria and Württemberg, and in 1852-3 in Prussia. For example, in the last-mentioned year 150 rabid dogs were brought to the Berlin Veterinary School, and in Hamburg there were 267 cases of rabies. In 1861 there was an epizootic in the Rhine provinces and France; in 1863-1871 in Württemberg; in 1862-1867 and 1873-1876 in Vienna; in 1865-1866 in Saxony; in 1871-1876 in Saxony, Bavaria and Prussia. Since the introduction of proper dog laws and compulsory muzzling the disease has greatly diminished in most of the German states, a yearly average of about 700 rabid animals being reported from 1866 to 1902,⁴ usually near the border

line of countries where muzzling is not enforced.⁵ With such laws Denmark, Sweden and Norway have not known rabies for more than fifty years, and it has recently been eradicated from England and Switzerland. It has never been known in Australia, probably owing to the strict enforcement of a six months' quarantine for dogs.

With the exceptions noted, practically every European country—France, Austria, Hungary, Belgium, Holland and Italy—shows a record somewhat similar to that of Germany. Russia has had years of experience with this disease, and that country and Austria constantly supply the German towns on their borders with fresh cases. Roumania, Servia, Bulgaria and Turkey are by no means free, although the fact that dogs in the latter country suffer more often from “dumb” rabies explains the reason why it is not wider-spread in that land.⁶ Rabies is also frequently reported in Africa and Asia.

It is naturally the pride of health boards and of governments to show as little disease as possible in their respective communities, and it is doubtless always with regret that they report outbreaks of infectious disease. Therefore, if official figures are to be misrepresented, they would naturally be minimized rather than otherwise. We must consequently assume that, if the figures given for rabies and all other infectious diseases occurring in various lands are not true figures, they probably and undoubtedly represent fewer cases than actually occur, inasmuch as, unless remarkable supervision is exercised, numerous cases of disease are never reported, or escape detection.

In North America rabies exists in Canada, Mexico, Cuba and very widely in the United States. Accurate mortality statistics for all the states are impossible to obtain, as they are not kept with the same precision as in some European countries, nor has the prevalence of rabies in animals been recorded with much accuracy. We know, however, that it has existed here for about a century and a half. The first outbreak occurred in Boston in 1768, and in 1770 and 1771 it was observed in dogs and foxes in the same vicinity. It was reported in Philadelphia in 1779 and also in Maryland. In 1785 it was prevalent throughout the northern states and soon after spread to the southern states.⁷ Peters⁸ quotes from a Boston newspaper of 1798, which indicates that the disease existed in Rhode Island at that time, and there is little doubt that it has existed there and in many other states from time to time ever since. For example, it must have been prevalent in Massachusetts between 1876 and 1882, for during that period 44 people died of rabies, and again between 1888 and 1894 there must have been another outbreak, for 45 people died of it during this period.⁹ The largest number of deaths in any one year was 17 in 1890; 15 in 1878, and 14 in 1877 and again in 1889. Previous to this the reports show that 28 people died of hydrophobia between 1842 and 1876,

5. See maps, etc., in Kitt's *Was muss jeder Hundebesitzer wissen?* Stuttgart, 1908.

6. Remlinger and Mustapha Effendi, Hutya and Marek: *Spezielle Pathologie und Therapie der Haustiere*, 1909, i, 467; Remlinger: *Rabies in the Street Dogs of Constantinople*, *Jour. Tropical Veterinary Science*, 1909, iv, 561. In this article Remlinger offers another explanation, not for the Ottoman Empire, but for the city of Constantinople. In closing he says: “It is in the special conditions under which street dogs live, in their distribution into distinct groups, in the subtle instinct which makes the others avoid a rabid dog, to which we must attribute, more than to any peculiarities in the disease itself, the rarity of rabies in Constantinople street dogs.”

7. Moore: *The Pathology of Infectious Diseases of Animals*, 1906.

8. Peters: *Am. Jour. Pub. Hyg.*, 1907, p. 96.

9. Rep. Mass. State Board of Health.

3. Hertwig: *Beiträge zur näheren Kenntnis der Wuthkrankheit*, 1828.

4. Friedberger and Frohner: *Spezielle Pathologie und Therapie der Haustiere*, 1904, ii, 548.

the number varying considerably with the years, often no deaths and once as many as 6 in 1854.

In Massachusetts vital statistics of this disease in animals began to be kept in 1895, and Table 1 is made from the reports of the Cattle Commission (now the Cattle Bureau), the Boston Board of Health, the State Board of Health, Massachusetts reports of births, marriages, deaths, etc., and from figures kindly given me by the Health Department of the City of New York and by Dr. Rambaud of the Pasteur Institute of New York.

TABLE 1.—RABIES IN MASSACHUSETTS

Year.	Mortality Dogs.	Mortality Other Animals.	Mortality People.	People Exposed and Given the Pasteur Treatment.
1895.....	4	0	0	11
1896.....	12	2	2	7
1897.....	19	8	0	8
1898.....	25	2	2	11
1899.....	1	1	0	3
1900.....	3	0	0	0
1901.....	11	0	0	1
1902.....	2	0	0	1
1903.....	1	1	0	1
1904.....	2	0	0	0
1905.....	98	5	2	12
1906.....	356	43	8	133
1907.....	741	37	2	165
1908.....	511	53	5	144

These figures are fairly accurate, although probably far too low, as there can be no doubt that many cases in animals, and men also, were never reported. Suspicious cases are not included in the above table; the figures represent only such cases as were demonstrated beyond all reasonable doubt to be actual cases of rabies, either by a clear history of a bite by a rabid dog and subsequent typical symptoms, by the presence of Negri bodies, by lesions in the Gasserian ganglia, by animal inoculation and often all of these proofs in sequence.

Many of our states would show a similar or a worse record if figures were obtainable, but they are difficult to secure.¹⁰ There is little doubt, however, that the disease is widely spread over the country, and few states, if any, are free from it.

Yet in spite of all historic and scientific evidence there are a few medical men who say they do not believe there is any such disease as rabies. They accept without remark other infectious diseases, but rabies is beyond their comprehension. If asked why they hold such contrary opinions, their usual reply is that they have never seen a case. Perhaps they have also not seen smallpox, glanders, trypanosomiasis or China, yet they do not deny their existence.

Here are two historic and scientific facts which have been demonstrated over and over again:

1. If ten persons are exposed to the same gonorrheal infection, a varying per cent. will surely contract the disease, unless preventive measures are employed.
2. If a rabid dog bites ten persons, or animals, a varying per cent. will surely become rabid unless preventive measures are employed. And yet it is as difficult to convince the person who accepts the one and rejects the other as it is to convince the man who refuses to trust the scientific evidence that the earth is not flat.

It is often stated that Pasteur institutes do not prevent rabies, but cause it. They may, so far as they insure a very reliable protection against the disease and consequently induce a carelessness in enforcing proper dog laws which in themselves would be sufficient to stamp it out.

Pasteur institutes are of two kinds, public and private. Public Pasteur institutes are established by endowment,

such as the Pasteur Institute in Paris; by governments such as those of the United States Public Health and Marine-Hospital Service at Washington, the New York City Board of Health and the Consejo Superior de Salubridad, Mexico City; by universities, such as the Pasteur Institute of the Universities of Moscow and Bucharest. These are founded for the benefit of the people of the country and for the study of this and other diseases. Private Pasteur institutes are what the name implies, but it is as unfair to impute ulterior motives to their proprietors as it is to assert that all physicians have but one end in view in the practice of their profession. Both do an immense amount of charitable work which is never made public, and for which they often receive not even a thank-you.

Pasteur institutes will cease to exist as soon as properly enforced dog laws eradicate rabies, for no infectious disease can be so easily eradicated. It only needs the cooperation of humanitarians and real dog lovers to pass and enforce the necessary dog laws, and in a few years this will be accomplished. (See English statistics.)

The Pasteur preventive treatment has reduced the mortality of persons bitten by rabid animals from between 6 and 14 per cent. to a fraction of 1 per cent. The statistics of all the Pasteur institutes show this. No class of men is more ready to discredit the work of his brother, or is a more severe critic, than the scientist who controls the work of another, yet the statistics of all institutions giving the Pasteur treatment singularly agree. They may be read in the reports of the various governments and universities or in the *Annales de l'Institut Pasteur* from the time of the first publications by Pasteur.

A few tables will suffice to illustrate. To quote from Law:¹¹

The following table gives the number of individuals treated who had been bitten by animals which had been proved rabid by successful inoculation of other animals, and of those bitten by reputedly rabid animals, and their respective mortality:

TABLE 2.—RESULTS OF TREATMENT IN PERSONS BITTEN BY ANIMALS SUSPECTED AND PROVED RABID, RESPECTIVELY

	No. Bitten.	No. of Deaths	Mortality %
By animals proved rabid by inoculation	2,872	20	0.69
By animals pronounced rabid by veterinarian	12,547	61	0.48
By animals suspected of rabies.....	4,747	15	0.31
Average mortality			0.46

The Pasteur treatment by its great success in persons who have already been bitten has in a great measure robbed hydrophobia of its terrors, only it must be resorted to as early as possible in the period of incubation.

In this connection it should be remembered that there is no known cure for rabies when symptoms have once appeared and that death follows a train of well-recognized phenomena, agonizing to the sufferer; and the delirium and mania, the violent reflex spasms of mouth and larynx with inability to swallow, are harrowing to the observer no matter how extensive his experience as a forced witness of others' suffering. Physicians who have been so unfortunate as to see a person with hydrophobia usually have no desire to see another, and find difficulty in eliminating the haunting recollection.

The figures of the Pasteur Institute of Paris,¹² 1886-1907, are given in Table 3.

10. Kerr, J. W., and Stimson, A. M.: The Prevalence of Rabies in the United States, THE JOURNAL A. M. A., Sept. 25, 1909, liii, 989.

11. Law: Veterinary Medicine, 1900, iv, 331.

12. Ann. de l'Inst. Pasteur, 1908, p. 557.

TABLE 3.—FIGURES OF THE PASTEUR INSTITUTE OF PARIS,
1886-1907

Year.	Persons Treated.	No. of Deaths.	Mortality %
1886.....	2,671	25	0.94
1887.....	1,770	14	0.79
1888.....	1,622	9	0.55
1889.....	1,830	7	0.38
1890.....	1,540	5	0.32
1891.....	1,559	4	0.25
1892.....	1,790	4	0.22
1893.....	1,648	6	0.36
1894.....	1,387	7	0.50
1895.....	1,520	5	0.38
1896.....	1,308	4	0.30
1897.....	1,521	6	0.39
1898.....	1,465	3	0.20
1899.....	1,614	4	0.25
1900.....	1,420	4	0.28
1901.....	1,321	5	0.38
1902.....	1,005	2	0.18
1903.....	628	2	0.32
1904.....	755	3	0.39
1905.....	727	3	0.41
1906.....	772	1	0.13
1907.....	786	3	0.38

The figures in this table are similar to those of all the Pasteur institutes of the world, for example that of Tunis,¹³ where in 1906, 489 persons were treated, with no deaths. Since the foundation of this institute, 2,490 persons have been treated, with 9 deaths, or a mortality of 0.36 per cent.

At the Pasteur Institute of the University of Bucharest, in 1903-1905, 3,091 persons were given the preventive treatment and none died. In Berlin, in 1898-1902, 1,416 persons were given the Pasteur preventive treatment, of whom 12, that is, 0.84 per cent., died of rabies, while among those not treated the mortality was 6.9 per cent. In Prussia during the year 1907, 281 persons were treated, of whom 4, that is 1.4 per cent., died of rabies, while of those not treated 2.71 per cent., died.

At the Budapest Pasteur Institute in 1890-1907, 35,639 bitten persons received treatment, of whom 159, that is 0.44 per cent., died of rabies, while from 1890 to 1903, of 1,861 bitten persons not treated, 266, that is 14.29 per cent., died of rabies.

In 1905 there were treated in forty Pasteur institutes in various parts of the world 104,347 people, of whom 560 (0.54 per cent.) died of rabies later than fourteen days after treatment ended. According to the location of the bite, i. e., head or the hands, the mortality of the treated varies from 1.99 to 0.36 per cent.¹⁴

The Pasteur preventive treatment depends on the fact that the spinal cord of a rabbit that has been inoculated with "fixed" virus and died of rabies in from six to seven days, loses its virulence day by day, so that at the end of fourteen days it is no longer capable of producing harmful effects.

Beginning, then, with an emulsion of a small piece of cord that is not virulent, or slightly so, the patient is inoculated daily for about twenty days with increasing strengths of the virus until his system has reacted to such a degree that it can withstand the stronger virus and immunity is produced. For this purpose many rabbits must be employed. Many rabbits and guinea-pigs

must also be employed for the purpose of diagnosis in all laboratories where this work has to be done, such as laboratories of the boards of health, for instance. Happily, however, not so many animals must be used for this purpose as formerly, owing to the discovery of the Negri bodies. Unless some other method of diagnosis and treatment is found this sacrifice of rabbits and guinea-pigs must continue until rabies is eradicated.

An article¹⁵ on hydrophobia which was recently sent to me was written, doubtless, with the hope of comforting many people and with the best intentions for the general welfare of the country. But I judge that the writer has had no personal experience with rabies and has spent little time on the study of the accepted scientific literature of this or any other infectious disease. Consequently many of her statements are not "facts," and if they are read by people who know nothing of medicine or medical literature, much real harm will be done instead of evidently intended good.

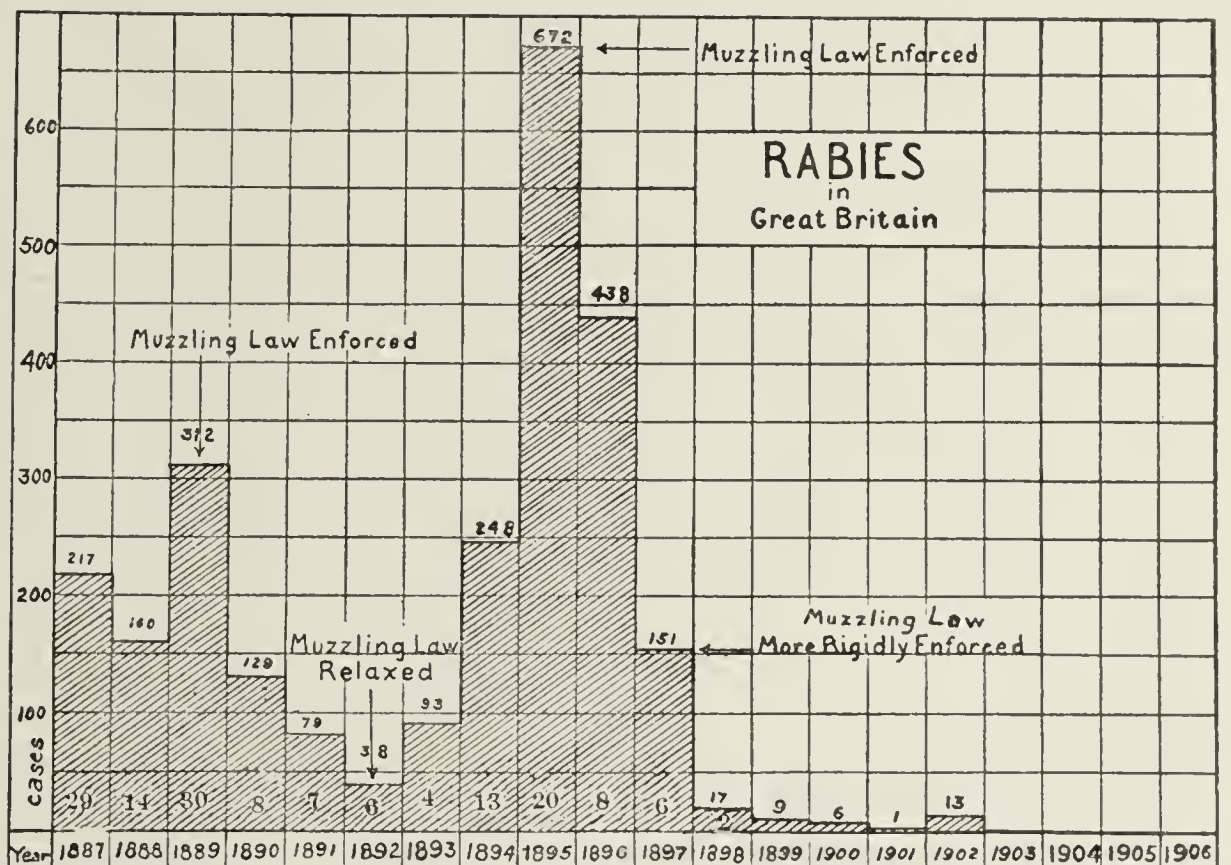


Chart showing relation of enforcement of muzzling law to prevalence of rabies in Great Britain. The figures in the cross-hatching indicate the number of persons who died of rabies in England. Credit for making this chart is largely due to Mr. Aubrey H. Strauss.

She would have us believe, for instance, that the Pasteur institutes are to a large extent responsible for hydrophobia, whereas it is the other way about; if there were no rabies there would be no institutes, and certainly the disease is much older than the institutes. To quote (p. 47): "In Germany, where there is scarcely any hydrophobia, they declined the offer of the Pasteur Institute." This is not a "fact," for there are two such establishments in Germany, the *Institut für Infektionskrankheiten*, Berlin, and the *Hygienische Institut*, Breslau; moreover there is still considerable rabies in that country, as we may see by referring to the works already mentioned, although now fewer deaths than formerly in human beings, perhaps largely owing to these very institutes.

Again to quote from this article:

In England hydrophobia is almost extinct. The report of the Registrar-General for Great Britain and Wales . . . in 1907 said that in 1906 and for three years previously there had

13. Bull. de l'Inst. Pasteur, 1907, p. 404.

14. The above statistics are from Hutyrá and Marek.

15. White, Caroline E.: Facts about Hydrophobia, Jour. Zoophily, May, 1909.

not been a single case of hydrophobia in the United Kingdom, and this same United Kingdom refused to have a Pasteur Institute.

Nothing could be more misleading than this "fact." The true reason that there is no rabies in England has nothing whatever to do with Pasteur institutes; it is merely that proper dog laws were enforced, i. e., all unlicensed and unmuzzled dogs were destroyed, as also all dogs exposed to a rabid one. The accompanying chart compiled from the "Annual Reports of Proceedings under the Diseases of Animals Acts" explains the matter very simply.

This scheme is so readily grasped that explanation seems unnecessary. The number of cases of rabies here given refer only to the dog. Other animals are excluded, and I have only added the number of deaths in man to show how they rise and fall with the number in the dog. It should be remembered that many English people annually took the preventive treatment; for example, 147 in the year 1892. These are the only figures that I have, but, if so many took the treatment that year when so few dogs were reported, it is fair to assume that the number increased when more dogs were affected.

Note that in 1892 there were but 38 rabid dogs in England. At this time the authorities listened to a petition of "dog-lovers" and removed the "cruel muzzle," with the result that during the next five years 1,602 dogs, to say nothing of many other animals, and 51 people died of the most agonizing disease known to the medical world. In spite of this fearful lesson these "humanitarians" came again in 1899 with another petition signed by 50,000 of them asking once more to be relieved of the annoyance of the muzzle. Fearing a repetition of the above calamity, the authorities wisely remained obdurate, with the result that in 1905 no case of rabies occurred in England, and there has been none since. The sudden rise to 13 cases in 1902 is very instructive. These cases occurred in a wild, hilly district of Wales where both people and dogs were difficult to control, but by rigid enforcement of the laws the trouble was stamped out.

The muzzles have been removed from the dogs in England, but will be resumed with the appearance of the first case of rabies. Moreover, there is a strict quarantine of six months imposed on any dog brought into the country.

Many people argue that the matter was comparatively simple in England, but that similar results cannot be accomplished here, as this is not a "little island." This is true to a certain extent only. If, for instance, all dogs of a state were muzzled and a rabid dog should come over the boundary from a neighboring state and bite a number of dogs, a certain percentage of these dogs would certainly develop rabies if not destroyed, but the dogs of this given state being all muzzled, the disease would spread no further; in other words, it would be kept down to the minimum.

Even local muzzling may be of great value if properly enforced. For example, not long ago a rabid dog attacked a number of school children and bit several of them severely, necessitating their taking the Pasteur treatment. This dog ran from a neighboring town where a muzzling order existed at that time, and, had he been properly muzzled or immediately shot for not being so, this calamity could not have occurred. Many similar instances might be given.

Even inadequate muzzling sometimes does much good, for it may succeed in preventing an individual dog now and then from spreading this truly terrible disease.

If those opposed to animal experimentation in general and Pasteur institutes in particular are truly interested in preventing much suffering in both animals and man as far as rabies are concerned, they should devote their energies to advocating the adoption of the historic methods employed in England and other countries for the suppression of this disease, and they will have the well-earned satisfaction of knowing that they have accomplished enormous good by assisting in the eradication of rabies from our country without any more annoyance to the dog than is daily experienced by all our draft animals in harness.

PERINEAL PROSTATECTOMY

SOME CONCLUSIONS BASED ON A STUDY OF 400 CASES

HUGH HAMPTON YOUNG, M.D.

BALTIMORE

Before discussing the operative results it may be well to say a few words in regard to the differentiation of hypertrophy and carcinoma of the prostate. In making this comparison I have a series of 145 cases of benign prostatic hypertrophy which were exhaustively studied two years ago¹ and a series of 111 cases of carcinoma of the prostate which I have recently published.²

In my series of 145 cases of hypertrophy, the prostate was described as distinctly soft in 56, elastic in 26, firm in 45, moderately hard in 14, very hard in no cases. The seminal vesicles were slightly indurated in 19, moderately indurated in 5. Glands were palpable in the pelvis in 5 cases. In my 111 cases of cancer the prostate was soft in 2, elastic in 1, slightly indurated in none, moderately indurated in 6, very hard in 78, stony in 9, in places very hard and in others soft in 10 cases. The seminal vesicles were indurated in most cases, generally very greatly in 88 cases and the membranous urethra was indurated in 35 cases. These figures show at once the very great importance to be attached to induration in the prostate in men past 40 years of age. In a few cases only a small area was involved, but it was invariably very hard. The 2 cases in which the prostate was soft were those in which hematoma was present beneath the capsule. The posterior surface of the prostate was irregular in 14 cases of prostatic hypertrophy and nodular in only one, whereas in carcinoma it was rough and nodular in 69 cases. It is a remarkable fact, however, that in most cases of carcinoma of the prostate the posterior surface is smooth until late in the disease.

The cystoscope showed in hypertrophy of the prostate no intravesical enlargement of the lateral lobes in only 13 cases, whereas in 45 cases of cancer the lateral lobes were considerably enlarged in only 7 and in the rest of the cases either not enlarged or only very slightly so. The median lobe of the prostate, which was so commonly enlarged in hypertrophy, was generally no more than a small bar in carcinoma, there being only 5 cases in 46 in which a small rounded lobe was present. In all of these cases, when the median and lateral portions of the prostate were present as rounded lobes, they were found to be adenomatous hypertrophies which were present at the same time with carcinoma. Pathologic examination showed that the carcinoma involved the posterior subcapsular stratum of gland tissue, whereas the hypertrophy involved the lateral and median lobes and pro-

1. Johns Hopkins Hosp. Rep., 1906, xiv.

2. Young, H. H.: Ann. Surg., December, 1909.

jected into the bladder, the two being distinct and separate processes and the lateral lobes apparently preserved intact by their thick capsules which seem to prevent the ingrowth of cancer. Another very distinctive finding in cases of cancer was marked thickening of the entire suburethral portion of the prostate, whereas in hypertrophy there was only thickening in the region of the median lobe.

A study of these cases showed that carcinoma of the prostate occurred about one-fourth as often as hypertrophy (100 cases of cancer to 400 cases of hypertrophy); that carcinoma frequently occurred in cases in which no hypertrophy was present; that when the two occurred at the same time the cancer generally involved only a transverse layer beneath the posterior capsule and the two diseases remained distinct for a long time; that carcinomas grow upward into the space beneath the trigone and not toward the rectum nor the bladder, which was seldom involved, even late (and then through the trigone and in the region of the ureteral orifices); that induration should be viewed with great suspicion; that great hardness should always lead to an exploratory operation; and that in cases of pure carcinoma there are no enlarged intravesically projecting lateral or median lobes, but in about 50 per cent. of the cases a benign hypertrophy of the lateral lobes is present, and these may project into the bladder.

The value of the cystoscope has been very decisively proved in this series of cases. It was employed in fully 95 per cent. of the cases and was very valuable in demonstrating beforehand the condition of the bladder, ureters and intravesical portions of the prostate.

Vesical calculi were present in about 15 per cent. of the cases and large vesical diverticula in about 10 per cent. (in several sufficiently large to warrant operative removal). In a few instances calculi encysted in pouches or in diverticula were found with the cystoscope, and if they were in such a position as to make removal through the perineum impossible a suprapubic operation was done. Not a few cases, supposed to be hypertrophy of the prostate, were found to be tumors of the bladder, and in several instances hematuria, which was supposed to come from the prostate, was found to come from the kidney. I therefore feel very strongly the great importance of cystoscopy as a preliminary procedure. Without it the operation of prostatectomy is generally much less exact and scientific than with it.

In cases in which cancer was suspected the procedure followed was this: The operation was begun as for benign hypertrophy; that is, an inverted V-cutaneous incision, blunt dissection of the space on each side of the central tendon posterior to the transversus perinei and anterior to the levator ani, division of the central tendon and recto-urethralis, linear incision of the membranous urethra, insertion of the tractor, exposure of the posterior surface of the prostate by pushing back the rectum. Careful palpation was then made, and if the prostate was of stony hardness it was always found to be cancer. If the prostate was somewhat elastic an incision was generally made parallel with the urethra through the capsule on one side and an inspection of the cut surfaces made. A peculiar gritty sensation to the knife, suggesting a very fibrous tissue, and numerous small yellowish dots and lines in a grayish stroma would usually be present if the case were carcinoma. If it were impossible to make a naked-eye diagnosis a piece of tissue was taken for a frozen section which was stained at once and examination made while the operation halted. Not

more than six to ten minutes were thus consumed as a rule, and if the case were found to be a fibrous prostatitis instead of carcinoma the usual operation for benign hypertrophy, namely, enucleation of the lateral and median portions of the prostate, was then performed, the urethra and ejaculatory ducts and vesical sphincter being preserved. If the disease was found to be carcinoma and previous examination had demonstrated that a radical operation was feasible this was at once begun by severing the membranous urethra, freeing the anterior and lateral surfaces of the prostate, dividing the bladder just above its juncture with the prostate, cutting across the trigone about 1 to 2 cm. below the ureters and finally excising the vasa deferentia and seminal vesicles with the entire prostate, prostatic urethra, capsule and cuff of bladder in one piece. An anastomosis between the large opening in the bladder and membranous urethra was then made, no difficulty being encountered, as a rule, in making a tight closure (and in getting subsequently a good union). If the disease was found to be carcinomatous, but previous examination had showed that the seminal vesicles were completely involved, or that the invasion had extended too high for any hope of complete excision by the operation above outlined, a simple conservative perineal prostatectomy was performed, great care being taken not to excise any mucous membrane and to dig out carefully the mass of carcinoma in the median portion of the prostate and sometimes beneath the anterior portion of the trigone. The wound was then closed, as in cases of hypertrophy, with double tube drainage for the bladder, light gauze packs for the lateral cavities, suture of the levatores ani and partial closure of skin with catgut.

Postoperative treatment in all these cases was about the same: water in abundance; infusion immediately after the operation (and frequently afterward if necessary on account of uremia); patient out of bed as soon as possible, generally the second or third day; gauze and tubes out on the day after the operation and no subsequent instrumentation except before the discharge of the patient, when a catheter was passed to see whether the bladder emptied itself completely.

I may say here that my experience shows that the passage of sounds is absolutely unnecessary in fully 99 per cent. of the cases. In very rare instances a slight contraction occurs in the membranous urethra several months after the operation, but I have not seen a single case of definite fibrous stricture following the operation, and I do not know of more than two patients who have had sounds passed occasionally since the operation. To pass a sound is always to invite epididymitis and traumatism of the verumontanum, and it is nearly always as unnecessary as it is inadvisable.

ANALYSIS OF RESULTS

I. CARCINOMA OF PROSTATE; RADICAL OPERATION

This was performed in 6 cases. The ages of the patients were 70, 64, 65, 75 and 68, respectively, and symptoms had been present 11 months, 3 years, 4 years, 1 year, 8 months and 1 year, respectively. Physicians had been consulted and treatment given 8 months before in one case and 7 months before in another. In both of these cases an osteopath was employed who gave prostatic massage, thus losing valuable time. One patient had been subjected to a Bottini operation six months before admission. In all cases sufficient symptoms had been present to warrant rectal examination, by which a

diagnosis could have been made long before the patient applied to us for treatment.

The onset symptoms were difficulty and frequency of urination in all cases except one, in which the first symptom was pain in the urethra. Three patients had never suffered any pain. In the other three cases pain, either local or referred, was a prominent symptom. On admission urination was extremely frequent and difficult in all cases except one, in which a catheter was used twice daily.

The prostate was described as considerably enlarged in 3 cases, of moderate size in 2 cases and slightly enlarged in 1 case. Marked induration was present in all cases, involving the whole prostate in 4 cases. In 1 case one lobe was indurated, but less so than the other and distinctly elastic. In one case the marked induration was confined to half of the prostate, the other being very slightly indurated.

The seminal vesicles were found on rectal examination to be free from infiltration or induration in 4 cases. An area of induration between the seminal vesicles was present in 4 cases. The catheter showed 400, 300, 500, 400, 80 and 600 c.c. residual urine.

The cystoscope showed a slight elevation of the median portion in 5 cases. In one case there was a small definitely rounded median lobe with a shallow cleft on each side.

The lateral lobes were scarcely enlarged intravesically in any case. There was generally not even a sulcus between them in front, but in 2 cases it was present but shallow. The vesical mucosa was everywhere intact, but the cystoscope showed an elevation of the trigone which involved only the anterior portion in one case. In one case the trigone was considerably elevated and irregular, extending out on the left side as far as the urethra. In 4 cases the trigone was negative.

In 5 cases the operation was carried out with apparent success and without shock, but a study of the specimens removed showed carcinoma near the upper limit in 2 cases. In one case (patient dying of shock) autopsy showed extensive carcinoma of the peritoneum and retroperitoneal glands, although the bladder and seminal vesicles were free from invasion. In one case the patient died nine months after the operation as a result of traumatism and infection, in the attempt to remove a stone adherent to a silk suture. Autopsy showed a very small area (1 cm. in diameter) of recurrence back of the bladder. In one case the patient lived over three years in comfort, but autopsy showed extensive metastases in various parts of the bladder, the bladder and urethra, however, being free from ulceration. In one case in which the patient died six weeks after the operation from ascending renal infection as a result of the intentional but injudicious division of the two ureters, an extremely careful post-mortem examination of all the pelvic tissues, with numerous sections taken for microscopic study, failed to reveal any evidence of carcinoma, and it seems probable that the disease had been completely eradicated. Two patients are alive and apparently well, one six months and the second four and one-half years after the operation. In both of these cases the specimens showed that the disease had been completely removed with a fairly wide margin, and in one case at least the lapse of time seems to insure a radical cure.

As a result of the experience gained in these 6 cases the following may be said:

1. The operation should not be attempted in cases in which the infiltration extends more than a short distance

beneath the trigone as determined by the cystoscope and by examination with the finger in the rectum and the cystoscope in the urethra; or in those in which the upper portions of both seminal vesicles are involved; or in those in which an extensive intervesicular mass or indurated lymphatics or glands or involvement of the membranous urethra or muscles of the rectum shows that the disease is manifestly too far advanced.

2. The ureteral papillae should be left intact with sufficient tissue below them to insure proper suture and leave their openings free, 1 or 2 cm. above the wound.

3. Hemorrhage should be carefully checked (by hugging the capsule injury of the periprostatic flexus may be largely avoided).

4. Silk should never be used in making the urethrovesical anastomosis on account of subsequent deposits of lime salts, but chromicized catgut with occasional sutures of silkworm gut (left long for subsequent removal) are the best.

5. When the operation is attempted early it can be performed without much danger or great difficulty and with excellent chance of cure.

6. Only 3 of the 6 cases above recorded were suitable for operation. In all of these the disease was apparently completely removed, and one patient is now apparently well four and one-half years after the operation.

II. CANCER OF PROSTATE; PARTIAL OPERATION

The results obtained in cancer cases by a conservative perineal prostatectomy (in which the urethra is preserved intact, the median and lateral lobes being shelled out from the capsule as completely as possible and the internal orifice of the urethra dilated with forceps) have been surprising. I have grouped them in classes.

Class 1.—Those with a "perfect" functional result; i. e., complete relief of urinary obstruction as long as the patient lived.

There are 5 patients in this class, aged 72, 64, 82, 55 and 57; prostatic symptoms had been present 6, 3, 7, 2 and 6 years, and the patients lived 3½, 2½, 2 years, 10 and 4 months, respectively, after the operation. The relief of the urinary obstruction and pain afforded by the operation in these cases was, indeed, splendid.

In these 5 cases the patients have been able to void naturally without hesitation in a fairly good stream without pain and have never required catheterization.

In one of the cases the patient did not have to get up at night to void. In others the interval was slightly shorter than normal, but the patient considered himself well as far as the bladder was concerned.

Class 2.—Cases in which the patients are still alive and completely relieved by the operation of conservative perineal prostatectomy.

There are 10 cases in this class, the patients being aged 60, 62, 61, 78, 67, 75, 67, 79 and 75; symptoms present 2, 2½, 15, 10, 4, 1, 1, 1, 4 and 1 year; and all ten patients alive and completely relieved 5, 1½, 1½, 1 year and 9, 7, 7, 4, 3 and 3 months, respectively.

Two cases were of interest because the carcinoma was localized in a small area in the prostate and apparently completely removed with the lateral lobes. Both of the patients are apparently completely cured now, 5 and 1½ years after the operation. In another case not tabulated here (operation by Dr. J. R. Caulk) a similar small nodule of carcinoma was found in the anterior commissure of the prostate. There are only 3 cases in which carcinoma was discovered extremely early. The case in which the disease has been present for 15 years was one of chronic prostatitis with a small area of carcinoma, and

the case in which the symptoms had been present for 10 years was one of hypertrophy of the middle and lateral lobes with carcinoma of the posterior portion of the prostate.

The results in these cases have been extremely satisfactory. There has been no hematuria in any case since the operation and no evidence of vesical tumor formation. So far they bid fair to give good final results.

Class 3.—Cases of good immediate results, but subsequently recurrence of obstruction.

There are four cases in this class, the patients being aged 66, 66, 75 and 54; symptoms present $4\frac{1}{2}$, $3\frac{1}{2}$, 3 and $3\frac{1}{2}$ years, respectively.

In the first case the median bar was not removed and a recurrence of the obstruction was to be expected. It is surprising that ten months elapsed before the patient had to begin the use of a catheter.

In the second case benign hypertrophy of the lateral and median lobes in front of the posterior layer of cancer was present. The operation was apparently complete, but obstruction recurred in six months. The patient is still alive, two years after the operation. The relief of obstruction in the third and fourth cases was also temporary (ten and eight months).

A survey of the 19 cases, grouped above, in which the operation of conservative perineal prostatectomy was performed shows no cases in which there was no benefit from the operation and only 4 cases in which almost complete and permanent relief was not afforded by the operation. Two cases were remarkable for the length of time ($3\frac{1}{2}$ and $2\frac{1}{2}$ years) in which the patients lived in complete comfort, as far as the bladder was concerned, although the cancer spread upward involving the high pelvic structures, and in one case producing stricture of the rectum. Some of the cases in Class 2 bid fair to be as successful as the two above mentioned, as the patients are still in excellent health a year or more after the operation. Two cases are remarkable in that the patients have been completely cured by the operation. In these cases, however, the diagnosis of carcinoma was not made before operation and the carcinoma which was present in each case was simply a small nodule in one of the lateral lobes and completely removed by the operation. These two cases show the very great importance of early operation in hypertrophy of the prostate, even though carcinoma is not suspected. In both these cases, however, rectal examination showed distinct induration, greater than that usually seen in hypertrophy, thus demonstrating the importance of suspecting carcinoma in all cases where any portion of the prostate is markedly indurated.

The results obtained in these 19 cases (79 per cent. of lasting relief of obstruction) shows the very great value of this operation, of enucleation of the obstructing lobes, in cases of carcinoma in which the radical operation cannot be undertaken, but in which the patient is suffering with frequent, difficult or painful urination and catheter life is either impossible or very difficult, painful or burdensome. One is almost tempted to say that the operation is generally advisable, but I think it is better to try to get along without it, using the catheter, if necessary, until the conditions described above supervene, when the operation may be easily undertaken. Great care should be observed in preserving the normal structures, particularly the mucous membrane of the urethra and vesical neck, but the operation should be very thorough, particularly in the region of the median portion. The operator should be sure that the prostatic orifice is well dilated and should make an examination

with the finger to see that all the obstruction has been removed and to palpate the trigone. If a considerable subtrigonal infiltration is discovered it may be advisable to remove it with the curette through the cavity left by the removal of the median bar; this was done in some of these cases. It is possible that in the 4 cases in which there was a recurrence of obstruction this recurrence was due to the fact that a mass of subtrigonal infiltration was not removed in either of these cases.

Two recent cases have not been included. In both of these, however, the immediate results have been excellent and the patients have left the hospital within three weeks, the fistula closed and the patient voiding naturally without pain. This makes 21 cases in which I have personally performed the operation of conservative perineal prostatectomy in cancer cases without a single death.

III. BENIGN HYPERTROPHY AFTER PERINEAL PROSTATECTOMY

Ages of Patients.—In 339 cases of benign hypertrophy of the prostate which have been analyzed, the ages of the patients were as follows:

	Cases.
Under 50 years.....	12
Between 50 and 59 years.....	63
Between 60 and 69 years.....	145
Between 70 and 74 years.....	66
Between 75 and 79 years.....	41
Over 80 years.....	12

One of these patients was 88 years of age and one 87 years of age. As seen here the operation was not refused on account of the age of the patient (and I may say that it has been extremely rare to refuse to operate because the patient was too weak). In almost all cases in which it was unwise to operate at once, preliminary treatment was given, and if at the end of two or three weeks the condition was not desperate perineal prostatectomy was performed. In several instances it was done really as a life-saving measure with the hope that the better drainage afforded would save the patient, but at least 4 of my 13 fatalities was due to this, and since I have adopted a longer course of preliminary treatment for desperate cases this has not occurred.

Marital State.—Two hundred and sixty-two were married, 54 were widowed, 21 single and in 2 no record has been made on this point. This would seem to show that single men were more or less exempt from prostatic hypertrophy, and it is also borne out by the fact that in my first series of 145 cases there were 10 Protestant ministers, all of them married, and not a single Catholic priest.

In this series also statistics show conclusively that gonorrhea cannot be considered a causative factor, there being in 145 patients only 46 who admitted having had gonorrhea and in only 8 cases were strictures present. In only a few cases was there a history of a chronic prostatitis extending up to the time of the beginning of symptoms of hypertrophy, so that it seems evident that chronic inflammation does not play an important rôle in the etiology and that sexual activity does.

Time Since Operation.—In the following tabulation of results I have included only cases in which the operation was performed over four months ago. I have thus excluded 14 cases of more recent date, in some of which the patients are in the hospital, but all of which are apparently going to give excellent results. Among the 327 operative cases I have been able to hear from 250 patients (and these are alone included in the various tabulations below). This does not include the reports in regard to patients who have died since leaving the

hospital, which will be considered separately. The time elapsed since operation is given in the following table:

	Cases.
4 to 6 months.....	13
6 to 11 months.....	27
12 to 17 months.....	42
18 to 23 months.....	22
24 to 30 months.....	24
30 to 35 months.....	14
3 to 4 years.....	38
4 to 5 years.....	41
5 to 6 years.....	24
6 to 7 years.....	5

As noted here, in 146 cases (about 60 per cent.) more than two years have elapsed since the operation, so that ample opportunity has been afforded for obtaining the ultimate results.

Time of Closure of Fistula.—This is shown in the following table:

	Cases.
1 week.....	11
2 weeks.....	44
3 weeks.....	70
4 weeks.....	45
5 weeks.....	19
6 weeks.....	9
7 weeks.....	3
8 weeks.....	10
3 months.....	12

As noted here, in 50 per cent. of the cases the fistula closes in less than twenty-one days, and in 22 per cent. of the cases inside of fourteen days. In one remarkable case there was never any leakage of urine through the perineum after the removal of the tubes on the second day after the operation, and in 2 cases none after the fourth day. In 8 other cases the fistula closed within the first week, and this in spite of the fact that these patients were out of bed on the third day after the operation and generally walking during the first week. As noted in this list, in only 10 per cent. of the cases was the fistula present after the sixth week. In a few instances the fistula persisted for several months, but there are only 2 cases in which the fistula is still present after a prolonged period. In one of these a perineal urinary fistula is still present, two and one-half years after operation. The patient has symptoms strongly suggestive of vesical and probably prostatic calculi, but cannot be induced to return for examination. The second case, in which a perineal urinary fistula is present, is one in which a tear was made into the rectum during operation, and, although immediate closure was performed, a recto-urethral fistula has persisted. This is the only recto-urethral fistula which is present, though not the only case in which the rectum was accidentally injured at operation. When it is so injured it is almost always the operators' fault unless there be extensive perineal scar tissue, in which case the perineal operation should be avoided. As a rule, no difficulty whatever is experienced in separating the prostate from the rectum.

Length of Stay in Hospital.—As showing the benignity of the operation, the following table of length of time in which the patient remained in the hospital is very instructive:

	Cases.
6 to 13 days.....	8
14 to 20 days.....	61
21 to 27 days.....	74
28 to 34 days.....	52
35 to 42 days.....	28
7 to 8 weeks.....	14
8 to 9 weeks.....	3
9 to 10 weeks.....	0
10 to 11 weeks.....	2

As shown here, there were 8 patients who left the hospital in less than fourteen days, one on the sixth. In all these cases the results have been excellent and the patient felt so well that he insisted on leaving. In 28 per cent. of the cases the patient did not remain three weeks, and

in 60 per cent. of the cases the patient went home by the end of the fourth week. Only 2 patients in 251 remained longer than two months.

It is, indeed, remarkable to see how rapidly these very old and often very infirm men convalesce. After the second week they are generally fretful to get home, and about the only thing that keeps them is waiting for the fistula to close. The fact that in most cases only a few drops of urine escape through the fistula during urination after the first ten days makes it very difficult to restrain them from departing before the fistula closes completely.

Functional Results.—Answers have been received from 241 patients. In interpreting these it must be remembered that in a large proportion of cases a polyuria is present, the amount of urine voided in twenty-four hours being considerably more than that in younger men and the specific gravity considerably less. This polyuria is most marked at night. In one of my cases only 10 ounces of urine is eliminated during the day, though 60 ounces are passed during the night. This polyuria will account for many of the cases in which urination is as frequent as every two to three hours; notwithstanding this frequency the patients consider themselves well. In other cases the increased frequency is due to long-standing cystitis with contracture of the bladder. This is almost always present, often permanently, in cases in which a calculus has been present before operation. (Calculi have been found in about 16 per cent. of the cases.) The two cases in which urination still occurs at intervals of half to one hour were characterized by contracted bladder, severe hemorrhagic cystitis, chronic prostatitis and marked pain. The operation was performed in the hope of giving some relief, and, although the obstruction which had previously been present has been removed, the patient still suffers from vesical irritability and frequency of urination.

In almost 65 per cent. of the cases the interval is about four hours, and 46 patients do not have to arise at all at night to urinate; 222 patients state that they void urine naturally; 15 patients say that urine is voided almost naturally, there being slight hesitation or slowness of stream.

I have made careful inquiries as to the use of catheters and find only 2 patients in whom there is almost complete retention of urine, requiring a catheter about three times daily. Cystoscopy several months after the operation, showed, in both cases, a small remaining median bar, and it seems probable that this is causing the obstruction. In these 2 cases (which I have not been able to see) there was a return of obstruction several months after operation. Both of the patients required catheterization when last heard from. A fourth patient returned the other day and a catheter found 450 c.c. residual urine, although the patient was voiding quite normally and at intervals of two to three hours. The cystoscope showed a very small transverse median bar and this was excised, under cocaine, with the "urethroscopic median bar excisor or punch" which I have recently devised and employed with considerable success in about 14 cases. I have examined as many cases as possible at my office, and in a few instances have found from 30 to 50 c.c. residual urine. These patients, however, are very comfortable and void freely. In one case residual urine seems to be due to a diverticulum in the right half of the bladder.

In my first series of 145 cases the catheter was employed on entrance by the patient in 105 cases, in 35

on account of complete retention of urine, and in 70 cases, although the retention of urine was incomplete, the catheter was used irregularly. It is fair to assume that in this latter series the proportion of cases requiring the catheter before operation was about the same. Physicians have become alive to the dangers of a catheter life, but not to the great damage done by a large amount of residual urine. A catheter life is greatly preferable to an increasing back pressure on the kidneys. Early operation is the great desideratum.

I believe that in all cases retention of urine after the operation is due to an incomplete enucleation and is the direct fault of the operator. There have been only 3 cases in 339 in which a catheter has been required since operation. This series, I believe, shows conclusively that it is easy to remove all obstruction and to furnish complete restoration of normal urination by means of perineal prostatectomy.

It is interesting to note the relief from pain which has been given by the operation. Two hundred and forty-two patients say that they have no pain at all and 15 complain of only very slight pain. Several patients complain of irritability of the urethra; 2 patients with chronic prostatitis complain of severe pains in the back and hips, and one patient with multiple diverticula complains of severe pains in the rectum. Aside from these, the patients have been apparently completely relieved of pain (which was considerable before operation in a large proportion of cases).

To the question, "Have you been cured by the operation?" 222 out of 250 reply that they are absolutely cured. Twenty-one patients state that they are almost cured and one patient that he is improved. There is not a single patient who reports that he has been unimproved by the operation, although a few cases, in which the principal symptoms were vesical irritability, frequency of urination, and pain with contracture of the bladder have not been entirely relieved, although urination has become much more satisfactory with the removal of the obstructing median bars. This small group represents some of the most unsatisfactory cases in genito-urinary surgery, which generally require months of local treatment to the seminal vesicles, prostate, urethra and bladder.

Incontinence.—Definite incontinence is present in only 2 cases. One of the patients is a man now 84 years of age who had an immense prostate weighing 300 gm. He had previously had a suprapubic operation, and on account of the great size of the prostate the operator had refused to remove it. During my perineal operation the patient became very weak and the deep portions of the prostate had to be removed hastily, and in so doing the vesical neck and possibly some of the perineal muscles were injured or lacerated. The patient is able to retain urine while recumbent and does not wet the bed at night, but when he is on his feet there is a continuous dribbling. I have not had a chance to make a cystoscopic examination.

The second patient is a man, 65 years of age, who had complete retention of urine. Cystoscopic examination showed a peculiar orifice with several rather deep sulci. The operative note says that the urethra was so thin that after the lateral incisions were made the ejaculatory bridge tore away anteriorly and the prostate was about to come away in one mass, the lateral and median portions together. The lateral lobes were removed separately and then the median lobe was removed after dividing the urethra transversely just in front of the median lobe and stripping it up anteriorly and pos-

teriorly. Examination then showed a dilated lacerated prostatic orifice and a suture with catgut was taken. Two months later the patient complained of incontinence when on his feet, and the cystoscope showed a markedly dilated internal sphincter with a wide cleft posteriorly. A recent letter says that he voids urine naturally and occasionally can hold it all night without wetting the bed. When on his feet he is apt to dribble, though occasionally he can hold urine for four hours.

In both of these cases the operation performed was not according to my usual technic; much more traumatism was done to the vesical neck in both cases, and it seems probable that this is responsible for the incontinence when the patient is on his feet.

There are other cases in which the retentive power is not as strong as the patient would wish. In one case the patient's physician writes that he thinks there is a stone present. It is now five years since the operation. Another patient operated on eight months ago has, every few days, a slight leakage of a few drops of urine, sometimes as much as fifteen or twenty, once or twice during the day. He is able to retain urine for five hours and does not get up at night to urinate. The cystoscope shows a very slight elevation in the median portion of the prostate, which is somewhat irregular. The prostatic urethra is much dilated, and it seems probable that urine occasionally collects in this, is not evacuated completely at urination and afterward escapes through the external sphincter. The patient is improving steadily, however.

The third patient, aged 74, had previously had an internal urethrotomy, a Bottini operation and a suprapubic operation. The prostatic orifice was extremely irregular, and there were deep clefts left by the Bottini. He returned two years after the operation, saying that occasionally there was a slight dribbling and that he was generally able to retain urine for two or three hours. Cystoscopic examination showed that the internal orifice was irregular and somewhat dilated, and in front of it were two or three small urethral prostatic lobulations. With the cystoscopic rongeur these were removed and the patient reports that now, five weeks after this operation, he is practically cured.

In a fourth case the bladder is contracted and its greatest capacity is only 4 ounces. The patient voids urine at intervals of one to one and a half hours, the largest amount passed at one time being 2 ounces. If he voids urine every hour there is practically no leakage, but if he does not there is. He is now 77 years of age.

Two patients had incontinence of urine before operation. One patient was a young man and the bladder contracted, but the cystoscope showed a slight median bar, and the operation was done in the hope that removal of the obstruction would allow the bladder to dilate. The operation was not successful, and incontinence has been a little more marked since operation. The patient is able to void urine at intervals, but if he does not go quickly he is unable to hold it, and on account of a contracted bladder urination is very frequent.

The second patient is a man who had only 180 c.c. residual urine, but continuous incontinence at night and occasionally also during the day before operation. A neurologic examination showed markedly exaggerated reflexes, suggesting spinal-cord trouble. The cystoscope showed a rounded median lobe; this was removed at operation, and the residual urine has disappeared, but the incontinence persists, though at present he says it rarely amounts to more than a few drops. "During the day I void every two or three hours; sometimes I go as long as five hours." The cystoscope showed, several

months ago, an irregular somewhat dilated internal orifice.

I have thus mentioned in detail all these cases hoping that they might throw some light on the question of vesical control. As shown by these statistics, if the operation is carefully done one need not fear incontinence of urine. It seems to be important to preserve the floor of the urethra in the region of the median portion of the prostate. Whether this is due to the nerve-supply or to muscle-tissue which it may contain is uncertain. Contracture of the bladder, severe cystitis with inflammation of the prostatic urethra, probably play an important part in the cases of marked urgency of urination which have just been mentioned, the patients being unable to restrain the outflow of urine when the desire comes on. These cases are not true incontinence, but are often troublesome and difficult to cure. In contradistinction to the cases mentioned above are many cases of incontinence which have been cured by the operation. These were almost always cases with large amount of residual urine and an irregular prostatic orifice. The removal of the enlarged prostatic lobe usually allows the internal sphincter to contract sufficiently to close the orifice completely and continence is regained. One interesting case was that of a man of complete incontinence of urine, locomotor ataxia, 370 c.c. residual urine, a small globular median lobe. The operation was undertaken in the hope that on the removal of the median lobe the orifice would contract sufficiently to cure the incontinence. A recent report, now almost two years since operation, says that the patient is able to retain urine for six hours; that he voids 300 c.c. at a time, and that there is no incontinence. It not infrequently happens that there is a slight weakness of the sphincter for several months after the operation, but, as noted above, in practically all of the cases this completely disappears, and inside of a year the patient, who feared that he was going to have some incontinence, is able to retain urine perfectly. In effecting this restoration of sphincteric control Alexander's plan of voluntarily exercising the muscles (by stopping the flow of urine several times during urination) is of very great value.

Recto-urethral Fistula.—There is only one case in which a recto-urethral fistula is present. This patient had previously had a perineal prostatectomy and a tear was made into the rectum, which, although sutured at operation, failed to heal. In a few other cases the rectum was torn, but was successfully sutured, and there has been no recto-urethral fistula since. If one is careful to follow the anatomic landmarks, to divide the recto-methralis muscle close to the triangular ligament and to separate the rectum from the posterior surface of the prostate with care according to the technic described, there is practically no danger of rectal injury unless the cicatrix of a previous perineal operation or marked periprostatic adhesions exist. If the rectum is injured a suprapubic operation should be done so as to divert the urine.

The Effect of Perineal Prostatectomy on the Sexual Powers.—Letters with numerous questions in regard to the effect of the operation on erections, coitus, the act of ejaculation, etc., have been sent out to all my patients by Dr. John R. Caulk. He has made a careful summary of the present condition in comparison with that before operation, and I quote at length from his report as follows:

Seventy-six patients, who had stated before operation that erections and intercourse were normal, replied. Of these, 39 say that their sexual powers are unimpaired,

erections and coitus being normal. Five say that erections are normal, but that they have not attempted sexual intercourse; 10 that erections are somewhat impaired, but intercourse is nevertheless indulged in and fairly satisfactory; 4 that erections are somewhat impaired, but coitus is not attempted; 5 that erections are present, but so much impaired that coitus has been found impossible; 13 report that erections have not as yet returned; many of these are of the more recent cases.

Among 10 patients who had had normal erections before operation, but did not attempt coitus, 5 report that erections are normal and that intercourse is now indulged in and is normal; 1 that erections are normal, but coitus has not been attempted; 4 that erections have not returned.

Of patients with erections impaired before operation, but coitus still possible, 44 were heard from; of these, 4 have normal erections and coitus; 20, erections impaired, but coitus possible and about the same as before operation; 8, erections impaired, but coitus not attempted; 1, erections impaired, coitus impossible; and 11 that erections have not returned.

There were 13 patients with imperfect erections and coitus not attempted before operation. Of these, 3 report that erections and intercourse have become normal since operation; 7 that erections are still impaired and intercourse not attempted; and 3 that erections have not returned since operation.

There were 10 patients who could not have coitus before operation on account of imperfect erections. One of these reports that erections are now normal and coitus satisfactory; 1 that erections are still impaired and intercourse not attempted; 2 that intercourse is impossible on account of feeble erections; and 6 that erections have not reappeared.

Of 48 patients who had completely lost the power of erections before operation, 2 report that erections and coitus have become entirely normal since operation; 2 that intercourse is fairly satisfactory, but erections are imperfect; 3 that erections are impaired and intercourse not attempted; 3 that erections are impaired and intercourse impossible, and 38 that erections have not returned since operation.

Unfortunately no note was made as to the presence of erections before operation in a good many cases, and some of the other patients refused to answer our questions. We think, however, that the above statistics give a very fair idea of the results obtainable by a conservative perineal prostatectomy in which the ejaculatory ducts and the floor of the urethra are carefully preserved. As the time after operation lengthens the percentage of perfect restorations of sexual powers increases considerably, and it is fair to state that ultimately in about 80 per cent. of the cases in which the sexual powers were normal before operation they finally become normal after operation. Very interesting, indeed, is the demonstration, given in the later paragraphs above, that in quite a number of cases in which intercourse was impossible before operation on account of impaired or absent erections there has been a complete restoration of the sexual powers as a result of the operation. In a few instances in which the patient complained of an impairment as a result of the operation a urethroscopic examination has shown considerable enlargement and inflammation of the verumontanum. A few applications of the nitrate of silver stick has been followed by a return of the erections, and it seems probable that decline in sexual vigor is due largely to disturbances of the verumontanum as in sexual neurasthenias of younger men.

Mortality.—There have been 13 deaths after the operation. This includes every patient who died in the hospital, regardless of the length of time after the operation. Among these 13 there have been only 2 patients who died during the first week, both of them at the end of forty-eight hours, one of acute edema of the lungs and the second of cerebral hemorrhage. In the latter case the patient had had a previous stroke and was in a highly nervous condition before operation, trembling with excitement when the ether was begun, but insisting on having the operation without delay, which he said he could not stand any longer. He never regained consciousness after operation, and examination on the following day showed paralysis of the right leg and arm. There were two deaths during the second week, one on the eighth day of secondary hemorrhage. In this case there was a contracted bladder with a large vesical ulcer and the hemorrhage seemed to come from the bladder. The other patient died on the tenth day from continuous vomiting. He had been subject to attacks of this sort for several years, and autopsy showed extensive dilatation of the kidney pelves, thinning of the cortex and marked destruction of renal tissue. Six patients died during the third week. One who was in excellent shape and almost ready to leave the hospital was given a high enema and collapsed immediately afterward. Autopsy showed pulmonary embolism. The second had suffered from uremia for a long time, and autopsy showed double hydropyonephrosis. The third died of uremia. In this case there was a large residual urine before operation, and the patient did not get the preliminary treatment, continuous catheterization, etc., which is now used. The fourth patient, 79 years of age, died of uremia on the eighteenth day, and the symptoms all pointed to severe kidney lesion. The fifth patient was a man 73 years of age who died of hypostatic congestion of the lungs. The patient was in desperate condition before operation, which should have been delayed. The sixth patient was a man 87 years of age, who had an excellent result from the operation, but acquired pneumonia on the twenty-first day and died on the twenty-fourth day. Autopsy showed consolidation of both lungs.

Two patients died during the fifth week, one, aged 73, of uremia, autopsy showing double pyonephrosis. The second patient, aged 81, died on the thirtieth day from exhaustion, congestion of the lungs and probably uremia. In this case the bladder was very greatly distended before operation. He had not used a catheter and he was not given the preliminary treatment as at present. The thirteenth death was that of a man 88 years of age who had been using a catheter for twenty years and had 14 large stones in the bladder. He died during the eighth week after the operation, when preparing to go home the next day, of successive hemorrhages from the nasopharynx.

A survey of these thirteen operative deaths shows that most of them were, in fact, accidental and not directly attributable to the operation, but, as they occurred after the operation, I feel that they should be included. Although this report includes a period of over six years and many of the patients were very aged men, 12 being over 80 years of age and 109 over 70 years of age, I have been able to get reports of the death of only 38 patients since leaving hospital, there being only 9 cases in which I have been unable to get any recent report. Among these 38 patients who have died since operation there were 11 deaths which occurred within the first six months after operation, 3 between six months and a year, 8 during the second year, 6 during the third year, 6

during the fourth year, 2 during the fifth year, 1 during the sixth year, and 1 during the seventh year. The operative results obtained in these cases are said to have been excellent in 28, good in 3, improved in 5 and poor in 2, in both of which the patients had to use a catheter occasionally before death.

The causes of death were: accident 2, pneumonia 2, uremia associated with myocarditis 4, apoplexy 5, "stomach trouble" 2, acute Bright's disease 1, "spinal-cord disease" 1, pyonephrosis 3, dysentery 1, sudden death, cause unknown 1, uremia with malaria 1, pericarditis 1, heart failure 2, acute edema of the lungs 1, secondary suprapubic operation for vesical calculus 1, cancer of the stomach 1, suicide 2, cause unknown 7. Among the 9 patients who have not been heard from recently, the result was good when leaving the hospital in all cases, and in most of them subsequent reports were obtained several months after the operation which showed that the condition was maintained.

Percentage of Mortality.—Including cases of cancer of the prostate in which the typical operation of conservative perineal prostatectomy was employed, 13 recent cases which have not been tabulated above, 20 cases in which operation has been performed since this paper was written several months ago, and a few cases in which the technic was not the typical one and which have not been tabulated above there have been 400 cases of perineal prostatectomy with 13 deaths, a mortality of 3.25 per cent. All deaths occurring in the hospital, regardless of the time after operation, have been included; no patients sent home to die. During a period of two years and eight months 128 consecutive cases were subjected to the operation of conservative perineal prostatectomy without a single fatal result—all the patients returning to their homes. Forty-three of these 128 patients were over 70 years of age and two were over 80 years of age.

These facts are, I think, sufficient to show that the operation is in itself quite free from danger, and that if preliminary continuous catheter drainage is given, for two or three weeks, to those patients with large residual urine (over 500 c.c.) who have not been previously catheterized regularly at least three times a day, the mortality should be almost *nil*. The operation should be done early, before the residual urine has become large, as this is the greatest danger. In determining the functional capacity in these cases we have found phenolphthalein of great service.

A CASE OF PELLAGRA *

WILLIAM A. HALEY, M.D.

HOUSTON, TEX.

Patient.—A woman, aged 51, past the menopause, the mother of five children, without specific history or history of any special sickness, consulted me in April, 1909, in regard to a "bad feeling," as she termed it, which began about five years before observation (April, 1909). She had lived in the country and in small towns until the family moved to Houston about two years before the time of examination. She was not well nourished and had a "muddy" complexion. She showed marked deliberation in moving and answering questions.

General Treatment and Course of Disease.—I considered the case one of neurasthenia and general debility; prescribed a course of tonic and upbuilding treatment, including the administration of glycerophosphates and Fowler's solution, the use of a nutritious diet, cold shower-baths, massage, exercise and

* Read before the Harris County Medical Society, at Houston, Texas, Jan. 8, 1910.

a sojourn of a few weeks in the country. On the suspicion that there might be some latent malarial element, I also prescribed quinin and small doses of calomel. The patient did not improve but continued to lose weight. Ten or twelve weeks after the physical examination a blood examination was made, which showed no malaria, the hemoglobin 60 per cent., relative leucocytosis, but no further abnormality. Several fecal examinations were made in search for the hook-worm or their ova but none were found. Some time during the middle of September the patient mentioned an eruption about the mouth and soreness of the tongue, which I attributed to the wearing of false teeth. I ordered a mouth-wash, which failed to give relief. Later the patient mentioned an eruption on the back of the hands. This for the first time suggested the diagnosis of pellagra. A marked exaggeration of the patella tendon reflex and ankle clonus was noted. Nothing could be learned about the patient's use of corn-bread, but later I gave her hypodermic injections of atoxyl, half a grain to begin with, increasing to three-fourths of a grain every other day. I also gave Bland's mass, with arsenic and strychnin. The local condition on the hands, around the mouth and in the mouth improved under this treatment, also the number of bowel movements was reduced from three to six, to one and two in twenty-four hours. (I should have said earlier in this report that among the marked symptoms were slight pain in the stomach and frequent passages from the bowels—four, six and eight on some days.) There seemed to be no improvement in the psychosis, which had developed about the time that I made the diagnosis. The patient continued to lose weight. Just before I began the atoxyl treatment I was called in the night to see the patient, on account of a "sensation of floating," as it were. The patient was considerably distressed; her temperature was 99; pulse 85. I gave a hypodermic of an eighth of a grain of morphin. After a little while the patient was relieved. The atoxyl treatment was kept up at intervals for about a month, and was finally discontinued. On account of some ocular disturbance, which was, no doubt, not entirely due to the atoxyl, I then administered thyroid extract. There was no benefit; the patient continued to grow worse, and was confined to her bed most of the time for three weeks before transfusion was done. Dr. H. P. Cole of Mobile, Ala., being called in consultation because of his experience with this disease, concurred in the diagnosis.

Transfusion.—This was done Dec. 22, at 4:45 p. m. The donor was not a cured pellagrin, but a healthy man, aged 22, a relative of the patient. The method used was direct communication of the radial artery of the donor with the anterior ulnar vein of the patient, under cocain infiltration, $1\frac{1}{2}$ drams of 0.1 per cent. solution for each, the donor and the patient, preceded by a hypodermic injection of morphin. At the time the transfusion was begun the pulse of the patient was 85 and the temperature 99; after it had proceeded about fifteen minutes, the patient mentioned a sensation of warmth about the body; the veins in the forehead and about the face began to be a little distended. At the end of twenty-two minutes and a half the patient now and then took a deep breath; showed slight cyanosis and some restlessness; the pulse had reduced to about 80 per minute. The transfusion was now discontinued. The effect on the donor was slight; he asked for a drink of water at the end of about fifteen minutes; had a slightly intermittent pulse; showed a little pallor about the lips and face. He rested about three or four hours after the transfusion, and suffered no ill effects.

Postoperative History.—The patient rested fairly well for a few hours after the transfusion; nausea and vomiting began a little later the same evening. She slept about one hour during the night. At 3 a. m. temperature was 99 and pulse 75; the patient continued to vomit at intervals; had to be catheterized in the morning. The day following the transfusion, at 3 p. m., temperature was 101; pulse 78; the patient vomited brown material; and brown material was passed from the bowels. The patient was not able to take any nourishment by the mouth. All fluids were discontinued by the mouth and nutritive enemas and saline solution were given per rectum. The second day nausea and vomiting continued. The pulse was 88 and the temperature 99; at 4 a. m. the temperature was 102.8, this being the highest temperature of the patient; the pulse was 80. From that time there was a gradual decline in tem-

perature and pulse, with occasional slight elevations, but never going back as high as above stated. One-thirtieth grain strychnin was administered hypodermically every three or four hours; the patient slept at intervals but continued to vomit, though after the second day did not vomit the brown material. The strychnin and nutritive enemas were continued and saline subcutaneous solution given. The third day after the transfusion of blood the patient was able to take a limited amount of nourishment by the mouth; sat up two hours; temperature was 99; pulse 89. The patient seemed to be doing well until December 29, the seventh day after the transfusion, when she was weak and depressed; temperature was 97; pulse 80; the skin was cold and clammy. On December 31 the patient lapsed into a state of coma. Dr. Cole saw the patient again in consultation and suggested an intravenous infusion of physiologic salt solution. This was administered two or three times during the day, with a small amount of adrenalin solution added. The patient rallied slightly, but never regained consciousness; there was a quick response of pulse, respiration and temperature. The temperature went up to 101.4, pulse 110, with a gradual decline of pulse after the intravenous infusions were discontinued. The cardiac centers but not the respiratory center seemed to be involved, for at the time of the intravenous infusion the pulse could not be felt at the wrist; the heartbeats could scarcely be heard with the stethoscope, yet the breathing was fairly regular until toward the end; then the heart's action suspended entirely; later, the breathing. The patient died December 31, at 8:15 p. m. During the last few days of the sickness it seemed as though all the symptoms of the disease, except the mental symptoms, were markedly exaggerated; with a return of inflammation of the tongue, mouth and the eruption around the mouth and on the hands, together with a cracked condition of the skin on the back of the hands; an intense burning sensation in the feet, while the patient was sufficiently conscious to make mention of such sensation.

DERMATITIS FOLLOWING VIOFORM

E. W. POTTHOFF, M.D.

OAK PARK, ILL.

Mrs. N., aged 58, suffering from varicose ulcer, lower third, right leg, was under the care of her family physician for some time. Among the various drugs used was vioform. A few hours after applying this preparation a dermatitis developed which soon became generalized, with all of its concomitant symptoms and in addition both limbs showed below the knees an extensive purpura. This condition cleared up very quickly under withdrawal of drug and proper treatment.

I report this because I think that it is the first case of dermatitis following the use of this drug to be published.

1139 Austin Boulevard.

REPORT OF A CASE, POSSIBLY, OF PELLAGRA

J. SIDNEY EASON, M.D.

SAVAGE, MISS.

Patient.—Mrs. H., aged 34, wife of farmer living in delta.

History.—There is nothing of note in the family history. The patient had had the diseases of childhood. She began to menstruate at 14, and has always suffered with dysmenorrhea. In 1905 she was operated on for salpingitis and since that time has had leucorrhea. In the past three years she has suffered from indigestion and constipation. In 1907 an erythematous eruption appeared on the right foot and spread up to the knee; it was treated as erysipelas. The eruption soon disappeared, leaving the patient extremely nervous and excitable.

Present Illness.—With these exceptions she seemed well until April 10, 1909, when I was called and found her suffering from diarrhea of a severe character. She complained of vertigo, dizziness, and great pain over the right iliac region, and extending

up under the right breast. Temperature was 101 F.; pulse ranged from 130 to 135.

Two days later an eruption resembling erysipelas appeared just below the breast; it disappeared on the second day, and appeared on the right foot as a desquamative erythema, and gradually spread as far as the knee. The patient was poorly nourished, the hair looked dry and lifeless and the skin everywhere had a thick, sallow appearance. Heart and lungs were normal, liver and spleen were enlarged; tongue was heavily coated. The urine was of a deep color but was otherwise normal, though there was great pain on urination. The patient presented generally an appearance of profound melancholia, changing at times to wildest mania, when it was necessary to hold her in bed. She would not talk but often cried out as if wild or in severe pain. The entire body was in a condition of tonic spasm.

Course of the Disease.—The eruption, at first moist, became very dry and darker in color. The skin cracked and on the leg large sloughs separated, leaving raw bleeding surfaces over which new skin formed of a rough wrinkled appearance. The mental and nervous symptoms improved as the patient gained strength and she is now up and seemingly well, though she is still troubled a great deal with indigestion and dysmenorrhea.

NITROGLYCERIN HEAD

C. E. LAWS, M.D.

DU PONT, WASH.

"N. G. head" is a term well known to all who are engaged in the manufacture and use of high explosives. Those who are most frequently and severely affected are men employed in dynamite and gelatin factories, miners and excavators who do blasting.

The nitroglycerin enters the system through the skin, respiratory and alimentary tracts. A man who is working in "powder" may cause another person a great deal of misery by simply shaking hands or by permitting articles which he has been using to be handled by the other. A worker frequently carries some of the drug to his home in his clothing and may make his whole family sick. Sleeping in the same bed or the wearing of contaminated clothing will likewise produce effects. Miners and men in the magazines, especially on hot days, are poisoned by the fumes. It frequently becomes necessary to taste the nitroglycerin, and symptoms quickly manifest themselves.

Symptoms.—Within a period ranging from a few minutes to an hour or more after exposure the person experiences a sense of heat with fulness in the head and possibly a flushing of the skin. If the heart is examined now an increased action will be noted, but this is followed by a marked retardation. One premonitory symptom noted by many is a complete loss of vision either in one or both eyes, the headache not coming on until complete restoration of sight. The most distressing and dreaded symptom is the headache which rapidly supervenes. Owing to the direct action of the drug on the muscular coats of the arteries there is a marked dilatation of these vessels. To this dilatation of the vessels of the brain and cord may be laid the cause of the throbbing which the poor sufferer experiences. He holds his head between his hands to relieve it, and when he steps on the ground or attempts to stoop over he often cries out with pain. Sometimes he becomes maniacal, running about, shouting and striking his head against obstacles. The recumbent posture is often unbearable and he must pass his time in the upright position, sleep being out of the question. The pain is sometimes located in the back part of the cranium, sometimes it is frontal and at others general. The duration of an attack is from a few hours to one or two days. Nausea and vomiting with loss of appetite are frequent symptoms.

The genitourinary system comes in for its share of disturbance, too, there being frequent urination with the passage of large quantities of light colored urine of low specific gravity.

Nitroglycerin is a marked aphrodisiac and most "glycerin men" have large families.

The effects of the drug are interesting. All who work in it are sooner or later troubled with dyspnea and tachycardia on exertion. Alcohol causes a flushing in some that very much resembles scarlet fever. Others are unable to touch it at all and it is a well known fact that "powder men" become easily intoxicated.

I am unable to say what effect it has on the length of life, but I know several men who have been in the business for many years, one in particular who enjoys excellent health after twenty-five years' service, with the exception of shortness of breath on any undue exertion. There is an increase in the area of heart dulness and a rather slow pulse.

Some people enjoy a natural immunity to the action of the drug while others must acquire it and the process is painful. After being out of it for one day sometimes, a man goes back to work and becomes sick. This attack, however, is comparatively slight and he can continue without much inconvenience. Others, while not working, will rub a small amount into the skin or keep some on the hat band so that they may always be in condition.

Treatment.—This is most unsatisfactory, and there is apparently nothing that will give the poor sufferers relief. In slight cases in those who are more or less accustomed to the drug, a hearty meal and a good sleep will straighten them out, but in the severe cases all the remedies suggested, such as phenacetin, chloroform, morphin, etc., have little or no effect. Hot baths do well in some cases but a warm atmosphere aggravates the symptoms. Many "patent-medicines" have been recommended but none of them are of any use.

It is said that nitroglycerin was at one time exploited as a cure for headache and it probably did well in chronic renal degeneration with high tension pulse.

I can find no mention of an antidote in the literature and if any one should discover it he would at least have the gratitude of many thousands of "powder men."

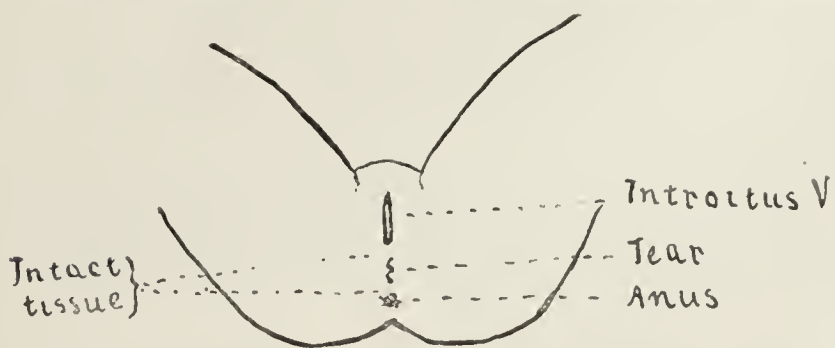
AN INTRAPERINEAL TEAR

A. PIETRI, M.D.

PONCE, PORTO RICO

Patient.—At 2 o'clock one afternoon I was called to see a woman who had given birth to a 20-inch normal child early that morning. The woman was a primipara, aged about 20, and of healthy, strong constitution.

Examination.—On examination I found an ugly tear through the perineal floor in the median line, not extending to the anus or involving the vaginal outlet. The approximate position and size of the laceration are shown in the accompanying diagram.



The introitus vaginae was very small and inelastic. The laceration had occurred through the raphe. Birth occurred through the tear and not through the introitus.

History.—The delivery had been rapid—four hours—and the pains and efforts at expulsion had been violent. The woman had been attended by a friend who was not even a midwife.

Treatment.—At the first visit the parts were so edematous and swollen that immediate repair was inadvisable. A few days later the laceration was sutured, though by this time the tissues between the tear and the introitus had sloughed away. Recovery was uneventful and a good perineum was secured.

32 Isabel Street.

Therapeutics

THE DRUG TREATMENT OF ALCOHOL, MORPHIN AND COCAIN HABITUÉS

The treatment of acute alcoholic excess is pretty generally understood and generally well carried out. The removal of the craving for alcohol and the length of time that the patient will abstain from alcohol depend largely on the suggestions of the treatment, the physician in charge and the character of the institution in which he was treated. In other words, it is largely mental impression.

The drugs used in the treatment of the alcohol habit have generally been kept secret, but atropin in some form has been frequently used and seems to have the greatest success to its credit.

Dr. Alexander Lambert, of New York, published his method of treatment in *THE JOURNAL*, Sept. 25, 1909, and has again discussed it in the *New York State Journal of Medicine*, January, 1910. He has long made careful study of alcoholics in his hospital wards, and speaks with authority, and lauds the treatment with which he has had great success.

He finds that during the last twenty years young men are less likely to become alcoholics than older men, as there has been such a tendency, in many occupations, not to employ men who were addicted to the use of alcohol. Lambert finds alcoholics most likely to be among men who work overtime or under great strain, as "journalists, actors, and physicians." Sometimes "clerks, bookkeepers, accountants, and stenographers," who are looking for excitement, get into the alcohol habit. Also occupations that cause great physical exhaustion, as "stokers, firemen, blacksmiths, iron and brass molders," and those who are working over furnaces or in heated places become alcoholics. Another class who tend to drink too much are those who at times work hard, this to be followed by a period of idleness, as "hostlers, hackmen and teamsters." Among women, "domestic servants and prostitutes" head the list.

As Lambert well says, the mere temporary cure of the desire for alcohol should be by no means the end of the treatment of the patient. This, however, is a moral and social question that would be inappropriately discussed here. The craving for alcohol can undoubtedly be removed in patients who do not have periodic attacks of this desire (such a condition being a nervous affection that is not now under discussion). Consequently these patients deliberately try their ability to withstand just a taste of alcohol, and, having taken this taste, quickly again fall into the habit.

Lambert gives credit to Mr. Charles B. Townes for the medicinal treatment which he uses to deprive a patient of the alcohol, morphin or cocain habit. This prescription consists of:

R.	e.e.	
Tincturæ belladonnæ (15 per cent.)	20	fl.3v
Fluidextracti hyoseyami	10	or
Fluidextraeti xanthoxyli	10	āā, fl.3iiss
M. et Sig.: Administer as directed.		

Lambert emphasizes the necessity of carrying out his treatment absolutely to the letter, and an important part of the treatment is profuse catharsis. In alcoholics "from 6 to 8 drops of the above prescription are given every hour, day and night, until either the patient shows symptoms of belladonna excess, or from the cathartics the characteristic stool." The dose of the above "is increased by 2 drops given every six hours until 14 to 16

drops are being taken; it is not increased above 16 drops." Lambert says that "usually an alcoholic can be given 4 compound cathartic pills at the same time that the specific is begun. After the drops have been given for fourteen hours, a further dose of compound cathartic pills is given, either 2 or 4, depending upon the amount of action obtained from the previous pills. If the first pills have caused abundant action, only 2 are now necessary. At the twentieth hour of the drops, from 2 to 4 more compound cathartic pills are given, and after these have acted, the stools should begin to be green. An ounce of castor oil should now be given, and a few hours later the characteristic thick green mucous, putty-like stool will appear. Usually the drops must be continued, and at the thirty-second hour from 2 to 4 compound cathartic pills are again given, and a few hours later the castor oil. The drops can now be discontinued."

Usually in treating alcoholics stimulation is necessary, and it may be necessary to give a hypnotic, but such treatment will not interfere with the administration of the above. "In the first twenty-four hours with an older patient, or one in the midst of a spree, whisky should be given four or five times, in 1 or 2 teaspoonful doses, in milk. The whisky should not be continued after the first twenty-four hours, and in younger patients it is usually not necessary to give it at all.

"The belladonna symptoms which would cause the drops to be stopped until they had subsided" are, extreme dryness of the throat and beginning delirium and appearance of the belladonna rash or scarlatiniform redness of the skin. An alcoholic is less tolerant of belladonna than a morphin patient, but Lambert says "if they are sensitive to this drug they will show it in the first six or eight hours of the treatment."

He states that after the patient has been through with this treatment the desire for alcohol has ceased, and that it is a question for the next few days of proper nutrition, and sometimes the administration of a drug for sleep. He finds the best hypnotics for these alcoholics are chloral and bromids. Whatever tonic is given of course must be non-alcoholic.

In October, 1909 (*Monthly Cyclopedia and Medical Bulletin*), appeared an article by Riewel, of Cleveland, Ohio, discussing the scopolamin (hyoscin) treatment of those addicted to the overuse of alcohol. He quotes a number of writers on this treatment, and the summation shows that the treatment is one of "a combination of 1/100 of a grain of scopolamin, 1/500 of a grain of atropin, and 1/60 of a grain of strychnin, every two to four hours." Here again, then, is an atropin treatment of alcoholism.

It does not seem that there should be any mysterious halo surrounding a 15 per cent. tincture of belladonna as against the pharmacopeial 10 per cent. (provided that more is used), or that the fluidextract of hyoseyamus would act any differently than the tincture, or perhaps better still hyoscin (scopolamin), or in the fact that belladonna is any better than the alkaloid atropin, or that the very few drops of the fluidextract of xanthoxylum (the dose of which as a bitter tonic, with perhaps slight irritant properties, is 2 c.c. (30 minims or 1½ a teaspoonful)) can be of any specific value, as from every physiologic and pharmacologic standpoint it cannot be.

The treatment, then, is an atropin treatment, with such stimulation as is required, perhaps strychnin, with such added atropin-sedative (hyoseyamus or hyoscin) action or perhaps some more active hypnotic, to the point of atropin tolerance. The symptoms looked for are those

of atropin poisoning. The antidote to the high blood pressure, the cerebral congestion, and the dry skin from the atropin is caused by the prostration which must necessarily be produced by the severe catharsis that is advocated. Such catharsis is evidently a necessary and valuable adjunct to the treatment. Whether the compound cathartic pill is the means of producing it, or whether saline cathartics could be used is a question for the individual choice.

The treatment that Dr. Lambert advises is atropin or associated atropin to the point of tolerance, administered hour by hour, the patient thus being ably watched and cared for, and the production of sufficient and profuse catharsis.

Lambert finds that most patients who become morphinists have acquired the habit by accident, mostly through the attempt to stop pain, sometimes he thinks by the careless prescription of a physician. This emphasizes the necessity of teaching medical students, that they should rarely if ever write a prescription for morphin, but should always give the patient or nurse, from their pocket case, the morphin tablets required.

By the method which Lambert advises patients "do not suffer more than a bearable amount of discomfort" in breaking away from the drug. "Before beginning the treatment, the patient is made comfortable with his accustomed dose of morphin, and then given 4 or 5 compound cathartic pills. When these have acted, the drops should be given as prescribed for alcoholics. Of course if there is a hypersensitiveness to belladonna (atropin), the drops must be stopped and later begun again at a smaller number. After the drops have been started and the time has come for the patient's usual dose of morphin, he should receive "from one-half to two-thirds of the kind of opium that he has been taking, and administered in the manner that he has been administering it. (The above amount should be divided into three parts and given at half-hour intervals.) After fourteen hours of the drop treatment, the patient should be given 4 compound cathartic pills and 5 grains of blue mass, or some other form of vigorous cathartic such as the vegetable cathartic pills of the Pharmacopeia with ginger and capsicum and 1/25 of a drop of croton oil to each pill. Four or 5 of these last pills should be administered, if preferred to the compound cathartic pills and blue mass. After the twentieth hour of the drop treatment the patient should receive 4 or 5 more of the vegetable cathartic-ginger-capsicum-and-croton-oil pills and blue mass, and, if these do not quickly act, they should be followed by 4 or 5 compound cathartic pills and then an ounce of Epsom salt or Hunyadi water every half-hour for four or five doses. If in an hour or two these do not act, 4 or 5 more of the vegetable cathartic pills, followed by the salts, should be persisted in until the bowels act." Lambert well says that this cathartic treatment will appear to be extraordinary, and it is surprising that the withdrawal of the morphin does not of itself produce a diarrhea. The inhibition can only be due to the atropin. Lambert says that "if by the twentieth hour the cathartics do not act the symptoms of the reduction of the morphin, viz.: sneezing, nervousness and pain, come on in full force, and the patient begins to suffer. If the cathartics do act well, a second dose of morphin or opium should be given of about 1/3 or 1/6 of what was given as the initial dose at the beginning of the treatment. Twelve hours after this second dose of morphin or opium the patient should again have 4 of the vegetable cathartic pills, each with ginger and capsicum and 1/25 of a drop of croton oil, or 4 compound

cathartic pills with the 5 grains of blue mass, and following this the stools will begin to be green. After the liquid green stools have occurred following the thirty-second-hour cathartic, an ounce of castor oil should be administered, and will cause the thick, green stool" as described under alcoholic treatment. After this movement, Lambert says, the patient feels "suddenly relaxed and comfortable and the nervousness ceases." Most patients then go to sleep. After the thirtieth hour of such treatment, and he well says earlier "if the patient is in a weak condition, stimulation with strychnin, from 1/60 to 1/30 of a grain, is advisable."

Turning again to Riewel's article, we find that the hyosein (scopolamin) treatment of morphin addiction which has been studied by him gives successful results by first administering calomel, followed by Rochelle salts, and then giving in a typical case a hypodermic of 1/200 of hyosein hydrobromid, 1/600 of atropin and 1/200 of strychnin, and repeating this every 1 1/2 hours for eight doses; "then one-half of this dose every hour and a half for a time, and then increased again to the full dose every hour and a half. After the treatment is over, patients who cannot sleep should receive for one or two nights either trional, chloral, or bromids. If delirium occurs from the hyosein or atropin, the amount must be reduced, but at any time that delirium becomes serious 1/4 of a grain of morphin will stop it." This hyosein treatment, Riewel says, will eliminate the desire for the drug. He cautions against using this treatment when there is Bright's disease.

Again we have the atropin treatment, which is the physiologic antidote for morphin, in the one instance preceded by free catharsis, and in the other free catharsis given throughout. While it seems advisable to give mercury in some form to act on the upper intestine and relieve the kidneys of congestion and remove the old bile, which will aid the liver in performing its effective physiologic work, still the particular cathartic selected must still be a matter of individual choice. Lambert has demonstrated that atropin will at least temporarily cure morphinism with the aid of free catharsis.

In treating patients for the cocain habit, which, by the way, is usually associated with the morphin habit, Lambert has found that the beginning dose of morphin should be less than when the patient has been taking the morphin alone, the cocain having been a sort of antidote to the intensity of the morphin action. The cocain should be stopped abruptly, and therefore these patients generally require strychnin stimulation early in the treatment. The amount of morphin that Lambert advises at first is half the usual twenty-four-hour amount, the dose being given as above described under the treatment of morphin addiction.

Lambert thinks that if the patient has been free from his desire for morphin or morphin and cocain for forty-eight hours he will not have this desire return for years, unless he has a return of the cause for which he used the morphin, viz.: acute pain, insomnia, sorrow or worry, and he believes that 85 per cent. of patients cured of this narcotic remain cured. This seems to be a very high percentage, and the experience of most of us would make this number little more than 50 per cent.

Those patients, however, who have had the cocain habit alone are much more likely to relapse, as they have probably taken the cocain for mental depression or for physical bracing. Of course, after the desire has been temporarily removed, unless the environment of the patient is changed or he is put into better physical condition, the same old craving for stimulation will recur.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

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[For other information see second page following reading matter]

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THE AMERICAN MEDICAL ASSOCIATION—ITS POLICIES AND ITS WORK

I. THE OPPOSITION AND ITS CAUSES

The proprietary medicine business, until within the past five years, had a most phenomenal growth and one which, considering the viciousness of the traffic, would have been impossible had it not been immensely profitable. The large returns drew to its ranks men without knowledge of medicine, pharmacy or chemistry, men who not only put up preparations for the medical profession to use, but also had the presumption to attempt to teach physicians how to use them—how to treat disease. Reputable manufacturing pharmaceutical houses, finding the demand for official and non-secret drugs falling off, were, one by one, almost forced by economic conditions into the secret proprietary business, until finally there was hardly a pharmaceutical concern that did not have many typical nostrums in its lists of "specialties." THE JOURNAL, like other medical journals of that time, accepted advertisements of proprietary medicines which later proved to be fraudulent; there was no standard and no means of distinguishing the good from the bad. Thinking members of the medical profession realized the conditions and continually protested against them. The evil was discussed in society meetings, often with emphasis, but the agitation usually ended only in discussion, while such criticisms were smoothed over or eliminated when the reports of the proceedings appeared in medical journals.

The proprietary "interests" were so powerful financially, they ramified in so many directions, and they affected so many in the medical profession itself, that the problem of attacking the evil seemed too large and too difficult, and the only result to be expected was failure, with vilification and abuse as the lot of those who attempted it. However, after much deliberation, and with due regard for the attempts that already had been made, and especially with a full appreciation of the opposition to be expected and of the difficulties to be met, the movement against this evil was started by the formation of the Council on Pharmacy and Chemistry of the American Medical Association. The announcement of the creation of this Council was received with great satisfaction by many, but encountered sneers, derision and open opposition, not only from the interests directly affected, but also from many medical journals.

Nor did this journalistic opposition come entirely from publications whose paid subscription lists were insignificant and which absolutely owed their existence to their advertising patronage; it came, too, from some which were well supported by the medical profession. A defunct journal was resurrected by a certain group of nostrum-makers to oppose the movement. In it the members of the Council, and especially its chairman, were ridiculed, cartooned and maligned. Since then scores of so-called medical journals have apparently existed for the sole purpose of attacking the American Medical Association and its officers, and of obstructing its efforts—and very naturally so, since such journals derive most of their support from those who are exploiting the profession.

About this time *Collier's Weekly* published that remarkable series of articles by Samuel Hopkins Adams called "The Great American Fraud." The "patent medicine" people soothed themselves with the belief that the articles and the lessons they taught the public would soon be forgotten, as they undoubtedly would have been had they been allowed to remain as ephemeral newspaper matter. But the American Medical Association, obtaining permission to issue these articles in book form, published and distributed them by the thousands. The facts presented were thus preserved in the hands of individuals and libraries all over the country and became a permanent and ever-living evidence of the fraud and viciousness that is inseparable from the "patent medicine" business, and of the gross impositions practiced on the public.¹ In addition to the exposures made by Mr. Adams, the chemical laboratory of the Association has been analyzing a host of "patent" and proprietary medicines, and THE JOURNAL has insistently and persistently tried to enlighten the public regarding this evil.

Naturally, therefore, the "patent medicine" people were aroused, individually and collectively—as the Proprietary Association of America—and endeavored to poison the minds of the public against the American Medical Association. Pamphlets of various kinds have been—and are still being—sent broadcast, such, for example, as "The Political Doctors," "Confiscatory Legislation," "The Machinations of the American Medical Association," "The Legislative Schemes of the American Medical Association"—and numerous others. The newspapers, especially, have been furnished with all kinds of misinformation regarding the American Medical Association and about what it is doing, but, happily, the majority of newspaper editors saw the animus back of it. A few, not knowing the facts, have said harsh things, using the material furnished them by the interests affected to attack the Association and the profession generally.

Thus, two directly related interests—the so-called ethical proprietary business and the "patent medicine"

1. How far-reaching an effect this has had may be imagined when it is realized that over 150,000 copies of this book have been printed. The wide-spread spontaneous demand for the book has been most gratifying. One disinterested layman alone purchased 45,000 copies for free distribution.

business—by fair means and foul have done their best to discredit and injure the Association. The former was—and still is—supported by a large number of journals, of small circulation, it is true, supposed to represent the medical profession; the latter, by the cheaper class of newspapers, influenced largely by the lure of advertising contracts.

Nor are the proprietary and “patent medicine” interests the only ones whose fraudulent profits have been cut down through the exposure of their methods by *THE JOURNAL*. After a campaign of public education lasting several years, Congress passed the Food and Drugs Act, and its passage was due in no small degree to the influence of the American Medical Association, with the help of the members of its constituent state and component county societies. Since its enactment *THE JOURNAL* has exerted even greater influence for the pure food law’s honest and impartial enforcement; and this also has aroused the enmity and active opposition of manufacturers and dealers in sophisticated foods.

Thus—to say nothing of the unfriendly attitude of some of those connected with certain low-grade medical schools whose shortcomings have been shown up in *THE JOURNAL*, and without including the owners of the medical journals affected—there are three financially and politically powerful commercial interests combined for the common purpose of attempting to discredit and to weaken the Association and to obstruct its work. Failing to produce any result and finding that their onslaughts on the Association only drove the profession into closer alliance, they pursued another course.

In the fall of 1908 some letters addressed to the president of a pharmaceutical concern, whose methods had been given unpleasant notoriety in *THE JOURNAL*, revealed the fact that a concerted attack on the editor of *THE JOURNAL* was under discussion. Their tenor was: “Stop attacking the Association, as you will do no good. Center it on Simmons, for he is responsible.” Shortly after this, information was received that the individual to whom the letters were addressed, both by personal effort and through the efforts of detectives, was endeavoring to find something in the editor’s life that might be damaging to his reputation.

Material obtained by going back thirty-eight years or more was craftily arranged by a Chicago physician and was worked up so as to make the most damaging “case” possible. Articles were published in such of the cheaper medical journals as would print them, “addresses” were delivered before such medical societies as would tolerate them, newspaper interviews appeared and, especially, thousands—yes, hundreds of thousands—of pamphlets and reprints were circulated with an extravagance that indicated that expense was no object—all these methods were used to make public the matter which had been so assiduously collected. It is probable that during the last two years more money was spent in detective work, in printing and in postage in an attempt to blast the reputation of the editor of *THE JOURNAL* than ever before

was expended for a similar purpose. Being personal in character, this matter naturally could not be discussed in *THE JOURNAL*.

That these attacks were received with joy and utilized to the fullest extent by the proprietary and “patent medicine” interests goes without saying; in fact, the very “consumption cure” concern which we expose in this issue went so far as to reproduce in a newspaper advertisement the photograph of the physician circulating this matter and to extol him in these words: “For him to expose the methods of the A. M. A. is a Godsend to every consumptive, as it clearly shows why the medical profession at large does not recommend Nature’s Creation.” And more recently the American Druggists Syndicate, because *THE JOURNAL* has made clear the fraud, misrepresentation and deceit connected with its “patent medicine” business, has been using the material with absolute disregard of expense, circulating it among physicians and druggists throughout the country.²

These attacks, of course, have been regarded as a part of the general scheme of retaliation of those whose financial interests were being injured through the work of the Association; in a word, as coming from enemies who have good cause for fighting back.

II. THOSE RESCINDED RESOLUTIONS

From what has been said above, opposition and retaliation are to be looked for from those interests whose commercial existence is threatened by the work of the American Medical Association. Such enemies and such opposition were to be expected and could, therefore, be reckoned with. An attack from within the ranks of the profession itself, however, is another matter. When, furthermore, it comes from one of the most progressive component county societies, and one in whose territory is located the headquarters of the Association, the matter deserves comment.

The Council of the Chicago Medical Society, at its January meeting, adopted certain resolutions which purported to be based on the preamble that:

“Certain conditions exist which menace the best interests of the American Medical Association and of the medical profession at large.”

These resolutions³ were published in the society’s *Bulletin* and copies of them were sent officially to the various state society journals. Unofficially, typewritten copies were sent—some at least in envelopes bearing the address of the individual who is reported to have made the original draft of the resolutions—to medical journals all over the country. Incidentally the matter appeared with appropriate headings in the Chicago newspapers of the morning following. The resolutions were rescinded at the next meeting of the Council, but the publicity given their adoption was strikingly absent in their rescindment. Because these resolutions have furnished the enemies of the Association with ammunition that is being

2. See letter and comments in *THE JOURNAL*, February 19, p. 629.

3. The resolutions appeared in *THE JOURNAL*, Jan. 29, 1910, page 382; notice of their rescindment appeared in *THE JOURNAL*, Feb. 12, 1910, page 543.

and will continue to be used against it—as those who inspired them undoubtedly intended they should—it seems wise to give some consideration to what—in view of the fact that they have been rescinded—would ordinarily have required no comment.

Many—in fact most—of these resolutions dealt with matters of Association policy, matters which have been up for consideration time and again and have been discussed *pro* and *con*. They are matters on which an honest difference of opinion may well exist and are very proper questions for consideration if discussed by those having a full understanding of the points involved. Whether, for instance, one person should be permitted to hold at the same time more than one executive or honorary position in the Association; whether the office of general secretary and the position of editor should or should not be separated; whether the number of trustees should be increased or decreased; whether the initiative and referendum are feasible and desirable—all these are questions on which there may easily be differences of opinion. With such we may deal at length in the future.

A few of the resolutions, however, dealt not with matters of policy, not with theories, but with matters of demonstrable fact. To consider these in detail:

“All officers and employees whose duties involve financial responsibilities should be bonded.”

The answer to this implication is simple and short: All such officers and employees are bonded and for years have been.

“The law governing admission to membership in the American Medical Association should be so amended as to make it mandatory on the secretary to enroll applicants who have complied with the provisions and by-laws governing the same.”

The secretary never has refused to enroll such applicants, and under the present by-laws which have been in force for years, could not if he would.

“Space should be set apart in THE JOURNAL for free and courteous discussion of the policies and methods of the Association or for any other matters that may appeal to the membership at large as bearing on the interests of the Association.”

Such space always has been available and never has been denied those who wished courteously to present matters of interest to the Association. What constitutes “matters of interest” always has been and always must be determined by the editor—past, present or future—that is one of an editor’s functions. Any other method of conducting a journal would result in chaos.

“No member should be expelled from the Association without a fair trial and full hearing.”

Under the present laws, and they have been in force for years, no member *can be* expelled from the Association, either with or without trial, for the American Medical Association has no voice in the matter. Right to membership in the Association depends entirely on membership in the county society, and when a physician ceases—voluntarily or involuntarily—to be a member of his county society he thereby loses his right to membership in the state society and in the American Medical Association.

The reason space is given to a consideration of the foregoing resolutions is not only that the direct statements contained therein are misleading or absurd—and they are both—but that each one carries with it an implication—more or less veiled—of official negligence or dereliction. The resolution regarding the bonding of employees implies that responsible officials are not bonded; that dealing with the enrolment of members gives the impression that the secretary has refused to enroll applicants who were eligible; that providing free discussions in THE JOURNAL insinuates that freedom of discussion is not to be had; that referring to loss of membership intimates that the Association has not only the power to expel its members, but that its members actually have been expelled without a “fair trial and full hearing”—all of which implications are false and unwarranted libels on the Association and its officers.

If the majority of those members of the Council of the Chicago Medical Society who voted for these resolutions had realized what there was behind them, then the only explanation of their action would have been that of sheer maliciousness. But we believe—in fact, we know—that many of those who voted for them had no clear conception of the conditions which were supposedly under consideration. With an honesty of purpose that was superior to their judgment they allowed themselves to be used as catspaws to pull out of the fire the chestnuts of personal spite of one or two individuals. That they did so was unfortunate in that it gave the common enemy reason for rejoicing and lent color to the rumor so assiduously promulgated by the proprietary and “patent medicine” interests that there are internal dissensions in the American Medical Association—a rumor which is as false as it is persistent.

We know that the medical profession has never been so united as it is to-day; we know that the attempts to better the scientific, economic and social conditions in the profession itself are receiving hearty support and cooperation; we know that the campaign against fraud and deceit in proprietary medicines is meeting the approval of all right-thinking physicians; we know, in fact, that the great mass of the medical profession of the United States is heartily in sympathy with the critical and constructive work which the American Medical Association is doing through THE JOURNAL and through its standing boards and committees—and this knowledge is in itself an inspiration to larger and better things.

That the organization which has grown so wonderfully in the past decade is capable of improvement, none realizes more keenly than those who have so earnestly striven to perfect it; that criticisms and suggestions will help to bring about such readjustments in the machinery of the Association as changed conditions make necessary, its best friends have always maintained; that such criticisms and suggestions are, and always have been, welcomed by those to whom the Association has intrusted its executive work, goes without saying. But while all this is true no one will question the principle that for criticism to be of

any value it must be of a constructive and not a destructive nature, and, further, that it must come from those who are at least fairly familiar with the conditions which it is desired to better. To suggest changes in the constitution and by-laws of an organization for no other *actual* purpose—whatever the nominal purpose may be—than that of satisfying personal pique or for political expediency, is not criticism—it is denunciation. That opposition should have developed is not to be wondered at, rather is it to be welcomed; it is only moving bodies that meet resistance. That self-seeking or revengeful individuals should ally themselves with the open enemies of the profession is not surprising, but once their object is made clear they cease to be a menace.

One thing the passage of these resolutions shows: The rank and file of the Association are not as familiar with the details of their great organization as they should be. If men of more than ordinary intelligence and ability, such as those composing the business body of the Chicago Medical Society, could be misled on points so fundamental and elemental in nature, then it is safe to assume that a great majority of the members of the Association need to be better informed about the Association itself. This being so, we purpose to review briefly, in future issues, the history of the American Medical Association and its development during the past ten years and show what has been, and is being, accomplished in the interest of both the medical profession and the public.

HYDROPHOBIA

The importance of a disease is not to be measured altogether by its frequency; its effects in individual cases are also to be reckoned. When a disease like hydrophobia is apparently on the increase it is a health problem of some urgency. The statistics in Dr. Frothingham's paper in this issue of *THE JOURNAL* show a rather formidable prevalence of the disorder in certain parts of the country. Kerr and Stimson¹ state that there were one hundred and eleven deaths from hydrophobia in 1908, and that the number of deaths from this cause in the registration area in 1906 and 1907 (eighty-five and seventy-five, respectively) was almost double the number in any previous year since 1900. The health authorities of several of the states have also called attention to this fact. Rabies exists in nearly every portion of our country, and Dr. Frothingham could have added Alaska to the political divisions where it is found, as enumerated by him. It is probably endemic in the arctic regions, especially if we are to consider, as it seems we should, the distemper noticed by Dr. Kane and many others since him, which carries off a large portion of the dogs in Alaska every year.

A recent writer² questions the rabid nature of this disorder on the ground that human beings bitten do not

apparently contract the disease. This can probably be accounted for by the fact that they are seldom bitten except through the heavy clothing worn in that region; it is a well-known fact that a large proportion of those bitten in other climates are protected the same way. Dr. Howe's description in other respects is that of rabies. The disease was, at least formerly, dreaded by the Eskimo in some parts of Alaska, and undeniable typical hydrophobia also occurs in that region. In short, so far as can be learned, in the territory of the United States only the Rocky Mountain and Pacific slope regions are free from the disease.

It must be regarded as most unfortunate that in many of our communities indifference and an unenlightened or perverted sentiment of compassion for animals should hinder the adoption of the reasonable methods of prevention which have exterminated the disease in Great Britain, namely, destruction of infected animals and proper muzzling of all dogs in infected areas. Even locally applied, these measures would still be of great value in reducing the danger of infection. It is also unfortunate that incredulity as to the existence of rabies or hydrophobia should be professed, even by a few physicians. The conversion of one of these to the opposite opinion by the occurrence of a case in his own family, extensively noticed in the medical and lay press a few years ago, points a moral, obvious but, it is to be hoped, less and less necessary among the medical profession and the intelligent public.

Medical News

GEORGIA

Personal.—Dr. Russell B. Moore, Auburn, is reported to be dangerously ill.—Dr. Spurgeon Williams, Winder, is convalescent after smallpox.

Medical Society Election.—The Fourth District Medical Society held its fifth semi-annual meeting at Newnan, February 15, and elected Dr. T. Neal Kitchens, Columbus, president, and Dr. Theodore B. Davis, Newnan, vice-president.

State Sanatorium Trustees Meet.—The trustees of the State Tuberculosis Sanatorium held their annual meeting, February 15. Capt. W. C. Raoul reported that a desirable site had been purchased and plans for buildings had been adopted, with still a balance of \$19,000 to be put into the buildings before the institution could be opened for the reception of patients, but that still further appropriations would be necessary. The following officers were elected: Dr. Thomas R. Whitley, Douglasville, president; Hon. T. D. Tinsley, vice-president; Dr. Marcus F. Carson, Griffin, secretary; Mr. J. T. Orm, treasurer, and Capt. W. C. Raoul, Hon. T. D. Tinsley, and Drs. Charles H. Richardson, Montezuma, Henry R. Slack, LaGrange, and Jeff Davis, Toseoa, executive committee.

ILLINOIS

Quincy Doctors' Club.—At an informal meeting of ten physicians of Quincy, held February 16, the organization of a physicians' club was considered. Dr. Thomas B. Knox acted as chairman and Carl W. Pfeiffer as secretary. Drs. Knox, John A. Koch, John K. Retieker and Kirk S. Shawgo were appointed a committee to present the matter to the physicians of the city and report at a subsequent meeting.

Personal.—Dr. Frank H. Jenks has been appointed superintendent of the Elgin State Hospital, vice Dr. Vaclav H. Podstata, resigned. The appointment becomes effective March 15.—Dr. William R. Patton, Charleston, is reported to be seriously ill in Washington Hospital, Los Angeles, with

1. Kerr, J. W., and Stimson, A. M.: The Prevalence of Rabies in the United States, *THE JOURNAL A. M. A.*, Sept. 25, 1909, Lii, 989.

2. Howe, G. B.: In Mikkelsen, *Conquest of the Arctic*.

rheumatism and erysipelas.—Dr. Charles E. Crawford, Rockford, inspector of the State Board of Health, has gone to California for a rest of several weeks.—Dr. Jacob Huber, Pana, has deeded to the local grand army post five acres of land adjoining the city for a park.—Dr. Joseph G. Kilgore, Vermilion, is reported to be critically ill with pneumonia.—Dr. Leslie A. Beard, Polo, underwent operation at Mercy Hospital, Chicago, February 15.

Chicago

Personal.—Dr. Henry Banga is ill in Michael Reese Hospital with septicemia due to an operation wound. He has been in serious condition but is now improving.—Dr. Gottfried Koehler, as the result of a recent civil service examination, has been named deputy commissioner of health to succeed the late Dr. Frank W. Reilly.—Dr. William A. Evans, health commissioner, has gone to New Orleans where he will have conferred on him the degree of LL.D. by his alma mater, Tulane University.—A diamond-studded gold watch was given Dr. Theodore B. Sachs by the board of directors of the Winfield Sanatorium for Consumptives, February 22.—Dr. Byron Robinson is reported to be critically ill at his home in River Forest.

INDIANA

New Hospital for Crawfordsville.—The plans for the new buildings of the Methodist Hospital, Crawfordsville, have been completed. The buildings will cost \$130,000, and will accommodate 70 patients.

Site Selected for Sanatorium.—A site has been selected about ten miles southwest of Delphi on a high bluff overlooking the south fork of Wildcat creek, for the location of the Lafayette Tuberculosis Sanatorium.

Opposes Intern Tests.—On the suggestion of Dr. William N. Wishard, Indianapolis, it is probable that another method than the competitive examination will be adopted for the selection of interns for the Indianapolis City Dispensary and City Hospital. As there is but one medical school, the ordinance providing for competitive examination is not considered necessary, as the grade made in the final college examination or before the State Board of Medical Examination and Registration may properly be taken as a basis.

Personal.—Dr. Charles S. Woods has been appointed city sanitarian of Indianapolis, Dr. Frank L. Truitt, city pathologist, and Dr. Eugene B. Mumford, inspector of contagious diseases (reappointed).—Dr. Ernest R. Sisson, Greenfield, who has been seriously ill in Indianapolis, is reported to be convalescent.—Dr. William F. King, Columbia City, has been appointed assistant state health commissioner.—Dr. John N. Records has been appointed postmaster of Franklin.—Dr. Edward P. Busse, Evansville, has been appointed superintendent of the New Southeastern Hospital for the Insane, Madison.—Dr. William R. Cravens, Bloomfield, is reported to be seriously ill with septicemia.—Dr. Charles L. Thomas, Logansport, who has been seriously ill in St. Luke's Hospital, Chicago, as the result of an automobile accident, has returned to his home greatly improved.—Dr. Edward F. Wagner, Fort Wayne, is reported to be ill with appendicitis.—Dr. Jewett V. Reed has been appointed superintendent of the City and Bobbs Dispensary, Indianapolis.—Dr. William G. Wegner, South Bend, has been appointed health commissioner of St. Joseph county.

MARYLAND

Pure Food Bill.—The pure food bill, which is being championed by Dr. Thomas A. Ashby, Baltimore, in the legislature, has been held back by opponents to the clause relating to ice-cream. The bill provides that 14 per cent. shall be the standard in Maryland, but permits the standard to run down to 4 per cent. on the proviso that it shall be labeled between those limits.

New Health Bureaus.—Dr. Thomas A. Ashby, Baltimore, introduced a bill in the legislature, February 24, providing for five bureaus of health under the State Board of Health, namely, communicable diseases, bacteriology, chemistry, sanitary engineering and vital statistics, each bureau to be directed by a chief at a salary of not less than \$1,500 or more than \$2,400, with an assistant, and if necessary with additional help. For expenses an appropriation of \$24,000 is made.

The Optometry Bill.—Advocates and opponents of the optometry bill, which is designed to place optometry on the same plane as medicine, and providing for a board of examiners, appeared before the committee on hygiene of the House of Delegates February 25. Among the opponents are Drs.

Samuel Theobald, Herbert Harland, Hiram Woods, Jr., Henry O. Reik, J. Frank Crouch, James J. Carroll, Ernest A. Knorr, G. Milton Linthicum and Arthur P. Herring, who state dealers in eye-glasses and spectacles were in many cases not qualified to examine eyes and prescribe glasses. Dr. Lewellys F. Barker of Johns Hopkins Hospital, in a written communication, states that serious disorders as brain tumor, locomotor ataxia, etc., first manifest themselves in eye symptoms, and might be prevented but for superficial examination of the eye by those not trained in medicine.

Care of the Insane.—The members of the State Lunacy Commission claim that the state bond issue of \$600,000 for the care of the insane will be sufficient. The supervisors of the Baltimore City Charities, however, say that not less than \$1,000,000 will be sufficient. The recommendations embrace \$250,000 for a negro hospital with provision for 452 patients; additional \$240,000 for buildings at Springfield to accommodate 674 patients; \$40,000 for additional buildings at Owing's Mills to accommodate 100 feeble-minded children, and \$450,000 to provide buildings each year for fifteen years to cost \$30,000 each, to provide for the annual increase of at least 100 insane patients a year.—Dr. Arthur P. Herring, secretary of the State Lunacy Commission, in a recent appeal for the state care of the insane, enumerated the following points in the safeguarding of the insane: They should receive a degree of comfort and decency suitable for the average citizen; they should be treated with uniform kindness and consideration; they should be supplied with attractions and interest to lessen the monotony of hospital life; they should have medical treatment for the cure of the disease, with release from the institution at as early a date as is safe for the patient and community.

Baltimore

Chiari to be Herter Lecturer.—It is announced that Dr. Hans Chiari, professor of pathology in the University of Strassburg, is to be Herter lecturer at Johns Hopkins University in October next.

Personal.—Dr. J. Whitridge Williams was reelected president of Johns Hopkins University, February 22.—Dr. Melville H. Carter has been elected president of the Crescent Democratic Club, and Dr. Benjamin F. Phillips, vice-president.

Pure Food Violators Fined.—The Kohler Manufacturing Company, charged with misbranding 216 packages of the "Dr. Kohler's Antidote," shipped to Nashville, April 15, 1909, is said to have pleaded guilty in the United States District Court, February 19, to violation of the pure food and drugs act, and to have been fined \$25. The misbranding referred to was the statement that the medicine cured headache, neuralgia and disordered stomach.

Commemoration Day.—At Commemoration Day exercises of the Johns Hopkins University, President Rempen stated that at least \$1,700,000 would be necessary to move the university to the new suburban site at Homewood, and that for actual running expenses and extension departments, there should be available an additional income of \$50,000 a year. Among the pressing needs of the university are a building for pathology, for which, with endowment, \$500,000 is needed, and a department of preventive medicine.

MASSACHUSETTS

Personal.—Dr. James L. Wellington, said to be the second oldest graduate of Harvard Medical School, celebrated his ninety-second birthday anniversary at his home in Swansea, January 27.—Dr. James A. King, Millville, has recently returned from abroad.—Dr. Timothy Leary, Boston, has been appointed a medical examiner of Suffolk county, vice Dr. William G. MacDonald, deceased.—Dr. Emerson A. Ludden, chairman of the board of health of North Brookfield, is said to be ill with smallpox, contracted from a patient whom he treated.

Board of Health Organized.—At a meeting of the New Bedford Board of Health, February 9, organization was effected by selecting Dr. F. M. Kennedy as chairman. The following appointments were made: Medical inspector, Dr. Archibald N. Senesac; bacteriologist, Dr. Augustus H. Mandell; quarantine physician, Dr. Joseph A. Frasier; vaccinators, Drs. Anna W. Croacher and L. K. Doran; and school inspectors, Drs. Joshua F. Weeks, Joseph A. Bernier, Fred C. Graves, Charles Shanks, Edwin P. Seaver, Jr., H. V. Weaver, William A. Nield and Joseph P. St. Germain.

Hospital Notes.—The sanatorium for tuberculosis patients at Westfield, the third of the four public buildings to be built and maintained by the state, was opened February 16. It has

accommodations for 150 patients.—By the will of the late Thomas H. Dodge, Worcester, a provision is made for the establishment of a hospital to be known as the Eliza D. and Cora J. D. Dodge Hospital, to be devoted to the care of women and children only, not for incurable diseases or contagious diseases. The \$30,000 devised for this purpose is to be held in trust for seventy-five years before the hospital is to be built.

MISSOURI

Measles Prevalent.—An epidemic of measles is reported in Carroll county, where several deaths are said to have occurred.

Antituberculosis Society Organized.—Buchanan Society for the Relief and Prevention of Tuberculosis was organized in St. Joseph, February 22, with a charter membership of 35. Dr. Oliver C. Gebhart was elected secretary, and Drs. Charles R. Woodson, Emmett S. Ballard, James K. Graham, Henry W. Westover, Daniel Morton and H. V. Good, directors.

Personal.—Dr. Horace D. Quigg, Bunton, has been appointed superintendent of the State Feeble-Minded Colony, Marshall.—Dr. John A. Lowry suffered severe damage by fire to his building in Moberly, Feb. 6.—Dr. Mathew W. Pickard, Kansas City, has been appointed division surgeon of the Chicago Great Western Railroad, with jurisdiction between Kansas City and St. Joseph.—Dr. George W. Smith, Albany, has succeeded Dr. J. A. Crockett, Stanberry, as physician of Gentry county.

St. Louis

New Hospital Bills.—The physicians of the city are divided into factions for and against the hospital bills pending in the municipal assembly, which if passed will radically change the system now in force, will curtail the authority of the board of health, and will place in the hands of a hospital board, headed by the mayor and six members, laymen and physicians, the entire management of the city hospital, insane asylum, quarantine hospital, female hospital and poorhouse.

Unlicensed Practitioners Fined.—Edward Wicke, charged with practicing medicine without a license, is said to have been fined \$100 and costs in the court of criminal correction, February 21.—C. O. Wright is said to have been fined \$200 by Judge Kline in the court of criminal correction, February 5, on the charge of practicing medicine without a license. It was alleged by the health department officers that the defendant had agreed to cure patients in the last stages of consumption for \$1,000.

Personal.—Dr. John Stewart has been appointed superintendent of the State Sanatorium for Incipient Tuberculosis, Mount Vernon, vice Dr. Oliver H. Brown, resigned.—Drs. Arthur H. Bradley and James Moores Ball have resigned from the faculty of Barnes Medical College.—Dr. Edward W. Saunders was operated on in Johns Hopkins Hospital recently for appendicitis.—In the damage suit against Dr. John M. Dean, in which malpractice was alleged, the jury has decided in favor of Dr. Dean.

Hospital for Incipient Tuberculosis.—The St. Louis Society for the Relief and Prevention of Tuberculosis has purchased ten acres near Kirkwood, on which will be established a sanatorium for incipient tuberculosis. Dr. Adrian S. Bleyer is medical director of the institution, and Drs. Nathaniel Allison, Louis H. Behrens, William Porter, Morris C. Tuholske, Francis L. Bishop, William S. Dentsch, Louis E. Bunte, Jerome E. Cook, Elsworth Smith, Oscar H. Elbrecht, William Engelbach, Warren P. Elmer, Walter Fischell, Max A. Goldstein, Rufus C. Harris, Frederick C. E. Kuhlmann, Samuel T. Lipsitz, Hanau W. Loeb, Edgar M. Senseney, Roy P. Scholz and Cleveland H. Shutt are members of the medical staff.—At a meeting of the advisory board and a committee of one hundred of the United Jewish Charities, February 21, \$3,000 was realized for the sanatorium fund of the organization.

NEW YORK

Progress Against Tuberculosis.—State Health Commissioner Porter has approved the Pendell Farm Site for a tuberculosis hospital for Poughkeepsie. The purchase price is \$10,000. The institution will accommodate 40 patients.

Gift to Adirondack Cottage Sanatorium.—One of the many congratulatory letters that Dr. Edward L. Trudeau received in connection with the celebration of the twenty-fifth anniversary of the institution was one from Mrs. E. H. Harriman containing in addition an offer of \$25,000 for a research and medical fund for the support of the sanatorium laboratory. The fund is to be known as the E. H. Harriman Research and Medical Fund of the Adirondack Cottage Sanatorium. The trustees of the institution accepted the gift.

Personal.—Dr. Salphronius H. French, Amsterdam, was tendered a dinner by the Montgomery County Medical Society, February 8, in honor of his completion of fifty years of medical practice. He was also presented with a parchment scroll suitably inscribed.—Dr. Karl G. Leo-Wolf has taken charge of the new clinic and dispensary opened February 17, under the supervision of the Niagara Falls Committee on the Prevention of Tuberculosis.—Dr. Thomas H. Halsted has been elected president of the Syracuse Society for the Prevention of Social Disease, and Drs. Albert E. Larkin and Aaron B. Miller have been elected members of the executive committee.

New York City

Medical Lecture.—The date of the lecture on "Diseases of Metabolism," to be given by Prof. Magnus Levy of the University of Berlin, has been changed from March 19 to April 2.

Harvey Society Lecture.—The seventh Harvey Society lecture, given March 5, by Dr. Adolph Meyer of Johns Hopkins University, is on "The Present Status of Aphasia and Its Relation to Psychopathology."

New Free Clinic.—The East New York Dispensary on Watkins street near Pitkin avenue will be ready for occupancy by the middle of March. The building has cost about \$25,000, most of which has been raised by the people of that vicinity.

Typhoid Carrier Released.—Mary Mallon, popularly known as "Typhoid Mary," has been released from quarantine on North Brother Island by order of the health department with the proviso that she is not to seek employment as a cook. She has also agreed to report frequently to the board of health. It was proved conclusively that she was a typhoid carrier.

Honor Dr. Jacobi.—On February 26 the Associated Alumni of Mount Sinai Hospital celebrated Dr. Abraham Jacobi's half century of service. Dr. Jacobi was presented with a gold medallion bearing on one side a bas-relief of himself and on the other side the words, "Humanitarian, Teacher, Leader and Friend," executed by Moberly Clark. The speakers of the evening were Drs. Martin W. Ware, William H. Welch, Baltimore, John A. Wyeth, Charles H. May and Arpad G. Gerster and others.

Personal.—Dr. Allan McLane Hamilton has returned from Europe.—Dr. Aaron B. Cohen has been appointed house physician of the Eastern District Hospital, Brooklyn.—Dr. Charles C. Haskell has resigned from the Willard Parker Hospital of the New York Department of Health, to become connected with the department of pharmacology of Messrs. Eli Lilly and Co., Indianapolis.—Dr. John C. Bryan was placed in Bellevue Hospital, psychopathic ward, January 13.—Dr. Robert H. Golder is reported to be seriously ill at his home in Rossville, Staten Island.

New Hospitals.—The new hospital and four pavilions for the isolation and treatment of communicable diseases at Hoffman's Island, are now completed and ready for occupancy. Separate pavilions are provided for measles, scarlet fever and diphtheria. The five buildings will accommodate 300 patients.—Plans have been filed with the building superintendent of the Bronx for a new three-story hospital connected with the Hebrew Infant Asylum. The building will cost \$30,000, and will be equipped with a series of isolation wards.

PENNSYLVANIA

Postgraduate Study.—The Chartiers Branch of the Allegheny County Medical Society has a class of 20 which meets every Monday evening for postgraduate study.

New Officers for Hospital.—Tarentum Hospital Association, at its annual meeting in January, elected the following officers: President, J. G. Stewart; vice-president, J. W. Hempill; secretary, Dr. Thomas B. Allison; and treasurer, O. C. Camp. A board of directors was elected and at its first meeting, selected Dr. George M. Getze as president. The new hospital is well on toward completion and will be ready for occupancy May 1.

Personal.—Dr. Joseph L. McCool, physician at the Marcus Hook Quarantine Station, has resigned, taking effect March 1.—Dr. Joseph M. Corson, Chatham Run, narrowly escaped drowning February 19. When driving across the river near Lock Haven, the ice broke, precipitating him into the stream.—Dr. Harry W. Zech, York New Salem, while crossing Codorus Creek, February 17, was caught by a barbed wire and narrowly escaped drowning.

Tuberculosis Dispensaries.—A free dispensary for the treatment of tuberculosis will be erected at 406 Wharton street by the Jewish Consumptive Institute, fully equipped for the study of the disease and the distribution of milk and eggs to the poor. A force of nurses will be organized to visit patients

in their homes.—Owing to the impracticability of conducting a tuberculosis dispensary in a tent in cold weather, the Germantown Hospital closed its dispensary February 15. It will open again in the spring.

County Societies to Aid Tuberculosis Work.—The Committee on the Prevention of Tuberculosis of the Medical Society of the State of Pennsylvania has decided that one of the most important ways of securing advance in the crusade against tuberculosis will be to request each county medical society throughout the state to hold one or more meetings during the year on tuberculosis, with especial reference to physical diagnosis. The committee offers, if two weeks' notice is given, to arrange for a competent speaker. It is suggested that patients be on hand at the meeting for demonstration. Any requests for speakers should be addressed to Dr. Charles J. Hatfield, chairman of the committee, 2008 Walnut street, Philadelphia.

Benefit from Removal of Adenoids.—Last October the Department of Public Health issued a pamphlet directed to the parents of the younger school children concerning the nature of adenoid growths and their danger to the child. Recent investigations prove that the presence of adenoid growths are responsible for the increasing number of backward children in the lower grades, but that instant and marked improvement has followed the operation for removal. During the last school year, the medical inspectors found in the public schools 1,326 cases of adenoids and the pupil in each case was referred by letter to his parents. Of this number 482 were operated on.

Philadelphia

Jefferson College Smoker.—The members of the Academy of Jefferson Medical College, composed of men in the school having a college degree, held their annual smoker, February 18. The purpose of the association is to encourage men to attend a college before beginning their medical study. The speakers of the meeting were: Rev. Dr. George W. Lincoln, Dr. J. Chalmers DaCosta and Commodore R. J. Denny, U. S. N.

Plea for a Sane Fourth.—Another meeting of the Committee for the sane Celebration of the Fourth of July was held February 25. The committee is planning to have ordinances enacted to prohibit the sale and use of explosives. The meeting was addressed by Mrs. Imogene Oakley, of the Civic Club, Dr. William W. Keen, Mr. George W. Ochs, Dr. Samuel Wolfe, representing the State Medical Society, Dr. J. Madison Taylor, and others.

To Reduce Infant Mortality.—In pursuance of the movement to reduce infant mortality, Dr. Joseph S. Neff, Director of Health and Charities, addressed the Clerical Brotherhood, February 14. He reviewed the work of the National Association for the Study and Prevention of Infant Mortality and declared that of the 6,860 deaths in this city in 1909, fully 65 per cent. were preventable. Of the total number 4,763 were of infants under one year. He renewed his plea for a corps of women nurses for the dissemination of information to mothers regarding the treatment of infants.

Gifts to the University.—Donations amounting to more than \$1,000,000 were announced by Provost C. C. Harrison of the University of Pennsylvania, at the annual "University Day" exercises in the Academy of Music, February 22. Besides the presentation by Henry Phipps of the Phipps Institute for the Study and Prevention of Tuberculosis, valued at more than \$500,000, previously announced, the provost also stated that the \$250,000 necessary for a zoology laboratory had been donated from various sources; that an alumnus had guaranteed the payment of \$100,000 within the current year for the endowment of a chair, the occupant to be known as "The Benjamin Rush Professor of Physiologic Chemistry;" that Mrs. Caroline E. Richmond had donated \$50,000 for the endowment of ten beds in the University Hospital; that the funds necessary for the completion of the new medical laboratories had been secured. This needed addition will now be built in memory of the late James McManes. This is the gift of his daughter and it is the same family who earlier presented the pathologic laboratory.—Sargent's portrait of Dr. J. William White was presented by Dr. Alfred Stengel. Dr. Charles H. Frazier received the portrait on behalf of the faculty.

SOUTH CAROLINA

Health Board Reorganized.—The board of health of Anderson has been reorganized with ten members instead of five as heretofore, and four members are physicians.

Personal.—Dr. James R. Ware has been elected president of the Greenville Board of Health.—Dr. William B. Cox, Chester, has been elected physician of the Chester County Pension Board.

Charleston Mortality.—The annual report of Dr. J. Mercier Green, health officer of Charleston, reviews the work of his department for 1909, and notes a steady reduction in the death rate. In 1899 the mortality rate was 21.60 per 1,000, while in 1909 it was reduced to 14.04 per 1,000. The colored rate for 1899 was 40.50 per 1,000, while in 1909 it had decreased to 32.03 per 1,000. He advocates the completion of the sewerage system, the filling up of all vaults and cesspools, the removal of cows and dairies from the city, and the inspection and thorough care of bakeries and dairies.

SOUTH DAKOTA

Tuberculosis Sanatorium Located.—It is probable that the state tuberculosis sanatorium, established by the state legislature, will be located on a site of 133 acres known as Chinaman's Ranch, near Custer.

Benzoate of Soda Condemned.—The Fourth District Medical Society, at its January meeting, adopted resolutions urging Congress to amend the Food and Drugs Act so as to prevent the use of benzoate of soda and other similar preservatives in foods; and endorsed Dr. Harvey W. Wiley in his vigorous campaign in food legislation.

WEST VIRGINIA

Hospital Incorporated.—Campbell Hospital has been incorporated at Beckley with a capital stock of \$5,000 by Dr. J. A. Campbell and others.

Postgraduate Work.—Physicians of Clarksburg and Harrison county have organized the Harrison County Postgraduate School to improve facilities for postgraduate work.

Sanatorium for Wheeling.—At a meeting of the Wheeling Antituberculosis Society, February 11, ways and means for the erection of the proposed sanatorium were discussed, and a committee on site was appointed, with Dr. Andrew J. P. Wilson, chairman, and Drs. Harriet B. Jones and William H. McLain as medical members. Dr. Michael Gaydosch was appointed a member of the ways and means committee.

Dr. Hicks Exonerated.—The following resolution was passed by the Cabell County (W. Va.) Medical Society at its regular monthly meeting, Jan. 13, 1910:

Resolved: That the Cabell County Medical after due deliberation of the charges against Dr. Ira Clay Hicks have been thoroughly investigated, the following findings are submitted:

That we have investigated these charges and find them to be wholly untrue.

Dr. Hicks having shown his good intentions in the matter by submitting his immediate resignation to the Knights of Modern Chivalry as director, as well as aiding the censors of this society in their investigation of these charges; in justice to Dr. Hicks we demand that a copy of this resolution be printed in *The Journal of the West Virginia Medical Association* and *The Journal of the American Medical Association*, with the request that independent medical journals copy.

WISCONSIN

Street Cuspidors.—It is reported from Black River Falls that street cuspidors to prevent the spread of tuberculosis are to be installed in that city.

Annual Report of Sanatorium.—At the annual meeting of the Milwaukee Sanatorium for Tuberculosis Association, which maintains the institution, Blue Mounds, the report showed that 106 cases had been treated in the sanatorium during the year.

Personal.—Dr. J. Thomas Elliott, Rhinelander, is convalescent after a severe attack of erysipelas.—The case of Dr. Isaac Buckeridge, Beloit, charged with having failed to report a case of scarlet fever, was dismissed on petition of the district attorney, on account of lack of sufficient evidence to warrant prosecution.—Drs. Hugo F. Mehl, Samuel G. Higgins, P. W. O'Donovan and Dirck Bruins have been appointed assistant medical inspectors for schools of Milwaukee.

Drinking Cup Abolished.—The State Board of Health has published a rule that "The use of the common drinking cup on railroad trains, in railroad stations and in public and private schools is hereby prohibited. No person or corporation in charge of or in control of any railroad train or station or public or private school or state educational institution shall furnish any drinking cup for public use, and no person or corporation shall permit on said railroad trains or in stations or at said public or private schools, or in state educational institutions, the common use of the drinking cup."

CANADA

Will Not Amalgamate.—At the recent annual meeting of the Western General Hospital, Montreal, it was decided that the institution would not amalgamate with the Royal Victoria Hospital nor with any similar institution.

New Toronto General Hospital.—This institution is to have in its eye, ear, nose and throat department 36 beds; gynecology, 39 beds; general surgery, 145 beds; medicine, 150 beds; emergency, 9 beds, and obstetrics, 36 beds. This arrangement will provide for 124 more beds in the public wards than in the present building, and for 22 more in the private and semi-private wards. The hospital is to cost about \$2,500,000, of which \$1,500,000 is available.

Personal.—Dr. Ethelbert E. Meek has been appointed health officer of Regina, Sask.—Dr. Maurice McD. Seymour, Regina, has been appointed commissioner of the Saskatchewan Bureau of Public Health.—Dr. Robert G. Brett, Banff, Alberta, has gone to Vienna for graduate work.—Dr. J. L. Todd, McGill University, has been awarded a gold medal by the Liverpool School of Tropical Medicine for research work in sleeping sickness on the coast of West Africa.

Victorian Order of Nurses.—The annual meeting of the Toronto branch of this order was held February 25 in Toronto. The receipts for the year were \$6,078.09 and the disbursements \$5,935.05. The medical report was presented by Dr. Harley Smith. Nine nurses had made 9,399 visits in attendance on 709 patients, not including 510 infants who had received care. The number of Toronto physicians who had employed the nurses of the order increased by 40 during the year, bringing the total up to 370 who now ask for their services.

Hospital Meetings.—The ex-house surgeons of the Toronto General Hospital will hold their annual banquet and meeting in Toronto on Easter Monday. Dr. Roland Hill of St. Louis will deliver the scientific address. A gold-headed cane will be presented to Dr. Thomas Cullen, Baltimore, the ex-house surgeon, who has made the best contribution to medical literature during the last year.—The fourth annual meeting of the Canadian Hospital Association will be held in Montreal March 28 and 29. The president is Dr. H. E. Webster, superintendent of the Royal Victoria Hospital, Montreal. Dr. Christian R. Holmes, Cincinnati, and other eminent hospital workers will be present. Visits will be made to all the Montreal hospitals and demonstrations held on special features of their work.

Trying to Improve Ontario's Milk Supply.—The Ontario Milk Commission appointed by the legislature last spring has presented its report to that body. It recommends that the legislature fix the conditions under which milk is produced; that more attention be paid to cleanliness of cattle and conditions under which milk is produced, as well as the health of cattle; that no milk be sold in shops in cities over 50,000 inhabitants; proper care of handling of cans, bottles and other utensils. The milk supply of Ottawa was found to be the best in Ontario, and that of Toronto the worst, the latter city consuming 2,336 eight-gallon cans per day, coming from 900 farms within a radius of forty miles. Certified milk was the ideal, but probably could never be obtained except for sick and infant feeding. Pasteurization of milk was an expedient, but a good one. The report refers specially to the good work done in the Hospital for Sick Children, Toronto, where a modern pasteurization plant has been installed. It is being used for 1,200 in-patients and 12,000 outside patients. The government is earnestly enjoined to do something to stem the increasing tide of infant mortality by improving the milk supply.

University News.—The new buildings of the Medical Faculty of McGill University to replace those destroyed by fire three years ago are nearing completion and will be ready for occupation in the early summer. The next annual convocation will be held in the new building, at which time there will be a reunion of the medical graduates.—A university commission was appointed some time ago by the Manitoba government on the extension and management of the Manitoba University in Winnipeg. The majority of the commission advocates a state university, organized on the basis of the state universities in the United States.—That medical teaching is not satisfactory in the medical department of the University of Toronto, is the burden of the memorandum handed to the board of governors of the university by the new dean of the medical faculty, Dr. Charles K. Clarke. He states that the candidates for the final examinations during the last two years have not been properly qualified or equipped, and that better methods of teaching are necessary. A correspondent in the *Canadian Practitioner and Review* considers this is largely due to allowing experienced teachers to go and employing juniors.

LONDON LETTER

(From Our Regular Correspondent)

LONDON, Feb. 12, 1910.

The Lowest Birth and Death Rates on Record

The constantly diminishing birth-rate, which has been accompanied by a diminishing, but not so marked, death-rate, has been a frequent subject of comment in previous letters. The figures for 1909, which have just been published, show that once more the records have been beaten. The birth-rate was 25.6 per 1,000 of the population, a drop of 0.9 per 1,000 on the figures for 1908 and the lowest birth-rate on record. On the other hand, there is a decrease in the death-rate, due largely to improved sanitation. The rate is 14.5 per 1,000, also the lowest on record, and 0.2 lower than the rate of the previous year. During the last ten years, the death-rate has dropped 1.6. The death-rate of children under the age of one year also shows a satisfactory decline. During 1909, it was 109 per 1,000 born which is 11 below the rate for 1908. The vigorous work of municipal and philanthropic bodies in appointing health visitors and nurses who give instruction in slum districts on the rearing of the young is evidently bearing fruit. During the last 10 years the infant mortality has dropped no less than 29 per 1,000. There is also a marked decline in the death-rate from epidemic disease.

Compressed Air Experiments at the London Hospital: The Safest Method of Decompressing Caisson Workers

In the new respiration laboratory at the London Hospital, Mr. Leonard Hill, whose experiments with compressed air have done so much to elucidate the pathology of caisson disease, is conducting an important series of researches in cooperation with Mr. Greenwood on the safest method of decompressing caisson workers. The admiralty regulations for the decompressing of divers are based on experiments on goats conducted by Drs. Haldane and Boycott, but the London Hospital physiologists regard the pig as more closely resembling man physiologically and anatomically and have therefore selected this animal for experiments. They find that they can safely bring out pigs weighing up to 115 pounds which have been exposed to +90 pounds of atmospheric pressure for two hours, a sufficient time to have saturated most of their bodies with the excess of dissolved nitrogen. Saturated at this pressure the body-water holds in solution from 6 to 7 per cent. of nitrogen, and the body fat from 39 to 49 per cent.—and the pigs were very fat. It is found that the safest method of decompression is to lower the pigs from +90 to +20 pounds of pressure in ten minutes, keep them at 20 pounds for two hours, and then lower them to the atmospheric pressure in another twenty minutes. A pressure of 20 pounds seems to be sufficient to keep bubbles of nitrogen from forming in the blood and during the two hours at this pressure the supersaturated blood gives off the dissolved nitrogen from the lungs.

The Danger from Illness of Locomotive Engineers

In my letter of May 30, 1908 (*THE JOURNAL*, June 20, 1908), I recorded the death of an engineer on the footplate of an express train a few minutes after leaving Newcastle, and in my letter of Aug. 29, 1908 (*THE JOURNAL*, Sept. 12, 1908) I reported the case of an engine driver who had just returned from sick leave and while driving a train was seized with paralysis. For a few minutes the fireman was so concerned for the driver's safety that the train was left uncontrolled and dashed at a high speed through a station where it was signalled to stop in order to let an express train from London pass. Fortunately the signalman realized that a disaster was imminent and switched the runaway train on to a branch line just in time to avert an accident. When the train was pulled up the driver was found lying helpless and speechless on the footplate. Recently an engineer on the Midland line died suddenly while in charge of an express train. The train left Leeds at 10 p. m. Sunday night. After pulling up at Derby the driver reeled and fell into the fireman's arms. Fortunately the train was at a standstill. Had the seizure happened during the run a disaster would probably have occurred. The postmortem examination revealed extensive though unsuspected disease of the heart.

Damages for Malpractice Obtained from Unqualified Dentists

The practice of dentistry by unqualified persons is rife in Great Britain as the law interferes with them only when they use the title "dentist," or in any way imply that they are legally qualified. Only when they are guilty of gross malpractice do they come before the courts. Two flagrant cases have just occurred. In London a woman claimed damages against the "London Hygienic Institute." She was canvassed

by a representative of this firm for a set of false teeth. She consented to have a number of extractions and the replacement of the teeth by a denture for \$27. Later, the canvasser called, accompanied by another man, and between them they extracted twelve teeth and left the patient in a state of collapse. Before the operation was concluded she was in such a serious condition that one of the men sent out for brandy. For three weeks she was confined to bed and visited by a physician. Before the operation she was given to understand that the extractions would be painless. She was awarded \$500 damages. On the same day that this case was adjudicated a still more flagrant one was heard in a Glasgow court. Another so-called hygienic institute (note the avoidance of any word suggestive of dentistry in order to keep outside the clutches of the law) was sued by a stationer. In extracting seventeen of his teeth in order that he might be supplied with artificial teeth the defendants broke his jaw and lacerated his mouth so that before it would be possible for him to be fitted with teeth he would have to undergo a surgical operation. He was also awarded \$500 damages. Unfortunately, such cases, which are far from uncommon, do not prevent the continuance of this dental quackery. There are so many dupes that these so-called institutes can well afford to pay damages from time to time. Only when the malpractice is of a glaring description do they come within the clutches of the law.

PARIS LETTER

(From Our Regular Correspondent)

PARIS, Feb. 11, 1910.

Commission for the Study of Antityphoid Vaccination

For more than three months the Academy of Medicine has been discussing the prophylaxis of typhoid fever. At the last session the academy took up the question of the nomination of a commission for the study of the theoretical and practical conditions of preventive vaccination for typhoid fever, in accordance with a resolution offered by Professors Chantemesse and Landouzy. According to Dr. Landouzy, the condition of the country in consequence of the floods made it a duty for the academy to take a stand as soon as possible on the question of antityphoid vaccination. Dr. Netter was opposed to the nomination of a committee on the subject, believing that the facts were sufficiently numerous and well-known to enable the academy to pronounce on them; but a commission, if appointed, might advantageously be given the task of studying the means, as yet entirely unknown, by which bacillus-carriers might be relieved of their dangerous guests. Dr. Vaillard, on the contrary, believed that the Minister of War would ask nothing better than to undertake antityphoid vaccinations if he were sustained by the authority of the Academy of Medicine. Moreover, he believed that it was not for the Academy of Medicine to indicate the means for eliminating germs from bacillus-carriers, since such work could be accomplished only through the clinic and the laboratory. Finally the proposition to name a commission for the study of antityphoid vaccination was accepted. The academy appointed the following members of the commission: Drs. Chantemesse, Chanffard, Delorme, Kelsch, Landouzy, Netter, Roux, Thoinot, Vaillard, Vincent and Vidal.

First Congress of French Interns

The institution of hospital internship, which constitutes one of the distinguishing features of our hospital organization, has in recent years been much attacked. The hospital interns are chosen competitively after having passed through a period of externship. The fault which is found with the competitive examinations is that they chiefly exact efforts of memory and that kind of preparation which Taine called "mechanical cramming." In place of learning to draw a clinical picture from life, from his hospital recollections, the candidate for the internship goes through a system of memory gymnastics which fill his mind with incoordinated facts and fashionable theories. But in spite of the disadvantages of the method of recruiting interns the considerable advantages of the medical instruction which the interns receive cannot be disputed. During the discussion on the reform of medical instruction Dr. Roux, director of the Pasteur Institute, who found fault with this instruction for being unpractical, declared that young physicians were ill prepared for the practice of medicine; but he admitted that the hospital interns, among whom were many excellent physicians, formed an exception, not because they had successfully passed the examination for the internship, but because, after having passed it, they had received a practical medical education for four years in the

hospital service. There could not be, then, any question of suppressing the internship, but there is an urgent necessity for studying carefully its actual workings and of seeking improvements.

The Friendly Association of Interns and of Former Interns of the Civil Hospitals of Bordeaux has just taken the initiative in the matter. On the occasion of its thirtieth anniversary, which will be celebrated next May, this association has decided to invite to a family gathering representatives of other internships of the French university centers and to use the opportunity to hold the first congress of French interns, at which all questions pertaining to the hospital internships will be discussed. The questions will bear on the following three main topics: (1) the system of recruiting; (2) the organization; (3) the administration and salaries.

The Devotion of the Hospital Personnel During the Floods

M. Mesureur, Director of the Public Charities, has just addressed to the heads of the hospital establishments a circular in which he pays a tribute to the devotion of the hospital personnel in the course of the trying period through which Paris has just passed. In the hospitals directly affected by the flood, as well as in the establishments which have come to their aid, the patients have not ceased to receive the most attentive care in spite of considerable difficulties, even when almost all the services were deprived of water, light, heat and cooking facilities. An admirable effort of activity and endurance was put forth to preserve the workings of the hospital, to save the supplies, and to provide against the stopping of the technical services. The supplies were furnished day and night, and more than 2,000 beds were improvised to receive the patients driven from the Hospice of Ivry and the Bouicaut Hospital.

BERLIN LETTER

(From Our Regular Correspondent)

BERLIN, Feb. 10, 1910.

The Building of a "Rudolf Virchow House"

During the celebration of the eightieth birthday of Rudolf Virchow, in 1901, the Berlin Medical Society voted to erect a building to bear the name of the great pathologist who was for many years president of the society, and to serve for its scientific meetings and social affairs. As the society possesses little property it has needed several years to accumulate a fund so that the first step in carrying out this plan, the acquisition of suitable ground, could be taken. The difficulty was further increased by the fact that central real estate for new buildings is very difficult to get and very costly in the so-called medical quarter, that is, the section of the city in which the clinics and other scientific institutions are generally situated and which is best fitted for meetings of the medical profession. At the last meeting of the Berlin medical society a resolution was adopted authorizing the purchase of a piece of ground in Luisenstrasse at the price of 600,000 marks (\$150,000). As the capital available for the building is only about \$55,000 and the erection of the building itself will require about \$100,000 in addition to the cost of the ground, a very considerable time would elapse before we would be in a position to hold the first meeting in the Rudolf Virchow House if the present methods of raising money should be continued. We hope for assistance in this matter from the German Surgical Society. This society is in possession of the Langenbeck House which has hitherto served for the meetings of the surgical society as well as a meeting-place for the Berlin medical society. As this house has become too small for the congresses of the surgical society, which at times numbers 1,800 members, the surgical society feels the necessity of building another house for its gatherings and it can be expected that both societies will combine for the new building. Perhaps some well-to-do colleagues, not only of Berlin but throughout Germany and in foreign countries, will contribute to the erection of this building, which is to be a memorial to the greatest pathologic anatomist and the teacher of the entire medical profession of the world in this generation. Here especially I make my appeal to the German physicians of America of whom a good part have themselves sat at the feet of Rudolf Virchow and received from him their pathological and clinical education. Unfortunately, we do not have here the large donors which America possesses in abundance for the establishment of great scientific and especially medical institutions, and we physicians must help ourselves in this respect. It seems to me therefore so much the more appropriate that the German physicians of the entire world should combine in erecting a building which shall serve as a home for the greatest German medical society.

Limitation of Privat-Doctents

Complaint has been made for a long time that the number of privat-docents in the German universities exceeded that needed for instruction, especially in large cities like Berlin and Munich in Germany, and Vienna in Austria. The excess of privat-docents results in their crowding each other, while a considerable number are destitute of hearers and in addition they interfere with the selection of proper clinical material. Another complaint refers to the reasons why a number of privat-docents attach themselves to the faculty. It is no secret that a certain part of our colleagues join the faculties only because with this title they have a larger rôle in society and can attract patients more readily and secure a larger dowry when they marry, especially if they are so fortunate through outside influence as to be granted the title of professor after a short time. The consideration of this and similar complaints has induced the government and the faculties to limit the number of privat-docents. It is recommended to secure this end first by increasing the difficulty of securing the positions and, on the other hand, by more dismissals. Both methods have been tried, especially by the Berlin medical faculty. For admission the question of need has been raised, the personal relations have been scrutinized, and the scientific requirements somewhat increased. It has further been suggested to call only suitable investigators as privat-docents and in general not to permit any longer the voluntary candidature of privat-docents. A few weeks ago the decision was finally made to guarantee the position of privat-docent only for five years and to prolong this privilege only in case of those teachers who at the end of this time had shown the necessary capacity for research work and instruction. To this decision many are justly opposed. The objection is especially made that not only scientific considerations but also personal sympathies and antipathies and probably even sectarian prejudices, which are justly suspected in the German faculties, might have an influence on such decisions. For this reason at the last two meetings of the German university teachers a resolution along these lines, presented by the Munich psychiatrist, Professor Kraepelin, was voted down. As the minister of education has not yet sanctioned the decision of the Berlin medical faculty, it is to be hoped that the objection made to it will be considered. I say this although, in my opinion, the suggestion of this decision of the faculty came from the authorities of the department of education who have to do with this matter. As the *Deutsche medizinische Wochenschrift* has editorially pointed out with justice, two factors should determine the admission to the position of privat-docent: strict scientific requirements and the avoidance of any concessions on the part of the faculty. The latter have been largely responsible for the surplus.

The majority of privat-docents have been the assistants of the regular professors. These are rewarded to a certain extent by admission to the faculty for the numerous services which they have performed for the regular professors and in regard to the admissions to the position of docent some of the regular professors frequently make concessions to each other. They "trade off," to use a parliamentary expression: a nomination by one professor is accepted in the expectation that he will accept in a similar way a nomination by the other. If each professor gave his opinion regarding the fitness of a candidate for the position of privat-docent, without personal bias, according to his best knowledge, the objections complained of would disappear of themselves.

Limitations of Consultation Journeys

The city administration of Leipzig advertises a vacancy in the position of head physician in the St. George Hospital and imposes the condition that consultation practice shall be permitted only in Leipzig, and that even here the administration may insist on a limitation under some circumstances. This step is taken on account of the fact that many prominent chief physicians of hospitals and clinics often neglect the duties of their position on account of the demands of consultation practice. However much the consultation journeys serve the interests of the suffering public outside the large cities it must be admitted that the requirements of the authorities are just, as they express the desire that their physicians shall devote themselves primarily to the patients for whose care they have been given their position.

Smallpox in West Prussia

In consequence of the deplorable sanitary condition of Russia, she sends us from time to time infections which in this country we know only by name. That we had to deal last

year with cholera cases which were the advance guard of the great St. Petersburg cholera epidemic I have told you in a previous letter. In a similar way we receive smallpox patients from time to time, partly through the business relations with Russia and partly through tramps who pass through Germany. In this way a small epidemic of smallpox has arisen in Marienburg and vicinity which so far includes about 30 cases. In one village 17 cases occurred. By compulsory vaccination of all the inhabitants of the village, altogether 1,000, it was possible to stamp out the epidemic, a result which should be well worthy of attention by all the opponents of vaccination in Germany and in foreign countries. The mortality was low.

Disinfection in Tuberculosis

The wish which I expressed in my last letter that the disinfection of dwellings which have harbored patients with lung and laryngeal tuberculosis should be done by the municipality without charge has been fulfilled sooner than might be expected. An order of the administration which has appeared in the last two days has filled the gap.

Rudolf Virchow Hospital

The affair at the Rudolf Virchow which I reported in my last letter has again been officially investigated and it has been determined that the suicide of the nurse had no immediate connection with the reprimand of the managing director. Still this unfortunate affair has had the good result that a commission has been appointed to investigate the other charges made against the hospital on this occasion.

VIENNA LETTER

(From Our Regular Correspondent)

VIENNA, Feb. 15, 1910.

Campaign Against Trachoma in the Austrian Army

The army of Austria-Hungary often numbers among its members individuals who come from regions infected with trachoma who, without showing manifest symptoms, are the source of troublesome outbreaks of this disease. Certain parts in the eastern and southern districts are hotbeds of the infection. Much has been done to suppress it, but the rather low degree of culture and the low standard of life of the inhabitants make it a troublesome task. The conditions of combating trachoma in the army have been recently regulated by an ordinance of the general staff surgeon. Thus each regiment has to contain at least one surgeon, who has had a special training in an eye clinic, of not less than one year's duration. For this purpose a number of scholarships for trachoma wards have been created by the ministry of war. A special (non-military) eye surgeon will be appointed in cooperation with the civil-service authorities for every ten villages in the infected regions, so that he will be able to visit every ten days each of his villages. In these trachoma places special hospitals will be erected, solely for the purpose of treatment of soldiers affected with these diseases. No man suffering from trachoma, when called on to enlist in the army, should be accepted until he be cured. Trachoma of a grave nature makes a person unfit forever for military service, according to Austrian law. A special military oculist shall inspect all trachoma hospitals and patients within certain intervals and report on his observations directly to the general staff surgeon. It must be considered that while 50 years ago nearly 6 per cent. of all recruits were suffering from trachoma, now the percentage has gone down to 0.9 per cent., and in many regiments it is extinguished entirely. In the regiments recruiting from the trachoma regions alone (about 16 regiments) the percentage is at present above 10 still. Mainly for this reason the above-mentioned rules were drawn up.

Death of Zaufal

By the death of Professor E. Zaufal, who died a few days ago at the age of 77, the Austrian Otologic Society loses one of its most prominent members. He was one of the first assistants of Politzer and has made his mark on the progress of modern otology. He was the first man to show that the acute middle-ear inflammation was the result of bacteriologic influence, especially of the diplococci. Zaufal developed the radical operation for chronic middle-ear suppuration which originated from Küster's clinic. He was the first to point out the importance of examining the fundus oculi in ear diseases, and one of the most important steps in otosurgery; the opening and cleansing of the sinus transversus in otitic sinus thrombosis was performed by him for the first time in 1884.

Pharmacology

NATURE'S CREATION

A Typical Nostrum

Whatever may be said of the morality of nostrum exploitation it must be admitted that it shows no lack of business perspicacity. Should an epidemic of yellow fever sweep over the country, "patent medicines" which have previously been advertised as "cures" for a variety of conditions are immediately heralded either as specifics for, or as unfailing prophylactics against, this scourge. Should influenza be prevalent, the quack remedy that has previously been sold as a colic or rheumatism "specific" is advertised as the one and only reliable cure for *la grippe*. So, too, when the attention of the public is focussed on certain diseases, the "patent medicine" makers are the first to recognize the commercial potentialities of playing on popular interest. This is well illustrated by the innumerable "consumption cures" that have appeared during the last year or two—since, in fact, the institution of an active campaign against tuberculosis.

THEN AN "ABSOLUTE CURE" FOR SYPHILIS

An example of the way in which even the merest pretense of scientific consistency is sacrificed by nostrum mongers for the financial returns of the moment is to be found in a "patent medicine" now emanating from Columbus, Ohio, called "Nature's Creation." This nostrum was at one time exploited in Chicago as an "absolute cure" for syphilis—or "blood poison." Under the caption "Nature's Creation *vs.* Mercury and Potash" this "cure" was foisted on the public and the ignorant were told that "Nature's Creation and Antitoxin are the only *Real* specifics discovered in recent years." The syphilitic was warned against taking "mercury and potash" and was told that "it is *much* better to let the disease run with no treatment at all than to suppress it with mercury and potash." The viciousness of such doctrine is only equaled by the effrontery which becomes evident when the results of the analysis of this nostrum are considered. "Marvelous Cures" were reported, the records of which were "made under the personal supervision of one of Chicago's most prominent physicians!"

NOW A CONSUMPTION CURE

As the public became more and more interested in the subject of tuberculosis it apparently was decided that there was more money to be made out of a tuberculous clientele than out of syphilitic patrons: exit the "blood poison" cure; enter the consumption specific.

USUAL NOSTRUM CLAIMS

The claims made for "Nature's Creation" make its classification easy: *Genus*, "nostrum;" *species*, "consumption cure;" *variety*, "mysterious unknown plant." As to what it is said to be:

"Nature's Creation is a secret remedy . . ."

"Is made entirely from vegetable matter . . ."

"Contains everything beneficial and nothing harmful."

"It is a complex vegetable compound, cannot be analyzed."

"Comprised of vegetable matter containing at least one ingredient that the medical world knows nothing about—it is the one that gives the greatest value, and no chemist has ever been able to determine what it is."

But what it is said to *be*, pales into insignificance when compared with what it claimed to *do*:

"Creates an appetite."

"Strengthens the heart."

"Reduces the temperature."

"Developes atrophied cell tissues."

"Stops night sweats and hemorrhages."

"Renovates and builds up the entire system."

"Checks at once further progress of the disease."

"Positively strengthens and restores the leucocytes."

TESTIMONIALS

No enterprising exploiter of nostrums, whether of the "ethical proprietary" or of the "patent medicine" type, need experience any difficulty in obtaining testimonials. As has been repeatedly shown testimonials are about the least expensive part of the stock-in-trade of the nostrum vender. A free bottle or two of the preparation, an order on a local photographer for a dozen photographs, a refund of a portion of the blood-money collected by the exploiter, the not uncommon weakness of the unintelligent to desire to see their name and picture set forth in all the glory of printer's ink or even

in some few cases an honest belief in the efficacy of the nostrum—all furnish easy and not costly means of obtaining favorable comment on any "patent medicine" however worthless or vicious.

That the virtues of "Nature's Creation" are extolled via the testimonial route goes without saying; that the testimonials differ in no essential particulars from those common to the "patent medicine" business, is likewise evident. We find that old familiar patient who has been "given up" by numerous physicians and who has been told that she could not live more than ten days; "Nature's Creation" is taken at the eleventh hour and death is robbed of one more victim!

To determine the value of a few of the testimonials, letters were sent to physicians living in the same town as the individuals who have written (?) so enthusiastically regarding the virtues of "Nature's Creation." Here are

some of the replies that have been received:

"In regard to 'Nature's Creation' and Miss ——'s connection with same, I would state that she did not have consumption at all . . . When —— gets a cold and coughs the least bit she thinks she has consumption, and it was during such a spell as this that she commenced to take the fake remedy. I have treated the family and I know positively that anything else would have worked similarly."

The Miss —— here referred to was advertised as one of those people "whose recoveries have been most wonderful." The physician who wrote the above also had this to say of an individual whose case is *not* advertised:

"There was Mrs. —— here who really had tuberculosis and came into my hands after spending a great deal of money trying the nostrum and drifting into the last stage. She rapidly got worse all the time she took it and died a short time after I first saw her."

Another physician who was written to concerning another "wonderful recovery" said:

"As regards —— and 'Nature's Creation' . . . she is not my patient. . . I only attended one patient who took the wonderful remedy and she praised it up for several weeks and at the end of that time passed from the sphere of 'Nature's Creation' into the presence of the Creator."

TUBERCULOSIS OR CONSUMPTION

Why Doctors Don't Prescribe N. C.

It is generally understood that under the arbitrary rules of the American Medical Association which has a membership comprised of nearly all the physicians forbids its members to prescribe a medicine if the originator refuses to furnish them with the formula—no matter if they have been shown absolute proof that it is a sure cure for the disease that it is intended for—now Nature's Creation is in that class—it is a secret complex preparation comprised of vegetable matter containing at least one ingredient that the medical world knows nothing about—it is the one that gives the greatest value, and no chemist has ever been able to determine what it is—Nature's Creation is sold only in original bottles direct to the patient, one price to all—this, of course, cuts the doctors out of any chance to make a fee and for this reason but few are possessed with sufficient courage and human kindness to recommend it to their patients suffering with a disease (Tuberculosis) that they acknowledge they can not treat with success—it is the religious duty of every physician to investigate the merits of Nature's Creation and when satisfied—have the manhood to stand by it instead of condemning it when questioned by their poor unfortunate patients. The time is near at hand when public sentiment will cause them to see that the course they are now pursuing will react upon them. What confidence can a family have in their doctor after hearing him condemn Nature's Creation when they know it has saved one or two of its members even after he has given up all hope—Is it not natural to suppose that when the services of a physician is again required for any other ailment that they will avoid him.

Buffalo, N. Y. April 21st, 1909
Office hours from 9 to 5
Bell Phone Sen. 1144

EDWARDS & CAMPBELL
Sales Agents for Nature's Creation,
Suite 531 Brisbane Bld'g.
Buffalo, N. Y.

Reproduction (much reduced) of part of a leaflet sent out by the Buffalo, N. Y. branch of the concern. The size of the original was 11½ by 9 inches.

Another quoting a fellow practitioner who had last treated one of the marvelous "cures:"

"Dr. A. says . . . that — is no better than he was before taking the nostrum and, in Dr. A.'s opinion, — had no tuberculosis, anyhow!"

Of one patient whose testimonial was given much publicity two years ago, a Colorado physician writes:

"She has been benefited by the change to this climate but *she is not cured* and the benefit she has is attributable to Colorado sunshine. Further, she refused to allow this nostrum to use her name in their literature."

SOME PECULIAR COINCIDENCES

One letter of inquiry was written direct from THE JOURNAL office to an individual living near Columbus, Ohio, whose portrait appeared among other testimonial givers. The reply in itself was amusing, breathing injured innocence and restrained indignation; but some coincidences of a mechanical nature made it even more amusing.

Coincidence 1: The letter was typewritten on a plain sheet of paper that bore a certain watermark; the same watermark is found in the Nature's Creation Co.'s stationery!

Coincidence 2: The machine on which the letter was typewritten had two characters out of alignment; the same two characters show the same lack of alignment in a communication sent out by Nature's Creation Company on its official stationery!

Coincidence 3: The degree of indentation of the first line of each paragraph was unusual; the same peculiarity is to be found in a letter emanating from the office of the nostrum company!

Coincidence 4: The "reply" was dated five days later than the letter of inquiry; this is about the time that would be consumed if the testimonial-giver sent THE JOURNAL's letter to Columbus and awaited a reply!

Under the circumstances, it is difficult to avoid the suspicion that the "reply" to THE JOURNAL's letter originated in the office of "Nature's Creation" and was merely signed and mailed by the individual who gave the testimonial.

WHAT OUR CHEMISTS FOUND

Laboratory Report: An original, sealed bottle of "Nature's Creation" was obtained direct from the Nature's Creation Company, Columbus, Ohio, and was submitted to the Association laboratory for chemical examination. The bottle was labeled back and front and was wrapped in a circular containing directions for using the preparation. On the front label was pictured in colors a rocky landscape and waterfall over which the words "The Nature's Creation Co.'s Discovery" were printed in red. A facsimile signature, "Mrs. J. M. Reynolds (originator)" was printed across the lower part of the label, which also bore the serial number "16050 B." and declared the presence of 6 per cent. alcohol. The label on the other side of the bottle contained directions for using the preparation. "Nature's Creation" is a dark, brown liquid having a sassafras-like odor and a salty, licorice-like taste. Qualitative tests show the presence of iodid, potassium, sodium, vegetable extractive—including some preparation of licorice—and small quantities of sulphates, phosphates, calcium and iron. Appropriate tests indicate the absence of potent alkaloids, salicylates, benzoates, cinnamates, and phenols such as creosote and guaiacol. Quantitative estimations of potassium and iodid indicated that these constituents are present in the form of potassium iodid, equal approximately to 6.00 grains in 100 c.c. of the preparation. Estimation of sulphate and phosphate indicated that these radicles are

probably present in combination with small quantities of sodium, calcium and the potassium not present as iodid. These salts are present in quantities too small to have any therapeutic effects.

The examination indicates that "Nature's Creation" is essentially a solution of potassium iodid in a weakly alcoholic medium containing vegetable extractives and flavoring matter and small quantities of inorganic salts.

From the analysis given it seems, therefore, that the main medicinal ingredient of this "complex vegetable compound" which "cannot be analyzed" is potassium iodid. These findings are not surprising when what has been said about the earlier exploitation of "Nature's Creation" as a remedy for syphilis—a substitute for the "potash" treatment!—is borne in mind.

REVERSING THE USUAL ORDER

Many nostrums now on the market were originally exploited to the medical profession as "ethical proprietaries" and after receiving the necessary quota of testimonials from unthinking physicians were boldly launched as "patent medicines," pure and simple. The "consumption cure" of J. Q. Lloyd of St. Louis variously known as "Lloyd's Specific," "Re-Stor-All" and "Aisol," is a case in point. "Nature's Creation" apparently is reversing the usual order. Originally sold direct to the laity, first for syphilis and now for tuberculosis, exploited by means of newspaper advertisements that are probably

without a parallel in their vilification of the medical profession, the promoters of this nostrum have the consummate impudence to attempt to foist their "vegetable" mixture of dilute alcohol and potassium iodid on physicians. The Buffalo, N. Y., headquarters of "Nature's Creation" are known as the "Therapeutic Co., inc.," with a Dr. W. H. Baker as its "consulting physician and a director of its affairs." Dr. Baker circularizes the medical profession in the interest of "Nature's Creation" which he claims "is equally as effective and specific in tubercular trouble as Anti-Toxine is with Diphtheria." (Spelling and composition as in original). The "literature" sent out to physicians by the "Therapeutic Co., inc." differs but little from that sent to the laity. The medical profession is given a few enlightening, fundamental facts regarding the composition of the blood—though these facts are known to every school-boy who has reached the seventh grade. There is, however, one important omission in the advertising that goes to physicians, but which appears in that sent to the laity. Here it is:

"Nature's Creation is a secret remedy and as it is a complex vegetable compound cannot be analyzed. This is why the medical profession has not the same medicine."

With this exception there is practically no difference between the "lay" and "professional" advertising. The "consulting physician" encloses with his own letter to the medical men a facsimile letter from Dr. Arthur W. K. Downes, a homeopathic physician of Chicago, who states that "you need have no hesitancy in using this medicine in any and all cases of consumption. . . ." In answer to a letter addressed to the "consulting physician," asking for the formula of "Nature's Creation" the secretary of the company wrote:

"It will be impossible for us to forward to you the formula of the remedy, known as 'Nature's Creation,' as we do not possess the same."

CONCLUSION

This nostrum is so typical of its class, its method of exploitation so characteristic of the innumerable "cures" that flood the market that in closing we can do no better than quote Mr. Adams in the "Great American Fraud:"

Tuberculosis or Consumption

POSITIVELY CURED

Over 300 cases cured in Columbus, O., the home of NATURE'S CREATION

Endorsed by the State Board of Tuberculosis and also by Leading Physicians in Ohio.

Those suffering with this dreadful disease can be assured of a speedy and permanent cure. Write to any resident in Columbus, Ohio, or call on C. G. EDWARDS, at No. 316 FRANKLIN STREET, BUFFALO, N. Y., for testimonials and further information and also to secure the medicine as Mr. Edwards is sent here by THE NATURE'S CREATION CO. and the remedy can only be obtained through him.

No matter how many doctors have pronounced your case incurable NATURE'S CREATION will cure Tuberculosis (Consumption). It destroys the germs and can be taken into the most DELICATE STOMACH or by the smallest child. Its soothing effect will be noticed immediately.

CHILLS and FEVER

Stopped in from One to Three Days.

Call and investigate this wonderful medicine. The only cure ever discovered that will cure Tuberculosis (Consumption). It will cost you nothing to call and be convinced and

A typical newspaper advertisement of "Nature's Creation." The most extensive advertising seems to have been done in the cities of Columbus, Ohio, and Buffalo, N. Y. Small advertisements have appeared in the classified advertising sections of the New York papers.

Book Notices

"Our national quality of commercial shrewdness fails us when we go into the open market to purchase relief from suffering. The average American when he sets out to buy a horse, or a box of cigars, is a model of caution. Show him testimonials from any number of prominent citizens and he would simply scoff. . . . Now observe the same citizen seeking to buy the most precious of all possessions, sound health. Anybody's word is good enough for him here. An admiral whose puerile vanity has betrayed him into a testimonial; an obliging and conscienceless senator; a grateful idiot from some remote hamlet; a renegade doctor or a silly woman who gets a bonus of a dozen photographs for her letter—any of these are sufficient to lure the hopeful patient to the purchase. He wouldn't buy a second-hand bicycle on the affidavit of any of them, but he will give up his dollar and take his chance of poison on a mere newspaper statement which he doesn't even investigate."

And of the value of printer's ink as an asset to the exploiter of "patent medicine:"

"Take from the nostrum venders the means by which they influence the millions, and there will pass to the limbo of pricked bubbles a fraud whose flagrancy and impudence are of minor import compared to the cold-hearted greed with which it grinds out its profits from the sufferings of duped and eternally hopeful ignorance."

Association News

THE ST. LOUIS SESSION

Announcement of Hotel Headquarters and Meeting-Places

Arrangements are well under way for the St. Louis session of the American Medical Association next June. The Committee on Arrangements makes the following announcements of meeting-places and hotels:

GENERAL MEETING PLACES

PRESIDENT'S RECEPTION...	First Regiment Armory, Grant and Manchester Avenues.
GENERAL SESSION	Odeon Theatre, Grand and Finney Avenues.
REGISTRATION, SCIENTIFIC AND COMMERCIAL EXHIBITS, POSTOFFICE	Coliseum, Washington and Jefferson Avenues.
HOUSE OF DELEGATES.....	St. Louis Medical Society, 3523 Pine Street.

SECTIONS

MEETING PLACES

PRACTICE OF MEDICINE....	Third Baptist Church, Grand and Washington Avenues.
SURGERY	Odeon Theatre, Grand and Finney Avenues.
OBSTETRICS	Y. M. C. A. Bldg. Association Hall, Grand and Franklin Avenues.
OPHTHALMOLOGY	Aschenbroedel Hall, 3535 Pine Street.
LARYNGOLOGY AND OTOTOLOGY	Sodality Hall, Grand Ave., between Pine Street and Laclede Avenue.
DISEASES OF CHILDREN...	Grand Avenue Presbyterian Church, Sunday School, Grand Avenue, near Washington Avenue.
PHARMACOLOGY	Delmar Avenue Congregational Church, Delmar, West of Grand Avenue.
STOMATOLOGY	Y. M. C. A., Small Hall, Grand and Franklin Avenues.
NERVOUS AND MENTAL DISEASES	St. Louis University Library, Grand Avenue, head of E. Pine Street.
DERMATOLOGY	Odeon, Recital Hall, Grand and Finney Avenues.
PREVENTIVE MEDICINE	Knights of Columbus Bldg., 3549 Olive Street.
PATHOLOGY AND PHYSIOLOGY	Y. M. C. A., Lecture Hall, Grand and Franklin Avenues.
GENERAL HEADQUARTERS.....	Southern Hotel

HOTEL HEADQUARTERS

SECTIONS

HOTELS

SURGERY	Jefferson
DERMATOLOGY	Jefferson
LARYNGOLOGY AND OTOTOLOGY.....	Jefferson
PRACTICE OF MEDICINE.....	Planters
PATHOLOGY AND PHYSIOLOGY	Planters
PHARMACOLOGY	Planters
OPHTHALMOLOGY	Marquette
OBSTETRICS	Marquette
DISEASES OF CHILDREN	Marquette
NERVOUS AND MENTAL DISEASES.....	Buckingham
PREVENTIVE MEDICINE	Buckingham
STOMATOLOGY	West End

THE MORPHIA HABIT AND ITS VOLUNTARY RENUNCIATION. (A Personal Relation of a Suppression After Twenty-five Addictions.) With Notes and Additional Cases. By Oscar Jennings, M.D. (Paris), Fellow of the Royal Society of Medicine. Cloth. Pp. 492. Price, \$2 net. New York: William Wood & Co., 1909.

This book is a sort of supplement to the author's former book on the cure of the morphin habit. The author here restates his plan of gradual reduction and substitution at a certain point of solutions by rectal injection, together with the use of alkalies in the form of Vichy or the bicarbonates, and spartein as a heart tonic. Self-renunciation is an important feature of the plan, and in this the patient must be tactfully supported. Nothing, he says, can be worse than restraint or compulsory suppression. Other methods of treatment are critically discussed, and the author relates his personal experience of a suppression after twenty-five years of addiction.

CLINICAL MANUAL FOR THE STUDY OF DISEASES OF THE THROAT. By James Walker Downie, M.B., F.F.P.S.G., Lecturer on Diseases of the Throat and Nose, University of Glasgow. Second Edition. Cloth. Pp. 415, with 104 illustrations. Price, \$3.25. New York: The Macmillan Co., 1909.

This second edition has been remodeled and practically rewritten. It gives a brief description of the various diseases of the throat, of methods of examining the mouth and throat, and of methods of treatment, including the newer ones, such as x-ray and radium therapy. The book concludes with an enumeration of formulas used in laryngology. The illustrations, especially the colored plates, are good and plentiful, and the book is a practical one for the general practitioner.

TECHNIC OF HYDROTHERAPY AND SWEDISH MASSAGE Employed at The Loma Linda Sanitarium, Loma Linda, Cal. Edition 2. Compiled by George Knapp Abbott, M.D. Paper. Pp. 40. Price, 25 cents.

This is a very convenient little manual, describing the method of applying most of the hydropathic methods. While some are best carried out in a special institution, the majority of the methods described are applicable in ordinary practice and the book ought therefore to be of service to the general practitioner who must instruct his patients or nurses in such manipulations.

Queries and Minor Notes

PELLAGRA—A CORRECTION

Dr. A. G. Fort, Lumpkin, Ga., calls attention to the fact that in THE JOURNAL, Feb. 12, 1910, page 560, in lines three and six, second paragraph, the word pellagra should be uncinariasis. This mistake was due to error in transcribing the report of the meeting, but as there is no resemblance between the two diseases we trust that our readers understood the article.

BOLUS ALBA

To the Editor:—In THE JOURNAL, Jan. 8, 1910, p. 170, mention is made in an abstract of "bolus alba." I have been unable to find the substance, drug or compound in any books at my disposal. What is it, or where must I look to get the desired information? J. R. SCOTT, Waterloo, Iowa.

ANSWER.—Bolus alba is a nearly pure white clay, similar to kaolin or fuller's earth. It is official in most of the European pharmacopeias. It was formerly much employed in medicine but fell into almost complete disuse. There now appears to be a tendency to revive it. Without doubt kaolin, U. S. P., would answer as a substitute.

NEW METHODS OF SPUTUM RESEARCH

To the Editor:—In THE JOURNAL, Oct. 9, 1909, p. 1241, appears an abstract of an article from the *Medizinische Klinik*, August 29, by Dr. P. Uhlenhuth on "New Methods of Sputum Research," giving a method of cleaning sputum for the examination of tubercle bacilli which seems very advantageous in laboratory work. However, in this article the formula is not plainly given. Please give this formula in such a manner that it can be made up by any retail druggist.

ANSWER.—The substance used by Uhlenhuth is a proprietary preparation, the exact formula of which is unknown to us. The essential components are given in the abstract referred to and a similar preparation can be made by any one by mixing liquor sodæ

chlorinatae with liquor sodii hydroxidi. As the product is used greatly diluted the following mixture of official preparations ought to be equally efficient.

Liquoris sodae chlorinatae	1 1/4
Liquoris sodii hydroxidi	1

M.

One part of this mixture with 4 parts of water is very nearly equivalent to a 5 per cent. solution of the proprietary preparation if the statements made regarding it are correct.

BORROWING PERIODICALS FROM SURGEON-GENERAL'S LIBRARY

To the Editor:—Is it possible to borrow journals from the library of the Surgeon-General in Washington?
M. H. S.

ANSWER.—On receiving this letter we wrote Dr. W. D. McCaw, the librarian, who states in reply that while the Surgeon General's Library is essentially a library of reference and not a lending library, books are sometimes loaned to physicians. It is preferred to make these loans to institutions, or societies, whose librarian is authorized by the directors or trustees to make such requests, thereby becoming responsible for the safe return of the books. Physicians can make a deposit of money sufficient to replace the book desired, and this deposit can remain in the library permanently, subject to other loans, or it can be returned immediately on the return of the book in question. The library does not lend unbound journals, old and rare editions of books, volumes of plates, atlases, text-books, or any publication that cannot be readily replaced. Packages are sent and returned by express only, and at the cost of the borrower. Two weeks is the limit of time for loans, although when necessary the time may be extended.

SOMNIFUGOUS DRUGS WANTED

To the Editor:—Will you kindly give me a list of the most efficient somnifugous drugs. I have a patient who complains of extreme lethargy. I have tried various suggestive methods, diet, alteratives and the like, with little or no effect. There is no visible cause for the condition.
E. OLIVER, M.D., Aucram, N. Y.

ANSWER.—Drugs are not classified as somnifugous in works on pharmacology and therapeutics. Neither can one find any reference to the milder forms of stupor or hebetude in the works on practice of medicine. It is evidently a subject to which writers have paid little attention. One reason for this is that the symptom is usually connected with others which are more prominent and the removal of the underlying condition usually suffices for a cure.

A thorough diagnosis should first be made. The condition may be the first stage of a stupor depending on organic disease of the brain. The reflexes should be tested and the eyes examined for evidence of a possible brain tumor or other cerebral lesion. In case brain disease is found treatment should be directed to the fundamental condition, as little can be expected from the use of drugs directed to a single symptom. In some cases the condition of somnolence may depend on disturbance of the digestive organs by which blood accumulates in the splanchnic area and a relative anemia of the brain results, assuming, as has been generally held, that there is anemia of the brain during sleep. For such a condition a regulation of diet according to the findings after a test meal and appropriate medication for the digestive condition would be first in order. This symptom may depend on other conditions which will require a thorough investigation by all the means of clinical diagnosis, including the microscope.

The Public Service

Medical Corps of the Navy

Changes for the week ended Feb. 26, 1910:

Boyd, J. C., medical director, detached from duty as president of the Naval Examining Board and Naval Medical Examining Board, Washington, D. C., and ordered to continue other duties.

Pleadwell, F. L., surgeon, detached from duty as assistant to the Bureau of Medicine and Surgery, Navy Department, and ordered to continue other duties.

Bralsted, W. C., surgeon, detached from special duty in the Bureau of Medicine and Surgery, Navy Department, and ordered to duty as assistant to that Bureau.

Barber, G. H., surgeon, detached from the Naval Hospital, Boston, Mass., and ordered to command the Naval Hospital, Olangapo, P. I.

Brownell, C. D. W., surgeon, order of February 17, revoked.

Harmon, G. E. H., medical director, transferred to the retired list from March 5, 1910.

Grinnell, A. G., surgeon, retired, ordered home when discharged from treatment at the Naval Medical School Hospital, Washington, D. C.

Nelson, J. L., P. A. surgeon, detached from the Buffalo, and ordered to the Bureau of Medicine and Surgery, Navy Department.

Shippen, L. P., asst.-surgeon, detached from duty with the

Marine detachment, Camp Elliott, Canal Zone, and ordered to the Buffalo.

Grinnell, A. G., surgeon, transferred to the retired list from Feb. 18, 1910.

Wieber, F. W. F., surgeon, ordered to Washington, D. C., for examination for promotion and then to wait orders in that city.

Public Health and Marine-Hospital Service

Changes for the week ended Feb. 23, 1910:

Kerr, J. W., asst. surgeon-general, directed to proceed to New York City, on special temporary duty.

Gassaway, J. M., surgeon, directed to proceed to Talmage, Stockton and Napa, Cal., on special temporary duty.

Carter, H. R., surgeon, leave for 1 month from Feb. 5, 1910, on account of sickness, amended to read 1 day, Feb. 5, 1910.

Nydegger, J. A., surgeon, leave for 3 days from Feb. 17, 1910, revoked.

Mathewson, H. S., P. A. surgeon, directed to proceed to East Las Vegas, N. Mex., on special temporary duty.

Clark, Tallafiero, P. A. surgeon, granted 2 days' leave of absence, Feb. 16 and 12, 1910, on account of sickness.

Lavinder, C. H., P. A. surgeon, granted 7 days' leave of absence from Feb. 14, 1910, under Paragraph 191, Service Regulations.

Lloyd, Bolyar, J., P. A. surgeon, directed to proceed to Washington, D. C., and report to the Director, Hygienic Laboratory for temporary duty.

McKeon, F. H., P. A. surgeon, granted 7 days' leave of absence from Nov. 20, 1909, under Paragraph 191, Service Regulations.

Lanza, A. J., asst.-surgeon, relieved from duty on the Revenue Cutter *Rush*, and directed to proceed to San Francisco, for duty.

Hotchkiss, S. C., asst.-surgeon, granted 1 day's leave of absence, Jan. 1, 1910, under Paragraph 191, Service Regulations.

Dynan, N. J., acting asst.-surgeon, granted 1 day's extension of leave, Feb. 10, 1910, on account of sickness.

McLarty, A. A., acting asst.-surgeon, granted 10 days' leave of absence from Feb. 18, 1910.

Rodman, John C., acting asst.-surgeon, granted 5 days' leave of absence from Feb. 23, 1910.

Storrs, H. R., acting asst.-surgeon, granted 5 days' leave of absence from Feb. 26, 1910.

Wollenberg, R. A. C., asst.-surgeon, resignation accepted by the President, effective Feb. 15, 1910.

Board of medical officers convened to meet at the Bureau, Feb. 21, 1910, for the purpose of revising the U. S. Quarantine Regulations. Detail for the board: Assistant Surgeon-General L. E. Cofer, chairman; Surgeon H. R. Carter; Passed Assistant Surgeon R. H. von Ezdorf, recorder.

Marriages

OTTO J. FRUTH, M.D., to Miss Helen Gemp, both of St. Louis, February 12.

ANTONIO D'AMICO, M.D., Newark, N. J., to Miss Annina Violetto, of Messina, Sicily, recently.

SAMUEL EDWARD IZARD, M.D., to Miss May Estelle Drummond, both of Newhebron, Miss., February 20.

JOHN D. MCKINNON, M.D., to Miss Jeannie G. Newcomb, both of Calumet, Mich., at Grand Rapids, February 17.

BENJAMIN L. FRANKLIN, M.D., Millbrook, Mich., to Miss Bertha Shepard, of Lake Odessa, Mich., at Grand Rapids, February 8.

Deaths

Elbert Warren Clark, M.D. Rush Medical College, 1871; a member of the American Medical Association and Iowa State Association of Railway Surgeons; president of the Iowa State Medical Society in 1896; local surgeon at Grinnell for the Chicago, Rock Island and Pacific and Iowa Central railways; a member of the local board of pension examiners; president of the Rush Medical College Alumni Association of Iowa in 1904 and 1905; five times a member of the city council of Grinnell; mayor from 1893 to 1897; president of the city school board for six years, and trustee of Iowa College since 1898; a member of the twenty-third general assembly from Poweshiek county; and state senator in 1906; first vice-president of the Merchants' National Bank; died at his home in Grinnell, February 16, from the effects of a fall received a year and a half before, aged 67.

Charles Fourgeaud McGahan, M.D. Dartmouth Medical School, Hanover, N. H., 1833; a member of the American Medical Association; American Climatological Association; American Laryngological, Rhinological and Otological Association; and Mississippi Valley Medical Association; professor of anatomy in the U. S. Grant University, Chattanooga, from 1889 to 1892; a director of the National Association for the Study and Prevention of Tuberculosis; medical director of the Aiken, S. C. Cottage Sanatorium; died at his home in Aiken, February 15, from pneumonia, aged 48.

William Winslow Eaton, M.D. New York University, New York City, 1864; a member and formerly president of the Massachusetts Medical Society; formerly vice-president of the American Electro-Therapeutic Association, and president of the Essex South District Medical Society; surgeon of the Sixteenth Maine Volunteer Infantry during the Civil War; president of the Board of Health of Danvers; a member of the local pension examining board; died at his home in Danvers, January 31, from cerebral hemorrhage, aged 73.

Horace R. Littlefield, M.D. Rush Medical College, 1870; assistant surgeon of volunteers during the Civil War; surgeon-in-chief of the construction departments of the Oregon Railway and Navigation Company, Northern Pacific Railroad, Washington and Idaho Railway, and Portland and Puget Sound Railroad; died at his home in Portland, Ore., February 17, from the effects of injuries received in a railway accident more than six years before, aged 64.

Walter Steadman, M.D. New York University, 1894; of West Hoboken, N. J.; formerly a member of the American Medical Association, a member of the American Society of Railroad Surgeons; surgeon to St. Mary's Hospital, Hoboken; and local surgeon for the Delaware, Lackawanna and Western Railroad; died in Christ Hospital, Jersey City Heights, February 13, after an operation for abscess following typhoid fever, aged 36.

William Henry Walling, M.D. Medico-Chirurgical College of Philadelphia, 1889; for several years a member of the faculty of his alma mater; a member of the Medical Society of the State of New Jersey; a veteran of the Civil War; formerly editor of the *Philadelphia Medical Times and Register*; died at his home in Atlantic City, N. J., February 17, from cerebral hemorrhage, aged 73.

Ezekiel W. Hinton, M.D. Rush Medical College; a member of the Kansas Medical Society, and president of the Kingman County Medical Society since its organization; a pioneer resident of Kingman county, and formerly superintendent of the State Hospital for the Insane, Osawatimie; died at his home in Kingman, January 15, from cerebral hemorrhage, aged 74.

Alfred C. Godfrey, M.D. Rush Medical College, 1890; of Galena, Ill.; a member of the American Medical Association; formerly a member of the faculty of the John A. Creighton Medical College, Omaha; and surgeon of the medical staff of the Presbyterian Hospital in that city; died at the home of his father in Galena, February 18, from tuberculosis, aged 41.

John Edwin James, M.D. University of Pennsylvania, 1866; Hahnemann Medical College, Philadelphia, 1886; professor of gynecology in Hahnemann Medical College; senior gynecologist to Hahnemann Hospital and consulting surgeon to the Childrens Hospital; died in Hahnemann Hospital, Philadelphia, February 16, from cerebral hemorrhage, aged 69.

Don Lee Shaw, M.D. Rush Medical College, Chicago, 1891; formerly a member of the American Medical Association; a member of the Illinois State Medical Society; professor of surgery and director of the anatomical laboratory in the Chicago College of Medicine and Surgery; died in Kankakee, February 21, from general paresis, aged 43.

Lorenzo D. Jared, assistant surgeon of the Twenty-first Illinois Volunteer Infantry during the Civil War; for many years a practitioner of Whiteside county, Ill., and afterward a teacher and botanist of California; died in the Soldiers' Home Hospital, Los Angeles, Cal., Aug. 3, 1909, from valvular heart disease, aged 78.

Dennis Frank Keefe, M.D. College of Physicians and Surgeons, Boston, 1909; attending dental and oral surgeon to Rhode Island and St. Joseph Hospital, Providence; a member of the Rhode Island Board of Registration in Dentistry; died at his home in Providence, February 1, from cerebral hemorrhage, aged 43.

James J. Norwine, M.D. Missouri Medical College, St. Louis, 1880; one of the first councilors of the Butler County (Mo.) Medical Society; local surgeon at Poplar Bluff for the St. Louis, Iron Mountain and Southern Railroad; died at his home, Nov. 22, 1909, from nephritis, aged 51.

Edgar Ivory Hanscom, M.D. Medical School of Maine, Brunswick, 1903; a member of the Rhode Island Medical Society; assistant physician at the State Hospital for the Insane, Cranston, Howard, R. I.; died in that institution, February 19, from septicemia, aged 38.

John B. Allen, M.D. Medical College of Ohio, Cincinnati, 1881; a member of the Indiana State Medical Association; formerly president of the Wayne County Medical Society; health officer of Cambridge City, Ind.; died at his home February 18, from tuberculosis, aged 65.

Josiah Henry Gunning, M.D. New York University, New York City, 1861; assistant surgeon in the United States Navy during the Civil War; formerly professor of anatomy in his alma mater; died at his home in Oakland, Cal., January 4, from heart disease, aged 68.

LaFayette Garrett, M.D. Texas Medical College, Galveston, 1876; a practitioner of Texas for more than fifty years; formerly president of the board of trustees of the Galveston Board of Education; died at his home, Dec. 2, 1909, from senile debility, aged 84.

Thomas Albert Proctor, M.D. University of Pennsylvania, 1852; surgeon of the Forty-first Virginia Infantry, and later of the Third Georgia Infantry, C. S. A.; died at his home near Drake's Branch, Va., February 9, aged 80.

Paul Hellison, M.D. Norway; formerly surgeon in the Norwegian service; for more than 26 years a practitioner of Deer Park, Wis.; died at his home in that place in August, 1909, from senile debility, aged 72.

Michael J. Murphy, M.D. State University of Iowa, Iowa City, 1885; of Cumberland, Iowa; a member of the American Medical Association; died in Fort Worth, Texas, January 15, from acute melancholia, aged 53.

William Hugh Moore, M.D. University of Nashville and Vanderbilt University, 1890; of Viola; a member of the Tennessee State Medical Association; died in Pensacola, Fla., February 11, from nephritis.

Augustus Henry Dieck, M.D. University of Goettingen, Germany, 1842; for 70 years a practitioner of the sixteenth ward of New York City; died at his home, February 16, from senile debility, aged 91.

Isaac N. Mathers, M.D. Manitoba University, Winnipeg, 1907; a member of the Vancouver (B. C.) Medical Society; died in the Vancouver General Hospital, Nov. 9, 1909, from typhoid fever, aged 40.

Hendricks L. Cartwright, M.D. University of Louisville, 1878; a member of the Kentucky State Medical Association; died at his home in Burkesville, February 18, from cerebral hemorrhage, aged 61.

Newton H. Traver, M.D. New York Homeopathic Medical College, 1861; of Lewiston, Mich.; died in the Harper Hospital, Detroit, February 2, from shock following a surgical operation, aged 72.

Esther B. Holmes, M.D. Homeopathic Medical College for Women, Cleveland, 1871; for 30 years a practitioner of Colorado Springs; died at her home in that city, Aug. 26, 1909, aged 66.

Flavius Josephus Gregory, M.D. Jefferson Medical College, 1859; assistant surgeon in the Confederate Service during the Civil War; died at his home in Keyesville, Va., February 13, aged 74.

William King, M.D. Medical School of Maine, Brunswick, 1887; of Brunswick; died in the Augusta State Hospital, February 15, from mental disease of long standing, aged 52.

John Gray, M.D. Yale University, New Haven, 1868; for sixty-five years a practitioner of Connecticut; died at the home of his son in Bridgeport, February 17, aged 89.

William T. Smith, M.D. Memphis Hospital Medical College, 1901; formerly of Caddo, Okla.; died at his home in Durant, Okla., Dec. 31, 1909, from pneumonia, aged 34.

Karl A. Grempler, M.D. Germany; for more than forty years a dentist of Baltimore; died at his home, Sept. 11, 1909, from cerebral hemorrhage, aged 75.

John George (license, Miss.); of Pine Bluff, Miss.; a surgeon during the Mexican War; died in Jonesboro, Tenn., Sept. 28, 1909, from heart disease, aged 86.

Philip W. Boyd, M.D. University of Maryland, 1868; a Confederate veteran; died at his home in Winchester, Va., February 13, from nephritis, aged 63.

G. W. Wasson, M.D. Medical College of Georgia, Augusta, 1856; a Confederate veteran; died at his home in Fairview, S. C., February 4, aged 89.

Benjamin Silas Vawter, M.D. Pennsylvania Medical College, Gettysburg, 1854; died at his home in Washington, D. C., January 5, aged 78.

Henry J. Waite, M.D. College of Physicians and Surgeons, Keokuk, Iowa, 1880; died at his home in Minneapolis, February 11, aged 80.

George Haydon Stevens, M.D. Detroit Homeopathic College, 1906; died at his home in Detroit, February 13, from tuberculosis, aged 32.

Medical Economics

THIS DEPARTMENT EMBODIES THE SUBJECTS OF ORGANIZATION, POSTGRADUATE WORK, CONTRACT PRACTICE, INSURANCE FEES, LEGISLATION, ETC.

Legislative Notes

MARYLAND

A pure food bill (No. 57) has been introduced into the Maryland legislature. This bill was framed by a joint conference of the committee of the state society, the governor's commission and the drug exchange committee. A similar bill last year was defeated, mainly on account of the difference of opinion as to who should have charge of its enforcement. At present, all are agreed that the State Board of Health is the proper authority. Practically the only opposition comes from the ice-cream interests, some of the smaller Baltimore dealers wishing to continue to sell ice-cream containing less than 8 per cent. butter fat. The bill defines drugs as all medicines and preparations recognized in the United States Pharmacopoeia or National Formulary and any substance or mixture for the cure, mitigation or prevention of disease of either man or animal. Food is defined to include all articles used for food, drink, confectionery or condiment by man or animals. The usual provisions are made regarding standard of strength, quality and purity as well as adulteration, coloring, bleaching, etc. The provisions regarding labeling, misbranding and adulteration are similar to those of the national Food and Drugs Act. The State Board of Health is authorized to appoint a state food and drug commissioner at a salary of \$2,500, to administer the law. All examinations and analyses are to be made in the laboratories of the board. The bill is an excellent one and should become a law.

Bill 213 is to provide for the registration and licensing of midwives. This bill is also endorsed by the state society.

Bill 33 is to amend the present lunacy laws of the state and is the result of the work of the present lunacy commission.

Bill 167, an antivaccination bill, has been reported on adversely by the committee.

Bill 221 is to provide for records of cold storage detention of meats, butter, eggs and other perishable provisions and provides that all food stuffs shall bear a tag showing the date of admission to the cold storage warehouse and the date on which they are taken out.

A bill on expert testimony (No. 188) has been introduced by the legal profession of Baltimore. It provides that any judge of any court of record may appoint one or more disinterested skilled persons to serve as expert witnesses, who shall examine into the matters committed to them and report their findings in writing to the court and that such reports shall be filed with the papers in the case, not as evidence but as a basis for the examination of the expert witnesses by the court or by the counsel of either party, but such experts shall not be deemed the witnesses of either party but shall be called by the court. The calling of such witnesses by the court does not limit the right of the parties to call other expert witnesses as usual.

Bill 150 is the usual optometry bill to provide a short cut for untrained and unqualified persons to enter the practice of medicine, at least to a limited extent, and is thoroughly pernicious.

MASSACHUSETTS

The following bills have been introduced in the state legislature:

H. B. 1130 makes it the duty of every physician, medical student or midwife in attendance at the birth of a child to instill into the eyes of the child immediately after birth a suitable prophylactic for ophthalmia neonatorum.

Bill 615 is to provide for the medical inspection of working children.

H. B. 830 is to provide for appeals from the decisions of local boards of health to the superior court of the county.

H. B. 974 is to restrict the use of common drinking cups and to prevent contagious diseases.

H. B. 977 is to authorize cities and towns to establish homes or hospitals for consumptives.

H. B. 979 is to forbid the storage of any food product in a warehouse or cold storage for more than six months.

H. B. 826 is to amend the Massachusetts food and drugs act so as to make it uniform with the national law.

NEW YORK

A bill has been introduced into the legislature providing for the licensing and inspection of abattoirs and markets where meat is sold, under the direction of the State Commissioner of Agriculture. The tendency of western stock raisers to ship diseased meat into this state is responsible for this measure.

A bill has been introduced proposing two amendments to the code of civil procedure and the insanity law which aims to meet the situation involved in such repeated attempts to secure freedom as have been made in the case of Harry K. Thaw and others. These amendments provide that writs of habeas corpus and certiorari shall not be issued in behalf of a person who has been committed to, or detained in, a state hospital for insane criminals by virtue of the judicial determination of his insanity by a competent tribunal of civil or criminal jurisdiction and has been granted one writ, except under conditions prescribed by Section 93A of the insanity law. This is a new section of the insanity law and limits the rights of a person confined in a state hospital to a second writ of habeas corpus or certiorari. It requires a certificate under oath of two physicians that they have examined the person under custody and believe him to have recovered his sanity. The authorities of the hospital may present facts in opposition and the granting of the writ is within the discretion of the court.

NEW JERSEY

The Committee on Medical Legislation and a special committee of the Medical Society of New Jersey have drafted and secured the introduction of a medical practice bill endorsed by the state society. This bill is to provide for the appointment by the governor, with the consent of the senate, of a board of medical examiners consisting of five "old school" physicians, three homeopathic physicians, one eclectic and one osteopathic physician, the bill providing that the board shall remain the same as at present constituted, with the addition of an osteopath. The usual provisions regarding organization, etc., follow. Each applicant must present a certificate from the state superintendent of public instruction showing that before entering medical college he attended four years at an approved public or private high school or had the equivalent of such instruction. Applicants for a license to practice medicine must also produce diplomas from a medical college in good standing with the board, showing that the applicant has studied medicine for four full school years of nine months each. Applicants who graduated prior to July 4, 1903, and who have been in continuous practice for five years since, may be admitted on evidence of three courses of medical lectures while applicants who graduated prior to July 4, 1894, may be admitted on evidence of two years of lectures. Osteopaths must produce evidence of graduation from some legally incorporated osteopathic college in the United States in good standing with the board and must have studied osteopathy for not less than three years of nine months each. After July 4, 1912, applicants for an osteopathic license must produce evidence of four years work of nine months each. Each applicant is to be examined in the materia medica and therapeutics of his school of medicine and the following subjects: anatomy, physiology, hygiene, chemistry, surgery, obstetrics, gynecology, pathology, bacteriology, diagnostics and histology. The board may refuse or may revoke a license for the following reasons, inebriety, criminal abortion, conviction of a crime involving moral turpitude, public advertising of special ability to treat or to cure chronic and incurable diseases, presentation of a diploma, license or certificate illegally obtained or issued under fraudulent or unlawful misrepresentation. Licenses by the board are to be filed with the clerk of the county in which the licensee resides. Government medical officers, hospital interns, legally qualified

dentists, manufacturers or dealers in lenses, artificial eyes, limbs, etc., those engaged in the mechanical examination of the eyes for adjusting spectacles, physicians of other states called in consultation and physicians residing on the boundary line of the state are exempt. The administration of family remedies, chiropody or any religious practices are also exempt. Osteopaths now practicing are required to register within sixty days of the passage of the act. Osteopaths licensed by registration and without examination are not authorized to use any drugs or medicines, serum, antitoxin, vaccine, practice surgery, attend any infectious or contagious disease or sign any death certificate. The definition of the practice of medicine is changed considerably from that of the existing law and provides that any person holding himself out as being able to diagnose, treat, operate or prescribe for any human disease, pain, injury, deformity or physical condition or who offers or undertakes to do so is practicing medicine and surgery. The definition in the existing law turns on the use of the words "doctor," "professor," etc., and of the letters "M.D.," rather than on the actual fact of treatment.

Bill No. 37 is the usual optometry bill and should be defeated.

POSTGRADUATE COURSE FOR COUNTY SOCIETIES

DR. JOHN H. BLACKBURN, DIRECTOR
BOWLING GREEN, KENTUCKY

[The Director will be glad to furnish further information and literature to any county society desiring to take up the course.]

Seventh Month—Third Weekly Meeting

PROPAGANDA AGAINST TUBERCULOSIS

OBJECT: The prevention of tuberculosis. (a) Prevention of spread of infection by early diagnosis; treatment of curable cases and care of advanced cases. (b) Raising resisting power of individuals by higher standard of living, proper hygiene, etc.

AGENCIES: 1. *Official:* (a) National, work of National Bureau of Health. (b) State, establishment of sanatoriums, educational campaigns, legislation. (c) Local, dispensaries, educational campaigns, legislation, etc.

2. *Private:* (a) Organizations for prevention; (b) institutions for treatment.

METHODS: 1. *Research Work:* A study of social aspects of tuberculosis. Relation of tuberculosis to overcrowding, infected tenements, unhealthful occupations, factories and schools, public places, city and country life. Effect of food supply, alcoholism, hygienic surroundings, race, social standing, occupations. Aid of health officers and visiting nurses in carrying out this work. Study of bovine tuberculosis and method of regulation.

2. *Education:* Publication of leaflets and pamphlets. Maxims on street-car transfers. Circulars of advice distributed through labor unions, factories, department stores, churches, etc.; printed in different languages. Popular lectures; use of stereopticon to illustrate. Tuberculosis exhibits, local and traveling. Details of exhibit: I. Where Tuberculosis Breeds: Illustrate with models and photographs of tenements, bedrooms, airshafts, etc.; photographs of back yards, cellars, rubbish and garbage accumulations. II. How Tuberculosis Spreads: The bacillus, dust, street-sweeper, duster, spittoon, poorly ventilated factories, sweatshops and lodging-houses. The house-fly, food supply. III. How Tuberculosis Is Cured: Advantages of outdoor treatment. Photographs of sanatoria, dispensaries, summer camps, etc. IV. How Tuberculosis is Prevented: "Don't Spit." Model tenements, proper ventilations, etc. Use of posters and phonographs in exhibits. Press services. Supplying local newspapers with information regarding prevention and treatment of tuberculosis. Educational campaign through labor unions, etc. Campaign against "Consumption Cures." Schools. Instruction in hygiene in public schools. "Public Health Week." Instruction in spread, prevention and treatment of tuberculosis.

Miscellany

Prevention and Correction of Deformities in Paralyzed Children.—H. Winnett Orr, Lincoln, Neb., states that under normal conditions all parts of the body are beautifully balanced—this is shown especially in the extremities where one set of muscles is kept in balance by a set of opponents. Any paralysis may lead to deformity by giving the unparalyzed muscles an advantage so that they contract without opposition and produce distortion of the part of the body in that vicinity. This is called contracture deformity and such deformity is always preventable if proper support is provided to protect against overcontracture of the strong muscles. Of course, by "proper support" we may mean rather complicated splints or apparatus but such treatment can always be made to do good in such cases. Immediately after poliomyelitis, for example, complete rest is of the utmost importance. When any function can be resumed the affected parts of the body must be protected against distortion by suitable apparatus. If contracture deformity occurs under these circumstances some one is to blame. Massage, electricity, baths, etc., are only of value when used in connection with such apparatus. Plaster of Paris will make suitable splints in the majority of cases. After deformity has occurred correction may be made by forcible "bloodless" correction, by tendon division combined with manipulation or by the transplantation of the tendons of strong muscles into the distal ends of weak muscle tendons. The time for the performance of any of these procedures must be carefully determined after a careful estimation of the patient's condition. After any such procedure the putting up of the corrected part in a retention apparatus (preferably plaster of Paris) must be done without tension. Finally, physicians must learn the possibilities of prognosis in these cases so that the patients will not fall into the hands of irregular practitioners and institutions. They can be protected against deformity and it should always be done.—Abstract of paper read before Elkhorn Valley Med. Soc.

Are Hygienic Measures Eugenic?—Irving Fisher, of the National Conservation Commission (*Hygiene and Physical Education*, December), says the question has been raised whether reduction in infant and child mortality will not weaken rather than strengthen the race by interfering with natural selection and favoring the survival of the unfit. It is pointed out that mortality at later stages of life has not decreased as has that in the earlier stages. This may be explained by the fact that improvement in hygienic living has not as yet affected adults as much as children. Parents are quick to apply new methods for preventing disease in their children, such as sterilizing milk, but do not take the same precautions for themselves, and modern conditions may produce in some respects more unhygienic habits among adults than prevailed under simpler conditions of a generation ago. It must be borne in mind also that the same children's diseases and other causes which tend to kill the unfit child also tend to hinder the proper development of the fit. The lessening of children's diseases will have the effect not only of prolonging weak lives, but also of developing and prolonging the strong. Where infant mortality is high, mortality at all ages is high. Fitness is relative to environment. A lessening of physical strength cannot be called degeneration if conditions under civilization do not require the same physical strength as our barbarian ancestors needed. It is adaptation to existing conditions which measures fitness. With high health ideals will come a demand which will prevent the perpetuation of the unfit and through the mere force of public opinion lead in general to healthier marriages.

Teaching Sexual Hygiene to Boys.—Dr. Marshall H. Bailey, of Harvard University (*Hygiene and Physical Education*), asks whether it is better to allow the boys to get a mixture of truth and error in regard to sexual matters from their associates in school or on the street, or the truth from a more reliable source. Opposition to instruction in the laws of life is general. After corresponding with twenty-eight prominent medical institutions he found instruction in the hygiene of sex is given in nineteen and not given in six. In German universities a circular containing solemn warnings is given

out, but Dr. Bailey believes more good could be accomplished by giving instruction before entering university life, and besides that the great bulk of the young do not go to college. He therefore believes a circular of information compiled by a committee endorsed by the signatures of a considerable number of representative men and women should be sent to parents with a letter asking them to read it and then decide whether or not it should be presented to the boy either by themselves or the family physician.

Treatment of Tuberculosis at Loomis Sanatorium.—The Thirteenth Annual Report (1909) of the Loomis Sanatorium for the treatment of tuberculosis shows that of 205 patients discharged during the year, there were 15.61 per cent. of "apparent cures," as against 21.52 per cent. during 1908, due to the fact that the average stay of the patients in 1909 was 30 weeks, as against 43.17 weeks in 1908. Thus there seems to be established a definite relation between the duration of residence and the results of the treatment. Thirty-five out of 265 patients discharged during the year "apparently cured," were given tuberculin treatment, in addition to the regular hygienic and dietetic measures of the sanatorium. The results showed a considerable advantage in favor of the tuberculin, but the patients were selected and their residence in the sanatorium was longer. Still it seems to be proved in this institution, as well as in others, that this specific treatment, combined with the ordinary measures, has a percentage of advantage. In patients whose symptoms did not positively contraindicate it, controlled autoinoculation by exercise was practiced under rigid supervision. This was effected by manual labor in the way of timber thinning, landscape gardening, etc. Improvements have been made in the dietetic system of the sanatorium which enables the staff to control the diet of the patient with scientific precision. An investigation was begun of the present condition of all patients discharged since the opening of the institution, but the work was not sufficiently advanced to publish the results in this report. The value of such an investigation will be great.

Society Proceedings

COMING MEETINGS

Alabama, Medical Association of State of, Mobile, April 19-22.
Am. Laryn., Rhin. and Otol. Society, Washington, D. C., April 28-30.
Arizona, Medical Association of, Phoenix, April 20-21.
California, Medical Society of State of, Sacramento, April 19-21.
Conf. State and Prov. Bds. of Health, Washington, April 28-29.
District of Columbia, Medical Association of, Washington, April 26.
Florida, Medical Association of, Jacksonville, April 6-8.
Georgia, Medical Association of, Athens, April 20-23.
Maryland, Med. and Chirurgical Faculty of, Baltimore, April 26-28.
Missouri Valley, Medical Society of, Omaha, March 17-18.
Mississippi State Medical Association, Oxford, April 12.
South Carolina Medical Association, Laurens, April 19-21.
Tennessee State Medical Association, Memphis, April 12-14.

CONFERENCE OF THE COUNCIL ON MEDICAL EDUCATION AND OF THE COMMITTEE ON MEDICAL LEGISLATION OF THE AMERICAN MEDICAL ASSOCIATION

Held in Chicago, Feb. 28-March 2, 1910

Heretofore the annual conferences on medical education and medical legislation have been held at different times and places. Since the work of the two conferences was so closely related, however, and since many delegates were being asked to attend both, it was determined this year to hold the conferences of these two committees of the American Medical Association at the same time and place. This joint conference met at the Congress Hotel at 10:00 a. m. and was called to order by Dr. Arthur Dean Bevan, Chicago, Chairman of the Council on Medical Education.

Address of Chairman

DR. ARTHUR DEAN BEVAN, Chicago: We are called together for the purpose of improving the medical educational standards and we feel that we can discuss this whole subject freely

and fully even though some of the facts brought out criticize some states and some medical institutions. Many of us here know the difference between the modern intelligent medical care and the ignorant charlatan care of the sick. 1. We have seen the woman dying of child-bed fever which might have been prevented by the intelligent aseptic conduct of her confinement. 2. We have seen the child dead from unrecognized and untreated diphtheria, when the death might have been prevented by early laboratory or intelligent clinical diagnosis and the proper use of antitoxins. 3. We have seen the pinched and dusky face of the man dying of peritonitis, which could have been prevented by early diagnosis and proper operative treatment.

We who are medical men know the great difference between intelligent and ignorant, between trained and untrained medical care. But the public does not know; it does not understand. The public does not as yet realize the importance of public health measures and of measures aimed at securing properly trained medical practitioners.

From a study of the subject of medical education during the last eight years, I desire to present to you briefly some conclusions:

1. Medical education and medical educational standards are not in a satisfactory condition in this country. Great improvements have been made in the last ten years and, although the situation is encouraging, conditions as a whole are not only unsatisfactory, but not even acceptable.

2. When we met six years ago at the first conference on education there were over 160 medical schools in this country. There are now about 140 medical schools. The number should be further reduced to 60 or 70.

3. It costs more to conduct a modern medical school than the amount which can be obtained from students' fees. The 60 or 70 schools which should survive must receive either state aid or private endowment.

4. The medical school of the future must be developed as the medical department of a university.

5. The study of modern medicine demands: (1) a certain preliminary education; as a minimum this should be eight years in the primary school; (2) four years in the high school; (3) at least one year in special preparation in the pre-medical sciences of chemistry, physics and biology; (4) four years in the medical school, two years in the laboratories of anatomy and physiology, pathology and pharmacology; two years in clinical work in medicine, surgery, obstetrics and the specialties; and finally (5) at least one year of practical work as an intern in a hospital. And the time has about arrived when provision should be made for including this hospital year in the medical course.

6. The state licensing boards of the various states should have the legal power to insist on a proper preliminary education and a proper medical course, and they should have the right to refuse recognition to work done in colleges not offering proper medical instruction and the examination for medical licensure should be of such a practical character and so thorough as to determine the ability of the applicant to practice medicine. This power is necessary in order to protect the people of the state against ignorance and quackery. No public health measure is of greater importance than that aimed at securing properly qualified medical practitioners.

7. In order to secure proper medical standards throughout the country we must have the united support of the state boards, the medical profession, the medical schools, the universities and, what is most important of all, public opinion.

8. In order to obtain this support we must carry on a campaign of education showing what the existing conditions are and what changes are needed in order to secure conditions which will best safeguard public health, secure proper medical attention for the sick and aid in the advancement of medical knowledge.

With the knowledge which is now available of the conditions of the medical schools in this country, *i. e.*, that only about half of them are teaching medicine in an acceptable way, and with the power possessed by the majority of the state boards

to determine what constitutes a medical school in good standing, it would seem easily possible for the state boards acting either independently or conjointly to compel these unsatisfactory schools to come up to an acceptable standard or else to go out of existence. The teaching of modern medicine is too serious a function. The turning out of ignorant and poorly qualified physicians is too great a menace to the community to permit this sort of thing to go on. This review of the medical schools shows that of the 140 medical schools in this country only about half are acceptable. Turning from this very depressing picture to an analysis of the better schools we find much reason for encouragement.

The Council believes that the coming American standard will be: a four-year high school education; a year or two in the university laboratories in chemistry, physics and biology; four years in the medical school and a clinical year as an intern in a hospital.

Secretary's Report: Inspection of Medical Colleges

DR. N. P. COLWELL, Chicago: All the work done by the Council on Medical Education since it was created in 1904 has been focused on the investigation of medical colleges preparatory to issuing a classification of medical schools. In making the investigation, the chief aim has been to point out reasonable standards of medical education and to assist the colleges in any way it could in the fight many of them have been making to keep pace with the advances, which through modern methods of research have been made in knowledge of the causation and treatment of disease.

Following the first tour of inspection, the Council was criticised in certain quarters for not publishing outright its classification of medical colleges. That classification was not published, however, because the Council desired to give a number of colleges which were contemplating improvements the opportunity to make good. The delay has been more than justified. Many colleges have made extensive improvements, numerous mergers have been brought about and, on the whole, the situation has been greatly improved. The general conditions as revealed by the first inspection, however, were given the widest possible publicity, so that at the present time any plea of ignorance of the demands of modern medicine is unworthy of consideration. In the second tour of inspection, complete data regarding each college has been obtained and the whole field carefully reviewed, so that now further delay in the presentation of a classified list would not be justified and would unnecessarily prolong the existence of low standards.

Reference has just been made to the amazing variety of institutions professing to teach medicine in whole or in part which are annually turning out thousands of graduates who seek the privilege of practicing medicine. While some of these graduates may be thoroughly competent, there are doubtless many who are illiterate, untrained and decidedly incompetent. While they may differ greatly in their theories of disease and their methods of treatment, those who by whatever means secure the right to practice will be alike in this respect: they will all be required to differentiate between the normal and the abnormal; they must determine the nature of diseases, injuries and deformities and in many of their cases what they do or fail to do will mean the life or the death of the patient.

The only legal barrier which can protect the public from ignorant, untrained and incompetent practitioners is the state medical licensing board. It is of extreme importance, therefore, that in each state there should be a single licensing board, that its members should be selected because of their special fitness for the work involved and that this board should be given full authority in the premises. Instead of that we now have in our 49 states and territories 82 different boards of medical examiners including the sectarian boards. In some states the responsibility for defending the public against ignorance, incompetence and fraud, is divided among as many as 4 separate boards.

The point to be borne in mind is that an osteopath is required to make a diagnosis just as a medical practitioner is, and, therefore, needs a similar training in the fundamental medical branches. Lower educational standards for osteopaths,

therefore, are a serious menace to the public and an unfair discrimination against medical practitioners. Regarding osteopathic colleges also it should be stated that owing (a) to their lower preliminary requirements, (b) to their shorter course for the osteopathic degree, (c) the few instructors in their faculties who have had a scientific medical training and, more important still, (d) to the serious if not absolute lack of laboratory equipment and clinical facilities not one of the osteopathic colleges in the United States can be compared even with those medical colleges which have been rated as not acceptable by the Council on Medical Education.

State licensing boards are fighting the people's battle against ignorance and incompetence, sometimes without the support either of the public or of the medical profession, and they are often seriously handicapped. That some states have not already been overrun with incompetents is due entirely to the examining boards which have found methods by which the unfit could be excluded even with the limited authority allowed them by their legislatures. The time has come, however, when the medical profession and the people of each state should see to it that a single board of competent medical examiners shall control the licensing of all practitioners of medicine and that this board be given full authority. This one barrier between the sick and afflicted and the crowds of ill-trained and incompetent practitioners must be made effective.

Other Reports and Addresses

The rest of the morning was taken up with reports of special committees which will be covered in the continuation of this report in *THE JOURNAL* next week.

At the Monday afternoon session the following addresses, which will be published in *THE JOURNAL*, were given:

"Standards in Medical Education as Related to Standards in General Education," Hon. Elmer Ellsworth Brown, United States Commissioner of Education, Washington, D. C.

"The Obligations of the University to Medical Education," President Henry S. Pritchett of the Carnegie Foundation for the Advancement of Teaching, New York City.

"The Relation of the University to the Medical School," President J. G. Schurman of Cornell University, Ithaca, N. Y.

"Some of the Functions of a University Medical School," Dr. Victor C. Vaughan, Dean, University of Michigan College of Medicine and Surgery, Ann Arbor.

These addresses will be printed in the near future in *THE JOURNAL*.

(To be continued)

MEDICAL SOCIETY OF THE STATE OF NEW YORK

One Hundred and Fourth Annual Meeting, held at Albany, Jan. 25-26, 1910

(Concluded from page 736)

Osteitis Deformans (Paget's Disease); Report of Two Cases

DR. HENRY L. ELSNER, Syracuse, spoke of the various conditions included under osteitis deformans, hyperostoses, leontiasis and kindred conditions as purposeless enlargements of the bone, and went extensively into the history of the subject, tracing its development from the days of Malpighi to the present time. He believes it safe to adhere to Paget's original characterization of the disease, the symptomatology of which has not been changed, although we have learned much concerning its pathology during recent years. He described two cases. One patient is a woman of 62, in whom the leading symptoms are asymmetrical hyperostoses affecting the right half of the cranial vault, the left clavicle, the right ilium, and the left femur, with secondary changes in the spinal column, arteriosclerosis, aortic (valvular) obstruction and mitral insufficiency. The case is classical and answers in every particular the requirements included in the original definition of the disease. The second case is probably the youngest of Paget's disease on record. The patient is 17 years of age; the bone growth dates back five years. In both of the cases reported there was a history of traumatism. In the first case, the patient, when 6 years old, was thrown from a carriage, striking on the right parietal bone, the point at which, when she had reached her fifty-fifth year, the disease commenced. In the

second case, there is a history of fracture of the femur. The leading features of the second case are the marked changes in the rami of the lower jaw, the decided thickening of the left parietal bone, the enormous enlargement of the sternal end of the right clavicle, the surprisingly large right ilium, the enlargement of the right humerus and forearm, the increase in the length of the arms and the increase of the size of the right foot, with the characteristic decalcification and abnormal bone growth pathognomonic of Paget's disease. In the second case, x-ray exposures confirmed the diagnosis. The first patient refused to be x-rayed or photographed.

Dr. Elsner discussed the rarity of this pathologic entity and gave data to prove this, there being less than 100 cases on record. He went extensively into the study of the bones involved, and considered the possibility of making a diagnosis with the involvement of one bone only, and proved that asymmetrical cases may become symmetrical, and that after a long period of hyperostosis cranii distant bones may hypertrophy and show the characteristic changes of Paget's disease. He also considered the relative frequency of malignant growth following these changes.

Paget's disease may be either painful or painless.

The history of traumatism in both of the cases reported is an interesting feature. In Case 1 the prime changes were found in the bone, which was injured when the patient was 6 years of age. In Case 2, the enlargements of the bones are distant from the seat of fractures sustained five years before other bone changes began. In the absence of positive knowledge with regard to the etiology of the condition, Dr. Elsner said that he had wondered whether, when Nature was called on to provide new bone or repair injured bone, the habit of bone formation may not have been stimulated and finally formed; and whether in these cases with a positive history of traumatism that factor ought not to be considered provocative. There is a growing feeling, he said, among those who have observed these cases that the majority of the patients suffer from some vascular change. Arteriosclerosis has been a frequent accompaniment. Valvular lesions were present in many of the reported cases. Paget's first patient suffered from mitral disease. In Case 1 the patient has arteriosclerosis and aortic valvular obstruction, with marked mitral insufficiency. In Case 2 the patient has an unstable circulation and muffled heart sounds, but no evidence of arteriosclerosis. Dr. Elsner directed attention to the close facial resemblance of patients suffering from this disease. Just as all aeromegalic and myxedematous patients grow to look alike as these diseases advance, so do these patients with skull changes grow to resemble each other. He also discussed the eye changes and took up the differential diagnosis and the value of x-ray pictures. He gave a summary of the pathologic findings as reported by various writers and concluded that widespread resorption and enormous hyperplasia produce the changes in osteitis deformans; that decalcified bone is formed in the majority of these, but that there are exceptions to this rule, and that occasionally there is a calcified deposit; that, so far as we know, no treatment has had the slightest influence in controlling the disease; that we must depend on Nature's compensatory provision by which the denser bone is finally deposited; that the disease is not specific; that the Wassermann reaction has been absent in all cases in which it has been tried by Kutsche since its introduction into medicine.

DISCUSSION

DR. WISNER R. TOWNSEND, New York: I wish to mention a case I have had under observation and which is one of 4 cases I have seen. This patient is a young woman, aged 38, whom I saw for the first time early this summer. She stated that for years previous to this time she had weakness in her left hip. There was no pain, but stiffness was marked whenever she exercised a great deal. One and a half years ago the patient ran to catch a train and on rising after a few minutes' rest she found that she was very lame and the joint suffered greatly. This condition increased with motion. There was great pain on either motion or pressure. She has been using crutches ever since. She was admitted to the hospital April 29, 1909, carrying crutches. There was slight edema of both legs below the knee, and there was slight grating of both shoulders, the left

being more marked. The wrists were the same. The fingers were slightly, if at all, involved. The temporomaxillary joints apparently were not involved. Both femora were rotated outward and the upper end of the left one was very prominent. The femur and tibia of the left side were larger than those of the right. There were no head symptoms. There was no headache. There was no enlargement of the head or of the facial bones. There was no enlargement of the bones of the upper extremity and this was tested not only by personal observation, but with x-ray pictures which show nothing abnormal so far as can be seen.

The blood count showed: reds, 4,560,000; white count, 9,000; hemoglobin, 90 per cent.; polynuclears, 67 per cent.; lymphocytes, 26.5 per cent.; eosinophils, 2.0 per cent.; transitionals, 2.5 per cent; mast cells, 2.0 per cent.

The patient is a very frail woman. She weighed from 105 to 110 pounds, was not large, and apparently was not in any sense diminished in height, but there was a bending at the femoral neck, or what is called coxa vara and she had a very large area there of rarifying osteitis. The tibia was markedly changed and thickened, and had all the characteristic symptoms of Paget's disease. This woman has been kept under observation and at present there is no sign whatever of any increase in the head measurements, or head symptoms, and apparently there is no increase in any other symptoms. In other words, the condition seems to be limited practically to the left lower extremity, although there is a slight change in some of the bones of the right lower extremity. I believe the condition is wholly progressive and well illustrates the type of disease in which the head is not involved. Whether the head will become involved eventually or not, I do not know. Dr. Elsner stated that in his cases the head involvement came early. In this case the woman had noticed the symptoms I have mentioned for years. The condition is not so rare as some of us believe, because I have seen 4 cases. This is a small number when we consider the number of patients I have an opportunity of seeing at the Hospital for Ruptured and Crippled during the course of a year. Nevertheless it is an interesting disease.

DR. CLARENCE COON, Syracuse, gave lantern slide demonstrations of x-ray pictures of osteitis deformans and of stomach and intestinal diseases.

Pellagra

DR. C. H. LAVINDER, Washington, D. C., gave a general talk on this subject. He gave an interesting account of the early history of the disease and what Italian and other physicians had accomplished by their investigations and treatment of it. He mentioned its prevalence in this country at the present time and the efforts being made to combat it.

Test Meals and Feces Examination: New Methods and Their Clinical Value

DR. ANTHONY BASSLER, New York: In nearly all cases of early gastric carcinoma and in latent ulcer, no value comes from the bacterial tests with test meals. Abnormal bacterial conditions of the colon are oftener matters of assumption rather than of accurate clinical diagnosis, for not all of the bacterial conditions of the gut show indol in the urine. The dietetic and neurotic conditions of the stomach do not give more than the merest bubble, but in ulcer and cancer I found that this was higher. In the normal individual the feces and water tests show a low gas result on the strict meat diet; the ordinary mixed diet shows a higher result, while that of the strict carbohydrate diet is the highest of all. When in the nutritive media the gas result is higher than normal, the patient is placed on a strict meat diet and the watery suspension test is performed, at which, should the gas result be higher than a meat diet should give, the diagnosis of the indolic form of chronic interstitial putrefaction is suggested. On the other hand, should the gas result in the nutritive media be lower than normal, the patient should be placed on a strict carbohydrate diet to see if the gas from the watery suspension of feces still remains below what was ordinarily seen in the individual on such a diet at which, when the result is positive, the diagnosis of the more common saccharobutyric form is suggested.

Medicolegal

The Drug, Sufficient Administering and Evidence of Pregnancy in Abortion Case

The Supreme Court of Iowa says that the defendant in the case of *State vs. Stafford* (123 N. W. R. 167) was charged with having administered a certain noxious substance to a woman named, she being pregnant, with intent to cause a miscarriage. The evidence left no doubt but that at her request he procured cotton root and wintergreen for her, brought her a substance that he represented to her was what she desired, and advised her how to take it.

Whether the drug furnished, when taken, would produce a miscarriage, was not material, save as bearing on the motive with which the defendant acted. The name of the substance need not be alleged in the indictment. Nor was it necessary that it be proved to have been noxious, though so alleged. Undoubtedly the word "noxious" was used in such indictments at the common law; but it is not in the Iowa statute defining the crime. That makes the intent the chief element in the offense. Hence the word "noxious" in the indictment, as it was merely descriptive of the substance, like that of a weapon or wound in charges of murder, might be treated as surplusage. So that all essential to be proven was that the defendant willfully administered "any drug or substance whatever." That he procured and delivered to the woman such drug or other substance for the unlawful purpose was sufficient proof that he "administered" it.

Proof of pregnancy was essential under the Iowa statute defining the crime. Decisions holding otherwise construe statutes materially different from that of Iowa. But it was not necessary that the woman be proven quick with child, as at common law. Difficulties in the proof of condition prior to that time are to be encountered, but absolute certainty is not exacted even in a criminal action. All that is necessary is that the evidence be such as to support the conclusion that the woman was enceinte beyond a reasonable doubt.

In this case the woman and the defendant had been indulging in sexual intercourse for more than a year. She had missed her menses on December 25 or 26, and in January became convinced that she was in a family way, and so informed the defendant. With that understanding the drug was procured and taken, resulting in her serious illness January 20, when she was removed to her home, and during the first week in February discharged from her vagina a substance which she testified resembled a blood clot. She was in health, save that she had a cold in December, and the circumstance of missing her menstrual flow twice in succession was not otherwise explained. The court is of opinion that the evidence was sufficient to carry the issue as to whether she was pregnant to the jury, even though two physicians expressed the opinion that at so early a period it could not be known with certainty without a microscopic examination or the discovery of the ovum whether she was enceinte. As said, absolute certainty is never exacted; all the law requires is such reasonable certainty as shall silence all reasonable doubt.

As the woman was not an accomplice, corroboration of her testimony was not essential.

A judgment of conviction is affirmed.

Circumstances Under Which a City Should Not Be Enjoined from Using a Public Park Building for Pest-House

The Supreme Court of Kansas says, in *City of Manhattan vs. Hessin* (165 Pac. R. 44), that this was an action brought by the latter party to enjoin the city from using one of its buildings as a pest-house. In the city is located the State Agricultural College, which is attended by about 2,000 students, who room and board in club and boarding-houses throughout the city. In the early spring of 1909 smallpox appeared among the students in some of these club and boarding-houses. The contagion spread so rapidly that the board of health was unable to control it with any quarantine regulations or by any plans of isolation which could be adopted. An epidemic seemed imminent. In this extremity

the board sought for houses throughout the city which could be temporarily used for pest-house purposes, but none could be obtained. However, in a public park owned by the city there was a stone building which had been erected for a floral hall, which was used for that purpose while the fair was in operation, but was not at the time in question occupied for any purpose. It could be used fairly well for the purposes of a temporary pest-house, and was adopted by the city for that use. Twelve patients were placed therein, and guards properly stationed to prevent the further spread of the disease, which was in that stage of development when it was most contagious. The plaintiff resided in property adjoining the park, about 500 feet from this building, when, fearing contagion, he obtained from the judge of the district court a temporary order of injunction prohibiting the removal of any other patients to such building, and requiring those already there to be removed within ten days. The city appealed to the Supreme Court, insisting that its officers were charged at the time this action was commenced with the duty of providing means to prevent an epidemic of smallpox, and that the performance of such duty involved the exercise of official discretion which could not be judicially controlled by injunction. The Supreme Court takes the city's view, and holds that the issuance of the injunction under the circumstances shown was error.

The city officers were compelled to perform these duties promptly. It was impossible for want of time to select a site and erect a suitable building. The situation presented an emergency which the officers were compelled to manage without delay, and in such a manner as would protect the rights of all interested parties. In this case the city and its officers were prohibited by the injunction from performing an important public duty. Public officers who are required by law to perform duties involving the exercise of judgment and discretion cannot be controlled by injunction while in good faith performing such duties.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

New York Medical Journal

February 19

- 1 *Visceral Angioneurosis. S. S. Cohen, Philadelphia.
- 2 *Thymus Gland Treatment of Certain Diseases. F. Gwyer, New York.
- 3 Dietetic Points in the Home Treatment of Tuberculosis. H. S. Anders, Philadelphia.
- 4 Treatment of Cervical Tuberculous Lymphadenitis and Tuberculous Dermatitis by the X-ray. R. H. Boggs, Pittsburg.
- 5 The Fight Against Tuberculosis. W. S. Mills, New York.
- 6 Piper Methysticum or Kava in its Effects in Gonorrhea. P. Bartholow, New York.
- 7 Multiple Fracture of Both Bones of Leg and Dislocation of the Ankle Treated by Passive Exercise. F. T. Woodbury, Fort Assiniboine, Mont.
- 8 Hypertrophy of the Mamma; Male and Female. W. A. Tatchell, Hankow, Central China.
- 9 Primary Sarcoma of the Ciliary Body. E. L. Klopp, Philadelphia.

1. **Visceral Angioneurosis.**—By the term visceral angioneurosis it is intended to imply that the manifestations of disordered function under discussion arise from circulatory disturbances rather than from primary tissue change in the organs affected, and to suggest their relationship with the familiar circulatory disturbances in the skin to which the term angioneurosis is commonly applied. The symptomatology of the visceral angioneurosis is multifiform and somewhat vague. The final element in the diagnosis, however, is the patient—his physical characteristics, his reaction to environmental change, his familial and hereditary liabilities, and his previous personal pathologic history. Cohen reports 15 cases.

2. **Thymus Gland Treatment of Certain Diseases.**—At the end of three years work Gwyer is more than ever fixed in his belief that in the use of thymus gland will eventually be found a valuable treatment for cancer, for that class of diseases due to improper metabolism, and possibly for tuberculosis. In his work, either the dried powdered thymus was

used in doses varying from 30 to 120 grains, 3 or 4 times a day, or one of a number of special preparations. Gwyer says that there are two difficulties in treatment by thymus: the one is to find the proper preparation, the other the proper dosage. He is now using the fresh thymus of calves, dried by himself. He is convinced that the entire gland contains substances which at least retard and limit its action and very likely one or more of its constituents antagonize others which have a curative value. The diseases experimented on were goiter, arteriosclerosis, rheumatoid arthritis, hemorrhoids, cystic tumor of breast, pulmonary tuberculosis and cancer.

Medical Record, New York

February 19

- 10 *The Thalamie Syndrome. S. E. Jelliffe, New York.
- 11 Influence of Alcohol in Certain Diseases of the Skin. L. D. Bulkley, New York.
- 12 *Compensatory Diarrhea. G. M. Niles, Atlanta.
- 13 Cancerous and Non-Cancerous Pyloric Obstruction. A. Goldman, New York.
- 14 *Tetanus with Point of Infection the Cavity of a Tooth. W. H. Luckett, New York.
- 15 Is Congenital Cataract Caused by Dystocia. G. E. Barnes, Herkimer, N. Y.
- 16 *An Irrigating Stone Searcher. V. C. Pedersen, New York.

10. **The Thalamie Syndrome.**—The symptoms of this syndrome are superficial persistent hemianesthesia of organic nature for sensibility, pain, tact, and temperature; mild hemiplegia without contracture, rapidly regressive; mild hemiataxia and astereognosis; severe pains in the hemiplegic side, paroxysmal, and intolerable; choreoathetoid movements of the members of the paralyzed side. Jelliffe also gives the history and autopsy of the case reported by Déjerine and Egger, on which the syndrome was formulated. The autopsy showed a lesion occupying the posterior external part of the optic thalamus at all its levels. The lateral internal and external nuclei were destroyed in their posterior third. There were secondary degenerations in the posterior part of the posterior segment of the internal capsule.

12. **Compensatory Diarrhea.**—Niles states that there are diarrheas that seem to be salutary in their effects. He calls these compensatory. There are, first, those that are concomitant with deficient or perverse catabolic processes; such occur in gout, diabetes, goiter, Addison's disease, etc.; second, those resulting from functional or structural diseases of certain excretory organs, as in failure of renal functions and extensive burns; third, those occurring in old persons who are failing in strength, the result of physiologic decline. The diarrhea here consists of incompletely catabolized products that need to be excreted. Also certain toxic states with elimination of toxic products by the bowels, such as uremic diarrhea; women past the climacteric seem to need elimination of certain products, which is done by diarrheal discharges. Treatment of such diarrheas should not be directed to stopping the passages.

14. **Tetanus from Infection of Cavity of Tooth.**—Luckett reports a case of tetanus in a child of ten who had very badly decayed teeth, and no other lesion that could allow of the entrance of the tetanus germ. Animal inoculations and culture experiments showed that tetanus germs were present in the tooth cavity.

16. **Irrigating Stone Searcher.**—Pedersen describes a modification of the Posner and Thompson stone searcher that he considers preferable to either of them. The searcher is curved in the same radius as the standard sound; its extreme width is less than in other instruments, and a small stone is easily reached on account of the smallness of the beak.

Boston Medical and Surgical Journal

February 17

- 17 *Influence of Race on the Infant Mortality of Boston in 1909. R. C. Cabot and E. K. Ritchie, Boston.
- 18 *Obscure Affections of the Hip-Joint. A. T. Legg, Boston.
- 19 Symptomatology and Differential Diagnosis of Tuberculosis of the Cecum. C. G. Munston, Boston.
- 20 *Simple and Clean Instrument for Vaccination. F. H. Williams, Boston.

17. **Influence of Race on Infant Mortality.**—Cabot and Ritchie found that the Jewish race in Boston far exceeds any other (a) in the number of stillborn babies, and (b) of digestive troubles proving fatal within the first two years of life.

The Italians in Boston suffered during 1909 far out of proportion as compared with the other races in the infant mortality from infectious diseases outside the gastrointestinal tract. The great bulk of these deaths were due to pneumonia. On the other hand, the Italian race is more fortunate than any other race in Boston in that it loses a far smaller number of children from congenital weaknesses, prematurity and birth accidents.

The Irish have the best record as regards stillbirths, and lose a remarkably small number of babies from infectious disease. They fare better than the Jews or the Italians as regards practically every one of the causes of infant mortality, though in all these respects, except as regards prematurity, their record is somewhat worse than that of the "Americans."

As might be expected from their longer settlement in this country, the so-called "American" race loses fewer children per thousand births than any other race. This advantage holds good as regards every one of the causes of postnatal infant mortality with the exception of those classified under the term "prematurity." In deaths from this cause, the "American" race has the worst record of all, and in the number of stillbirths the "Americans" are far more afflicted than the Irish and almost equal the Italians, though the Jews fare worse still.

18. **Obscure Lesion of the Hip-Joint.**—The following facts, symptoms and signs were present in each of the five cases reported by Legg: (1) age, 5 to 8 years; (2) history of injury; (3) limp; (4) thickening about the neck of the femur; (5) absence of pain; (6) absence of constitutional symptoms; (7) little or no spasm; (8) absence of shortening. All these patients sought advice solely on account of the limp. In two of the cases (the first and the fourth) the condition of flattening of the head of the femur existed on both sides; and in both cases there was entire absence of symptoms in one of the hips. No opinion as to the nature of these cases is offered.

20. **Instrument for Vaccination.**—The instrument used by Williams consists of a piece of stiff platinum wire, 1 mm. in diameter and 5 cm. long, fused into a piece of glass tubing which serves as a handle. The other end of the wire, flattened by means of a hammer to a width of rather more than 2 mm., has been well rounded with a file and its edge roughened by making shallow cuts in it with a knife blade. This roughening is important, for if not done the instrument bores into the skin and causes unnecessary pain while the outer layer is being removed. To use the instrument, the platinum wire is first sterilized by heating to a red heat in a flame; it cools in a moment, and the end is then pressed gently against the tense skin, which has also been sterilized, and the handle rotated between the thumb and finger of the right hand until the serum appears.

Lancet-Clinic, Cincinnati

February 5

- 21 Cerebral Decompression. A. Schachner, Louisville.
- 22 *Surgical Treatment of Exophthalmic Goiter. A. J. Ochsner, Chicago.
- 23 *Postoperative Results in Exophthalmic Goiters and Tumors. G. W. Crile, Cleveland.
- 24 *Primary Bilateral Ligation of the Upper Poles of the Thyroid for Exophthalmic Goiter. J. H. Jacobson, Toledo.
- 25 Pyemic Poisoning Caused by Pus in the antrum. R. J. Porre, Cincinnati.

February 12

- 26 *Gangrene from Syphilitic Endarteritis. A. Ravogli, Cincinnati.
- 27 Medicolegal Expert Testimony. B. F. Beebe, Cincinnati.

22, 23, 24. Abstracted in THE JOURNAL, Nov. 13, 1909, pp. 1675, 1676.

26. **Gangrene.**—Ravogli emphasizes the fact that when gangrene is produced by syphilitic infection, heroic antisyphilitic treatment has to be resorted to. In several cases through treatment the gangrene has been limited, the necrotic surface has sloughed off, and good cicatrization has followed. Of course, no benefit is to be expected from the treatment of the necrotic tissues, nor any effect whatever on the thrombosed arteries or veins. But when the syphilitic process has acted on the small vessels, then the limitation of the process can be obtained. In all Ravogli's cases tonic treatment, and

especially quinin in large doses, has been found of value to subdue septic condition. Ravogli concludes as follows:

1. Syphilis is liable to induce gangrene at any period of the disease. 2. Gangrene *en masse* occurs more frequently from endarteritis in the late stage of syphilis. 3. Gangrene may be the result of an acute peripheral endoangioitis of the small arteries, causing necrosis of superficial areas of the skin. 4. Gangrene may be the result of the pressure of the infiltrating elements on the blood vessels and on the tissues in the center of deep syphilitic lesions.

Virginia Medical Semi-Monthly, Richmond

January 21

- 28 *Hematology of Pellagra. C. H. Lavinder, Washington, D. C.
- 29 Education of the Public on the Cancer Problem. S. Leigh, Norfolk, Va.
- 30 *Congenital Word Blindness as a Cause of Backwardness in School Children: Case Associated with Stuttering. E. B. McCready, Pittsburg.
- 31 Treatment of Enlarged Prostate and of Chronic Prostatitis with Electricity. J. C. Walton, Richmond, Va.
- 32 Medical Antagonisms. F. L. Biscoe, Washington, D. C.

28. Abstracted in THE JOURNAL, Nov. 13, 1909, p. 1664.

30. Published in the *Pennsylvania Medical Journal*, January, 1909, and abstracted in this issue of THE JOURNAL, article No. 50.

Archives of Pediatrics, New York

January

- 33 Pneumococcus Infection. W. L. Carr, New York.
- 34 Meningism: A Consideration of the Syndrome of Dupré. L. Porter, San Francisco.
- 35 *Protective Action of the Colloids in Milk: Some Ultramicroscopic Observations. J. Alexander and J. G. M. Bullowa, New York.

35. Colloids in Milk.—According to Alexander and Bullowa the casein of milk is an irreversible, or coagulating, or unstable colloid, which is protected by lactalbumin, a reversible or stable colloid. In the modification of cows' milk for infant feeding it is necessary not only to consider the percentage of total proteids, fat, etc., present, but to see that the casein is adequately protected. The authors emphasize that the casein exists in cows' milk in an already formed higher degree of colloidal aggregation. Bald chemical analysis, without taking into consideration the principle of colloidal protection, is in their opinion, an insufficient criterion for the actual digestibility or availability of food.

Kansas City Medical Index-Lancet

January

- 36 Syphilis of the Nervous System. J. Punton, Kansas City.
- 37 The Emmanuel Movement. E. C. Smith, Kansas City.
- 38 Deep-Seated Pathologic Conditions of the Neck. F. J. Moenighoff, Kansas City.
- 39 Gonorrhea and its Management, Especially in Women. C. B. Hardin, Kansas City.
- 40 The Advantage of Psychometric Methods in Diagnosis, Prognosis and Treatment of Cerebral Disorders (continued). T. A. Williams, Washington, D. C.

February

- 41 A Famous Case Recalled. J. Punton, Kansas City.
- 42 Diagnosis and Treatment of Empyema. E. H. Musson, Norborne, Mo.
- 43 Abdominal Myomectomy for Large Uterine Fibroids. H. P. Kuhn and W. I. Frick, Kansas City.

Pennsylvania Medical Journal, Athens

January

- 44 Progress in Obstetrics. G. M. Boyd, Philadelphia.
- 45 *State Appropriations to Hospitals not Under State Control. J. R. Roberts, Philadelphia.
- 46 *What Other States are Doing in Hospital Support. C. McIntire, Easton.
- 47 *Advantages of the Pennsylvania System of Hospital Support. H. G. McCormick, Williamsport.
- 48 *Objections to Pennsylvania Method of Hospital Appropriation. L. F. Flick, Philadelphia.
- 49 *Suggested Improvements in Hospital Support. W. L. Estes, South Bethlehem.
- 50 *Congenital Word Blindness as Cause of Backwardness in School Children: A Case Associated with Stuttering. E. B. McCready, Pittsburg.
- 51 *Surgical Treatment of Diffuse Suppurative Peritonitis. G. D. Nutt, Williamsport.
- 52 *Relation of the Visual Field to the Investigation of Certain Psychoses and Neuroses. G. E. de Schweinitz, Philadelphia.

45, 46, 47, 48, 49. Abstracted in THE JOURNAL, Oct. 23, 1909, pp. 1424, 1425.

50. Congenital Word Blindness.—McCready holds that although but some 41 cases have been closely observed of this condition, the number represents but a small proportion of

the cases. That there is a distinct hereditary influence there can be no doubt. In two of the cases reported development in other directions was slow, while other cases showed evidences of a neurotic tendency. In nearly every case the patient, with the exception of his visual defect, was of average or above average intelligence. In the case reported, the patient, aged 20, family history negative, had enteritis when an infant. At the age of 4 years he had an attack of pneumonia with cerebral symptoms. He had great difficulty in reading from the time he first went to school, and began to stutter from fright at the age of 10. He could recognize letters and numerals, but very few words. The boy is of average intelligence but much retarded on account of defects. The object aimed at after correction of the speech defect was the development of the visual word center in the right hemisphere, and the establishment of functional relationship between it and the auditory word center as well as Broca's center in the left. His improvement has been satisfactory.

51. Surgical Treatment of Diffuse Suppurative Peritonitis.—Nutt claims that country surgeons often see many severe cases of diffuse suppurative peritonitis in which it is utterly impossible to select the time of operation or to convey the patients to a hospital, but in which by the use of stomach lavage, drugs that will fortify the heart action and prevent shock, and a small amount of etherization, a quick operation can be done with almost absolute certainty of success. In Nutt's opinion, the whole question resolves itself into the ability of the patient to stand the anesthetic; if equal to it, and if operation can be borne, an immediate operation seems to be the most reasonable plan and to afford the best prospect for the life and future health of the individual. To fortify the patient for a rapid operation, a thorough flushing of the stomach is necessary if there has been suspicious vomiting. Heart stimulants should be given an hour before operation. Oxygen administration during anesthesia is valuable.

52. Visual Field in Certain Psychoses and Neuroses.—De Schweinitz holds that there is no form of visual field pathognomonic of neurasthenia, but, other things being equal, a typical fatigue field is important in the symptom complex of this disease. Perimetric examination has a certain value in the differential diagnosis of hysteria and neurasthenia, inasmuch as a typical fatigue field of any variety is more likely to be found in a pure neurasthenia than in hysteria or hysteroneurasthenia. A stable concentrically contracted and tubular field, with inversion of the color lines, is a strong indication of hysteria, but such a visual field is not diagnostic of this psychosis and may be produced by conditions already named. Fatigue phenomena of the visual field are not limited to the periphery, but may appear in its center, and interpret macular exhaustion, and are equally important from a diagnostic standpoint. Certain varieties of central exhaustion scotomas are with difficulty distinguished from other central scotomas, the result of mild or attenuated forms of retrobulbar neuritis. In each instance it is possible that the phenomena depend on an edema of the optic nerve axis near the foramen. Slight forms of macular fatigue, so common in neurasthenic patients, probably explain many of the failures to relieve by glasses the asthenopia which is so prominent a symptom of many of these individuals.

Illinois Medical Journal, Springfield

January

- 53 Mistakes and Misconceptions in the Modern Treatment of Tuberculosis. J. W. Pettit, Ottawa.
- 54 Prevention of Tuberculosis. C. J. Whalen, Chicago.
- 55 Tubercle Bacilli in the Circulating Blood. F. Tice, Chicago.
- 56 Tuberculin Therapy in Pulmonary Tuberculosis. C. W. Leigh, Chicago.
- 57 Specific Treatment of Pulmonary Tuberculosis. K. von Ruck and S. von Ruck, Asheville, N. C.
- 58 Incipient Tuberculosis: Diagnosis and Treatment. C. W. Chapin, Weldon.
- 59 Tuberculous Peritonitis. R. A. Noble, Bloomington, Ill.
- 60 Pellagra. C. H. Lavinder, Washington, D. C.
- 61 Pellagra. W. J. MacNeal, Urbana.

American Journal of Medical Sciences, Philadelphia

February

- 62 Treatment of Acute Otitic Meningitis. E. B. Dench, New York.
- 63 *Treatment of Chorea in Children. J. Allan, Edinburgh, Scotland.
- 64 Therapeutic Use of Passive Hyperemia (Bier). G. P. Müller, Philadelphia.

- 65 Diagnosis and Surgical Treatment of Inguinal Hernia. W. L. Rodman and C. W. Bonney, Philadelphia.
66 Diagnosis of Cancer of the Intestines. W. F. Cheney, San Francisco.
67 Routine Examination of the Esophagus. C. M. Cooper, San Francisco.
68 Gastric Secretion. E. A. Aronson.
69 *Local Asphyxia of the Extremities (Raynaud's Disease) a Hitherto Undescribed Complication of Intermittent Achylia Gastrica. G. A. Friedman, New York.
70 Clinical Observations in Heart-Block. W. W. Herrick, New York.
71 *Physiology and Pathology of Creatinin and Creatin. V. C. Myers, New York.
72 *Skin Reaction in Carcinoma from Subcutaneous Injection of Human Red Blood Cells. C. A. Elsberg, H. Neuhoof and S. H. Geist, New York.

63. This article will be discussed in the Department of Therapeutics.

69. **Local Asphyxia of the Extremities.**—The patient, a woman, aged 23, was in perfect health until the age of 18, when, soon after an illness with an obstinate form of malaria, she noticed the development of her present malady. Though the condition of all four extremities is better in the summer, yet even then her skin does not functionate so actively as the skin in other people. The pain sense is lost not only in the affected parts, but nearly all over the skin and on the anterior part of the tongue, with diminution of the senses of temperature and touch. While the heart and palpable vessels are normal, the small arteries of the fundus show a marked contraction when the asphyxia of the extremities is most pronounced. There is slight secondary anemia, but the most striking feature is the fact that, without dyspeptic symptoms, there is a lack of free hydrochloric acid and the presence of mucons in the stomach contents on those days when the fingers and toes show the most characteristic picture of local asphyxia; while on the days when the extremities are red no mucons is present and the quantitative examination shows merely hypoauidity.

71. **Creatinin and Creatin.**—The significant physiologic fact to be borne in mind in regard to creatinin, says Myers, is the absolute constancy of its elimination, different for different individuals, but wholly independent of the volume of the urine and the amount of nitrogen excreted. Creatinin is an index of some special process of normal metabolism taking place largely, if not entirely, in the muscles. The intensity of this process appears to be associated with the muscular strength of the individual. In pathologic conditions, the creatinin excretion is usually low. From this point of view, the creatinin output may be looked on, at least to a certain extent, as an index of the physical condition of the patient. The creatinin elimination appears to be especially low in conditions associated with muscular weakness or inefficiency. It is, however, slightly increased in acute fevers and here does not run parallel with the muscular strength. In diseases in which the creatinin output is low, creatin is generally excreted. Creatin is not normally present in the urine, and its excretion may be regarded as pathologic. Furthermore, it is usually found to be associated with a loss of muscleprotein, thus indicating that the source of the endogenous urinary creatin is the creatin of muscle tissue.

72. **Skin Reaction in Carcinoma.**—The authors found that the subcutaneous injection of human red blood cells prepared in the manner described is in certain individuals followed by a characteristic and easily recognizable local skin lesion or reaction at the site of the injection. The majority of the patients (89.9 per cent.) in whom this skin reaction was observed were suffering from carcinoma. The majority of the patients (94.3 per cent.) in whom no characteristic skin lesion followed the injection were free from carcinoma.

The blood is obtained in the following manner: Into an ordinary aspirating syringe of from 10 to 15 c.c. capacity a glass bead about the size of a split pea is placed, and the syringe and needle are boiled in normal saline solution. The anterior aspect of the elbow of the individual whose vein is to be aspirated is carefully cleaned with soap and water, alcohol and ether, and a vein made prominent by tying a bandage around the arm. Under proper aseptic precautions the vein is punctured and from 5 to 10 c.c. of blood is aspirated into the cooled syringe. The needle is then removed from the syringe, the end of the latter covered with a piece of sterile gauze, and the syringe shaken for ten minutes.

After the blood has been defibrinated in this manner, about 1 c.c. is expressed into each of a number of sterile test tubes that fit into an ordinary centrifuge, and that have been previously half filled with sterile normal salt solution. The usual bacteriologic technic (passing the ends of the test tubes through the flame, etc.) is employed to keep the contents of the tube sterile. The tubes are then placed in the centrifuge for ten minutes. The clear supernatant fluid is then carefully poured off from each tube under the proper precautions to prevent infection. Fresh sterile salt solution is added, the tubes are gently shaken to mix the blood with the solution, and the tubes are again centrifuged for ten minutes. The same process is repeated a third time. Then, after the supernatant fluid has been poured off, four times as much salt solution as there are cells by volume is added. Thus, approximately, a 20 per cent. suspension of washed red blood cell has been obtained. The tubes are kept in the ice chest for from 24 to 48 hours, and are then ready for use. Any tubes in which there is the slightest amount of laking must not be used. If careful technic has been employed, the red cell suspension will often be free from laking for three or four days.

It is important to select the proper individual from whom the blood is to be obtained. Tuberculosis and syphilis must be excluded, the patient must not only be free from any evidence of disease, but must not have been recently ill, nor have received any injury, must not have even the slightest operation, and must not have recently had an anesthetic. The blood of individuals who have had any of these conditions is unfit for injections. The blood can, however, be taken from a patient during the early stages of ether anesthesia. The authors have found that the most satisfactory blood is that obtained from little children, and in the hospital they have usually obtained it from little patients who were to be operated on for hernia.

A hypodermic syringe which has been boiled in normal saline solution and cooled is filled with the blood mixture. The reaction begins to show in about five hours after the injection; it gradually increases in intensity until it has reached its height in from six to eight hours. When fully developed, the reaction appears as a somewhat irregular oval area with a well-defined margin measuring from 1x2 to 3x5 cm. The margin is often surrounded by whitish areola. The color of the lesion varies from a brownish red to a maroon, with, rarely, a bluish tinge. The lesion is distinctly raised from the surrounding skin surface. The raised area has a slightly boggy feeling, as if there were a subcutaneous exudation, and it is often somewhat tender. When the lesion has disappeared there remains behind a flat, yellowish or greenish discoloration such as is left by any small ecchymosis. In those cases in which the characteristic lesion does not appear the skin either presents no change except the needle puncture, or a small flat area of varying color; rarely, the skin is raised, but of normal color. Up to the present time the authors have given 684 injections to 432 patients.

Journal of the Kansas Medical Society, Kansas City

January

- 73 Three Cases of Poliomyelitis; Salient Features of the Disease. F. A. Carmichael, Goodland.
74 Suggestion. C. C. Goddard, Leavenworth.
75 Placenta Prævia. J. D. Walthall, Paola.

Journal of the Missouri State Medical Association, St. Louis

January

- 76 Solidified Carbon Dioxid as a Topical Agent. J. Grindon, St. Louis.
77 Obesity. W. K. Statler, Oak Ridge.
78 Series of Appendix Cases. L. A. Todd, St. Joseph.
79 Extirpation of the Lachrymal Sac. C. Barck, St. Louis.
80 Scientific Employment of Drugs. W. R. Patterson, Tipton.
81 Surgical Dyspepsia. F. J. Moennighoff, Kansas City.

February

- 82 *Radical Cure of Hernia as seen by the Country Surgeon. C. H. Suddarth, Smithville.
83 Surgical Treatment of Amebic Dysentery by Appendicostomy. R. J. Bunch, St. Louis.
84 Practical Points in Abdominal Surgery. C. C. Morris, St. Louis.
85 Modern Surgery of the Rectum. J. S. Wallace, Brunswick.
86 Case of Ruptured Bladder. F. J. Tainter, St. Charles.
87 Progress in Medicine and Surgery. C. O. Dewey, Breckenridge.
88 *Malarial Infection in Children. S. P. Child, Kansas City.
89 Ocular Examination as an Aid to Prognosis in Suppurative Otitis Media. W. E. Klokke, St. Louis.

82. **Radical Cure of Hernias.**—Suddarth performs the Bassini operation but uses a No. 3 twenty-day catgut for suture material.

88. **Malarial Infection in Children.**—Child reports five cases of malaria; a pure tertian, three estivoautumnal and one mixed infection of tertian and estivoautumnal. The estivoautumnal cases were chronic in form and revealed in one or more instances a blood picture of true pernicious malaria.

Montreal Medical Journal

January

- 90 So-called Doubling of the Puncta Lacrimalia. F. T. Tooke, Montreal.
- 91 Impressions of the Sixteenth International Medical Congress at Budapest. R. H. Craig, Montreal.
- 92 Rabies in Canada. C. H. Higgins, Ottawa.
- 93 Action of Some Remedies on the Heart in Disease. V. W. Henderson, Toronto.
- 94 Retrospect of Some Ophthalmic Bacteriology. S. H. McKee, Montreal.
- 95 Tumor of the Vermis Inferior Cerebelli. C. K. Russel, Montreal.

Annals of Otology, Rhinology and Laryngology, St. Louis

December

- 96 Topographic Anatomy of the Thyroid. P. Potter, Butte, Mont.
- 97 X-Ray Examination of the Mastoid Region. S. Iglauer, Cincinnati.
- 98 Physiology and Development of the Nose and Accessory Sinuses and Nasal Reflexes; Especially the Function and Importance of the Turbinate Bodies. H. J. Hartz, Detroit.
- 99 Present Status of the Tonsil Operation; Collective Investigation. G. L. Richards, Fall River, Mass.
- 100 Cavernous Sinus Thrombosis. L. A. Coffin, New York.
- 101 Nasal Sarcoma Submitted as a Corollary to a Former Paper on the Same Subject. J. Price-Brown, Toronto.
- 102 Purulent Otitis Media of Infancy and Childhood. H. O. Reik, Baltimore.
- 103 Treatment of Otosclerosis. W. S. Bryant, New York.
- 104 Chronic Purulent Otitis Media in Adults. S. M. Smith, Philadelphia.
- 105 Spoon Enucleation of the Tonsil. A. M. MacWhinnie, Seattle, Wash.
- 106 Chronic Epipharyngeal Periadentitis in Adults. J. E. Logan, Kansas City.
- 107 Incision for Submucous Resection. S. Yankauer, New York.
- 108 Amputation of Epiglottis in Laryngeal Tuberculosis. L. B. Lockard, Denver.
- 109 New Method for Inflating Eustachian Tube and Middle Ear. E. P. Fowler, New York.
- 110 Simple Acoustic Formula Adopted by Eighth International Otologic Congress at Budapest, 1909. J. Möller, Copenhagen, Denmark.
- 111 New Plastic Mastoid Operation for Acute Mastoiditis. F. T. Hopkins, New York.
- 112 Primary Carcinoma of the Trachea. T. P. Berens, New York.

Monthly Cyclopedia and Medical Bulletin, Philadelphia

January

- 113 Rational Treatment of Hypertension and Sclerosis of the Arterial System. C. Pope, Philadelphia.
- 114 Facial Spasm and Tic: Torticollis and Treatment. T. A. Williams, Washington, D. C.
- 115 Hernia: Etiology and Relation to the Earning Capacity of the Individual. A. C. Wood, Philadelphia.
- 116 Tabes Dorsalis. J. V. Shoemaker, Philadelphia.
- 117 Ophthalmia Neonatorum. L. W. Fox, Philadelphia.
- 118 Treatment of Pneumonia. C. S. Ashfield, South Norwood, O.
- 119 Differential Diagnosis of Retention of Urine and Anuria, and their Relation and Significance to General Medicine. W. Karo, Berlin, Ger.
- 120 Treatment of Syphilis. H. M. Christian, Philadelphia.

Alabama Medical Journal, Birmingham

January

- 121 Relations Between Systemic and Ocular Lesions. H. Woods, Baltimore.
- 122 Complete Extirpation of Colon. E. M. Prince, Birmingham.
- 123 *Dressing for Burns. G. A. Hogan, Birmingham.
- 124 The Jefferson County Medical Society. J. D. Heacock, Birmingham.
- 125 X-Ray in Treatment of Cancer. J. H. Edmondson, Birmingham.

123. **Dressing for Burns.**—The burnt area being sponged off with sterile normal salt solution, Hogan applies perforated oiled silk directly to this area. On this he puts sterile gauze, cotton, and a bandage. The perforations allow drainage and at subsequent dressings the gauze is removed, also that part of the perforated oiled silk which does not adhere to the burn. This oiled silk which has been removed may be used after being cleansed in normal salt solution and applied as before. Some of the advantages claimed for this dressing are:

1. It is rarely necessary to give opiates.
2. There is very little pain in applying or changing this dressing.
3. These perforations afford better drainage than can be obtained from the use of other dressings.
4. There is a minimum amount of danger of infection, for by using this dressing there is practically an absence of traumatism in changing the dressing and the drainage is better.
5. The oiled silk seems to act as a skin graft and healing is more rapid.

Memphis Medical Monthly

January

- 126 What Class of Tuberculosis Patients Shall We Send West? J. W. Laws, Lincoln, N. M.
- 127 The Importance of Pain. F. C. Spaulding, Crawford, Miss.
- 128 Intestinal Obstruction. W. S. Anderson, Memphis.
- 129 Home Treatment of Tuberculosis. H. E. Griffin, Coffeeville, Miss.

Western Medical Review, Omaha

January

- 133 Uterine Cancer. W. O. Henry, Omaha.
- 134 Early Diagnosis of Gall-Stones. J. E. Summers, Omaha.
- 135 *Mental Aberration Following Mastoid Operations. H. Gifford, Omaha.
- 136 Poisoning by Bismuth Subnitrate in the Use of Bismuth Paste. A. B. Anderson, Pawnee City, Neb.
- 137 Dystocia from Inertia. A. B. Somers, Omaha.

135. **Mental Aberration Following Mastoid Operation.**—The first patient was a woman of 65, with a double mastoiditis following acute otitis media during attack of grippe. Both mastoids were opened, and considerable pus was evacuated from each. The patient made an ordinarily rapid recovery without any unusual objective symptoms, but following the operation she seemed to be in a somewhat dazed condition, and at the end of two weeks, when her mind seemed to be entirely normal again, it was found that the entire period from the day preceding the operation to the end of the two weeks was a perfect blank so far as she was concerned. She had absolutely no recollection of the operation, nor of the preparations for it, nor of anything that had occurred in the meantime. In other respects there was nothing unusual about the case; her mind became entirely normal and she made a good recovery. The second patient, a man, within 24 hours after the operation showed decided signs of mental aberration and became unruly and very talkative; and in the course of the next day or two became a furious maniac: so entirely unmanageable that he had to be put in a straight jacket and confined to a cage bed in which he could thrash about without injuring any members of the hospital staff. By rubbing his head about he made any attempt at dressing the wound entirely useless, but nevertheless it progressed beautifully, and his ear gave him no further trouble. His mental condition, however, showed so little signs of improvement that he was removed to the state asylum, where at the end of about two months after the operation, he recovered entirely. He returned to his business and had no further relapse, either mentally or aurally. The third patient, a woman, presented plain symptoms of mastoid abscess and Gifford performed a radical operation, removing much pus and old cholesteatomatous masses from the antrum and adjoining cells. One week after the operation, she became semicomatose, with a slow pulse and nearly normal temperature. The symptoms of brain abscess were so marked that Gifford at once removed the roof of the antrum and of the tympanic cavity and exposed the dura for a space one inch by one-half inch in extent. An incision into the brain immediately above the tympanic cavity gave no result, then an incision up and slightly back one inch posterior to the auditory canal opened a brain abscess from which about three drams of pus was evacuated. A glass drainage tube was inserted into the cavity and the rest of the wound dressed with iodoform gauze. The woman improved rapidly and so that as far as the ear and brain wounds were concerned the cure was complete, although she developed an apparently permanent paralysis of the right third nerve; but her mind never became perfectly clear and gradually symptoms of profound melancholia with delusions developed, which have persisted up to the present time, that is, for nearly a year after the operation.

Journal Arkansas Medical Society, Little Rock

January

- 138 Extrauterine Pregnancy. W. V. Laws and W. Chestnut, Hot Springs.
- 139 Extrauterine Pregnancy. G. E. Cannon, Magnolia.
- 140 Extrauterine Pregnancy. W. F. Smith, Clarksville.
- 141 Relief of Suffering During Labor. G. W. Murphy, Strong.
- 142 A Medicolegal Case. H. C. Dunavant, Osceola.

Laryngoscope, St. Louis

January

- 143 *Head Nystagmus. E. Urbantschitsch, Vienna.
- 144 Social, Hygienic and Economic Aspect of the Ear. C. J. Blake, Boston.
- 145 Social, Hygienic and Economic Aspect of the Nose. J. J. Kyle, Indianapolis.

- 146 Sociologic, Hygienic and Economic Aspect of the Throat. W. A. Wells, Washington, D. C.
 147 Subjective and Objective Sense of Sound Perception. D. B. Kyle, Philadelphia.
 148 Endocranial Complications of Nasal Origin. W. Freudenthal, New York.
 149 Method of Opening the Mastoid Antrum Through the External Auditory Meatus as the First Step in the Mastoid Operation. S. Iglauer, Chelunati.
 150 Double Mastoiditis Showing Symptoms of Intracranial Involvement—Recovery Without Opening Cranial Cavity. L. Emerson, Orange, N. J.
 151 Exhibition of Specimen of Sequestrum of Entire Petrosa. T. P. Berens, New York.
 152 *New Method of Packing the Nostril, Designed to Prevent Post-operative Hemorrhage and a New Quadrivalve Self-Retaining Nasal Speculum. W. E. Casselberry, Chicago.
 153 Simple Air-Compressing Apparatus. F. W. Dean, Council Bluffs, Ia.
 154 Improved Tonsil Tractors. G. C. Hall, Louisville.

143. **Head Nystagmus.**—In Urbantschitsch's experiments a free sweat of the head and more frequently over the entire body occurred with conspicuous frequency when labyrinth stimuli were produced (with eyes bandaged). In some cases trembling of the lower extremities (knees) occurred; in others, tremor or slight swaying of the head was noticed. This tremor was in some cases continued for some time; in others it occurred only periodically (for a shorter time). No regularity in the appearance of these symptoms in the several patients could be found not even in the same patient, when these tests were repeated on different days. It even seemed that the first experiments yielded more definite results than subsequent ones. It is not unlikely that the patient may become accustomed to such stimuli, so that the slightly changed muscle tonus later may be unconsciously compensated by repetition.

Hyperhidrosis was the most regularly recurring symptom observed in these experiments. Urbantschitsch was unable to determine what bearing this might have on labyrinth tonus. A reflex irritation of the sweat secreting center cannot be excluded. He inclines to the opinion, however, that it is due to a stimulus of the sympathetic nerve by way of the spino-vestibular route. His experiments would indicate at least, that it is possible to establish by means of certain methods corroborative evidence of the spino-vestibular route.

152. **New Method of Packing Nostril.**—The tampon which Casselberry has used satisfactorily for three years is composed of a rubber finger cot or, preferably of what might be called a club-finger cot which, after insertion into the nostril, is filled by means of an ordinary tubular gauze packer with a strip of sterile gauze, $1\frac{1}{4}$ inches in width, by a yard or more in length. The finger cot and packer having been sterilized by boiling, the packer, ready armed with gauze, is used first as a stem on which the rubber case, lubricated and held for the moment lengthwise on the stretch, is carried into place, extending from front to back in the nostril with the closed bulbous end just overlapping the choana into the nasopharynx. Both the packer and cot are then in position to pass the gauze which at the start should be packed with special firmness in order to form the posterior plug by an over-distention of the expanded end of the finger cot where the rubber is reinforced to withstand the strain. The club-finger cot, with its bulbous closed extremity and proximal slight constriction of its caliber, is especially suitable for forming such a plug in and behind the posterior naris, although an ordinary finger cot of large size or one cut from a surgeon's rubber glove, can be made to serve the purpose, almost, but not quite as well, by extra firmness, albeit gentleness, in packing the rear end.

Not only does the incasing of the gauze in rubber render the tampon comparatively free from the pushing and pulling requirements of uncovered gauze during its insertion and withdrawal, but its smooth surface permits of a ready detachment from the wound as soon as its purpose is fulfilled, usually by the end of eighteen hours, instead of forty-eight, when by first withdrawing the gauze from the rubber the flaccid case will slip from the nostril.

American Medicine, New York

January

- 155 Untoward Effects of Thyroid Medication and How to Forego Them. H. Stern, New York City.
 156 Method for the Instruction of the Public Along Medical Lines. H. S. Baketel, New York.
 157 The Future American. C. W. Woodruff, U. S. Army.

- 158 *Iodin in Sterilization of the Skin. I. S. Stone, Washington, D. C.
 159 Campaign of the German Hospital of New York City Against Pulmonary Tuberculosis. S. Breitenfeld, New York.
 160 Need of Sedative Treatment in Ophthalmic Surgery. J. H. Ohly, Brooklyn.
 161 The Urticaria of Infancy. U. J. Wile, New York.
 162 Ionization and Oxidation. J. P. Dickson, Franklin, Ia.

158. Abstracted in THE JOURNAL, Jan. 15, 1910, p. 234.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal, London

February 5

- 1 *Constrictions and Occlusions of the Alimentary Tract of Congenital or Obscure Origin. A. Keith.
 2 Some Aspects of Poliomyelitis. Sir W. R. Gowers.
 3 *Heredity and Disease. E. LeC. Lancaster.
 4 Use of the Cystoscope, the Urine Separator, and the Ureteral Catheter. E. Deanesly.
 5 Treatment of Fractured Limbs in Workmen. A. P. Gibbons.
 6 Futility of the Official Tests for Color Blindness. T. H. Butler.
 7 *An Interesting Case of Congenital Cataract. C. Killick.
 8 Aneurism in a Woman. H. G. Frean.
 9 Severe Antepartum Hemorrhage Due to Spontaneous Rupture of Vaginal Varix. C. E. Purslow and G. J. Branson.

1. **Constrictions of Alimentary Tract.**—The following list of specimens showing constrictions and occlusions of the alimentary tract of congenital or obscure origin in the medical museums of London is the basis of Keith's paper:

1. Non-cicatricial stenosis of the upper esophageal orifice, 9 cases.
2. Stenosis of the lower esophageal orifice, with dilatation of the esophagus, 6 cases.
3. Congenital stenosis of the mid-esophagus, 2 cases.
4. Malformation of the tracheoesophageal septum, 14 cases.
5. Hour-glass constriction of the stomach, 14 cases.
6. Hypertrophic stenosis of the pylorus, 14 cases.
7. Congenital occlusions of the duodenum, 7 cases.
8. Congenital occlusions and constrictions of the jejunum and ileum (not including those associated with Meckel's diverticulum), 15 cases.
9. Congenital occlusion at the ileocecal junction, 1 case.
10. Congenital occlusion of the colon, 4 cases.

3. **Heredity and Disease.**—The study of heredity is regarded by Lancaster as being at the same time depressing and encouraging. It is depressing because there is no getting away from the fact that there does exist some actual physical protoplasmic basis through which disease or the tendency to disease is handed down from germ cell to germ cell—even if we do not admit the whole Weismannian conception of chromosome, *i. e.*, determinant and biophor—and that no amount of care or education, no change in environment, no choice of function can, so far as we know, alter by one jot or one tittle the constitution of the germ plasma that each of us has received from parents and may transmit to offspring. It is encouraging because more and more it becomes clear that whatever of abnormal is contained within the inheritance it is not disease so much as predisposition to disease, and that each item of an inheritance requires suitable environment in which to appear, and suitable functioning for the encouragement of its growth. The deliberate improvement of the health of the race by restriction of the mating of those whose inheritance is physically or morally bad, except in extreme and obvious cases, is, in Lancaster's opinion, an idealistic dream for a future that may never arrive; the world gets more, not less, sentimental as it grows older. For the present, efforts toward raising the general health of the race should be directed toward improving the environment and providing for proper functioning.

7. **Congenital Cataract.**—Killick's patient, a woman, aged 36, was born blind. Several operations were performed, but apparently the only benefit which the patient received consisted in the fact that she was thenceforth able to distinguish between certain colors, especially if bright; for example, in certain lights she could make out that grass was green, and could also tell when she was wearing a red dress. Examination of the eyes by Killick showed that they were habitually directed downward, exhibited slow lateral nystagmus, and were so covered by the upper lids that only from one-half to two-thirds of the cornea was left exposed. The left eye was hopelessly disorganized, totally blind, and in an advanced

condition of phthisis bulbi. The right eye, on the other hand, though appearing somewhat sunken and smaller than normal, the cornea only measuring about a centimeter in diameter, was much more hopeful in appearance. The cornea was transparent except at one spot near the outer margin, where the scar of a needle puncture was visible; the anterior chamber was of average depth, and the iris appeared healthy, but was drawn upward as a result of some previous operation, but not a trace of a pupil could be seen. The tension of the eyeball was T—?. Vision amounted to perception of light, but Killiek found on trying the projection of light test in the dark room that the retina was perfectly sensitive and functional throughout the entire extent. An iridotomy was done, and two days after this operation the patient could see to get about.

Lancet, London

February 5

- 10 Electrotherapeutics in Gynecology. S. Sloan.
- 11 *Points in Diagnosis and Treatment of Certain Nervous Affections. J. Taylor.
- 12 Ankylostomiasis a Menace to the Industrial Life of Non-tropical Countries. Sir T. Oliver.
- 13 *Simple and Efficient Operation for Hemorrhoids. N. Porritt.
- 14 External Examination of Alimentary Canal. L. MacAuliffe.
- 15 Enterectomy for Intussusception under Spinal Anesthesia in An Infant Seven Months Old: Recovery. H. A. T. Fairbank and W. Vickers.
- 16 Clinical Apparatus for Obtaining Graphic Records of Blood Pressure. C. Singer.
- 17 Fatal Cerebral Hemorrhage Following Gastrojejunostomy for Pyloric Obstruction. C. H. Whiteford.
- 18 The Circulatory System (continued). H. Campbell.

11. **Treatment of Certain Nervous Affections.**—Speaking of epilepsy, Taylor says that bromid is, of course, the most useful drug we have for this disease. For a case of epilepsy in which the attacks occur indifferently at any time during the 24 hours it is best to give it in good doses—from 15 to 25 grains—three times daily. In many cases, however, the fit occurs only during sleep, and in these it is best to give a fairly large dose of bromid—from 30 to 40 grains—at bed time. In such cases it is well to combine with the bromid a small dose of digitalis. In all cases in which Taylor gives bromid he also gives nux vomica. If this rule is followed, he says, one will not see the condition of profound depression which occurs when bromid of potassium alone is used. The nux vomica does not interfere with the effect of the bromid in controlling the fits.

There is a class of cases in which the fits tend to occur nearly always in the early morning—very often while the patient is dressing—and these are most efficaciously treated by advising the individual to have an early cup of tea or milk, followed by a dose of a bromid mixture, half an hour before getting out of bed. This simple expedient is often successful in getting rid of troublesome fits. Should it happen only to move them to some other part of the 24 hours they must be pursued to their new time and similarly treated.

In many cases, especially long-standing cases in which the patients have been treated with bromids, the addition of borax is sometimes followed by gratifying results. Belladonna also is useful, sometimes alone, sometimes with bromid, especially in cases of *petit mal*, which, unfortunately, are in Taylor's experience less tractable than the severer cases.

Of bromid salts, he nearly always uses either the sodium or strontium salt—practically never the potassium, which has no advantages over the others, is much more depressing, and certainly tends to the production of acne. Bromid of strontium has the advantage that it has little tendency—in most patients none—to produce acne. Bromid of zinc can only be used in small doses, as it is emetic in larger ones, but it seems to be useful in some cases of *petit mal*.

13. **Operation for Hemorrhoids.**—In the method employed by Porritt, the sphincter having been stretched, one of the hemorrhoidal masses is seized with vulsellum forceps and pulled well out of the anus. It is encircled with a loose purse-string suture of fine Pagenstecher thread. Above, the purse-string suture entered the healthy rectal mucous membrane beyond the hemorrhoids; below, it took up that just within the anus; while at each side it was inserted far enough apart to allow the blades of the crushing instrument to grasp the base or pedicle of the pile seized. It is essential that the tumor be pulled well down. As soon as the purse-string

suture is placed the base of the pile is crushed. When the clamp is released, a broad flat layer of crushed tissue connects the pile with the rectum. The pedicle is now folded once on itself by giving a half turn to the pile, the clamp is reapplied, and crushing repeated. When the clamp is removed something like a pedicle has been made, but another half-turn, followed by another crushing leaves nothing more than a fine pedicle of crushed tissue. This is tied with a fine ligature beyond the clamp and the clamp is finally removed. The pile is then snipped away through the crushed pedicle. The stump of crushed tissue with the ligature on it is then buried by drawing tight and tying the purse-string suture already inserted. Other portions of the mass are isolated and removed in the same way.

Medical Press and Circular, London

February 2

- 19 Treatment of High Blood-Pressure. G. Oliver.
- 20 Indications for Gastroenterostomy. T. Carwardine.
- 21 Appendicitis, with Complications. R. A. Stoney.
- 22 *Total Anesthesia by Injection of Cocain into the Veins. C. Ritter.

22. **Anesthesia by Injection of Cocain into Veins.**—By injecting cocain into a vein Ritter has succeeded in producing complete anesthesia. He made the experiments on dogs injected with cocain into the superficial veins of the leg, while the animal was standing, or he had the animal bound to the table and made the injection into the crural vein. Even during the injection the animal was remarkably quiet. This showed itself most plainly when the dog was not tied, but held by an attendant. Even dogs that were very much excited, and at other times have attempted to spring from the table, did not as a rule require to be kept fixed. If they were bound and lying down the flaccidity of the muscles was characteristic. Sometimes the animal passed urine. Those that howled and whined before lay quite still. At the same time, however, they remain wakeful. They followed the operator with the eye and moved the head from side to side. The eyes were open and reacted to the slightest stimulus. The pupils were dilated. All movements were restrained. The respirations were calm, equable, mostly slightly accelerated. Sensation of pain disappeared in from three to five minutes. Respiration went on quietly. Wounds and ligature of vessels and nerves were painless.

The time the anesthesia lasts is varied, sometimes only fifteen minutes, usually half an hour or more. After this the animal's normal sensations return. Not one of the animals on which Ritter investigated died, and he noticed disagreeable by-effects in only a few. This happened usually with strong doses and small dogs. One dog reacted in this way every time, even with small doses. He became restless, threw his head about quicker and quicker. If he was loosed and set on his feet, he ran about with marvelous quickness, either to the left or to the right, and again toward the left in a circle. This often lasted fifteen minutes. Within from thirty minutes to an hour after the injection, he became quiet again. Real convulsions Ritter never saw.

Clinical Journal, London

February 2

- 23 *Diseases Simulating Cystitis in the Female. H. Fenwick.
- 24 Common Errors in Infant Feeding. E. Pritchard.
- 25 The "Cure" at Contrexéville (Vosges). J. H. Barnard.

23. **Disease Simulating Cystitis in the Female.**—The three diseases of the upper urinary tract in the female discussed by Fenwick which simulate cystitis and in which vesical irrigation is not only painful, but worse than useless, are: (1) *Bacillus coli communis* infection of the kidney (hematogenous); (2) tuberculosis of the kidney (hematogenous); (3) ureteritis due to uterine "sag." Each condition is discussed in detail and illustrative cases are cited.

Indian Medical Gazette, Calcutta

January

- 26 Minor Medical Services. D. G. Crawford.
- 27 Smith's Operation of Extraction of the Cataractous Lens in its Capsule. G. T. Birdwood.
- 28 Treatment of Stricture of the Urethra. J. R. Roberts.
- 29 Extraordinary Series of Outbreaks of Plague in Cape Colony. E. N. Thornton.
- 30 Operation for Varicose Veins as Performed in America. C. Duer.

British Journal of Children's Diseases, London

January

- 31 Modern Methods of Infant Feeding. N. P. Marsh.
32 *Neurofibromatosis of the Tongue in a Child, With the Classification of Incomplete and Anomalous Cases of V. Recklinghausen's Disease. F. P. Weber.
33 Carious Teeth in Elementary School Children. F. E. Larkins.

32. **Neurofibromatosis of the Tongue.**—The patient, a rather delicate-looking boy, aged 6 years, had a hard swelling below the tongue, which, according to the mother, had been almost certainly observed when the child was ten months old. The tumor in question formed an oval projection (about 5 and 10 mm. in breadth and length respectively) on the under surface of the tongue, situated along the right side of, and parallel to, the frænum linguae, about half way between the tip of the tongue and the orifices of Wharton's ducts. The surface of the projecting tumor, which was apparently covered by healthy mucous membrane, was partly whitish and partly reddish in color. No evidence of disease in the thoracic or abdominal viscera could be detected, and the general health of the boy appeared satisfactory in spite of his somewhat delicate appearance. The projecting portion of the tumor was removed, and on examination showed bundles of medullated nerve fibers bound together by a close connective-tissue stroma. Weber regards the tumor as being neurofibromatous, and a hard cord still remains to the right of the boy's frænum linguae, doubtless representing part of the lingual branch of the fifth cranial nerve.

Journal of Laryngology, Rhinology and Otology, London

January

- 34 Latent Infections of the Diphtheria Bacillus. P. W. Williams.

Glasgow Medical Journal

February

- 35 *Three Specimens Illustrative of Gangrenous Hernia. H. Rutherford.
36 *Natural and Unnatural Feeding of the Infant. L. Findlay.
37 Puerperal Eclampsia. D. D. Logan.

35. **Gangrenous Hernia.**—Rutherford reports the following cases: (1) Richter's right femoral hernia in a single woman, aged 30; (2) right inguinal hernia in a man, aged 44; (3) right obturator hernia in a woman, aged 59.

36. **Feeding of the Infant.**—Findlay shows that we do not as yet fully understand the secret of the beneficial effect of human milk, except that it contains some essential and probably organic substance, of the nature of which, however, we are entirely ignorant, nor can we explain why some children on artificial nourishment do well and others do not. At any rate, he says, we do know enough to see how erroneous it is to speak of humanizing cow's milk, and of this or that milk mixture or food being a proper substitute for the natural food of the infant. It behooves us, therefore, to insist on breast feeding in every instance, and to take all the means that lie within our power to encourage and enable the mother to perform this natural and most necessary duty.

Presse Médicale, Paris

January 22, XVIII, No. 7, pp. 49-56

- 38 Syndrome of Insufficiency of Left Ventricle. (Syndrome d'insuffisance ventriculaire gauche.) C. Lian.
39 Acute and Chronic Serous Anemia. M. Perrin.

January 26, No. 8, pp. 57-64

- 40 Acute Inflammation of the Cerebral Ependyma in a Four-Months-Old Infant. (Ependymite cérébrale aigue chez l'enfant.) P. Merle and R. J. Weissenbach.

January 29, No. 9, pp. 65-80

- 41 Administration of Sodium Nucleinate to Induce Therapeutic Hyperleucocytosis in Mental Disease. (Le nucléinate de soude et la leucothérapie en thérapeutique mentale.) J. Lépine.
42 Active and Passive Exercises for the Elbow. (Gymnastique du coude.) P. Desfosses and L. Durey.
43 *Promotion of Diuresis to Eliminate Anesthetic, etc. (Sur les injections de solutions isotoniques de chlorure de calcium ou de sérums fortement calciques, de solutions isotoniques ou hypertoniques de sucres et sur l'ingestion ou les lavements d'eau abondants, avant et après l'anesthésie chirurgicale.) G. Fleig.

43. **Promotion of Diuresis to Eliminate Anesthetic.**—Fleig emphasizes the importance of promoting elimination of the anesthetic by ensuring ample diuresis, and also of counteracting hemorrhage by rendering the blood more readily coagulable. He reports research which demonstrates that the heart action can be reenforced, the blood pressure increased and

coagulation promoted by preventive injection before the operation of an isotonic solution of calcium chlorid or artificial serum containing lime, with or without admixture of blood serum. He shows also that elimination of the anesthetic is promoted and the period of its contact with the tissues shortened by subcutaneous, intramuscular or intravenous injections of a solution of glucose or levulose. Copious diuresis is induced by these injections, which wash out the anesthetic and attenuate its secondary toxic effects while they have, besides, a tonic action on the cardiovascular system, combating reduction of blood pressure and collapse. The sugar solution has also a certain nourishing action. The sugar and calcium chlorid may both be combined in a single solution. He urges the more general adoption of such measures, especially with chloroform anesthesia, and when there is reason to dread an injurious action on the heart. He warns, however, that the calcium chlorid or blood serum should never be used in cases in which there is the slightest ground for fearing embolism from thrombosis. With the sugar solutions, when the aim is merely lavage of the blood, without desire to draw fluid from the tissues, an isotonic or paraisotonic solution should be used. This rinses out the blood. But when the aim is to wash out the tissues, in urgent cases requiring prompt diuresis and dehydration of the tissues, a hypertonic solution should be given the preference. Animals seem to wake in much less time after chloroform anesthesia followed by injection of a 25 per cent. solution of glucose. In one dog diuresis became copious in ten minutes after injection of 440 c.c., and continued thus for 20 minutes, after which the dog roused, while the same animal three weeks before did not rouse for an hour and a half after administration of the same amount of chloroform. Jeanbran has reported the cure of anuria from calculi in 2 cases by intravenous injection of a hypertonic solution of saccharose. Fleig found that normal individuals and patients with oliguria or anuria in acute infectious diseases, especially typhoid, responded with extremely copious diuresis to intravenous injection of a hypertonic 25 or 30 per cent. solution of lactose, glucose or mannite, in doses ranging up 1,100 c.c. in the 24 hours. Sometimes 4 liters of fluid were voided in the following 24 hours and there was no consecutive oliguria when the patients drank freely after the abundant diuresis. He states that the injections can be repeated, preferably on alternate days, without fear of the slightest toxic phenomena. The antitoxic action of the sugar solution is proportional to its lesser molecular weight, that is, proportional to its diuretic action, this being in inverse ratio to the molecular weight. Hypertonic sugar solutions ingested by the mouth do not seem to have the slightest diuretic action, and diuresis is less with isotonic solutions ingested by the mouth than when pure water is taken. The greatest diuretic effect is obtained, he declares, by drinking large amounts of water supplemented by intravenous injection of a hypertonic sugar solution.

Archiv für Gynaekologie, Berlin

XC, No. 1, pp. 1-212. Last indexed Feb. 5, p. 500

- 44 *Interference of Soft Parts with Delivery: Hysterotomy. (Ueber Weichtheilsschwierigkeiten, ihr Einfluss auf die Kindersterblichkeit unter der Geburt und ihre Behandlung, insbes. mit der vaginalen Hysterotomie.) L. Seitz.
45 *Tuberculosis of the Placenta. H. Schlimpert.
46 *Closure of the Blood Vessels after Delivery. (Gefässverschluss post partum.) O. Frankl and L. Stolper.
47 *Importance of Momburg's Belt Tourniquet in Obstetrics. (Bedeutung der Momburg'schen Blutleere in der Geburtshilfe.) F. Engelmann.
48 Corpus Luteum Abscesses. E. Kehler.
49 *Experimental Research on the Nervous Reflexes from Various Organs and the Peripheral Nerves Acting on the Uterus. Id.

44. **Reduction of Infant Mortality at Birth.**—This is a more elaborate presentation of data summarized in THE JOURNAL, page 750. Seitz' statistics show that of the 50,000 infants who die during birth in Germany each year, obstruction by the soft parts is responsible for the deaths in 16,000 cases; 10,000 are macerated and 3,000 not viable out of the total 63,000 infants born dead. For two-thirds of the fatalities with the viable children, however, obstruction by the soft parts is responsible, and he makes an urgent plea for prompt vaginal hysterotomy, incising also the vagina if necessary. He has thus treated 70 patients, and the outcome, he asserts, left nothing to be desired. Vaginal hysterotomy, he declares, is a harmless and efficient operation, and he considers it another argument in favor of institutional rather than home deliveries.

45. **Signs of Tuberculosis in the Placenta.**—Schlimpert reports positive histologic findings in the placenta in 6 out of 7 cases, the tuberculous mothers living at the time of the childbirth, and also 4 other cases in which the tuberculous pregnant women died undelivered. The children in all the cases died soon after birth, but no macroscopic signs of tuberculosis could be detected in them. Tubercle bacilli were found in the smears from the placenta in only 2 instances.

46. **Closure of the Vessels Postpartum.**—Frankl discusses the remarkable way in which the bleeding stops spontaneously after normal childbirth, although the vessels are widely gaping and even their spontaneous contraction, supplemented by the contractions of the uterine musculature, is not enough to explain this arrest of bleeding from them. Nothing analogous is observed in any other organ, and he ascribes it to a development of decidual elements in the vessel walls, which he found constantly after the fourth month of the pregnancy in 19 uteri examined for the purpose. These cells project into the lumen and close it like a valve when spontaneous retraction occurs after delivery. The article is illustrated.

47. **The Momburg Belt Tourniquet in Obstetrics.**—Engelmann gives the details of a case in which a primipara of 38 with placenta prævia and hydramnios had lost so much blood that the application of the Momburg belt was not followed as usual by contraction of the uterus, which had been so distended that the atrophied walls no longer responded to any stimulus. The belt arrested the hemorrhage, but whenever it was removed the patient collapsed. Notwithstanding pressure from the breech of the fetus, the hemorrhage continued behind it. The outcome would have been better probably if the belt had been applied earlier. Autopsy disclosed no evidences of injury from the belt, although it had been applied for about an hour and three-quarters in all, with several brief intermissions. The method certainly answers the purpose, he says, of arresting obstetric hemorrhage in every case, at least for the time being.

49. **Experimental Research on Reflex Movements of the Uterus.**—The research was done on cats and rabbits mostly after the cerebrum had been excluded by severing the pons from the nervous system below. This transforms the animal into a reflex machine, responding to the most delicate stimuli. The movements of the uterus were recorded on a rotating drum, the animals being under ether and artificial respiration. A reflex action on the uterus was evident on stimulation of any of the sensory nerves of the body, not only the spinal nerves, but also the sensory fibers of the sympathetic. It was noticeable, however, that the reflex movements induced by irritation of the skin, mucosæ, nose and breasts were comparatively slight and transient in comparison with the far stronger and more persisting reflex action between the gastrointestinal tract and the uterus and, in a lesser degree, between the bladder and the uterus. Among the numerous points of practical importance learned in this research is that distention of the stomach or intestines seems to inhibit the reflex movements of the uterus; this harmonizes with the old saying that a full stomach prolongs labor. On the other hand, the physiologic stimuli from food in the digestive tract, small amounts of a solution of sugar or albumin, milk, and the natural digestive secretions all have a powerful action in promoting the contractions of the uterus. The remarkably powerful action on the uterus movements of peptone taken by the mouth Kehrer regards as partly a reflex process from the digestive tract and partly as the result of absorption of the peptone into the blood. He found that a solution of peptone injected intravenously acted like ergot and as powerfully. The research suggests, he says, that it may be possible to promote labor contractions by administration of small amounts of the above articles of food; too much arrests the uterine contractions.

Archiv für klinische Chirurgie, Berlin

XCI, No. 3, pp. 543-801. Last indexed Jan. 22, p. 328

- 50 Mesenteric Cystic Tumor from Retention of Chyle. (Chyluscysten.) R. Hinz.
- 51 *Action of Thyroid Extract on Normal Bone Growth. (Zur Wirkung der Thyroidintabletten auf das normale Knochenwachstum.) E. Bircher.
- 52 *Clinical Experience with Surgery of Blood Vessels. (Klinische Beiträge zur Gefässchirurgie.) Krüger.
- 53 *Bleeding into a Goiter. (Kropfblutungen.) F. Brüning.

- 54 *Pathology and Therapy of Prolapse of the Rectum. (Mastdarmvorfall.) N. Beresnegowsky.
- 55 Pathogenesis of Round Gastric Ulcer. (Experimenteller Beitrag zur Pathogenese des Ulcus rotundum des Magens.) G. Zironi.
- 56 Isolated Disattachment of Lesser Trochanter. (Abrissfractur des Trochanter minor.) C. Pochhammer.
- 57 Familial Cystic Kidney; Recovery after Nephrectomy. (Inficirte Cystenniere; Nephrektomie; Heilung.) P. Buil.
- 58 *Artificial and Traumatic Inguinal Hernia. (Die künstlichen und traumatischen Leistenbrüche.) A. P. Krymow.
- 59 Epidermoids and Skiascopy. M. Krüger.

51. **Influence of Thyroid Tablets on Growth of Bones.**—Bircher's tests were made on young rats and the animals all showed arrested growth under the influence of the thyroid treatment in comparison with the controls of the same litter. The thyroid tablets seem to check the development of the epiphyses and induce emaciation.

52. **Surgery of the Vessels.**—Krüger reports 48 cases of injury of some large artery or vein with operative treatment in a number and discusses the lessons learned from this material. In 15 cases he was able to determine the ultimate outcome after ligation for aneurism or trauma of a vessel. Only 5 of the patients are entirely free from disturbances at present; the others show signs of insufficient collateral circulation.

53. **Hemorrhage into a Goiter.**—Brüning reports a case and summarizes 6 others from the literature. The indications for operative intervention are similar to those with acute appendicitis; immediate intervention in case of vital necessity, otherwise expectancy, knife in hand, operating when the threatening symptoms have subsided.

54. **Treatment of Prolapse of the Rectum.**—Beresnegowsky has been studying on the cadaver the factors which predispose to prolapse of the rectum and its mode of development. The data thus learned suggest a technic for effectual operative treatment, especially by strengthening the pelvic floor. He takes a pedunculated flap from the gluteus maximus muscle without disturbing the sphincter, working through an incision on each side of the anus, forming an acute angle with it. The aim is to reinforce the perineum by inserting a layer of staunch tissue which will support it. He gives an illustrated description of a case in which this technic was successfully applied.

58. **Artificial and Traumatic Inguinal Hernia.**—By artificial hernia Krymow means that voluntarily induced by young Russians to render themselves unfit for compulsory military service. He discusses the anatomic conditions and differentiation of artificial and traumatic hernia, with illustrated details of 5 cases, including 3 artificial and 2 traumatic hernias. The symptoms and lesions differ as the traumatism involved the parts above the inguinal ring or the ring itself.

Beiträge zur klinischen Chirurgie, Tübingen

January, LXV, No. 3, pp. 577-830

- 60 Amyloid Tumors in the Trachea. A. Reich.
- 61 Pathologic (Spontaneous) Central Dislocation of the Hip Joint. K. Henschen.
- 62 Unusual Cause for Incarceration of Hernia. (Eine ungewöhnliche Ursache der Brucheinklemmung.) K. Blauel.
- 63 Contusion of Bladder and Rupture of Urethra. (Cirkuläre Ruptur der Urethra und Abreissung der Blase von der Symphyse nach seitlicher Kompression des Beckens ohne nachweisbare Verletzung des knöchernen Beckens.) R. Stierlin.
- 64 *Menacing Hemorrhage in Stomach and Intestine. (Ueber lebensbedrohliche Magen- und Duodenalblutungen.) H. Finsterer.
- 66 Malformation of the Acetabulum. (Beitrag zur Entstehungsgeschichte des Otto-Chrobak'schen Beckens.) K. Henschen.
- 65 *Action of Radium on Malignant Tumors. A. Caan.

64. **Gastrointestinal Hemorrhage.**—Finsterer has compiled the cases from the literature since Borszaky's collection in 1906 of 78 cases of operative treatment of gastric hemorrhage with 38.4 mortality. He also reports a personal case in which uncontrollable gastric hemorrhage compelled intervention. Three gaping arteries with clots in them were found and sutured with silk, and the inferior coronary artery of the stomach was ligated to the right and left of the anastomosis. There was no further bleeding, but recovery was delayed by suppurative pleurisy requiring resection of the eighth rib and drainage, but the patient was dismissed cured after six weeks. The bleeding vessels were in a callous ulcer; gastroenterostomy had been done four years before on account of

gastric disturbances. It is a fair estimate, he thinks, that these severe gastric hemorrhages in the cases reported would have given a mortality of fully 70 per cent., while with operative intervention this was reduced to 14 per cent. The fatality in most of the operative cases was due to the intense anemia without recurrence of hemorrhage; consequently, operative intervention should not be delayed until the patient is dangerously exsanguinated.

65. Action of Radium on Cancers.—Caan writes from Czerny's cancer research institute at Heidelberg to describe the results of application of radium and radioactive preparations in 130 cases. In 50 per cent. a favorable influence was unmistakable; the tumors softened and shrivelled, while the subjective symptoms subsided. The influence was most marked on malignant lymphomas.

Berliner klinische Wochenschrift

January 17, XLVI, No. 3, pp. 89-132

- 67 *Flatulence and its Treatment. I. Boas.
68 *Tests of Pancreas Functioning. J. Wohlgemuth.
69 Clinical Determination of Diabetic Acidosis. H. C. Geelmuyden.
70 Diagnostic Importance of Tendon and Skin Reflexes in Uremia. (Diagnostische Bedeutung der Sehnen- und Hautreflexe bei Urimie.) H. Fette.
71 False Teeth in Prophylaxis of Cancer. (Trauma und Zahnprothese.) M. Hahn.

67. Flatulency.—Boas reiterates his plea for regulation of bowel functioning by the diet alone, a procedure which he regards as almost invariably all-sufficient unless there is organic obstruction. He urges the importance of distinguishing between flatulence from different causes, as different treatment is required. Analysis of the causes is the only guide to correct treatment. The swallowing of air during eating, especially rapid eating, in nervous individuals is the most frequent cause of exogenous flatulence. Colic is seldom observed when there is no obstruction to the passage of feces in this form of flatulence. The flatus is comparatively odorless; this variety is obstinate and only to be cured by better habits of eating and by systematic toning up of the nervous system. Drugs to combat the flatulency are useless. The indications are different with flatulence of alimentary origin, especially when there is chronic constipation or intestinal catarrh. The diet should be regulated to exclude gas-forming substances, and among these he places milk; there are many persons who react to milk and buttermilk with violent and painful flatulence. Eggs and dishes containing eggs frequently induce great production of gas, especially in winter when it is difficult to obtain fresh eggs; persons inclined to intestinal catarrh or habitual constipation and flatulency should be very cautious in the use of eggs. Of still greater importance in this respect is the blood content of meat; nothing is so subject to offensive putrid composition, he says, as blood. He consequently recommends entire avoidance of roast or broiled beef and mutton, and thorough cooking of all meats and avoidance of all raw or rare foods. In individual cases potatoes may maintain fermentation dyspepsia. The tolerance of the patients for various foods must be tested; sugar, dextrinated flours, wheat bread and rice may be well tolerated. The only drug which he has found effectual against flatulence and gastrointestinal fermentation in general is magnesium salicylate, in doses of 1 or 2 gm. (15 to 30 grains) three times a day; it seems to have a marked influence in preventing putrid gaseous fermentations while free from the usual by-effects of other salicylic preparations, and it is not constipating. It is serviceable only in alimentary or intestinal putrefactive processes. In case of organic changes favoring flatulence, purgatives are necessary, and for this he prefers castor oil in small repeated doses. When the flatulence is the result of congestion with heart disease, heart tonics may be useful.

68. Tests of Pancreas Functioning.—Wohlgemuth remarks that none of the present tests in vogue is really reliable, but that his experimental research and clinical experience seem to be demonstrating that the proportion of diastase in the urine and feces is very much increased in case of obstruction of the outlet of the pancreas. Determination of the proportion of diastase in urine and feces, after a test diet for two days, gives most instructive information in regard to pancreatic functioning. He gives the details of the technic which he has found most effectual for the purpose.

Deutsche medizinische Wochenschrift, Berlin

January 27, XXXVI, No. 4, pp. 153-206

- 72 Acute Fatty Degeneration of the Liver after Resection of One Lobe. (Akute Leberverfettung nach Resektion eines Leberlappens.) Rlne.
73 *Impedunculated Flaps to Insure Healing of Sutures. (Ueber die Verlötung unsicherer Nahtlinien durch freie Autoplastik.) F. König.
74 *Appendicitis and Incarceration of Appendix in Hernia. (Die Entzündung und die Einklemmung des Wurmfortsatzes im Bruchsacke.) J. Thon.
75 *Diagnostic Importance of Seroreaction in Tuberculosis with Special Regard to the Cobra Venom Reaction. S. Pekaiovich.
76 Modified Technic for Serodiagnosis of Syphilis. (Die Serodiagnose der Lues mittels Ausflockung durch glykocolsaures Natrium.) F. Rosenfeld and Tannhäuser.
77 Diagnostic Importance of Seroreaction in Syphilis. (Bewertung der Wassermannschen Reaktion.) Dreuw.
78 Treatment of Chronic Cardiospasm. H. Elsner.
79 Weakness of Ocular Muscles and its Treatment. (Muskuläre Augenschwäche und ihre Behandlung.) E. A. Heilmann.
80 Treatment of Lymphatic Serofulous Eye Disease. (Zur Behandlung der lymphatischskrofulösen Augenkrankheiten.) J. Eisenstein.
81 Traumatic Origin of Abscess in Nasal Septum. (Nasenschelwandabszess.) Anderoya.
82 Therapeutic Antihemolytic Action of Cholesterin. (Theoretische Betrachtungen über Cholestearin bei Schwarzwasserfieber als Heilmittel, mit praktischem Versuch.) Grimm.

73. Strengthening Sutures by Autoplastic Flaps.—König refers especially to suture of the abdominal wall after radical treatment of hernia and also suture of wounds in mucosa. By covering the line of suture with a broad piece of flexible tissue, the wound is soldered together, as it were, and the suture gains materially in strength. The flap used may be of periosteum, fascia tissue or the wall of a vessel. In two cases he used a piece cut from the aponeurosis of the rectus abdominalis to reinforce a suture of the bladder wall; the square flap extended for from 0.5 to 1 cm. beyond the wound and was fastened with silk all around. The defect in the aponeurosis and the incision in the skin above were also sutured with silk. He thus reenforced a suture after closing a defect in the urethra left from a rodent chancre. The flap used in this case was taken from the saphenous vein which he slit for the purpose. The vein flap healed promptly in place and the operation was successful. He suggests the possibility of thus soldering a suture in the dura after removal of a brain tumor, using a flap of periosteum or fascia. The latter tissue is particularly useful, as it can be obtained usually near at hand. Autopsy in some cases after an operation of this kind showed that the auto-flap had healed perfectly in place. Bone is less adapted for this procedure, as it does not fit so well to the tissues beneath.

74. The Appendix in Hernia.—Thon reviews the literature on this subject, and states that there were no fatalities in his own experience with 8 cases of appendicitis in the hernial sac, even although the appendix was strangulated in 5 cases.

75. Serodiagnosis of Tuberculosis.—Pekaiovich obtained positive responses in from 87 to 90 per cent. of 62 patients with pulmonary tuberculosis tested with the cobra venom hemolytic test according to Calmette's technic. At the same time he obtained a positive reaction also in 27.8 per cent. of 38 patients apparently entirely free from tuberculosis.

Fortschritte der Medizin, Leipsic

January 20, XXVIII, No. 3, pp. 65-96

- 83 Treatment of Pertussis. (Behandlung des Keuchhustens.) R. Fischl.

Medizinische Klinik, Berlin

January 23, VI, No. 4, pp. 127-166

- 84 *Local Treatment of Recent Puerperal Infection. G. Winter.
85 Nervous Disturbances of Internal Organs. (Nervöse Störungen der inneren Organe.) E. Magnus-Alsleben. Continued in No. 3.
86 Interaction of Organs with Internal Secretion. (Wechselwirkung der Organe mit innerer Sekretion.) Caro.
87 *Tabes Dorsalis in Boy of 13. (Beitrag zur infantilen Tabes.) W. Splitzmüller.
88 Apparent Cure of Diabetes in Girl Under 10. Hürter.
89 Mouse Favus in Human Beings. (Vorkommen von Mäusefavus beim Menschen.) R. Chajes.
90 Simplification of Roentgenography. (Aufnahmen von Röntgenogrammen auf Bromsilberpapier ohne Verstärkungsschirm.) F. Kronecker.
91 Angiomatous Nevi at the Back of the Neck. (Naevi angiomatosi in der Hinterhauptsackengegend.) E. Saalfeld.
92 Points to be Borne in Mind in Operative Treatment of Recurring Eczematous Lesions of Cornea. (Zur operativen Behandlung der rezidivierenden ekzematösen Hornhauterkrankungen.) Neubann.
93 Experiments with Parabiosis. G. M. Cristea and W. Denk.

84. **Local Treatment of Recent Puerperal Infection.**—Winter is inclined to be conservative, as he is convinced that Nature can be relied on in many cases to conquer the local uterine infection. Analysis of 422 febrile cases during the last seven years has shown that in only 4 cases was there a possibility that the general severe infection had developed secondarily to a direct primary infection in the uterus. Others' statistics show the same; the possibility of secondary infection is excluded in all but in 1 or 2 per cent. of the febrile cases. In all the others the infectious process in the uterine cavity remained localized; there is no reason for local treatment of such a process to prevent its spreading to general infection. Only when there is retention of secretions or long protracted endometritis does he regard local measures as justified, and they should always be mild. His experience has shown further that retention of a fragment of placenta is not necessarily followed by general infection. In 55 cases of fatal general infection a fragment of placenta was found in the uterus in 6 cases, but in 4 of these the uterus wall behind the piece of placenta was found sterile. In only 2 was there evidence that the infection might have occurred by this means, and in both these cases there had been fever before delivery. His rule is to remove the retained fragments of placenta at once—always with the finger—when there is no tendency to fever or local decomposition. In case of much hemorrhage, the fragment must be removed at once, even if there is local infection. The danger of fatal hemorrhage is more threatening than that of general infection. If there is no hemorrhage and the general condition is not bad, the removal of the fragment can be postponed for several days, and spontaneous expulsion promoted by energetic ergot medication. If the retention is accompanied by intrauterine infectious conditions, peritonitis, venous thrombosis or a tumor in the adnexa, no attempt should be made to remove the fragment unless compelled by severe hemorrhage. On the one hand, the importance of the local process is overshadowed by the intrauterine infection and, on the other hand, the manipulations on the uterus may aggravate the latter. Before attempting to remove the fragment, in case of existing local infection, the uterus should be cautiously rinsed out, continuing the irrigation for a long time; the curette should never be used. After the fragment has been detached with the finger, the irrigation should be resumed; this clears out the uterus from its secretions and washes away the germs that might otherwise settle on the site of the placenta. Ergot should be given to prevent absorption and further migration of germs.

87. **Tabes Dorsalis in Children.**—The patient in the case reported was a boy of 13 with no history of syphilis in the family and yet the boy's serum gave a positive Wassermann reaction. Marburg compiled 51 cases of tabes in children on record to 1908, and Spitzmüller has found a few more. Ataxia is the most prominent symptom in his case, but Marburg found it only in 56 per cent. of his cases. In this case as in a number on record, suddenly developing enuresis at the age of 9 was the first symptom of the tabes to attract attention.

Mitteilungen aus den Grenzgebieten der Med. und Chir., Jena

XXI, No. 1, pp. 1-180. Last indexed Jan. 1, p. 87

- 94 Appendicitis, and Vascularization of Segments of Appendix. (Das Segmentäre bei der Wurmfortsatzentzündung.) W. Brunn.
- 95 *Meat-Eating Responsible for Appendicitis. (Zur Aetiologie der Appendicitis.) MacLean.
- 96 *Limits for Extensive Resection of the Small Intestine. (Ueber die obere Grenze für die Zulässigkeit ausgedehnter Dünndarmresektionen.) G. Axhausen.
- 97 Clinical Experience with Opsonin Research. (Klinischer Beitrag zu Wrights Lehre von den Opsoninen.) E. Schmidt.
- 98 *Origin of Perforating Ulcer of the Foot. (Entstehung des Mal perforant du pied.) R. Levy.
- 99 Progressive Retracting Dystrophy of Certain Muscles. (Myopathologische Beiträge.) H. Steinert.
- 100 Sensibility of the Abdominal Organs. (Kritische Bemerkungen zu einigen neueren Arbeiten über die Sensibilität der Bauchorgane.) G. Nystrom.
- 101 *Autodigestion of Intestine Implanted in the Stomach. (Selbstverdauung des Darmes im Magen.) G. Hotz.
- 102 Syndrome Resembling Bulbar Paralysis after Firearm Wound. (Fall von Pseudobulbärparalyse durch Schussverletzung.) R. Sievers.
- 103 *Operative Treatment of Gastric Crises in Tabes Dorsalis. (Operative Behandlung gastrischer Krisen: Foerstersche Operation.) O. Bruns and F. Sauerbruch.

95. **Meat-Eating and Appendicitis.**—MacLean found in the course of several years' practice in an Asiatic town that the

Europeans were the only ones who had appendicitis. He states that helminths were present in every Chinese cadaver he had occasion to examine, sometimes in enormous numbers, but appendicitis never occurred among them. Excluding all other causes, he thinks appendicitis must be due to the difference in the diet between the European and Chinese and primitive races; the immoderate use of meat must be responsible, he says, for this child of European civilization.

96. **Limits for Extensive Resection of the Small Intestine.**—Axhausen tabulates the details of 12 cases in which from 300 to 540 cm. of small intestine was resected, including a case from his own experience. His patient was a young woman with volvulus of the small intestine with beginning gangrene and he resected 475 cm. leaving only 125 cm. of the small intestine. The case is especially interesting as he gives the metabolic findings for a time afterward: She had evidence of bilateral apical tuberculous processes at the time and the tuberculosis continued its course to a fatal ending six months after the operation. Notwithstanding the loss of 80 per cent. of the total amount of small intestine, there was no impairment of utilization of the carbohydrates ingested, but only about 64 per cent. of the fats and nitrogen was utilized and the ferments in the feces showed also the effect of the resection. At the same time, these changes were not sufficient to have seriously impaired the patient's health if conditions had been otherwise normal. He urges the determination of the length of the intestine left as important for estimating the length of justifiable resection; 80 per cent., as in his case, seems to be about the limit, although Denk's patient is now entirely healthy 18 months after resection of 540 cm., nearly 14 feet. The list includes Werelius' case reported in THE JOURNAL, March 16, 1907, page 945, in which 12 feet and 2 inches was resected.

98. **Perforating Ulcer of the Foot.**—Levy reports 13 cases, the findings sustaining his assertion that changes in the bone are the primary process, the perforating ulcer following secondarily. Treatment should always be directed against the primary bone lesion, and in every case of perforating ulcer Roentgen examination for the underlying joint affection, synovial secretion or spontaneous fracture should never be omitted. He calls attention to the fact that joint lesions and spontaneous fractures are comparatively frequent complications in syringomyelia and tabes.

101. **Autodigestion of Intestine Loop Implanted into the Stomach.**—Hotz tells of his research on dogs, implanting a loop of intestine in the wall of the stomach. There was no destructive action on the implanted intestine if the blood supply was not disturbed but inflammatory processes developed whenever there was a defect in substance.

103. **Operative Treatment of Gastric Crises in Tabes.**—THE JOURNAL, Aug. 7, 1909, page 492, mentioned Foerster's case in which resection of the posterior spinal nerve roots cured at one stroke unbearable gastric crises. The sensory hyperexcitability seems to be the main factor in these crises, and the other symptoms, the excessive motility and secretion, are secondary. By interrupting the sensory routes the pains cease. The sensory tracts for the stomach probably pass from the sympathetic into the posterior roots, especially the seventh to the tenth posterior dorsal roots. These were resected in the case reported, in two sittings, and the patient was freed from his pain and gained four pounds a week. Bruns reports another case in which he followed this same technic. The patient was a man of 40, the gastric crises commencing 9 years before in a mild form, increasing in intensity until during the last year he had been entirely helpless, with no relief from the usual measures; he had lost 58 pounds in the last two years. Sometimes the pain extended from the stomach to the small intestine, and in two crises lumps of feces were vomited. He had not been free from pain in the stomach at any time during the last year. The seventh, eighth and ninth posterior roots were severed, both right and left, every trace of blood removed and the dura sutured with fine silk, the muscles with catgut. The patient was freed completely from his pains, the results confirming in every respect Foerster's assumptions as to the causes of the gastric crises and the indications for operative treatment. The operation is

indicated only in the severest forms as it is a serious intervention and there are liable to be nutritional disturbances in the tissues interfering with healing. In Bruns' case there were superficial aseptic necrosis of the skin and furunculosis of the back afterward, all of which healed without much delay. [Resection of the posterior spinal nerve roots in treatment of spastic paralysis was recently discussed in an editorial, Jan. 15, 1910, p. 210.]

Münchener medizinische Wochenschrift

January 25, LVII, No. 4, pp. 169-224

- 104 *Experiences with Momburg's Belt Tourniquet. (Zur Blutleere der unteren Körperhälfte nach Momburg.) zur Verth.
- 105 Acute Poliomyelitis. R. Beneke.
- 106 *Technic for Early Test in Typhoid. (Neue einfache Methode zur Typhusdiagnose.) M. Mandelbaum.
- 107 *Changes in Drop-Forming Property in Syphilitic Blood Serum: Meiotagmin Reaction. (Spezifische Eigenschaft luetischer Blutsera.) G. Izar.
- 108 Structure of Sinus Node. (Ueber den Aufbau des Sinusknotens und seine Verbindung mit der Cava superior und den Wenckebachschen Bündeln.) C. Thorel.
- 109 Therapeutic Utilization of Destructive Action on Morbid Tissue of Crystals of Potassium Permanganate. J. Finck.
- 110 Explosion of Ether Fumes during Roentgen Examination in Course of Ether Anesthesia. (Kontraindikation der Aethernarkose bei Röntgenaufnahmen.) H. Krukenberg.
- 111 Present Status of Psychotherapy. L. Loewenfeld. Commenced in No. 3.

104. **The Momburg Belt Tourniquet.**—This communication from Bier's clinic at Berlin asserts that Momburg's technic has solved the problem of shutting off half of the body from the circulation without injury, comparatively speaking. The experiments on rabbits reported by zur Verth show that the animal becomes anesthetized in a third of the time required for the control. The ureters and nerves lie in sheltered regions so that they do not feel the effect of the constriction materially. Autopsy in 1 of the 20 cases in his experience showed that the temporary constriction of the mesentery causes no serious disturbance as recuperation is prompt. Of greater importance is the effect on the pulse and blood pressure, as he shows by several curves. His findings in this respect suggest that it is better not to raise the pelvis before applying constriction to the waist, but there is great advantage in applying Esmarch bandages to both thighs, according to Momburg's technic. The Katzenstein test is of great importance and also the use of a pulse-controlling apparatus to show when the femoral pulse is completely arrested. Persons with heart disease approximate the conditions in children, but in parturients the conditions are more favorable for the Momburg technic; the growing uterus has pushed the root of the mesentery up out of the way.

106. **Rapid Method for Early Differentiation of Typhoid.**—Mandelbaum states that typhoid bacilli string out into long chains or the chains coil into a snarl when typhoid serum is added to a culture of the bacilli. This reaction seems to be specific as he never observed it with any serum except that from typhoid patients. The reaction occurs in 3 or 4 hours and is readily perceptible in the hanging drop under the

but capable of growing well when further cultivated. A drop of blood is then obtained from the patient, aspirated into a long tapering capillary pipette with rubber cap like a medicine dropper (Fig. 1). Then ten or fifteen times as much of the sodium citrate bouillon inoculated with the typhoid bacillus cultures is drawn up likewise into the pipette (Fig. 2). By releasing the pressure on the rubber cap, the fluid gradually rises to fill the lower third of the broader part of the pipette. The tapering tip is then fused and the pipette well shaken to mix the contents (Fig. 3). The pipette is then kept at a temperature of 37 C. (98.6 F.) for three or four hours. The sodium citrate addition is for the purpose of preventing coagulation, and after this interval the red corpuscles will be

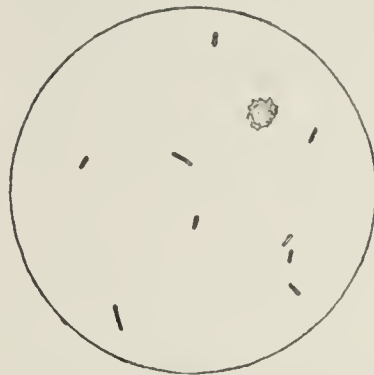


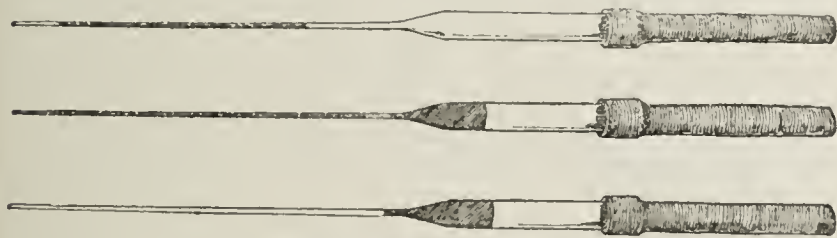
Fig. 4.—Negative reaction.



Fig. 5.—Positive reaction.

found collected on the bottom of the pipette, with a clear fluid above. The rubber cap is then taken off and a drop of the clear fluid is taken for examination as a hanging drop under the microscope. If the blood came from a person with typhoid the bacilli in the hanging drop will be adherent, as in Figure 5, while with non-typhoid serum the bacilli are scattered isolated through the fluid, as in Figure 4. Figure 5 represents a pronounced positive reaction. When the chains are found but with a few isolated bacilli between the chains and snarls, this reaction is typical of typhoid several years before. In the one chronic typhoid bacillus carrier he was able to examine, the reaction at the fourth hour was typical of a positive existing typhoid but then the picture gradually became modified so that by the end of the eighth hour the hanging drop resembled the findings with long past typhoid. There are thus three forms of the reaction, according to his experience, which, however, is not very extensive—only 12 cases of existing typhoid, 16 of long past typhoid and 1 typhoid bacillus carrier. The findings were constant in each class and were constantly negative in 75 other persons apparently free from a history of typhoid. The pipettes are those used in opsonin tests.

107. **Modification in Size of Drops as Specific Sign of Syphilis, Typhoid, etc.**—Ascoli calls attention to a specific test which he named the meiotagmin reaction. He measures the size of the drops with a stalagmometer and announces that the drop-forming property of various fluids becomes modified in certain pathologic conditions. Izar has applied the test to syphilitic serums and found that the addition of the syphilis antigen increased the number of drops in the test fluid while the serum of non-syphilitics had no such influence. He tabulates the findings in 12 cases of syphilis and 14 of non-syphilitics, using for the antigen an alcoholic extract of the spleen of a syphilitic fetus (0.5 gm. of pulverized spleen mixed with 50 c.c. of alcohol, incubated for two hours, filtered and evaporated to 10 c.c.) which was then diluted 1:100 parts with 0.85 per cent. salt solution. The blood serum was diluted 1 to 100 with the same salt solution. The number of drops formed by the diluted serum was determined before addition of the antigen. Then 1 c.c. of the diluted antigen was added to 9 c.c. of the diluted serum, and the whole kept at 37 C. (98.6 F.) during the two hour interval before the number of drops was again determined. There were always from 2 to 5 more drops in the fluid after addition of the antigen. In 2 cases the serum tested was received for examination labelled "Wassermann positive," but the meiotagmin reaction was negative. Investigation revealed that the serum in these cases was from patients with leprosy; here the meiotagmin reaction seems to be more exclusive and specific. Ascoli's communication related



Figs. 1 to 3.—Pipette.

microscope by this time. This reaction may also occur long before the agglutination test gives positive findings. It also seems to occur with serum from persons with a history of typhoid in the past, although the reaction develops more slowly in this case. The reaction was also slow but pronounced in the case of a chronic typhoid bacillus carrier. Mandelbaum has worked out a simple technic for the test, aiming to adapt it for general use. From 5 to 8 c.c. of a solution of 2 gm. sodium citrate in 100 c.c. of ordinary bouillon is sterilized in a test-tube as usual, and then this sodium-citrate-bouillon tube is inoculated with a loop of a motile typhoid-bacillus-bouillon culture or a scrap from an agar culture of typhoid bacilli. The culture must not be recent,

principally to the meiotagmin reaction in typhoid. Admixture of typhoid serum with an extract of typhoid bacilli increases the number of drops which the fluid is able to form. The term he has coined for the reaction is from the Greek words signifying "smaller" and "drop." Positive specific reactions have also been obtained in tuberclosis, and experiments with cancer extract are now under way.

Therapeutische Monatshefte, Berlin

January, XXIV, No. 1, pp. 1-56

- 112 *Disturbances from Oxyuris Vermicularis and their Treatment, Especially in Adults. (Vorkommen und Behandlung von Erkrankungen an Oxyuris vermicularis, besonders bei Erwachsenen.) W. Zinn.
- 113 Swedish Exercises in Heart Disease. (Welche Stellung gebührt der manuellen schwedischen Heilgymnastik bei der Behandlung Herzkranker?) H. Adam.
- 114 *General Anesthesia with Part of Circulation Shut Off. (Ueber die Narkose bei künstlich verkleinertem Kreislauf.) R. Klapp.
- 115 Vibratory Massage in Treatment of Gynecologic Lesions. (Bedeutung der Vibrationsmassage bei der Behandlung von Frauenleiden.) W. Liepmann.
- 116 Diagnosis and Treatment of Sporotrichosis. B. Bloch.
- 117 Relations between Pharmacology, Immunology and Experimental Therapy. E. Friedberger.

112. **Pin-worms.**—Zinn states that he has had 14 cases of oxyuris in adults in which the disturbances had been so annoying that severe neurasthenia developed and suicide was contemplated in some cases. Two of the patients were women; among the others was an army officer of 32 in despair from the persistence of disturbances without relief from innumerable courses of treatment. Another patient was a lawyer, another a college student. Knowledge of the life history of the parasites is indispensable, he says, for successful treatment and prophylaxis. Recent research has shown that the eggs are deposited by the female only in the rectum or outside the anus. The only way in which they can hatch out in the gastrointestinal tract is by being taken into the mouth. The eggs hatch out in the stomach; the young pass on down into the small intestine where they reach sexual maturity; the adult worms are found most numerous in the cecum. The fertilized female migrates downward into the rectum where she deposits her eggs or passes on to deposit them around the anus outside. This migration of the parasites out of the intestine is particularly important as this is the source of the tormenting itching, especially soon after going to bed. Treatment should therefore aim to destroy the young in the small intestine by a vermifuge internally, washing out the adult parasites in the large intestine by high enemas, supplemented by scrupulous care to cleanse the hands before and after meals and after defecation to prevent ingestion of the eggs. He prefers to give the calomel and santonin between meals, commencing with 0.5 gm. (7.5 grains) each of calomel and jalap in powder at 3 p. m., with a warm soap-suds enema at 6 p. m. the first day. The next day he gives 0.05 gm. (0.75 grains) santonin and 0.1 gm. (1.5 grains) calomel at 8, 10 and 11:50 a. m., with two tablespoonfuls of castor oil at 2 p. m., and again at 4 p. m. The third day a full warm bath is taken and morning and afternoon a soap-suds enema; this is repeated the fourth and fifth days with a full bath at night. This completes the course, after which the body and bed linen should be changed. The dosage should be smaller for children. The food should be light and fluid and he prefers to give the course in an institution to facilitate microscopic control of the stools. With this simple course of treatment he has cured in less than a week a condition that had tormented the patients for years. Some expelled the first day 500 and 600 specimens of the oxyuris. He adds that it is important to have all the children in the family take the same treatment as otherwise reinfection is liable.

114. **General Anesthesia with Part of Circulation Cut Off.**—Klapp's experience with the application of constricting bands high on the thighs was described in these columns Dec. 4, 1909, page 1952. He is assistant at Bier's clinic, Berlin, and he declares that time is proving the value of this method of damming off part of the circulating blood. Far less of the anesthetic is required. He first applies a constricting band to collect a certain amount of blood in the legs and then over this applies a tourniquet to shut off the blood as effectually as with an Esmarch bandage. He orders the patient to

breathe deeply and tranquilly; the room should be perfectly still. Then from 10 to 20 c.c. of ether is given all at once, which is enough for 15 minutes' anesthesia. For longer operations he gives from 20 to 30 c.c. at once and then 10 c.c., continuing with the drop method.

Wiener klinische Wochenschrift, Vienna

January 27, XXIII, No. 4, pp. 119-152

- 118 Dilatation of the Coronary Sinus in Mitral Stenosis. (Dilatation des Sinus coronarius cordis bei Stenose des linken Herzkostiums.) H. Rollett.
- 119 Etiology of Herpetiform Dermatitis. (Hydroa aestivalis.) A. Perutz.
- 120 Alimentary Saccharosuria in Gastrointestinal Disturbances in Infants. (Alimentäre Saccharosurie bei darmkranken Säuglingen.) A. v. Reuss.
- 121 Kidney in Pelvis Interfering with Pregnancy. (Kongenitale Beckenniere und Gravidität.) J. Halban.
- 122 Unsatisfactory Experiences with Combined Mercury-Arsacetin-Quinin Treatment of Syphilis. O. Neugebauer.
- 123 *Treatment of Flaccid Paralysis Following Poliomyelitis. (Zur Behandlung der post-poliomyelitischen schlaffen Lähmungen.) A. Wittek.
- 124 Nature of Seroreaction in Syphilis. (Zum Wesen der Wassermannschen Reaktion.) R. Bauer and A. Hirsch.

123. **Treatment of Flaccid Paralysis After Poliomyelitis.**—Wittek reports several cases in which tendon transplantation gave excellent results, and he thinks that operations on the nerves are unnecessary. His aim is to shorten the muscles affected, and, by excision of a corresponding skin flap, restore the joints to normal position, striving to restore the normal interval between the points of attachment of the muscles. The scar tissue will prevent over-stretching of the muscle. The children are allowed to use the limb. If by the end of the year it is found that the paralysis still persists, then tendon transplantation may be indicated or, if the paralysis is too extensive, the joint is immobilized by arthrodesis. He emphasizes that it is of vital importance in poliomyelitic paralysis to prevent undue stretching of the injured muscle. This must be borne in mind and precautionary measures taken from the moment the subjective pain subsides. Even the weight of the bed-clothes must be avoided in case of paralysis of the dorsal flexor muscles. Abnormal attitudes of the parts must be prevented. Improvised supports or braces made of strips of adhesive plaster or roller bandages may render good service in this line. This is the more necessary when the children are allowed to get up. The weakened muscles must be relieved from the weight of the body, even from the weight of the limb involved, and protected against traction from the antagonist muscles. Some time should be allowed to elapse before active orthopedic intervention is considered. The tendency is to interfere actively too early and too radically.

Zeitschrift für klinische Medizin, Berlin

LXIX, Nos. 5-6, pp. 393-508. Last indexed Feb. 19, p. 662

- 125 Research on Metabolism in Addison's Disease. (Beitrag zu Stoffwechseluntersuchungen bei Morbus Addisonii.) R. Eiselt.
- 126 Determination of Conditions in Regard to Coagulation of the Blood. (Der Koaguloviskosimeter.) K. Kottmann. (Die Vicrodt'sche Methode für Gerinnungsbestimmungen des Blutes in verbesserter Form.) Id. and A. Lidsky.
- 127 *Influence of Phosphorus, Cod Liver Oil and Sesame Oil on the Metabolism of Lime, Phosphorus, Nitrogen and Fat in Rachitis. (Phosphor, Lebertran und Sesamöl in der Therapie der Rachitis.) J. A. Schabad.
- 128 *Coincidence of Pregnancy and Diabetes, and Necessity for Exclusively Diabetic Treatment of Diabetic Pregnant Women. (Zusammentreffen von Gravidität und Diabetes mellitus.) H. Neumann.

127. **Phosphorus and Cod-Liver Oil in Rachitis.**—Schabad's research on the metabolism in rachitis has shown a favorable modification of the disease under the influence of cod-liver oil plus phosphorus. The proportion of lime retained is much larger under cod-liver oil; phosphorus alone has no such influence; but he found that phosphorus given with the cod-liver oil materially enhanced the action of the latter in this respect. He gives the phosphorus in a 1 per cent. solution in olive oil; three drops of the mixture represent 0.1 gm. oil and thus 1 mg. of phosphorus. The dose is one drop three times a day. Sesame oil failed to show any influence on the retention of lime and, consequently, cannot be used in place of cod-liver oil. The combination of the latter with phosphorus increases not only the amount of lime retained, but also the retention of phosphorus, while it promotes absorption of nitrogen and fats.

128. **Pregnancy and Diabetes.**—Neumann's experience and observation have demonstrated that the coincidence of pregnancy and diabetes is extremely rare and also that neither seems to have a specially harmful influence on the other. He advises examining the urine of every pregnant woman for sugar, even in the absence of symptoms. This is the only certain way to detect glycosuria in its incipency. Dietetic measures should be rigorously enforced from the start until delivery, but the pregnancy should never be interrupted on account of the diabetes alone. Treatment should be exclusively dietetic. In 285 cases of fatal coma reported by four French or German clinicians, 36 of the patients were between 20 and 30, and 77 between 30 and 40, with 19 under the age of 10. Fatal coma during pregnancy occurs in a smaller proportion than the general average of coma in diabetes. On the other hand, from 20 to 25 per cent. of pregnant diabetic women develop tuberclosis. Neumann's experience with 6 cases was summarized recently in *THE JOURNAL*, January 8, page 166. Subjective symptoms were not complained of in any instance, but all the patients, even in the mild forms, were thin, languid and moody, and looked badly. The pregnancy and puerperium were normal and the children were all well developed and thriving, with the exception of one child, who weighed only 4 pounds; both parents were diabetic. Sugar was found for a few days in the urine of the infant of one mother with severe diabetes. The vital indication in treatment is to insist on a strict antidiabetic diet, interposing occasional days of fasting and of exclusive vegetable diet, commencing this at the earliest possible moment and keeping it up through the puerperium. The benefit was manifest in his experience—no fatalities and fine healthy children. No anesthetic should be given, and the woman should not get up for two weeks after delivery; reading and visits should also be discouraged. Women with an inherited or acquired diabetic taint should not nurse their children, as the diet generally taken by nursing women might rouse the dormant tendency, or aggravate existing diabetes.

Zentralblatt für Chirurgie, Leipsic

January 22, XXXVII, No. 1, pp. 113-152

- 129 Modified Technic for the Bardenheuer Method of Extension in Treatment of Fractures. (Zur Technik des Streckverbandes nach Bardenheuer.) Rücker.

Zentralblatt für Gynäkologie, Leipsic

January 29, XXXIV, No. 5, pp. 129-176

- 130 *Enlargement of the True Conjugate by Inducing Lordosis. (Unblutige Vergrösserung der Conjugata vera.) J. W. Tjeenk Willink.
131 Spontaneous Healing of Large Rupture of Uterus. (2 Fälle gehellter Uterusruptur.) M. Tobiaszsek.
132 Acknowledgement of American Priority in Operation for Retroterine Fixation of Round Ligaments. (Zur retrouterinen Anheftung der Lig. rotunda.) F. Franke.

130. **Enlargement of the True Conjugate by Position.**—This communication from Treub's clinic at Amsterdam states that it is possible to enlarge the true conjugate by inducing lordosis by the simple measure of placing the patient in the lithotomy position on the edge of the bed with a bolster under the edge of the mattress. This raises the lumbar region, inducing pronounced lordosis. He placed a parturient in this position to promote delivery of the child with version, but found that spontaneous delivery occurred almost at once. This occurred in several cases until his attention was attracted to this coincidence, and he now resorts to this position when delivery drags and there is no absolute disproportion between the skull and the pelvic inlet, while the labor contractions are strong and frequent. The true conjugate enlarges for about one-fourth of an inch or more by the lordosis thus induced, which often turns the scale for speedy delivery.

Gazzetta degli Ospedali e delle Cliniche, Milan

January 23, XXXI, No. 10, pp. 97-112

- 133 *Vaginal Hysterectomy and Ruggi's Lateral Vaginal Incision. (Dell' isterectomia vaginale e del taglio latero-vaginale.) C. Orsoni.
134 *Antoplastic Amputation of the Breast. (Ampntazione della mammella per cancro, col processo Tansini.) A. Albanese.
January 25, No. 11, pp. 113-120
135 *Action of Gland Extract on Experimental Tuberculosis. (Influenza che gli estratti di tessuto linfatico esercitano sulla evoluzione della tubercolosi sperimentale.) S. Livierato.
January 27, No. 12, pp. 121-128
136 Dysentery in Southeastern Austria. (La dissenteria nell' Istria e a Trieste.) M. Gioseffi.

133. **Vaginal Hysterectomy.**—Orsoni extols the advantages of Ruggi's technic for vaginal hysterectomy by an incision through the vaginal wall and vulva opening thus the entire anoperineal region, the incision stopping only about 3 cm. from the anus. Compression with the fingers at the posterior angle, the assistant exerting similar compression at the anterior angle, prevents hemorrhage. This laterovaginal incision permits ample access to the uterus and materially simplifies and facilitates its removal. This technic is indicated, he says, whenever there are extensive adhesions with cancer, etc. Asepsis during the operation and a retention catheter prevent infection of the wound, which soon heals, even the virgin hymen soon showing no traces of the intervention.

134. **The Tansini Method of Autoplastic Restoration After Removal of the Breast.**—Albanese gives the details of 4 cases with two illustrations to show the good results attained by Tansini's method of covering the defect after removal of the breast for cancer. The flap is cut from the back and includes part of the latissimus dorsi. It is readily twisted around under the axilla to cover the defect left in the pectoralis. The gap then resulting in the muscles of the back enables the lips of the defect to be more closely approximated. The flap is nourished abundantly by the anterior scapular artery; it healed in place by primary intention in 4 of Albanese's 5 patients, and with slight inflammation in the other case.

135. **Influence of Extract of Tuberculous Glands on Experimental Tuberculosis.**—Livierato's experiments seem to demonstrate that the extract of tuberculous or scrofulous glands has a decided preventive action when injected into animals before they are infected with tuberculosis. When the extract was given after the tuberculous infection was well established the course of the disease was materially attenuated. Extracts of normal glands displayed no such property.

Policlinico, Rome

January 30, XVII, No. 5, pp. 131-162

- 137 *"Proliferating" Pneumonia in Malaria. (Sulla pulmonite proliferata dello Schrön nella infezione malarica.) B. Alberti.
January, No. 1, Medical Section, pp. 1-48
138 Fate of Ingested Micro-organisms. (Studi ed indagini circa la sorte dei microrganismi ingeriti con i cibi e con le bevande, tenendo presenti le moderne vedute del Pawlow intorno alla digestione gastrica.) A. M. Collodi.
139 Physiopathology of the Ocular Tuberculin Reaction and its Importance for Diagnosis and Prognosis. (La fisiopatologia della reazione congiuntivale alla tubercolina. Deduzioni sul suo valore diagnostico e prognostico.) N. Pende.
January, Surgical Section, No. 1, pp. 1-48
140 Osteomyelitis and Removal of Scapula. (Della osteomielite e della estirpazione della scapola.) R. Caminiti.
141 Ovarian Endothelioma. P. Ligabue.
142 Angiectasia of the Arms. (Sulle angiectasie degli arti superiori.) G. Egidi.

137. **Malarial Pneumonia.**—The combination of pneumonia with malaria and of malaria with pneumonia is not rare in Italy, and Baccelli affirms that the malarial germ alone may induce inflammation of the lung simulating true pneumonia. Alberti here describes a special type of malarial inflammation of the lung distinguished by proliferation of the epithelial, periepithelial and perivascular elements. This "proliferating" pneumonia, as he calls it, has been observed during typhoid infection, but it is most common in malaria. Professor Schrön regards it as a morbid entity, and has described the clinical picture as ushered in by a severe chill followed by remittent fever, never dropping quite to normal in the intermissions. There may be two or three attacks of fever during the day, each possibly, but not always, followed by sweating. There is extreme weakness, the spleen is much enlarged and tender, the complexion that of subjaundice. The cough is dry at first, but later there is much expectoration. The sputum is a characteristic yellow, almost the color of a lemon, foamy, more inclined to be fluid than the sputum of ordinary pneumonia, and although it may be blood-streaked, it is never rusty. The process in the lung migrates from point to point, as evidenced by the auscultation findings. Differentiation is not difficult if the possibility of this form of pneumonia is borne in mind, but the touchstone is the great improvement under quinin. If this drug is not given the process may drag on indefinitely and even prove fatal. Improvement is rapidly observed under 8 or 10 hypodermic injections of quinin during the 24 hours, giving thus a total of 30 grains. Under this

treatment the patients recovered completely in 4 days in the 2 typical cases reported.

Norsk Magazin for Lægevidenskaben, Christiania

February, LXXI, No. 2, pp. 105-284

- 143 *Ambulant Treatment of Chronic Purulent Maxillary Sinusitis. (Nogle Ord om de kroniske antrumpepymer og deres ambulatoriske behandling.) R. Gording.
144 Vaccination against Cholera. P. Aaser.
145 *Seroreaction for Syphilis in Aortic Insufficiency. (Aortainsufficiens og Wassermann's luesreaktion.) R. Krefting.
146 Ulcerative Coloproctitis Caused by *Balantidium coli*. F. Holmsen.

143. Treatment of Empyema in the Maxillary Sinus.—Gording describes the intranasal technic with which he was able to cure permanently a long chronic purulent process in the maxillary sinus in 21 out of 23 cases, a proportion of 91 per cent. recoveries. This was accomplished without radical intervention, merely by ambulant conservative treatment. He does not think that carious teeth can be incriminated in the etiology of the process to the extent that some accept, as otherwise the sinusitis would be more frequent; fully 70 per cent. of all the patients at the clinic in his charge have carious upper teeth while maxillary sinusitis is rare. He opens up the sinus through the nose under local anesthesia, and there is sometimes considerable hemorrhage, requiring careful tamponing. In 2 cases tardy hemorrhage occurred. The opening into the sinus must be made broad enough to allow the entire antrum to be tamponed and a thick drain introduced. The after-treatment consists in alternate tamponing with iodoform gauze, insufflation of air and lavage, the two latter less often, the course requiring from one to five months in all. The process was of many years' standing in every instance, to sixteen years in some. He does not include in this summary a number of patients who have been lost sight of since.

145. Wassermann Reaction and Heart Disease.—Krefting reports the autopsy findings in about a dozen cases of aortic lesions in which the Wassermann reaction was applied with a positive response in all but one case in which, while there was a pronounced history of syphilis, the patient had been taking considerable amounts of potassium iodid which might possibly explain the negative seroreaction. In another group of 8 cases of heart disease there was no reaction to the Wassermann test. One of these patients came to autopsy and nothing was found to suggest a history of either acute articular rheumatism or syphilis to explain the infectious polypous endocarditis and aortic insufficiency. His cases show that a syphilitic aortic lesion may become superposed on an old non-syphilitic cardiac lesion.

Ugeskrift for Læger, Copenhagen

January 20, LXXII, No. 3, pp. 61-86

- 147 *Determination of Tubercle Bacilli in Larynx Mucus. (Om Paavising af Tuberkelbaciller i Larynxslim.) K. Lundh.
January 27, No. 4, pp. 87-114
148 *Ocular Symptoms in Exophthalmic Goiter. (Øjentsilfælde som Udslag af Morb. Basedowii.) C. F. Heerfordt.

147. Tubercle Bacillus in Mucus from Larynx.—Lundh was able to reveal the presence of tubercle bacilli in mucus scraped from the larynx in 7 out of 66 tuberculous patients who had so little expectoration that there was no sputum for bacteriologic research. All the patients with positive findings were in the second or third stage of pulmonary tuberculosis, none in the first.

148. Symptoms on the Part of the Eyes in Exophthalmic Goiter.—Heerfordt discusses the exophthalmos, symptoms on the part of the lids and ocular muscles, anomalies in the lacrimal apparatus, conjunctiva and cornea, and other affections liable to occur with the disease. The exophthalmos may be unilateral, and in many cases the protrusion of the eyeball is within physiologic limits. The movements of the eyes are not impaired with exophthalmic goiter as much as with other forms of exophthalmos. The eyelids may be sluggish in their movements, especially in regard to following the movement of the eyeball downward. The absence of normal involuntary winking is also an early symptom, the patient not winking for minutes at a time and then only in a rudimentary manner. These symptoms on the part of the eyelids may appear on one or both sides. Paresis of the ocular muscles is more characteristic than mere insufficiency of convergence.

Ocular paresis may develop with other motor disturbances in the course of the disease. Epiphora is frequently encountered and usually early in the disease; it may accompany exacerbation of other symptoms. It may even be the first symptom that brings the patient to the physician. Later the patient may complain of dryness of the eyes and the lacrimal secretion may be found reduced. Hyperemia in the eyeball and conjunctiva is frequent in incipient exophthalmic goiter and may return frequently later. There is no evidence to show that the disease is directly responsible for the development of cataract, myopia, restriction of the visual field, glaucomatous conditions or atrophy of the optic nerve. Becker called attention to a peculiar characteristic pulsation in the central retinal artery, but no one seems to have confirmed his finding.

Books Received

All books received are acknowledged in this column and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender. A selection will be made for review in the interests of our readers and as space permits.

A SYSTEM OF CLINICAL MEDICINE. Dealing with the Diagnosis, Prognosis and Treatment of Disease, for Students and Practitioners. By Thomas D. Savill, M.D., Physician to West End Hospital for Disease of Nervous System. Second edition revised by the author, assisted by Frederick S. Langmead, M.D., Casualty Physician to St. Mary's Hospital, and Agnes P. Savill, M.D., Casualty Physician to St. John's Hospital for Diseases of the Skin. Cloth. Price, \$7. Pp. 963, with 172 illustrations. New York: Longmans, Green & Co., 1909.

DISEASES OF GENITOURINARY ORGANS. Considered from a Medical and Surgical Standpoint, Including a Description of Gonorrhea in the Female and Conditions Peculiar to the Female Urinary Organs. By Edward L. Keyes, Jr., M.D., Clinical Professor of Genitourinary Surgery, New York Polyclinic Medical School. Cloth. Price, \$6. Pp. 975, with 195 illustrations. New York: D. Appleton & Co., 1910.

PREPARATORY AND AFTER TREATMENT IN OPERATIVE CASES. By Herman A. Haubold, M.D., Clinical Professor in Surgery and Demonstrator of Operative Surgery, New York University and Bellevue Hospital Medical College, New York. Cloth. Price, \$6. Pp. 650, with 429 illustrations. New York: D. Appleton & Co., 1910.

NUTRITION AND DIETETICS. A Manual for Students of Medicine, for Trained Nurses, and for Dietitians in Hospitals and other Institutions. By Winfield S. Hall, M.D., Professor of Physiology, Northwestern University Medical School. Cloth. Price, \$2. Pp. 315 with illustrations. New York: D. Appleton & Co., 1910.

MANUAL OF OPERATIVE SURGERY. By John F. Binnie, A.M., Professor of Surgery, Kansas State University, Kansas City. Vol. II, Vascular System, Bones and Joints, Amputations. Half morocco. Price, \$3.50 net. Fourth Edition. Pp. 553 with 550 illustrations. Philadelphia: P. Blakiston's Son & Co., 1910.

NEW AND NONOFFICIAL REMEDIES, 1910. Containing Descriptions of Articles which have been Accepted by the Council on Pharmacy and Chemistry of the American Medical Association, prior to Jan. 1, 1910. Cloth. Price, 50 cents (paper, 25 cents). Pp. 256. Chicago: American Medical Association, 1910.

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Original Articles

SURVIVAL OF ENGRAFTED TISSUES

A, THYROID (INCLUDING PARATHYROID); B, KIDNEY
(INCLUDING ADRENAL) *

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A. THYROID

For a long time it has been known that thyroid tissues may be successfully engrafted.¹ Kocher² (1883) and Schiff³ (1884), in the early eighties, the former using dogs and the latter operating on man, obtained temporary benefit by grafting after removal of the thyroids.

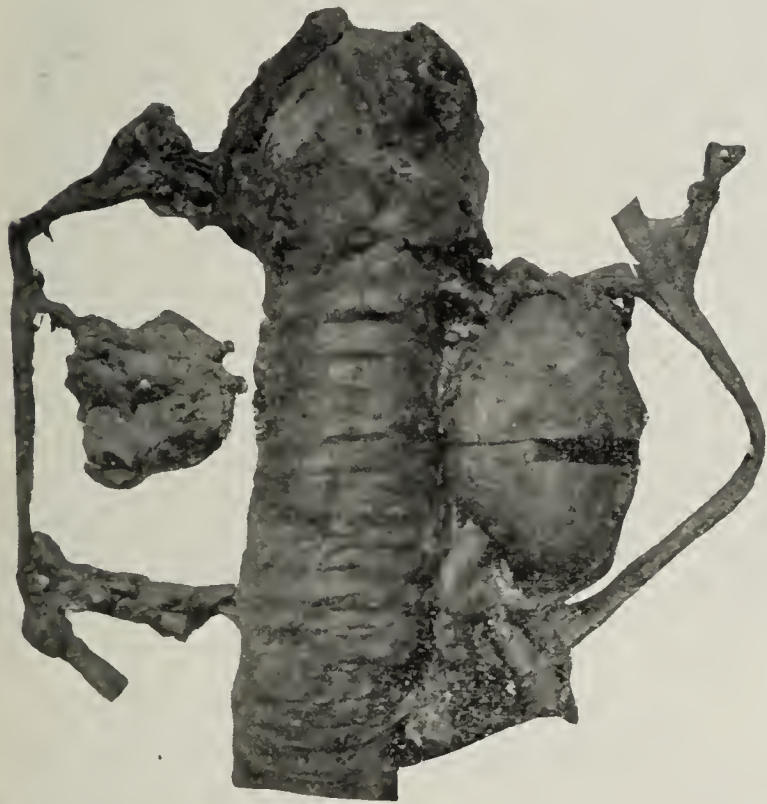


Fig. 1.—Right thyroid lobe of Dog 00, thirty-three months after removal and replacement, with reversal of circulation in superior thyroid artery and vein.

In 1892 Eiselsberg⁴ reported anatomically and physiologically successful results on cats. A little later Cristiani⁵ reported successful results on numerous species of animals. All such transplantations have been performed without anastomosis of the blood-vessels, so that the

results have been best when thin masses of tissues have been employed.⁵

The data we have to record were obtained by removing one entire thyroid lobe in a young 35-pound dog and replacing it, after washing out its vessels with salt solution, anastomosing the peripheral end of the superior thyroid vein to the central end of the corresponding artery; and the peripheral end of the artery to the central end of the vein, thus establishing a reversed circulation through these vessels. Great swelling of the gland occurred, and some infection ensued, but the swelling soon disappeared and the wound healed. The dog never showed any general symptoms indicative of deranged thyroid metabolism. Two years and nine months later the animal was killed with chloroform and the specimen examined. The gross relations are shown in Figure 1.

Anatomically, the left thyroid lobe was moderately enlarged and presented the appearance of colloidal goiter. The right lobe was quite fibrous and dense to

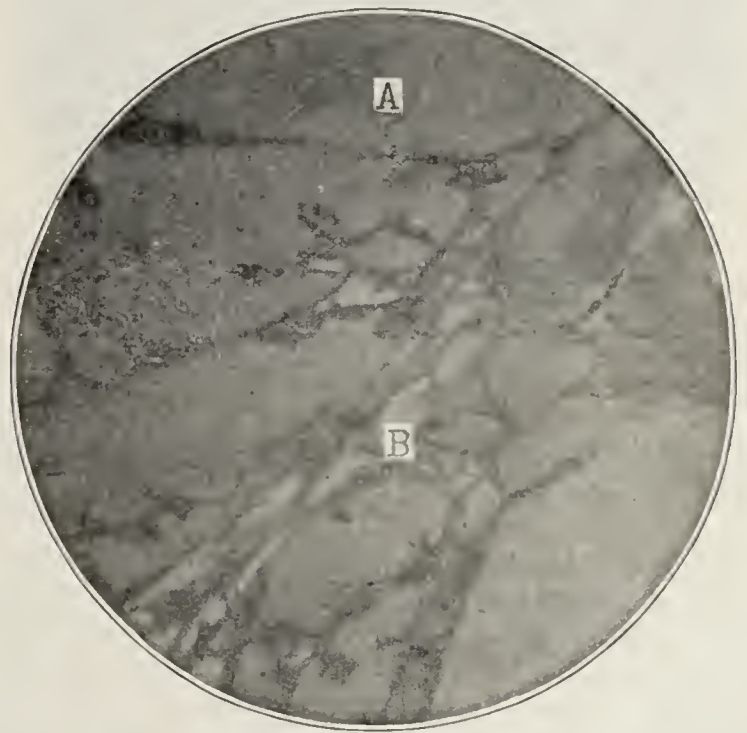


Fig. 2.—Microphotograph thyroid lobe (Dog 00), not operated on. Note large amount of granular colloid (A), and small amount of clear colloid (B) and fibrous relations.

the touch and adherent to surrounding structures. On dissection, the superior thyroid vessels were found intact. Owing to the fibrous adhesions it was difficult to make a satisfactory dissection of the vein. The artery is shown in Figure 1, and the point of union of artery to vein is shown in the same illustration.

Microscopically, the lobe which had not been operated on presented the appearance of colloidal goiter (Fig. 2). The lobe which had been operated on showed an enor-

*From the Physiological Laboratories of Washington and Pittsburg Universities.

1. For literature, see Vincent: *Lancet*, London, Aug. 11 and 18, 1906.

2. Kocher: *Cor.-Bl. f. Schweiz. Aerzte*, 1895; quoted by Vincent: *Lancet*, London, Aug. 11 and 18, 1906.

3. Schiff: *Rev. Med. de la Suisse rom.*, 1884, p. 438; quoted by Vincent, *Lancet*, London, Aug. 11 and 18, 1906.

4. Eiselsberg: *Wien. klin. Wchnschr.*, 1892, No. 5, p. 81.

5. Cristiani: *Compt. rend. Soc. de biol.*, 1894, p. 716; *Jour. de physiol. et path. gén.*, 1901, p. 204.

mously thickened connective tissue capsule (Fig. 3). The substance of the gland showed an abundance of normal staining colloid. The walls of the acini were considerably thicker than normal, due in part to strands of connective tissue. Otherwise the histologic elements themselves appeared normal, the arrangement only being abnormal.

Considering (1) that the auto-engrafted tissue was perfused with saline solution;⁶ (2) that the restored circulation was in the reverse of the normal direction thus contributing to the hyperemia; and (3) that the wound became infected, we may hope, since all of these factors probably are against the best result, that similar operations performed under more favorable conditions may yield even better results.

Parathyroid.—The results on the parathyroid tissue have not yet been sufficiently studied to permit their presentation at this time. Recently, however, an interesting paper by Halsted⁷ has appeared in which completely successful parathyroid grafting is reported.

Since I shall discuss these results in another place,⁸ it will be sufficient to state that the survival of an exceed-

serially. The total number of sections was 150, yet the parathyroid tissue was found only in the last 20 sections. The thickness of the sections is not stated, but probably it did not exceed 30 microns. Taking this as an outside estimate, then in one dimension the parathyroid tissue measured not over 0.6 mm. As shown in one of the plates accompanying the article (No. III, it would seem from the dog number, the reference to No. II probably being an oversight by the author), the parathyroid tissue is somewhat elliptical in shape. In the long diameter it measured 40 mm. As this is magnified 90 times (diameters, I take it), then 0.44 mm. is approximately the actual dimension. Roughly, then the mass of parathyroid tissue measured 0.6 by 0.44 mm., a spherical mass having a diameter less than the thickness of an ordinary pin. From this standpoint, the parathyroid tissue would seem to be the most precious of any tissue in the body of which we have specific information. The weight of the dog would be of interest in this connection,



Fig. 3.—Microphotograph thyroid lobe (Dog 60), operated on. Note clear colloid (A), and enormous amount of fibrous tissue (B). No granular colloid.

ingly small fragment of such tissue seems adequate to prevent the appearance of the symptoms of thyroparathyroidectomy (tetany, etc.). For example, after transplanting two parathyroid bodies⁷ and removal of the remainder of the thyroid tissues, the dog remained in good health.⁹ Three months later but one of the engrafted parathyroid bodies could be found. This was removed and preserved. "The dog died of tetania parathyreopriva on the second (or third?) day after the operation, thus proving the functional state of the removed autograft."¹⁰ This tissue was then cut for microscopic examination, all sections being preserved

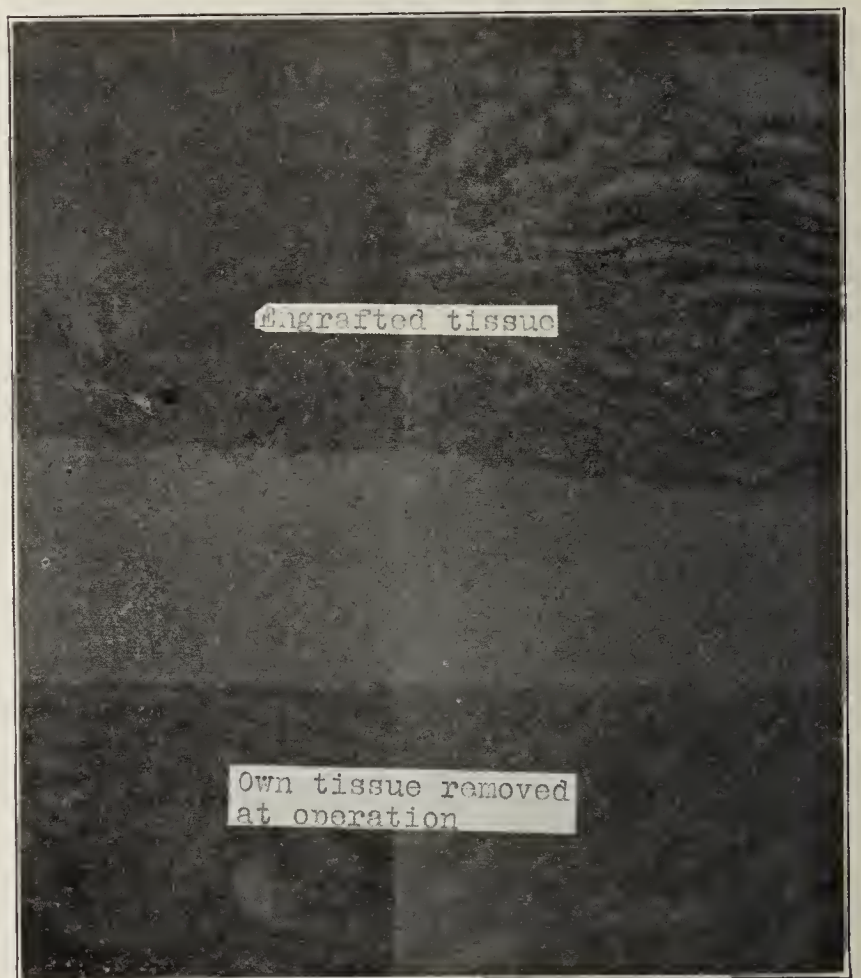


Fig. 4.—Microphotograph showing infiltration of tissue in boundary region (to the right) and more profound degenerative changes in cortical region (to the left) of iso-engrafted kidney seventeen days after the operation (cat). Small pieces of one of the kidneys removed at the operation, and of an engrafted kidney, were mounted on one block and sectioned, stained and photographed together for comparison.

but it was not included in the protocol. It may be remarked that some thyroid tissue is figured in both of the plates accompanying the paper.

B. KIDNEYS

Only transplantation of renal tissue with anastomosis of blood-vessels will be considered, since a very important function of the kidney is so well known to be the separation from the blood of and excretion of waste products, retention of which is rapidly detrimental or fatal to the animal. Obviously, then, to approach anywhere near to the normal conditions of such an organ, it is necessary to provide a functional as well as a nutrient blood-supply, and to provide a channel for the escape of the excretions to the outside of the body; otherwise a functional test of the operation is impossible.

6. Guthrie, C. C.: Some Physiologic Aspects of Blood-Vessel Surgery, THE JOURNAL A. M. A., 1908, LI, 1658; The Harmful Action of Physiologic Salt Solution on Animal Tissues, Washington Univ. Bull., 1908, VII, 40.

7. Halsted, W. S.: Autotransplantation and Iso-transplantation, in Dogs, of the Parathyroid Glandules, Jour. Exper. Med., 1909, xi, 175.

8. Manuscript as yet unpublished.

9. I am unable to find this specifically stated in the protocol (loc. cit.), p. 191, Dog 11, but the statement that "the dog is, presumably, reduced to the two transplanted glands," as well as the nature and result of the experiment, clearly indicates it.

10. Halsted: Jour. Exper. Med., 1909, xi, 192.

Also, not only for anatomic reasons (connections of tubules, etc.), but for the reason that an animal cannot long survive mere excision of renal tissue in excess of three-fourths of the total amount,¹¹ for, in spite of a polyuria, a fatal derangement of metabolism follows. That the protein metabolism is particularly affected is indicated by the rapid wasting of the muscular tissues and large amounts of urea excreted.¹¹

This upsetting of the metabolism has been attributed by Bradford to lack of internal renal secretion. It would

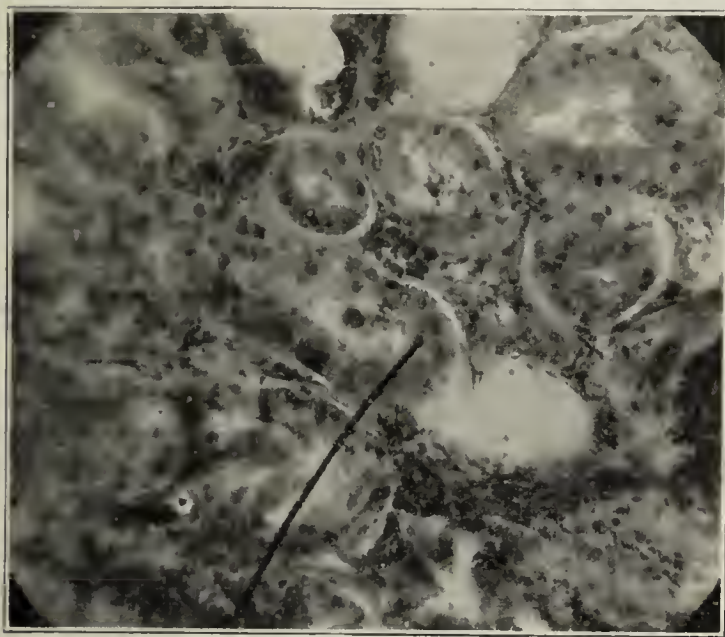


Fig. 5.—Degenerative changes in the tubular epithelium of an engrafted kidney.

seem from this standpoint that the internal secretion of less than one-half of one kidney is insufficient to maintain life. It is necessary, therefore, to engraft one-half or more of a kidney, fulfilling at the same time the requirements as to a functional circulation and to an excretory channel. A mass of tissue this large could not possibly survive without attention to the blood-vessels, at least in any but very small animals, even if there were no other valid reason against employment of the simple method. Since it is well known that one



Fig. 6.—Cat from which one kidney was removed and in its place a kidney from another cat engrafted. Photographed about one year later. The animal did not survive the functional test. (THE JOURNAL A. M. A., 1908, II, 1658.)

kidney is adequate for maintaining life, and since the entire kidney is easiest to handle, such operations should be performed with the entire organ, or both.

Floresco¹² seems to have been the first to publish a feasible method of transplanting the entire kidney with anastomosis of the blood-vessels and report successful

results. He used dogs. His transplanted kidneys were not, so far as I am aware, successfully put to the functional test, i. e., not all of the original kidney tissue was removed; and, therefore, his results are not conclusive. Later, in 1905, Carrel and I engrafted a kidney into the cervical region in a manner similar to that practiced by Ullmann¹³ with excellent temporary result as regards the circulation and preservation of excretory function. The renal artery was connected with the carotid and the renal vein with the jugular. The ureter was made to open into the esophagus. A few days after the operation the dog was anesthetized and the transplanted kidney examined and compared with the kidney left in the normal situation. It presented an exaggerated circulatory and secretory activity.¹⁴

After having devised a method of transplanting tissues *en masse*, i. e., with their surrounding structures, obtaining an adequate blood-supply by using the parent blood-vessels, e. g., in the case of the kidneys, interposing segments of the aorta and vena cava containing the origins of the renal vessels between the cut ends of the corresponding vessels of the host, we practiced renal is-transplantations on dogs¹⁵ and cats with excellent results

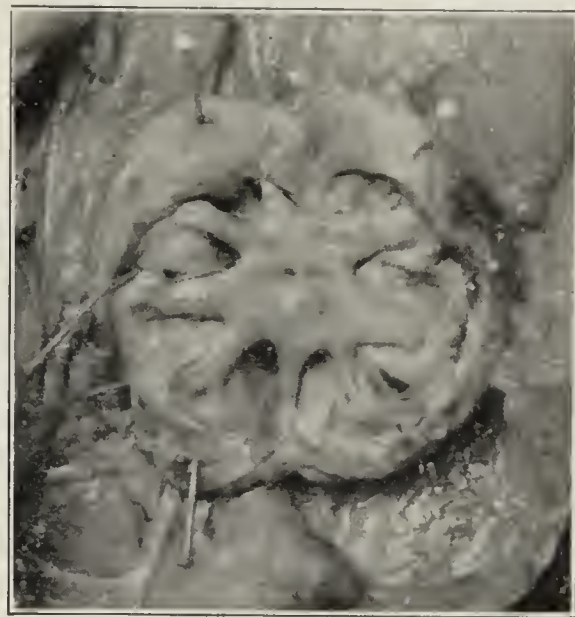


Fig. 7.—Engrafted kidney at post-mortem examination of cat shown in Fig. 6. (THE JOURNAL A. M. A., 1908, II, 1658.)

up to several weeks. But in all of our animals, as well as in all such experiments since reported by Carrel, death has soon terminated the experiment.¹⁶

Gross histologic examination shows a congestive, hemorrhagic and progressive degenerative process. In the beginning the circulatory change is greatest in the boundary zone, but later the cortex of the kidney presents extensive hemorrhages and degeneration and disappearance of the renal cells (microphotograph of seventeen-day cat, Fig. 4). An early stage of this process is shown in Figure 5.

There seems to be some variation in the results, e. g., rate and magnitude of the pathologic processes. But the degenerative processes are progressive, the seventeen-day specimen showing much more marked degenerative changes than specimens taken after shorter intervals. In all of these experiments the kidneys were subjected to complete anemia and perfusion with saline solution.

13. Ullmann: Wien. klin. Wchnschr., 1901, xv, 281.

14. Science, new series, 1905, xxi, 473.

15. Science, new series, 1906, xxii, 304.

16. Since this paper was written, Unger (Berl. klin. Wchnschr., June 7, 1909), has reported results of kidney transplantations by this method on seventy dogs and cats. One dog survived eighteen, and one cat ten days. At death the implanted kidneys showed marked nephritis. All the other animals died earlier.

11. Bradford: Jour. Physiol., 1889, x, 358.

12. Floresco: Jour. de physiol. et de path. gén., 1904, vii, 27.

and, as I have pointed out in another paper,⁹ these factors have to be taken seriously into account. In a case in which only one kidney was removed from a cat one kidney from another cat was introduced and appropriate vascular and ureteral connections made. This animal did well, as shown by the photograph taken about a year later (Fig. 6). Her remaining original kidney was then removed and she died in a few days with the usual symptoms of renal insufficiency. Figure 7 shows the gross appearance of the kidney.⁶ Histologically, only traces of normal structure remain (see microphotograph, Fig. 8), a few glomeruli and tubules having preserved sufficient of their structure for identification. This, so far as I am aware, is the longest observation which has been recorded on an iso-engrafted kidney, and therefore the longest instance of survival of such engrafted renal tissue.

In addition to the period of complete anemia with perfusion to which this kidney was subjected at the time of operation, other factors probably contributed to the disappearance of renal tissue. There was more or less ureteral stenosis, but whether this was due to a lack of

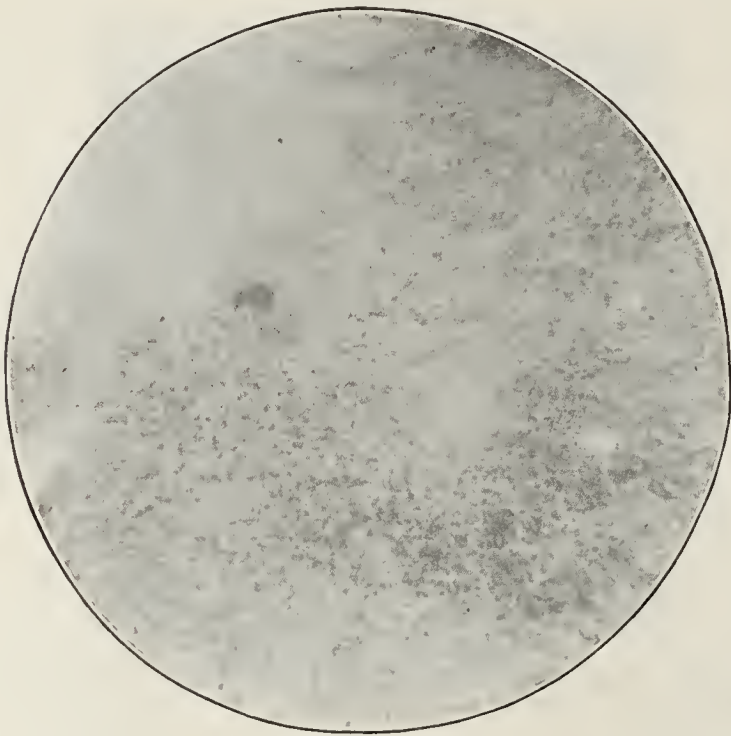


Fig. 8.—Microscopic appearance of kidney shown in Figure 7.

activity on the part of the kidney or to operative fault is, of course, unknown. The same was true of the renal blood-vessels, and, as in the case of the ureter, the primary factor in producing the condition is unknown. That the kidney still received blood is evidenced not only by the examination at the time of the last operation, but by the presence of a relatively large mass of tissue; for when the circulation to a kidney is completely shut off absorption soon occurs.

Adrenals.—As in the case of the parathyroid, our adrenal material has not been sufficiently studied to permit of conclusions. In this connection the results of Busch and von Bergen¹⁷ may be mentioned. These investigators transplanted the tissue into the spleen and some weeks later found good histologic structure in the grafts.

The results of a series of experiments on the thyroid and renal apparatus of fowls will be reserved for a later report.

SUMMARY

Renal isografts with anastomosis of blood-vessels and ureters have so far been only temporarily successful functionally, as shown by the death of the animal within a few weeks. Anatomically, congestive, hemorrhagic and degenerative changes occur so that the normal structure is soon lost. After a year, when sufficient renal tissue was left to perform the required physiologic functions, the transplanted kidney still presented a reminiscence of renal structure, but was totally incapable of adequate functioning, as shown by the death of the animal (cat) on the removal of the original normal kidney.

Thirtieth Street and Brereton Avenue.

RECURRENT ANTERIOR DISLOCATION OF THE SHOULDER

WITH A REPORT OF THREE CASES TREATED BY CAPSULORRHAPHY THROUGH AN AXILLARY INCISION *

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PHILADELPHIA

As the result of a previous study¹ of this subject I have concluded that the habitual or recurrent dislocation of the shoulder originates in a traumatic dislocation, and that the pathology of the two conditions is essentially the same, the only difference being that in the recurrent dislocation the gap between the margins of the capsular tear produced by the original dislocation becomes filled in by a new relaxed cicatricial portion of capsule of varying thickness. With such a cause the rational treatment would be to shorten the relaxed portion of capsule. The results of such treatment, more than any other factor, should determine whether this is the true pathology or not. In 34 cases which I collected from the literature and published in my first paper, in one case reported recently by Dahlgren,² in 2 by Wilmanns³ and in the first 3 in which I operated, this operation was followed by a positive cure in all except one. My fourth case promises a similar result. In Leguen's case, recurrence occurred twelve weeks after operation from a fall on the affected shoulder in an epileptic attack. I was not inclined to regard this as a failure of the operation to cure, in view of the period intervening between the operation and the recurrence and in view of the severe force probably applied by the fall on the shoulder, as this degree of violence seems to have been sufficient to produce a dislocation in a normal shoulder. More recently I have had the opportunity of operating on a patient in whom each of two previous similar operations had been followed by recurrences. This patient says that he knows of another case in which operation failed to prevent the recurrence of the dislocations.

CASE 1.—History.—The patient, a man 42 years old, coal miner, had his first dislocation twenty-five to thirty years ago, when he was caught by a mule between the teeth and thrown some distance. He suffered severe pain and disability in the left shoulder, but did not call a doctor until the following day, when a dislocation of the shoulder was discovered and reduced.

* Read before the Philadelphia County Medical Society, Oct. 27, 1909.

1. Thomas, B. T.: Am. Jour. Med. Sc., March, 1909, Univ. Penn. Med. Bull., March, 1909.

2. Dahlgren: Abstract, Zentralbl. f. Chir., 1909, xxxvi, 55.

3. Wilmanns: Zentralbl. f. Chir., 1909, xxxvi, 429.

17. Busch and von Bergen: Proc. Am. Physiol. Soc., Am. Jour. Physiol., 1906, xli, 16.

The arm was not bound to the side of the body, but was supported from the forearm by a sling for three or four weeks. During this time the patient would take the arm from the sling frequently and use it for eating, washing, etc. He thinks that some years elapsed before the second dislocation took place, but his memory is vague on this point. This was caused by a blow on the outer side of the shoulder by a rather small piece of coal. The following recurrences became more frequent, how frequent he cannot recall. He says that he has had hundreds of them. During one week, recently, the dislocation occurred every day and twice in one day. He has had as many as three in one day. He gave up all work, because he did not dare to move the arm from the side of the body. When the arm is in abduction some twist is necessary to produce the dislocation, but he does not know what that move-

It was opened by an incision about an inch and a half long, in the line of the anterior glenoid margin and about half an inch below it. Exploration of the joint at first detected no abnormal condition, but when the humeral head was forced strongly outward and the finger could palpate the posterior surface of the head, it was found to be superficially flattened on its cartilaginous surface just above the greater tuberosity. The flattened area was approximately circular and about an inch or an inch and a half in diameter. This probably had something to do with the frequency and ease with which the recurrences took place. There was also a slight roughening of the anterior glenoid margin. The joint surfaces were placed in their normal relations and the capsule shortened with No. 3 chromicized catgut sutures, the upper edge of the capsule being drawn down over the lower edge. The cut subscapularis was then repaired by catgut sutures, a small drain introduced to the lower edge of this muscle, and the skin wound closed by silkworm-gut sutures. A dressing

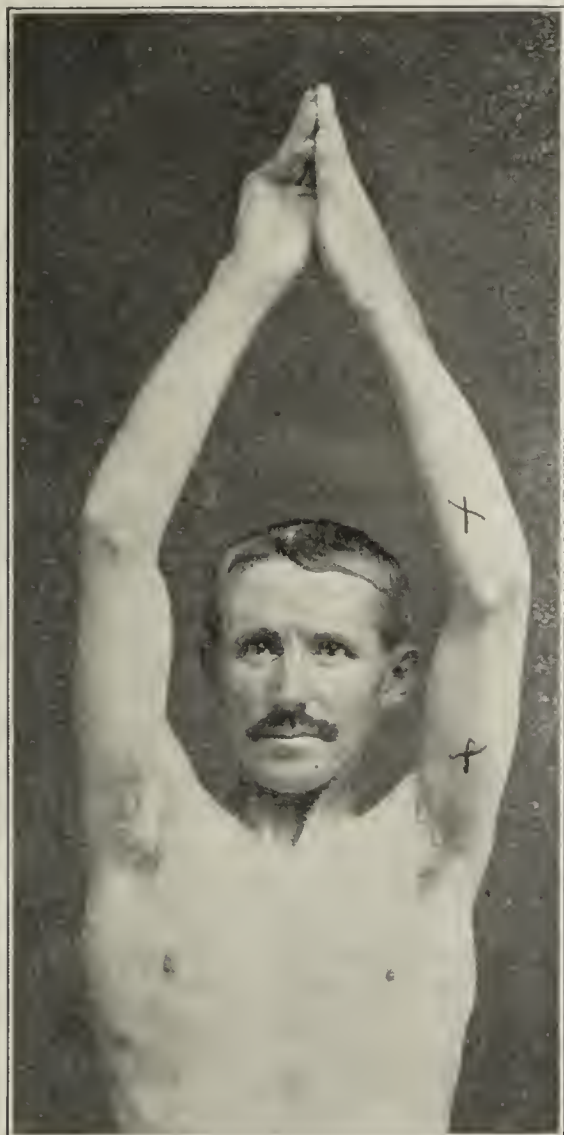


Fig. 1.—Front view of Patient 1. Deformity from scar in right hand.

ment is. He has had recurrences in bed during sleep, and for twelve years has been tying his arm to the side of the body on going to bed to prevent the recurrences. He has never had a dislocation when the arm was so tied.

Operation.—Performed Jan. 30, 1909, at the University Hospital in the service of Prof. J. William White, to whom I am indebted for the privilege of operating on the patient and reporting the case. The incision was made in the axilla along the coracobrachialis muscle and extended upward to the side of the chest and was about 5 inches long. The coracobrachialis, biceps and pectoralis major muscles were strongly retracted outward and the axillary vessels and nerves, including the musculocutaneous nerve, were retracted inward. The anterior circumflex vessels were divided between ligatures and the latissimus dorsi exposed in the floor of the wound. The circumflex nerve and posterior circumflex vessels were located as they passed backward between these two muscles. About half of the width of the subscapularis muscle was then divided on a grooved director, and cut ends turned aside, exposing the capsule. The capsule seemed to be of about the normal thickness and showed no evidence of the original tear.

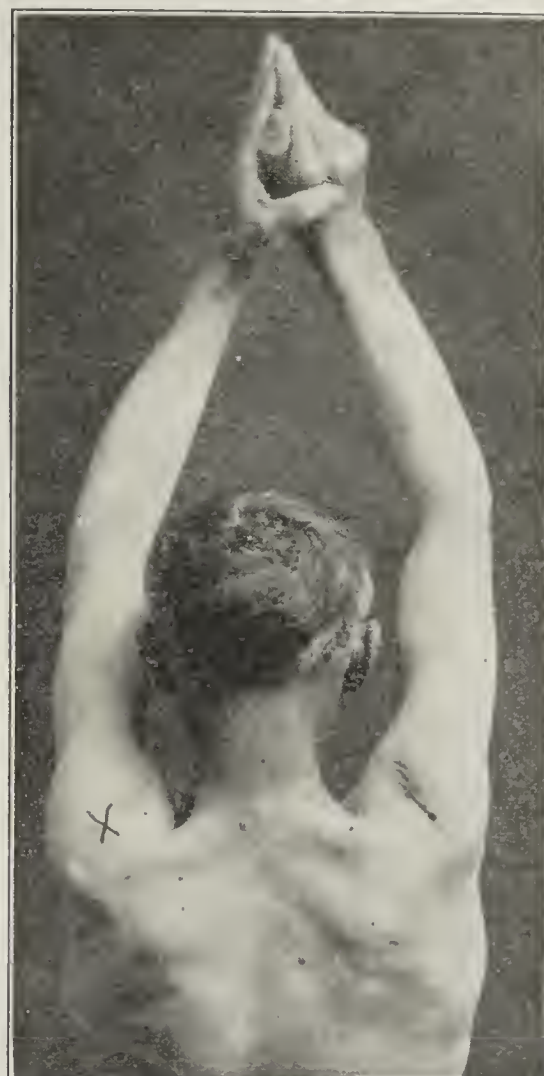


Fig. 2.—Back view of Patient 1. Movement of scapulae same on both sides. Depression in front of acromion in right shoulder due to better muscular development on that side.

was applied, the arm bound to the side of the body, and the wrist supported in a sling.

Postoperative History.—The drainage-tube was removed on the following day. Healing occurred by first intention. The patient was discharged from the hospital on the eighth day, and on the ninth day the bandages were removed and the arm placed in the sleeve of the coat, the hand being supported in front between the buttons of the coat. There was a slight degree of voluntary motion in all directions at this time. The patient left the city on the twelfth day. The arm was bound to the side of the body during sleep for another week. Three weeks after operation forcible movements were begun and in about ten weeks the patient could raise his arm straight above his head. About thirteen weeks after operation the patient met with an accident, falling headlong from a balcony fourteen feet high, to which there was a railing three feet high, striking, he says, on his hands, head and shoulders. His hands were severely bruised and abraded, and he had a large wound of the scalp, which extended from the eyebrow across the vault of the skull to the occiput. A fracture of the skull

was diagnosed. He remained in bed nine weeks, and for months afterward suffered from mental disturbances. He has not been able to go to work up to the present time. He did not, however, sustain a dislocation of the shoulder in this accident or at any other time since the operation. He says that the affected arm is the better of the two, now. He has, however, in the hand of the opposite side, a deformity from a large and rigid scar due to an old wound (Figs. 1 and 2).



Fig. 3.—Patient 2 sixteen weeks after operation. Weight of whole body hanging from hands. Left foot does not touch the floor. Movement forward of left scapula shows that abduction is still resisted by the contracted capsule.

The ability of the repaired shoulder to withstand dislocation from such a force goes far toward proving that, after a proper shortening of the relaxed capsule, the injured joint becomes practically as strong as the normal one; and the fact that the patient considers the shoulder operated on the better of the two would seem to show that the function of the shoulder is normal or nearly so. I saw him Oct. 27, 1909, and could find no impairment of motion on examination.

CASE 2.—History.—The patient, a man aged 26, hospital orderly, received his first dislocation in a baseball game, in May, 1904. While sliding to a base with his left arm in extreme abduction before him, the baseman stepped on this shoulder, producing an anterior dislocation. It was reduced soon afterward and the arm bound to the side of the body by a bandage for at least a month. From that time the bandages were removed about twice a week for massage, but replaced each time and the arm kept immovable at the side of the body for about three and one-half months altogether. He did no work for about a year, after which he drove a wagon for about five months. He then dislocated the shoulder while lifting himself up to the wagon with the hand of the affected side raised above his head. This was about a year and a half after the first dislocation. A month or two later he had a recurrence while asleep in bed, and a fourth dislocation a few months later. The pain was severe in every dislocation, but always disappeared in a few days, when the patient could use his arm freely again. On July 2, 1906, the shoulder was operated on for the purpose of shortening the capsule. The scar of this incision extends from about the middle of the clavicle downward along the anterior border of the deltoid. Healing by first intention occurred. According to the patient, whose memory was shown to be very defective on some points, the arm was bound to the side of the body for only three or four days after the operation, and only a bandage to keep the dressing in place applied. He remained in the hospital about six weeks and did not work again for two years. He became a hospital orderly June 18, 1908. A short time before Thanksgiving day of the same year, while going upstairs, he slipped and when falling grasped the banister with the left hand and sustained a recurrence of the dislocation. After reduction he kept the arm bound to the side of the body for two weeks, when he returned to his duties as hospital orderly. On Jan. 7, 1909, he sustained another dislocation while asleep in bed, and the arm was kept bound to the side of the body for three weeks after reduction. On March 26, 1909, he underwent a second operation for the shortening of the capsule, the incision being made in the axilla. Healing occurred by first intention. The arm was bound to the side of the body for nine days. About six weeks after operation while raising the arm above his head to remove a blanket from a high shelf, the dislocation recurred.

Operation.—On June 16, 1909, I performed the third operation at the Philadelphia Hospital, in the service of Dr. A. C. Wood, to whom I am indebted for the privilege of operating on the patient and reporting the case. Under ether anesthesia the dislocation was first produced to demonstrate that the causal condition still existed. The arm was placed at right angles to the body, and the scar of the last operation excised. The coracobrachialis and short head of the biceps were exposed up to the coracoid process. The cicatricial tissue from the last operation made dissection somewhat tedious. The inner edge of the coracobrachialis was used as a guide in deepening the wound. The tendinous insertion of the latissimus dorsi was next sought as a guide. The circumflex nerve and posterior circumflex vessels, which pass backward around the neck of the humerus at the upper end of this tendon, usually easily exposed, were not looked for as they were embedded in cicatricial tissue. The subscapularis muscle, which, in my previous operations was easily exposed and recognized, in this case was found only after some search. Evidently the divided ends had not united closely after the last operation, or had separated later. The inner was found easily and was of fair thickness. The outer or humeral end, found after some dissection, was fibrous and scanty. The anterior and lower part of the capsule was now exposed from the humeral to the glenoid attachments. This portion of the capsule was distinctly relaxed and the dislocation could be easily produced and reduced. An opening, about 2 inches long, was made in the capsule by the knife, about half an inch below and parallel to the glenoid margin. The capsule seemed to be of substantial thickness throughout. Two mattress sutures of chromicized catgut, No. 3, were then introduced with some difficulty and when they were tied the lower edge of the capsule was drawn tightly upward underneath the upper flap. The lower edge of the upper flap was then drawn

down over the lower by two single sutures. The ends of the divided but rather scanty subscapularis were then sutured together with catgut. A small rubber drainage-tube was introduced to the lower edge of this muscle and the superficial wound closed with silkworm-gut. A dressing was then applied and the arm bound to the side of the body by a Velpeau bandage.

Postoperative History.—On the day following operation the patient developed an epididymitis, which, he says, came on after the last operation, but a few days later than after this operation. It subsided in a few days in both instances. It was soon evident that there was some infection in the wound. The temperature reached $102\frac{4}{5}$ on the third day, and subsided to normal on the fourteenth day. On the nineteenth day a catgut suture escaped in the dressing, after which the discharge rapidly ceased. The suture was in the form of a loop about a quarter of an inch in diameter and the knot was intact. From the size of the loop, and the size and color of the catgut, it was evidently one of the sutures placed in the capsule or in the subscapularis muscle. It was probably a capsule suture, and, because of my anxiety to sufficiently shorten the capsule, had included too much tissue and had been tied under too much tension. Five weeks after operation the patient returned to his work as a hospital orderly. The arm could then be brought from the side of the body to an angle of about 45 degrees. There was about the same range of movement backward and forward and some rotation. From this time on the patient was advised to use as much force as he could stand in dragging the arm in the direction of abduction, as in hanging by both hands from a horizontal bar or from an upright pole. He did not have the assistance of a skilled masseur, as did my other two patients. The increase in function in the shoulder has been slow but steady, and very encouraging to the patient. I do not doubt that the cicatricial tissue at the site of the repair of the capsule will continue to yield until the capsule is of the normal length and the motion of the joint is normal. On October 8 the patient was able by hanging from his hands, to attain the degree of abduction illustrated in Figure 3.

I had little or no fear for the integrity of the joint from the infection which developed in this case. It was probably more a strangulation necrosis from one of the sutures in the capsule or subscapulous muscle than a serious infection, and with dependent drainage was well under control from the beginning. There was no danger from retention in the joint, since the operative wound extended directly downward from the joint, so that any discharge had a free and easy outlet. In those cases, as in Wiesinger's and in Hildebrand's two cases, in which the wound was left open and tamponed up to the opening in the joint which was not closed, the final results were good. Hildebrand, in addition, deepened the glenoid cavity with a sharp curette and flattened off the outer margins with a chisel. Mikulicz overlapped the capsule with silver sutures and packed the wound, which closed in three weeks. With the exception of my cases, in all those which have been reported the incisions have been made in the upper part of the shoulder, and were frequently drained, so that there must have been more or less retention of discharge in the wound and exposure of the joint to the risk of infection. The good results which were reported in all cases would indicate that the risks of infection of the shoulder-joint are overestimated.

CASE 3.—History.—This patient was referred to me by Dr. E. Eliason. He was a young man, aged 21, and had sustained a dislocation of the left shoulder about five years ago, from a fall in an epileptic attack. After this dislocation the arm was bound to the body for two weeks. He has had twelve dislocations altogether, most of them in epileptic attacks, but some from such causes as throwing up the arm to scare away a cat, falling out of a chair, and being pulled on the arm by another person. Dislocations had occurred during convulsions in bed. The patient suffered considerable pain for some days after

each dislocation, and usually found it necessary to take a general anesthetic for the reduction. The fear of a recurrence of the dislocation would not permit him to engage in sports and games of which he is fond. He could raise the arm above his head, but he did it with caution. The last dislocation occurred about the middle of September and since then he had been binding his arm to the side of the body at night to prevent the recurrences.

Operation.—This was performed at the University Hospital, Oct. 16, 1909, with the assistance of Dr. Eliason. The incision was made along the coracobrachialis muscle and was carried



Fig. 4.—Patient 3: right shoulder normal. Compare roundness of normal humeral head with notch in Figure 5.

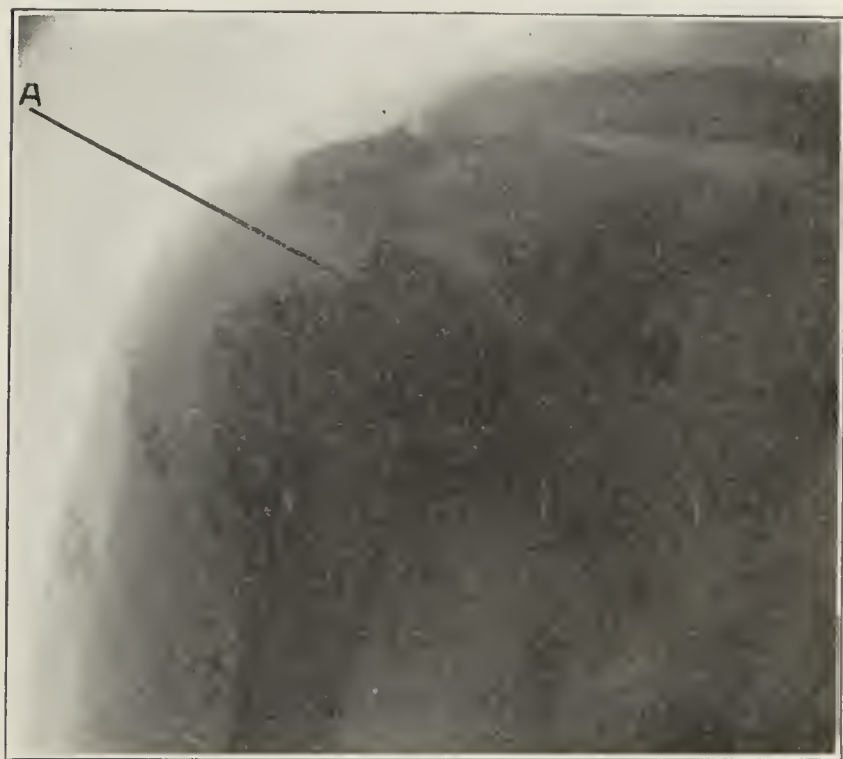


Fig. 5.—Patient 3: left shoulder recurrently dislocated; *a*, defect in cartilaginous surface of humeral head, frequently found in recurrent dislocations of shoulder, sometimes involves a third of head, and in dislocated position rests on anterior margin of glenoid cavity.

into the vault of the axilla under the pectoralis major and slightly downwards along the side of the chest. It was about 5 inches long. The operation was essentially the same as in the other cases, and as in them strong retraction was necessary on the outer side of the wound throughout the operation. On the inner side much less force was necessary. The musculocutaneous nerve entered the coracobrachialis muscle a little higher than in the previous cases and did not retract as

readily. The greater part of the subscapularis muscle was divided. The capsule in the upper part of the exposed portion was so thin that the cartilage of the humeral head could be seen through it. It was most relaxed in its lower portion. The defect in the cartilaginous surface of the head (Figs. 4 and 5) could not be palpated as the finger could not be made to pass to that portion, the head being held close to the glenoid process of the scapula by the surrounding muscles. A small foreign body which had evidently escaped from the joint was found in the wound. It was probably derived from

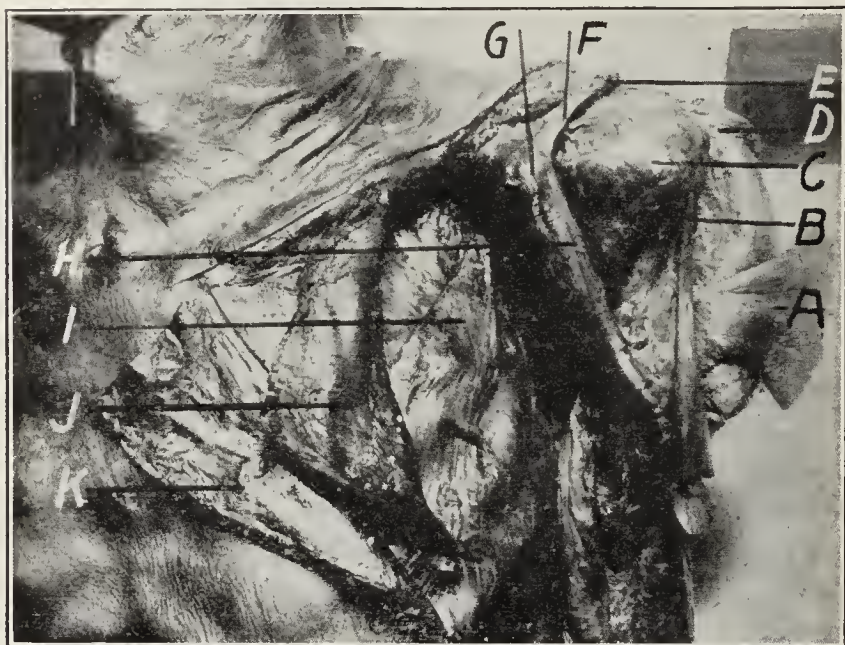


Fig. 6.—Dissected specimen, left shoulder; arm in extreme external rotation; *a*, reflected humeral end of pectoralis major; *b*, long head of biceps; *c*, lesser tuberosity of humerus; *d*, reflected deltoid; *e*, acromion; *f*, coraco-acromial ligament; *g*, coracoid process; *h*, short head of biceps and coracobrachialis muscles; *i*, pectoralis minor; *j*, reflected clavicular and sternal portions of pectoralis major; *k*, reflected skin and fascia.

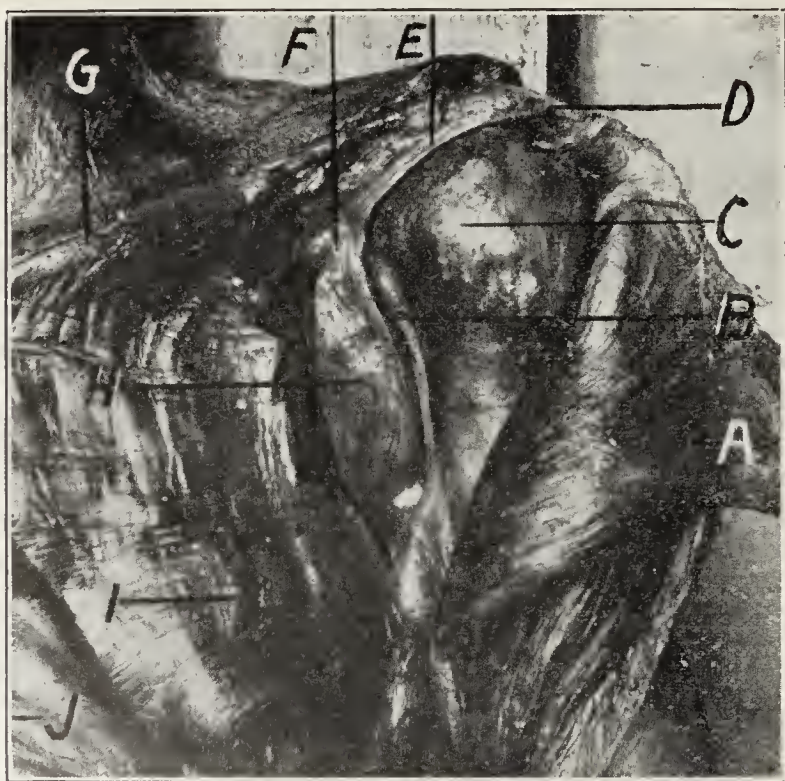


Fig. 7.—Same specimen as in Figure 6; extreme internal rotation; *a*, reflected deltoid; *b*, long head of biceps; *c*, greater tuberosity; *d*, tip of acromion process; *e*, coraco-acromial ligament; *f*, coracoid process; *g*, clavicle; *h*, short head of biceps and coracobrachialis muscles; *i*, clavicular and sternal portions of divided pectoralis major; *j*, reflected fascia and skin. The lesser tuberosity of the humerus, which is internal to the long head of biceps (compare with Figure 6) is concealed under the coracoid process and coraco-acromial ligament.

that portion of the humeral head showing the defect. The capsule could not be overlapped, but the edge of the lower thicker portion was brought up underneath the upper thinner portion by two No. 3 chromicized catgut sutures, and the capsule thus shortened. The margins of the divided sub-

scapularis were reunited by a continuous catgut suture, a small drainage-tube introduced to the lower margin of this muscle, and the skin margins united by silkworm-gut sutures. A gauze dressing was applied and the arm bandaged in the Velpeau position.

Postoperative History.—The drainage-tube was removed on the second day. The patient complained of much pain in the shoulder and down to the wrist on the first two days. On the third day it had largely subsided, and on the fourth day had practically disappeared. Healing occurred by first intention. The skin ruptures were removed on the fifth day and the patient left the hospital on the seventh day. The arm will be bound to the body until the end of the second week. Eleven days after operation, he has abduction to about 60 degrees, rotation is almost complete, and he has all the movements of the forearm, although, of course, they are weak. (This patient had full motion in six weeks, and since then an epileptic attack, but has had no dislocation since the operation.)

The first patient on whom I operated and whose case I reported in my first paper has been at work continuously since the first report, has been active in gymnasium and other athletic work, and has engaged in several

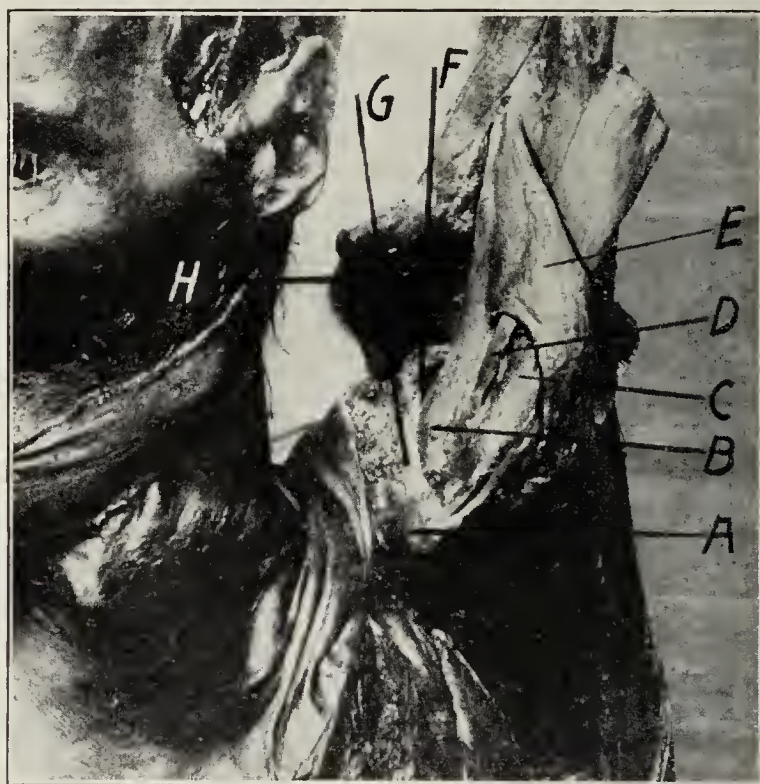


Fig. 8.—Same specimen as in Figures 6 and 7; arm in extreme abduction; *a*, coracoid process; *b*, lower portion of greater tuberosity; upper portion is under acromion; *c*, short head of biceps and coracobrachialis; *d*, long head of biceps; *e*, humeral end of divided pectoralis major; *f*, acromion process; *g*, coraco-acromial ligament; *h*, reflected deltoid. Between the outer surface of the surgical neck of the humerus and the edge of the acromion can be seen a portion of the space still intervening between the two.

semipublic boxing contests. He has had no recurrence of the dislocation, and feels that the shoulder operated on is as strong and the motion as good as ever.

While the four cases in which I have performed the capsule operation represent a small experience, there is only one other operator who has had as many.* Perthes contracted the capsule in four cases, while Francke did it in three, and excised the head of the humerus in one, an operation which has been practically abandoned. I am very much interested in the variation in progress of

* Since the reading of this paper I have operated in four new cases, in the service of Prof. J. William White, at the University Hospital. In three there was healing by first intention, and in one slight infection. In one case there was practically full motion in four weeks, at the end of which time the patient began to take up swimming exercises. In the second case, in which operation was done five weeks ago, motion is almost normal. The third patient, operated on two weeks ago, had abduction to a right angle, while the fourth was operated on only a week ago and has not begun to use the arm. The patient operated on five weeks ago has had several epileptic attacks since obtaining free use of his arm.

function in my first three cases. It required six weeks to get the arms straight above the head in the first case, about eight or nine weeks in the second, and about fifteen weeks in the third. The problem is clearly one of technic. In the first case the margins of the original tear in the capsule were found and sutured edge to edge, some shortening resulting from the old shriveling of the upper portion and the effect of the sutures. The slight stretching necessary later was more easily accomplished than in the second case, in which the edges of the opening in the capsule were overlapped and the shortening probably slightly greater. The inflammation which followed in the third case, and the anxiety to shorten the capsule and thus to prevent the recurrences which followed the two previous operations, delayed the period at which forcible movements of the joint could be begun and rendered them less effective. Infection should not occur more frequently in this than in any other clean operation.

Goldthwait in a recent paper⁴ explained the recurrent dislocations of the shoulder by certain peculiarities in the bony anatomy of the shoulder. He says that normally the lesser tuberosity of the humerus, when the arm hangs at the side of the body, is opposite or rests against the coracoid process. This process may be especially long, so that the forward movement of the arm is limited by impingement of the lesser tuberosity against it. If the force is sufficient, the head of the humerus may be lifted out of the glenoid cavity, the coracoid acting as a fulcrum. In like manner the acromion may be longer than normal, so that when the arm is raised above the head in extreme abduction, the greater tuberosity of the humerus impinges against the edge of the acromion process, and, if the force is strong enough, the head of the humerus is again forced out of the glenoid cavity, a true dislocation taking place. Drooped or stooped shoulder accentuates these peculiarities.

If these anatomic peculiarities are marked, Goldthwait says, it is easy to understand the ease with which a dislocation takes place, even if no great violence has been a factor in its production. He does not cite a case in which the recurrent dislocations developed without the occurrence of a first traumatic dislocation. The inference is that from the influence of stooped shoulder and long coracoid or acromion processes, the impingement of the tuberosities of the humerus leads to a gradual relaxation of the capsule and the development of recurrent dislocations.

Of the 47 cases which I collected from the literature and reported in my first paper, in all of those in which the history covered this point, the recurrences were preceded by a first dislocation due to the application of considerable violence. In connection with none could it be inferred that the patient had suffered previously from any inconvenience in the affected shoulder, from which one might be justified in suspecting that there had been a preliminary relaxation of the capsule.

Goldthwait does not describe the experiments he performed on the cadaver, nor the method by which he reached his conclusions. One is led to infer that he took only the bones into consideration. I tried to confirm the work of Goldthwait on the cadaver, but employed a dissected specimen in which the bones, muscles and ligaments were left as far as possible in their normal relations. The deltoid was detached from the clavicle and acromion process and reflected backward so as to expose the structures it was necessary to observe.

With the arm at the side of the body in the position of rest, the inner edge of the lesser tuberosity does not rest against the tip of the coracoid process, but is removed about three-fourths of an inch from it. In extreme external rotation it is about an inch and a half away (Fig. 6), and on extreme internal rotation the lesser tuberosity rolls easily under the tip of the coracoid. This is well illustrated in Figure 7. The lesser tuberosity is internal to the long head of the biceps which lies in the bicipital groove between the lesser and greater tuberosities. The greater, on the outer side of the long head of the biceps, can be seen in the illustration, but the lesser tuberosity on its inner side cannot be seen because it is concealed under the coracoid process. By dragging the shoulder forward and downward an effort was made to simulate the position of stooped or drooped shoulder, which Goldthwait says favors the earlier impingement of the lesser tuberosity against the coracoid. In this position the relations between the two bones were not altered, the scapula and humerus moving together and maintaining the same relations to each other as in the erect position. The anterior surface of the coracoid process is covered over by the attachment of the coraco-acromial ligament up to the tip of the process, which is still further covered by the common tendon of the short head of the biceps and the coracobrachialis muscle, so that the lesser tuberosity could not come into direct contact with it. But the lesser tuberosity is also covered over by the subscapularis tendon, so that it presents no projecting edge which could impinge against the tip of the coracoid if that were not already masked by the ligament and muscles. Figures 6, 7 and 8 illustrate these points very well. The whole anatomic arrangement here is one calculated to compel the head of the humerus on internal rotation to glide under the coracoid process and to render impossible the impingement of one against the other.

Again, when the arm is raised above the head in extreme abduction, the greater tuberosity cannot be made to impinge against the edge of the acromion, but glides under it. Moreover, when the tuberosity passes under the acromion, and an attempt is made by extreme abduction to bring the outer surface of the humerus against the edge of the acromion, this is prevented by the resistance of the capsule and muscles below. Although the two bones come close together they do not strike. As the force is increased the scapula is rotated in such a manner that its lower angle moves outward and upward and its upper end, including the acromion process, moves inward and upward away from the approaching humerus. It seemed evident that before the two bony surfaces could be made to strike each other the tense lower part of the capsule must rupture. This would tend to confirm the conclusion which I had reached in my first work on this subject, that the essential lesion in a dislocation of the shoulder is a rupture of the capsule. These observations were confirmed on three other dissected bodies. The results also tend to show that frequent strains on the capsule from the impingement of these bony surfaces against each other do not occur, and that a preliminary relaxation from such a cause is impossible. As the result of my observations on the cadaver I believe that the mechanism of recurrent dislocations of the shoulder suggested by Goldthwait cannot be effective. I wish to acknowledge here, my indebtedness to Dr. G. G. Davis, associate professor of applied anatomy in the University of Pennsylvania, for the anatomic material employed and the freedom of his department.

4. Goldthwait: *Am. Jour. Orthop. Surg.*, 1909, vi, 579.

About simultaneously with Goldthwait's paper appeared one by Clairmont and Ehrlich,⁵ in which is offered a new operation for the cure of this condition. According to these writers, mechanical therapy has been a failure and operation very successful. They recognize the fact that, in all operations, the relaxed capsule was contracted; and after a critical examination of all the methods employed up to the present time, they conclude that this shortening of the capsule was the only cause of success. They object to these operations, however, because of the large wound necessary and the exposure of the joint. They believe that the real cause of the recurrences is a lack of coordination of antagonistic muscles, particularly because the dislocations result from simple muscular contraction and not from severe trauma. Since, in the intervals between the recurrences, the joint functionates normally, they feel justified in leaving out of account the pathologic lesions present and in combating only the causal force, the abnormal muscular contraction on the axillary side of the joint. They conceived and put into effect by operation, in two cases, the idea of furnishing a resistance to this abnormal force, by transplanting a muscular flap taken from the posterior portion of the deltoid. This flap was made to encircle the posterior and outer surface of the surgical neck of the humerus as a sling and was attached to the under surface of the anterior portion of the deltoid. This antagonist is relaxed when the humerus is at rest and does not hinder its movement. On elevation of the arm it contracts simultaneously with the rest of the deltoid and, by pulling the proximal end of the humerus outward and upward, hinders the occurrence of the dislocation. Three months after operation in one case and two months in the other no recurrence of the dislocation had taken place and there were free movements in the shoulder-joint.

The chief advantage claimed for this operation is that it is a simple one. Compared to some of the operations which have been done, particularly those by Perthes, it may be. It requires two incisions, the anterior 8 cm. long, going through the upper portion of the deltoid, the posterior extending from the spine of the scapula downward to the insertion of the deltoid in the middle of the humerus. Half of the pectoralis major tendon is divided, but is later repaired by sutures. The teres major and latissimus dorsi tendons are divided to the same extent and are not repaired later. The two heads of the biceps are separated to make a part of the passageway for the transplanted flap. The external head of the triceps is divided obliquely for 1 to 2 cm. and is not repaired. The finding and dividing of the teres major is said to be difficult and to expose the circumflex nerve to considerable risk of division, while the conducting of the muscular flap through the passageway made for it gave some trouble. In the second case it would not reach as far as desired because of its contraction. The fact that the two patients operated on had free movements in the joint and that the condition had not recurred three and two months after operation, respectively, is not reassuring. After the operation of contracting the capsule, the patients have been able to take up gymnastic exercises, such as swinging from horizontal bars, climbing, swinging a heavy hammer, etc. It is doubtful if the small transplanted flap would long resist such forces, in view of the presence of the relaxed capsule, the contraction of which, it is admitted, produced the cure in all the other reported cases.

Clairmont and Ehrlich maintain that the contraction of the capsule is not a physiologic operation, since in the normal joint the capsule is so lax that it offers no hindrance to the free movements of the humeral head; so that it would be difficult at the time of operation to determine how much of the relaxation was normal and how much pathologic. While the normal capsule offers no hindrance to the free normal movements, it offers a very decided resistance to movement beyond the normal in every direction. When the arm is hanging down at the side of the body, the upper part of the capsule is tense, because that is the limit of movement in that direction. When the arm is elevated to its limit the lower part of the capsule is tense. In a similar manner the posterior capsule is tense on extreme anterior movement and the anterior portion on extreme posterior movement. When any part of the capsule is thus put under tension it becomes a very positive factor in holding the bony articulating surfaces snugly together. The corresponding muscles also take part in resisting the extremes of movement, but their resistance is probably not so rigid as that of the capsule. All parts of the capsule can be equally lax only in the midposition, i. e., with the arm directed outward at right angles with the body, without rotation. Since the normal capsule is tense below and anteriorly in extreme abduction of the arm, if during the operation the relaxed capsule could be made tense by the suture with the arm in this position, it would then be of the normal length. But it is difficult to retract the edges of the wound in that position.

In my last case I made the capsule tense by sutures with the arm at about a right angle with the body, and at the present time, eleven days after operation, the patient can abduct the arm to about an angle of 60 degrees. The case with which he can do this promises a more rapid return of full motion than in any of the other cases. In order to guard against the recurrences of the dislocation which is the chief object of the operation, the capsule should always be made shorter than normal, and should be stretched to the normal by forced exercises later. Only repeated movements beyond the normal will overstretch the capsule. Sudden and severe violence would not stretch but tear the capsule, when a new dislocation would probably take place.

In the treatment of recurrent dislocations, in my opinion, a sufficient shortening of the relaxed portion of the capsule will result in a cure every time. It is not held that this cannot occur without operation. I have already reported a case in which the dislocations ceased to occur twenty years ago, while the first was received in a fall forty years ago. A similar case has been seen since and another heard of. In the two which have been seen and examined there is still in each a sense of weakness when the arm is in abduction, which movement is made with caution. There is in both cases a distinct inclination to avoid this movement and especially to avoid any severe muscular exertion while the arm is in this position, indicating an uncomfortable sense of insecurity and the possibility of recurrence. In the first of these two cases, the recurrences took place at intervals of about two years, and in the second, in which both shoulders were involved, when the dislocations took place they gave little trouble and the bones usually slipped back into place almost immediately, indicating in this case probably a smaller rent in the capsule than usual and, therefore, less than the usual relaxation. It

5. Clairmont and Ehrlich: *Arch. f. klin. Chir.*, 1909, lxxxix, 798.

is easily conceivable that during long intervals between the recurrences with the arm at the side of the body and the elongated portion of the capsule in the position of most complete relaxation, just enough contraction of the cicatricial tissue about the torn capsule occurred to prevent a dislocation when the arm is raised in abduction and no violence is applied to the arm. This explanation of these rare spontaneous cures is the more plausible when we take into consideration the fact that the elongation of the capsule at the site of the original tear is probably never more than an inch. In a few of the reported cases we are informed how large a piece of the capsule was removed for the purpose of shortening it. In only one case (Stimson) was it as wide as an inch, and in others it was about 1 cm., half an inch, three-quarters of an inch, etc. This agrees with my experience in my last three cases, while in the first no observations were made on this point.

The chief difficulty with the spontaneous cures and with the non-operative methods of treatment is that they succeed too rarely and the cures are too uncertain. Goldthwait has seen a number of these recurrent dislocations, but reports only one cure by his method of treatment. Of this one he says:

In one very obstinate case which the writer has seen, in which nothing short of an extensive operation seemed to promise relief, the effect of position was tried (erect position of shoulders) and with six months of use of a brace to maintain this position no further trouble has occurred in two years of free use of the arm, while previous to the change in the position of the shoulders the dislocation frequently followed very slight movements, such as raising of the arm or the putting on of the coat.

I have found nothing in the literature to show that shoulders cured would withstand severe tests. In three months after operation or less I have given my patients full permission to undertake climbing or any gymnastic exercises, swimming, etc., and to forget so far as the still atrophied muscles will permit, that they ever had had dislocations. The overlapped capsule at the site of the original tear is in all probability, at the end of three months, as strong as the original capsule and is backed up by the cicatricial tissue around it. The headlong fall of seventeen feet which my second patient sustained without a recurrence of the dislocation goes far toward proving this statement. I feel that one is justified in promising a positive cure by operation, which cannot be sincerely said of any non-operative method of treatment.

There is a feature that deserves mention connected with those cases in which the intervals between the recurrences are long and the patient is hopeful that each one will be the last. Almost all these patients are seized with a feeling of panic when they realize that the arm is passing to the abducted position. The result is that they soon learn that their only safety is in keeping the arm at the side of the body, which makes cripples of them.

My second patient, because of this fear, had given up all work, although he was a poor man, a coal-miner. Another patient, who refused operation, has been having recurrences about every two or three years, and is now hopeful that he will have no more. Yet the dread of abduction of the arm was so great that he turned his face away when the first patient on whom I operated attempted to demonstrate his freedom of movement and confidence in the shoulder operated on. This

man is healthy and aged about 35, and without operation will be thus crippled throughout the rest of his life. One is surely justified in advising operation under these circumstances. There have been no deaths or ankyloses of the shoulder reported and there should be none.

The operation is done in a clean field, with a simple straight incision, 4 to 6 inches long, and involves merely the placing of a few sutures in the exposed capsule for the contraction of the relaxed portion. The best possible drainage of the field of operation is afforded. The shortened capsule will later elongate to the normal from traction by forced abduction and full function will return. There is much less danger associated with this operation than with the wiring of a fractured patella, since in the latter operation the tissues are severely traumatized, and if infection occurs the joint is in greater danger because of its large extent, its numerous pouches and the absence of good drainage. Moreover, without operation, there is practically no hope of obtaining a normal shoulder, when recurrences have once become established. There should also be less danger than in an appendicitis operation or the radical cure of an inguinal hernia, because of the larger serous cavity exposed to infection and the greater possibilities of a hernia following the latter operations.

CONCLUSIONS

The pathology of recurrent dislocations of the shoulder is essentially the same as that of the original traumatic dislocation. The margins of the tear in the capsule which permitted the first dislocation were prevented from uniting firmly and closely and were again separated by each recurring luxation, so that finally they united by a cicatricial portion of capsule bridging the gap between the margins. The resistance to dislocation offered by the normal capsule is lacking just as much in every recurrence as immediately after the first dislocation.

The first of the two cases here reported tends to prove that the capsule after operation may be practically as strong as before the first dislocation. The second case shows that failure of the operation to cure should not be charged to the operation itself, but to a defect in the method.

Peculiarities in the bony anatomy of the shoulder, as suggested by Goldthwait, do not explain the recurrences, and more certainly do not account for the original dislocation. The operation proposed by Clairmont and Ehrlich is much more severe than a capsulorrhaphy need be, does not remove the cause, and gives a joint much less secure with more impairment of function than follows a capsulorrhaphy.

Cessation of the recurrences may follow non-operative methods of treatment or may occur spontaneously; but such cases are rare, uncertain in their occurrence, and leave shoulders which are functionally very unreliable. After capsulorrhaphy by overlapping the edges of the opening in the capsule, the joint becomes practically normal.

In my judgment, this operation should be regarded as less dangerous to life and to the part operated on and more successful in avoiding or preventing later troublesome sequelæ, than the operations for appendicitis and inguinal hernia, and should be regarded as much safer than the operation for the wiring of a fractured patella.

2005 Chestnut Street.

THE OFFICE OF CORONER

ITS PAST, ITS PRESENT, AND THE ADVISABILITY OF ITS
ABOLISHMENT IN THE COMMONWEALTH
OF MISSOURI *

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The actual date of the origin of the office of coroner is lost in the mists of antiquity. Some authorities state that it existed at the time of King Alfred (871-910). At all events the office, so named from *corona*, because the coroner is an officer of the crown who kept some of the pleas of the crown, was founded in England and still exists in all parts of the British Empire as well as in the United States. In Scotland the corresponding duties are carried out by the procurator fiscal. The primary object of the coroner's office in England appears to have been to keep watch over the profits of the crown, to inquire concerning treasure trove, wreck, whale and sturgeon and to secure them for the king's use. His later function, namely, to conduct an inquest in cases of sudden death, had a similar purpose—to see that the crown was not deprived of its emoluments arising from the forfeiture of the chattels of felons and outlaws. Originally, it was the concern of the coroner to bring the goods of the felon to the king for his use rather than to bring the felon himself to justice.

Anciently, it was also the duty of the coroner to take the confession and abjuration of felons. He also held inquests on prison-breach, arson and housebreaking.

While the office was practically created for but one definite purpose, namely, the safeguarding of the property of the crown, through the march of ages this purpose has been slowly minimized, and we now see another function almost completely usurping it, i. e., the investigation and determination of the cause of death of individuals dying by their own hand, by some one else's hand, by official execution or through the multitudinous channels designated "accidents."

Such were the duties of the coroner in England in bygone days. They are now limited in that country, in accordance with the coroner's act (1887, S. 3), to an inquiry on "the dead body of a person lying within his jurisdiction" as to how, when, where and by what means the deceased came by his or her death, in cases in which "there is reasonable cause to suspect that such persons have died a violent or an unnatural death, or died a sudden death of which the cause is unknown, or that such person has died in prison, or in such place under such circumstances as to require an inquest in pursuance of any capital act, and on treasure trove."

THE OFFICE IN ENGLAND AT THE PRESENT TIME

In England at the present time there are three kinds of coroner. First are the coroners *virtute officii*: (a) the Lord Chief Justice of the King's bench who, by virtue of his office, is the chief or supreme coroner of England; (b) the Puisne Judges of the King's bench, who are sovereign coroners. Second are coroners by *virtute carte sive commissionis*. These are coroners appointed by the king, coroners of the verge, and the precincts of the palace, and are those who exercise their jurisdiction within the precincts of the king's palace.

The admiralty has power to appoint coroners within its jurisdiction, usually the judge marshal of the

admiralty and, *pro hac vice*, his deputy. This jurisdiction was anciently confined to matters arising on a high sea. The jurisdiction of admiralty extends to matters now arising on the open sea between the high- and low-water mark when the tide is in, but when the tide is out the authority of the county coroner obtains in such places. The coroners *virtute electionis* are the (a) county coroner and (b) borough coroners. In other words, in England there are four classes of coroners—official coroners (Lord Chief Justice of England and the judges of the High Court of Justice being *ex officio* sovereign coroners), franchise coroners, borough coroners and county coroners. In America, statutory provisions generally provide that the coroner shall be elected by the voters of the county, though in some states they are appointed for counties.

It can thus be seen that the office of coroner, ancient and honorable though it may be, now seems cumbersome and obsolete, viewed in the light of the modern specialization and systematization of human endeavor. Here we have the spectacle of an officer exercising two functions of widely separate character, judicial and ministerial. The *British Medical Journal*¹⁶ recently commented on the curious extent of the jurisdiction of the ancient office of coroner afforded by an inquiry held in August, 1909, at Yeovil. The proceedings, which took place under an act of Henry III, were to determine what a certain gold ornament found was and by whom it was found; the jury solemnly decided that the article was an ancient British torque, that it was found by Henry Coles, and that the owner was unknown. To whom the torque belongs will have to be determined by the higher court. This shows that even at this time coroners are still exercising in England some of their ancient prerogatives.

CORONER'S OFFICE IN AMERICA

The coroner's office was brought to America by the colonizers of New England. It existed throughout colonial times and after the revolution of 1776 and the formation of the constitution of the various states, it was incorporated into laws, or else was spoken of explicitly in the constitution from the various states. Dr. Cattell, in a paper read before the Philadelphia Medical Jurisprudence Society, Oct. 19, 1908, entitled "The Coroner's Office at Philadelphia: Its Past and Future," stated that the coroner's office coexisted with the arrival of Penn on the banks of the Delaware. An early case recorded is that of Benjamin Acrod, in 1683, on whose body a coroner's inquest was held. The jury found that "he killed himself by drinks." Suicides at that time who were possessed of goods might have these, in part or whole, claimed by the governor. In this case, however, Penn relinquished any claims that he might have to the goods, and an administrator of the estate was appointed.

With one or two exceptions which will be spoken of later, the coroner's office exists in all the different states of the Union. The duties of the office are mainly the investigation of the cause of sudden and violent death, yet the incumbent still performs as a ministerial officer the duties of a sheriff when that officer is incapacitated. The privileges and liabilities of a coroner as a judicial officer are determined by the status of the coroner's court; thus in England, where a coroner's court is a court of record, the privileges, immunities and liabilities are those ordinarily belonging to judges of courts of record. No action lies against him for any matter done

* Read before the St. Louis Medicolegal Society, Nov. 12, 1909.

* Because of the limitations of space, the article is here abbreviated by the abridgement of the historical portion. The complete article appears in the author's reprints.

by him in the exercise of his judicial functions. In the United States this court is a court of inferior jurisdiction, and not of record, and the coroner's privileges are correspondingly abridged and his liabilities are extended. In his ministerial capacity, his privileges and liabilities are those of a sheriff, whose substitute he is.

Thus we have at present an officer known as a coroner, created by statute or constitution, a quasi-magistrate, a conservator of the peace throughout his county, holding inquests in sudden deaths, issuing subpoenas, administering oaths to jurors, acting as marshal or sheriff when such officers cannot act, conducting post-mortem examinations himself or designating some other person to do so, making chemical and microscopic examinations of parts of the bodies of deceased individuals, or causing some one else equally skilled or unskilled, as the case may be, to do the same; in short, performing the duties of judge, advocate, physician, pathologist, bacteriologist, toxicologist! The system is absurd on the face of it. Since the time of Erasmus, we have had no pantologists; therefore it is easy to understand that the incumbent of this office is never qualified to perform all the duties for which he is elected by the people and charged by the constitution of the state to carry out.

Out of this weird jumble of duties, there stand out two functions which to-day represent the work which the coroner has mapped out for him on his induction into office:

First, he must make inquiries directed to show whether or not certain individuals came to their death from causes other than disease, and, if so, in what manner the violence causing the injuries resulting in death was operative.

Second, he must go through with procedures directed to the discovery, apprehension, examination and possible indictment of the person or persons by whom the violence has been committed.

It requires but a casual observation to perceive that these are two widely separated fields of activity and that they each call for a special kind of qualification: the first inquiry demands naturally a degree of medical knowledge usually possessed only by those who have been especially trained in that department of medicine called pathologic anatomy, in its broadest sense, by which I mean expertness in gross pathology, histology and bacteriology, coupled with a good general fund of medical information. The second inquiry demands a capacity to deal directly with the administration of justice with the object in view of correlating medical evidence with ordinary evidence for the purpose of fixing legal responsibility in all cases coming before the coroner's tribunal. Logically, the second inquiry demands the services of a jurist to hear the facts properly presented by a qualified member of the bar.

NEED OF SPECIALIZATION OF FUNCTIONS

While medicine and law have progressed slowly but surely far beyond the limits which existed at the time of the foundation of this office, the law, so far as it was represented in the primary creation and present existence of this office, apparently fails to recognize the need for specialization of the various functions of the office. For example, there is nothing in the statutes or constitution which demands that a county coroner should possess any kind of qualifications at all. It does not specifically state that he must be either a trained jurist or a trained pathologist, yet necessarily he cannot properly exercise the functions of his office in the absence of this double set of qualifications. In some places, mostly in

the large cities, the multitude of cases which come before the coroner's court have so embarrassed him that he has in many instances delegated the medical side of his work to some physician or physicians. The legal phase of his activity is usually handled by the coroner himself or by one of his deputies. It is unnecessary for me to describe the laughable travesty on justice which is continually going on in coroner's courts because of the failure on the part of the presiding officer either to understand or to utilize the ordinary methods of court procedure.

This haphazard method has apparently gone on for years without any definite step having been taken to reform it, even though members of the bar have long since recognized the shortcomings of the system. In this day of specialization no one would dare to believe that any one individual ever possessed suitable qualifications to perform all the duties of the office of coroner. In spite of the absurdity of the situation created by human minds and hands, wherein some one is asked to do what is well-nigh impossible, but little action has been taken with a view to ameliorate the condition.

MEDICAL EXAMINER SYSTEM OF MASSACHUSETTS

If we would have it otherwise, we will not have to look far for a system which, while insuring a high standard of skill and fairness in both medical and legal investigation, is simple, practical and economical. I allude to the system known as the medical examiner system of Massachusetts.

Strange to say, this system was created in 1877 synchronously with the abolishment of the office of coroner in the commonwealth of Massachusetts, not so much because a need was felt for separating the two widely different functions of the office, but because of certain flagrant abuses which prevailed among the incumbents of the office in Boston. These abuses became so extreme that the legislature, spurred on by the arguments presented by a young Boston attorney, Mr. T. H. Tyndale, at the present time an honored member of the Suffolk bar, passed the bills which were drafted by him and which are now known as the medical examiner laws of Massachusetts. With the enactment of these laws, Massachusetts both purged herself of abuses and created a logical system of medicolegal investigation that should serve as a model for all seekers after advanced, practical and fair methods of jurisprudence. The system there (and it might be added three other states of the Union, Michigan, Rhode Island and Connecticut, have followed the example of Massachusetts and enacted similar laws) divides the work between the medical examiner and the district attorney's office, aided by special officers of the police department. The laws creating the office of medical examiner provide for the appointment by the governor, with the advice and consent of the council, for a term of seven years, of able and discreet men, learned in the science of medicine, to be medical examiners and associate medical examiners in each county. The state is divided into districts, according to population. There are fourteen counties in the state, and these are subdivided into districts, according to population, the number of districts ranging from one, in the case of Nantucket, to ten, in the case of Essex and Middlesex. An examiner and associate examiner are appointed for each of these districts, with the exception of Suffolk, a county which is not divided, where two examiners and one associate are appointed. The total number of districts is, therefore, seventy-two, with an average to the county of about five. There are seventy-three examiners and seventy-two associates. Reappointment has been com-

mon, examiners and their associates serving repeatedly for one term after another. In Suffolk County the two examiners originally appointed served with distinction for four terms, a period of twenty-eight years. This statement will serve to show that in Massachusetts, in this instance at least, merit seems to have been placed above party politics.

The duties of the medical examiner consist primarily in the investigation of the deaths which have occurred within their districts of all persons who may be supposed to have died from violence, a term which has been accepted to mean "other than from disease." Under this heading would come:

1. Deaths from violence, wherein either from the circumstances of the death, from the appearance of the body, or from the nature of its surroundings, the supposed cause is reasonably manifest. Deaths of this order include: burns and scalds, crushing beneath falling bodies, cutting and stabbing, drowning (actual or apparent), elevator accident, explosion, falls, use of firearms, gas poisoning, hanging, and railroad accident.

2. Deaths supposedly by violence, wherein owing either to the nature of the cause or the circumstances of its operation the effects produced on the body are outwardly less manifest, and may be wholly disproportionate to the extent of the injury. Deaths of this order include: criminal abortion, blows or other forms of mechanical violence, electric shock, poisoning, starvation, strangulation, suffocation, and exposure.

3. Sudden deaths of persons not disabled by recognized disease, wherein, until the same is excluded by official medical inquiry, some mode of violence not immediately apparent may supposedly have been operative. Deaths of this order include those of persons who fall dead on the street or who die suddenly in public places, in their places of employment, or in their houses, without apparent cause. It includes deaths which may be supposed to be due to alcoholism.

4. Deaths under circumstances unknown, wherein there are no witnesses to the fact and where little or nothing may at the time be known concerning the deceased person. Deaths of this order include those of persons whose dead bodies are found in the open, in places of temporary lodgment or shelter, or in their homes, under circumstances largely or wholly negative, the cause of which cannot be properly stated without official medical inquiry.

It is provided in the statutes that the medical examiner may take charge of such cases, viewing and inquiring into the cause and manner of death; if he deems it necessary, on authority of the district attorney, mayor or selectmen of the district, in writing, he may make an autopsy in the presence of two or more discreet persons, whose attendance may be compelled by subpoena. Before making the autopsy he shall call the attention of the witnesses to the position and appearance of the body. He shall then and there make careful record of every fact and circumstance tending to show the condition of the body and the cause and manner of death, with names and addresses of witnesses, which record he shall subscribe. If necessary, the examiner may have a physician present, to whom shall be paid the sum of five dollars for his services. Other witnesses are allowed two dollars each.

The medical examiner is required to furnish the district attorney of his district a report of each autopsy and view and additional facts obtained. If as the result of his research he is of the opinion that death was the result of injuries caused by the act or negligence of the person

other than the deceased, he shall notify not only the district attorney, but also a justice of the police, district or municipal court, or trial justice having jurisdiction over the place in which the body was found, and shall file an attested copy of his findings in this court and with the district attorney.

It is further provided that in every instance in which death occurs on a railroad or a street railway report shall be made of the case to the court as well as to the district attorney.

He is further required, for purposes of registration, to certify to the registration authorities the place of death and name and residence of the deceased, if known, otherwise a description of the body, together with a statement of the cause and manner of death. He is further required to transmit to the secretary of state certified copies of the records of all deaths, the cause of which he has investigated during the preceding calendar year. He is further required to make a view of every case intended for cremation.

He is required to take charge of all moneys and personal property of the deceased, found on or near the body, and deliver it to the person entitled to its custody or possession, or, if not claimed within sixty days, then to the public administrator.

He has full authority to employ a chemist to conduct toxicologic investigations to aid in the determination of the cause of death, likewise to employ a clerk to reduce to writing the results of medical examination and autopsies.

He is further required to deliver the body, after examination, on application, to the husband, or wife, or next of kin, or to any friend of the deceased, who shall be entitled to possession in the order of priority named, and if the body is unidentified or unclaimed for forty-eight hours after the examination, to deliver the same to the overseers of the poor of the city or town in which it is found, for burial.

Associate examiners serve only in the absence of the examiner and in case of the inability of the latter to perform his duties.

Medical examiners are paid on a fee basis in all counties and districts, except that of Suffolk, where they receive a regular yearly stipend of \$4,000. The fee for a view of counties other than Suffolk is five dollars and thirty dollars for autopsy. There are also provisions for maintenance of an office, telephones, stenographer, etc.

The statutes provide that the magistrate of one of the courts mentioned shall conduct an inquest in all cases of accident, homicide, etc., wherein the state shall be represented by the district attorney or one of his assistants. This magistrate has the authority to bind over, as in criminal prosecutions, such witnesses as he considers necessary, or the district attorney may designate, to appear and testify at the court having jurisdiction over such crime. He naturally has authority to bind over accused persons to the grand jury.

In the City of Boston, County of Suffolk, the medical examiner has the cooperation of a special officer of the bureau of criminal investigation or police department. This officer looks up witnesses, reports and works out the cases with the medical examiner and the district attorney. The coroner's inquest is, therefore, completely eliminated and instead we have the case tried regularly before a magistrate presiding in a court of record. There are a number of special advantages in this method. One which is apparent is the fact that the magistrate only is required to hear a limited number of witnesses to war-

rant him in binding over an accused person to the grand jury, thus enabling the state to work out its case without the unnecessary and long-winded inquiry which, under the present coroner's system, often enables a guilty individual to defeat the ends of justice by providing him in advance with a set of facts which should be kept secret until the regular trial of the case.

OPPORTUNITY TO PERFORM SCIENTIFIC WORK

The most admirable part of the medical examiner system, from the standpoint of those who are seeking to elevate legal medicine into a higher position than it now occupies in this country, aside from the improvement in general which follows the separation of the two widely varying functions of the coroner's office, is the opportunity given to the examiner to develop legal pathology and perform his technical work properly. I do not wish to be understood as unduly stigmatizing the work of those who held the position of autopsy physician in that epoch of medicine preceding the promulgation of the doctrine of cellular pathology. There was necessarily in that period of darkness no possibility of expertness in autopsy investigation. Since that time, however, a great deal of light has been thrown on this dark picture. Numerous bacteriologic, pathologic and toxicologic means and measures have been brought out, one by one, each supplementing the other. These advances have been made by workers outside the field of legal medicine in most instances, yet they can most aptly be applied to the solution of medicolegal problems. One would never suspect that there was anything scientific about the conduct of a legal autopsy if he were to observe this work as it is done in most coroners' offices. In most localities there is practically no provision made for the proper performance of an autopsy. We see them conducted in barns, in livery stables, in private homes, in so-called "mortuary" rooms of hospitals and undertaking establishments, with hardly enough facilities for washing the hands of the operator, much less for accurately scrutinizing disease and abnormal conditions in all their devious and obscure manifestations. The so-called "morgue" of the average coroner's office is too often a place of resort for the morbidly curious to peer through glass windows at unsightly cadavers. The autopsy room in the so-called morgue of the average coroner's office is a huge joke, as a rule, on the very name it bears. There is sometimes at hand an operating table and perhaps running water, but one looks in vain for a weighing machine, a photographic apparatus, a microscope, a laboratory table, bacteriologic apparatus, test tubes, slides and cover-glasses of which even the humblest hospital laboratory boasts. In short, there is absolutely no possibility of anyone, no matter how expert he may be, performing all the different manipulations of this autopsy work in a manner satisfactory to the trained pathologist. The position of autopsy physician is seldom held by a pathologist, and, if it is, he has great difficulty in doing his work properly under the circumstances already detailed.

How different it is, for example, in the City of Boston, in the County of Suffolk, where I saw recently the systematic and scientific work of Medical Examiner G. B. Magrath, a man who brought to the position on his appointment the results of a number of years of experience as a trained pathologist! He informed me that it was his desire at the time of his appointment to conduct autopsies in exactly the same manner in which they are conducted in all up-to-date hospitals and teaching institutions. He has certainly carried out his initial resolutions on this point to the letter, and by doing so has

advanced legal pathology many steps. He does his work either in the regular city morgue, which is fully equipped with all laboratory facilities, or else at the Massachusetts General Hospital, where, it is needless to state, similar facilities are provided.

NEED OF CHANGE IN PRESENT SYSTEM

In summarizing, I wish to emphasize my opinion that there is urgent need to change the present system of medicolegal investigation as carried out in Missouri and other states. I believe that the separation of the two sets of functions of the office will redound to the advantage of the cause of justice. I strongly urge the enactment of laws similar to those of Massachusetts, Connecticut, Rhode Island and Michigan. There the system of official medicolegal investigation closely parallels the system in the continental countries which all students of legal medicine acknowledge to be ideal. And, above all, I wish to call attention again to the recognition of the work of the autopsy physician under the medical examiner system as compared with the lack of recognition when he is a mere subordinate of the coroner's office, a subaltern in the ranks, though bearing on his shoulders responsibilities fully equal to any which are assumed by medical men in any branch of practice. In attempting to perform his work he is absolutely compelled to decide the question of the cause of death, on which often depends the life and liberty of accused individuals, under the most serious and almost insurmountable difficulties. Under the Massachusetts system an examiner may perform his duties in a most painstaking and scientific manner, backing up the result of his gross findings with the data elicited by histologic and toxicologic and bacteriologic methods carried to full completion in a well-equipped and well-protected laboratory. In view of the importance of the facts to be gleaned from a legal autopsy, and the fact that in but few instances are there facilities for the qualified expert to do his work properly and that in most instances the work is done by "slattern" pathologists, who have but little training and with no overseer or expert director, truly it is a marvel that justice can ever be done in any case that must be developed through the kindly but woefully inexperienced agency of the coroner's autopsy physician.

The Massachusetts system practically makes it imperative that the sole *raison d'être* of the medical examiner's employment shall be good autopsy work. It eliminates, by turning the fierce white light of publicity and conspicuity on this office, the possibility of performing autopsies in the "cut-and-slash," "hit-or-miss" fashion of the average coroner's office, where but a bare semblance of exactitude in observation and description of pathologic change is carried out. Some there may be who will contend that the medical examiner system does not give perfect assurance of appointment of competent men to do this work, inasmuch as it calls for appointment by the chief executive of the state, yet I maintain men of merit are more liable to be selected in this way than is the case when the vote of the people decides the issue. The conspicuousness of the office, as I have intimated, saves it from debasement and cannot help but improve the situation. Conditions in Missouri ought not to be different from those in Massachusetts, where for years merit has ruled with respect to the appointment to these positions and where one change of administration after the other has not resulted in removal from office of medical examiners on account of party politics.

I therefore urge, particularly on the medical profession, the need for a reformation along this line. They

should be interested and should put their shoulders to the wheel in improving a condition which, to my mind, is a discredit to them. They have permitted the present system to prevail through ignorance, inertia and lack of appreciation of the chance for improvement in legal autopsy manipulations. Yet the profession to-day is active in endeavoring to increase the efficiency of all that is embodied in that department of medical endeavor called "state medicine." This movement properly is a part of state medicine and should receive their hearty endorsement. I need not remind them that every instance in which the findings of coroner's autopsy physicians have been successfully combated by opposing private experts is a direct slap in the face of professional honor.

Many of us have seen or have heard of failure of the state to prove the guilt of accused persons, who seemed to be practically convicted until examination and cross-examination of the state's most important witnesses, the coroner's autopsy physicians, showed that their work was inefficient and inconclusive, resulting in acquittal of possibly guilty people for want of convincing proof. Contrast these incidents in states where the coroner system prevails to the history of medicolegal jurisprudence in Massachusetts, where since the time of the inauguration of the medical examiner system in 1877 to the present time that state has not in a single instance failed to support the truth of the findings of her examiners! This I offer as my last and, I trust, my most convincing argument to my medical friends as to the need of purging ourselves of the taint of the present slipshod method of conducting autopsies in medicolegal cases.

I will leave to lawyers a discussion of the arguments as to why from a lawyer's standpoint the Massachusetts system ought to be superior to the coroner's system. I need only remind them that there is a distinct incompatibility in the twofold functions of the modern coroner's office. As Mr. Theodore H. Tyndale, in an address before the Massachusetts Medicolegal Society, once said:

If it is now difficult in the vastness of modern research, to be familiar and skilled in all branches of medicine, if it is more than mortal man can compass to know all the science of the law, how then can it be possible that one man should be versed in both, and so well versed as to be expert witness in one, and judge in the other?

The qualities of mind called into exercise in the practice of the two professions are not only different and distinct, but indeed diametrically opposed to each other. "Science is armed with the microscope; Justice is blind." The scientific investigator himself seeks his facts and testifies to them. A judge never comes in personal contact with fact but receives them from others, and holds a balance between them. Who can undertake to do both—to be interested in the one and remain impartial in the other?

In conclusion, I wish to express my sense of appreciation to Dr. George B. Magrath, medical examiner for the County of Suffolk (Boston), Massachusetts, for helpful suggestions and for the opportunity of observing the systematic operation of his office; I also wish to credit Dr. R. Henslowe Wellington, deputy coroner for the County of Westminster, London, for much of my historical material which was borrowed from his admirable work, "The King's Coroner"; also Dr. Henry Cattell, of Philadelphia, for both personal and written communications.

SYPHILIS AND THE AMERICAN NEGRO

A MEDICO-SOCIOLOGIC STUDY

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Any study of a disease as applied to an entire branch of a race must necessarily take up the sociology of that race. The knowledge of syphilis as affecting the Caucasian, however profound, will not give one an insight into the conditions confronting the negro, and the chief reason for attempting this paper is the lack of statistical material on the subject and the consequent general ignorance that exists in what might be called the white zones of our country.

About seven-eighths of the entire American negro race live in our Southern States, and the Southern man is a practical authority on the subject of conditions that oppose the black man's rise in the world. This knowledge is, however, of but little value to the world at large, because it is not down in black and white. This lack of statistics on the negro is at once a great harm and reproach to the South. It is a well-known fact that the most ardent of Northern theorists, after a sojourn of some time on Southern soil, becomes an advocate of the dealings of the Southern white man with the negro problem, and it is more than probable that half of the misrepresentations that the South has had to suffer would have never occurred had there been a proper system of vital statistics registration. More than this, in the proper cooperation with the national census bureau lies one of the greatest and most feasible of the means of settling the race question, for a white man is a white man, North or South—and knowledge is power. The census bureau has no figures that Europe will accept in vital statistics except an area known as the registration area. That area holds only 13.4 per cent. of the negro population, and no part of that area is south of the Ohio or Potomac rivers. Figures, however, cannot paint individuality, and, since the world ought to know Southern conditions, the Southern man and doctor must write, and that copiously.

The negroes of Richmond, Va., are of the highest type of the race in the South. Many of them are educated and property owners, men who are at the head of large banking and insurance institutions; successful ministers, teachers, physicians and lawyers. These men, though quite a respectable number, indicate a possibility rather than a promise. They are the triumphs of civilization in the individual and not a type of the possibilities, much less the probabilities, of the race.

To understand thoroughly what dissipation and disease has done for the negro, let us consider the terrible changes fifty years have wrought; let us consider, first, the negro of 1859, then the negro of 1909.

The negro of 1859 was not a free agent, and valuable only as a form of energy. He was a business proposition and, to get an interest on his investment, it was the business of his owner that this machine should be able to run at a proper potentiality. To this end the negro was not allowed to abuse his body, but, on the contrary, was made to preserve it. His cabin was well ventilated and his clothing was warm and sufficient. The food was plentiful and nourishing and his life was one of well-regulated sobriety. When sick, his master's own physician attended him and by a forced system of

hygiene the negro's body, as a piece of property, was not allowed to deteriorate.

True, education was not encouraged, and everything tended to make the negro of that time a physical man. With as good hygiene, and less dissipation, he outstripped the white race in fecundity, for from 1800 to 1860 his increase was 346.1 per cent., while the white increase was 312.9 per cent. After 1808 this increase was a natural one, as the importation of slaves was made illegal at that time.

When the curse of slavery—for it was a curse—was removed from the white man's shoulders, misguided theorists transferred it, under the name of freedom, to the unready negro—and it crushed him. Whatever the motive that guided the pen which decreed absolute suffrage, it stands as one of the world's great tragedies, for now the negro was free, not to live but to die, and he took advantage of his freedom. He was free, indeed—free as the birds of the air—free to get drunk with cheap political whisky and to shiver in the cold because his scanty savings went to purchase flashy and flimsy garments—free never to bathe, and to sleep in hovels where God's sunlight and air could not penetrate—absolutely free to gratify his every sexual impulse; to be infected with every loathsome disease and to infect his ready and willing companions—and he did it—he did it all. The result is the negro of 1909, the negro of to-day.

He is, as a rule, but a sorry specimen, for disease and dissipation have done their work only too well. The insane asylums are overcrowded, for insanity has increased over 1,000 per cent. in fifty years. The death-rate has increased, being in the registration area 30.2 per cent., as compared to the white rate of 17.3 per cent.

In the Southern States a peculiar condition arose. When the birth-rate became a plaything of sexual impulse and this in a stalwart race, there was a large increase and one of the maximum increases in the negro race, as a whole, occurred between 1860 and 1880. These children, the product of this carnival, were degenerates as compared to their forbears, and their offspring have been barely over one-fourth as much as the decade preceding. This has brought the increase of the race down, so that the figures now stand as to increase of population from 1860 to 1900 in the Southern States—white, 134.9 per cent., negro 93.4 per cent.

Morality among these people is almost a joke and only assumed as a matter of convenience or when there is a lack of desire and opportunity for indulgence, and venereal diseases are well-nigh universal. As an illustration of this: In clinic and private practice I have never seen a negro virgin over 18 years of age. Consultations with old men in the profession have yielded only two undoubted cases. Of course, there are many more, but it is terrible to hear a man in active and steady practice for fifty years, practicing both in country and city, proclaim his experience to be the same as my own. In an investigation among negroes of all classes, the average age of defloration was found to be about 15, and these estimates are not unfair to the race, as a whole, for they are gained from experience with a part of the negro population that enjoy exceptional advantages for education and improvement.

Marriage is common among them and desertion as common. Due to the recent passage of laws making desertion a crime, we find the applications for legal divorce outnumbering the white very greatly.

There is an element of grim humor to the Southern man in the statement of the census-taker, as published in Bulletin 38 of the Department of Labor. In our minds we can see him, earnest and perspiring, wading through a mass of misleading statements and prevarications, then filing his report:

Legal marriage is not considered absolutely necessary. Of forty couples who reported themselves as married, only twenty were legally married in the church or by legal authorities. Numerous cases are seen of two persons legally married and yet each living with a different person and reporting as being married to the second.

The negro is ambitious, after a fashion—ambitious to shine—for pride in him means what others think of him, not what he is. Mentally he is grown, but with a curious mushroom growth, and, psychically, he is a mass of the crossed strains of civilization and barbarism. This is the negro before infection.

LIABILITY TO INFECTION

It is my honest belief that another fifty years will find an unsyphilitic negro a freak, unless some such procedure as vaccination comes to the relief of the race, and that in the hands of a compelling law.

Altruism, as a part of the negro psychology, does not exist. He is, above all, an egoist, a modern Cain, who in nowise considers himself his brother's keeper.

A negro man will not abstain from sexual intercourse if there is the opportunity and no mechanical obstruction. If it hurts him, as in gonorrhea, he will abstain, but, let the chordee pass, and the bars are down for him.

Even among the educated, only a very few will carry out the most elementary instructions as to personal hygiene. One thing you cannot do, and that is to convince the negro that he has any disease that he cannot see or feel. This is due to lack of concentration rather than a lack of faith; even if he does believe, he does not care; a child of fancy, the sensations of the passing hour are his only guides to the future.

The spread of venereal disease is dependent, to some extent, at least, on the moral status of the race, and the morals of the negro is something of which the average man of other climes has no conception. His sexual powers are those of a specialist in a chosen field. Prostitution is not a disgrace, as in the white man's sense, and the worn-out prostitute of to-day may be the woman you employ as your maid to-morrow.

Religion is essentially emotional with the negro and he frequently seems to be his own judge as to sin. Honesty is frequent and faithfulness to financial trust is common, but adultery and fornication is literally not regarded as a sin. In some manner the negro has switched the Decalogue to suit his convenience and has made himself exempt from the seventh commandment.

GENERAL RESULTS OF INFECTION

The general results of infection in the negro are all physical. There never was a syphiliphobic in this race, for the knowledge that he is a syphilitic in nowise disturbs the negro. His idea of the medical world is that there is a remedy for every disease and that all that the doctor does is to select the right medicine. If one doctor cannot, another can, so what is the difference? He will take any treatment for awhile and readily rids himself of all that he can see or feel, then he stops and comes back when the relapsing syphilides appear. Get him well of these and the next time you see him he is with the gumma. Since in a large clinic experience

with all classes of negro syphilitics, among the patients not one has gone through the usual course of prescribed treatment; a natural conclusion is that, once infected, the average negro goes on to an average result. It could hardly be otherwise than that a disease so terrible and widely spread should work great changes in these people.

Insanity has increased in a truly appalling manner and we know that syphilis is a great cause of insanity in the white. Being more common among the negroes, it must be true that it is proportionately a greater cause in them, and, if this be admitted, it must then cause a greater number of cases of unbalanced mentality in persons never confined to asylum walls. The negro who commits the unspeakable crime of rape on the white woman is not a normal well-balanced man, nor is the negro who hides the criminal from pursuing justice, though he knows all the circumstances of the case, a member of that race which protected the women and children when their masters were at the battle front. The negro woman who believes every man of the white race a candidate for her charms, did circumstances allow, is not the same woman that the Southern child revered and loved to call "mammy." A horrible mixture of evils has done its work, and high up among them I place syphilis.

Tuberculosis is often spoken of as the scourge of the negro, but there must be twenty syphilitics to the one consumptive; and hundreds of the negro consumptives have syphilis to combat as well. This may sound exaggerated, but it is near the pitiless truth.

Syphilis affecting the individual negro is not to any great extent different from the disease in the whites. There are, however, a few points of difference.

From what has gone before, one would naturally conclude that, owing to the habits of this people, the disease would be more severe in its manifestations, and such is the case. Tertiary manifestations form a larger percentage of the cases and all phases are more intense. Among the eruptions there is a greater predominance of the pustular type, and rupia is fairly common. From the skin an early diagnosis is hard to make, the macular syphilides in particular being but a slight darkening of the skin. The pigmentation of the negro skin is so great that all discolorations show up as black spots and the only variations in color is the density of the blackness. From this cause the color of eruptions is no guide to diagnosis.

There is a special tendency to the papular-serpigiform conformations around the mucous outlets. Here the abraded papule takes on an enormous overgrowth due to body filth. Because of an almost invariable partial treatment there is a great predominance of relapsing syphilides.

As compared to the white, the negro's teeth are the better, and for that reason mucous patches are not so common. Gummata of all regions thus affected are common.

With the exception of the pigmentary changes, it may be justly remarked that these are all points that apply to the white races in the slums. This recalls an old Indian chief who was standing on the ice at Toronto, watching the winter carnival. He was barefooted, bareheaded, and his only raiment a blanket drawn around him. Being asked by a spectator how he could endure such intense cold with the scant covering, he replied, "Your face cold?" "No," was the reply. "Good, me all face," said the chief. The average negro is all slum

TREATMENT

The only thing we can do is to give treatment, although we can have no heart in giving it. The serum treatment of syphilis, if there ever be a successful one, is the negro's only hope, and that would have to contend with such superstition that it would have to be a compulsory law. Until then mercury and the iodids must be given, but in treating the negro one must do nothing that causes him pain—for instance, give hypodermic injections—as it is unlikely that he will ever show up for the second dose. Nor will he do anything so troublesome as the application of inunctions; with him it is treatment by mouth or nothing.

With no class of case should we try for so strong a mental impression, and under no circumstances should treatment be instituted until the negro is thoroughly convinced of his having the disease. No exaggeration is out of place in describing to him the possible dire results of not taking treatment; some good has resulted from showing the chancreous beginner the gummatous graduate, in an attempt to frighten the former to a course of self-salvation.

When the iodids are given, they should be given in fixed doses, as a teaspoonful at the time, for the negro will not take the trouble to pour out drops in ascending doses unless destruction is walking lock-step with him. It should also be remembered that a negro will take an unpleasant dose when a palatable one is neglected. Above all, do not, in any way, spare his feelings. Call syphilis the pox—be brutally plain, for any attempt to spare his feelings will only result in his belittling his condition.

Teaching him the hygiene of the disease is so hopeless that when we instruct him it would be a farce were it not a tragedy.

POLITICAL ASPECTS

Fortunately or unfortunately for the South, the negro problem is no longer a local one and is growing more national every day. If the healthy negro is a political menace, then the diseased one is doubly a social menace, and the invasion of the South by the North forty years ago has brought about an invasion of the North, and that by the man they freed.

The negroes of Southern birth, living in the North, have increased twice as fast as the negro population of the country, and in the year 1900 one twenty-fourth of the whole negro population lived in the North.

That miscegenation and its evils are more common in this part of the country is shown by the census findings that the proportion of mulattoes was greatest where the whites were in excess of the blacks.

The future of the negro lies more in the research laboratory than in the schools. This strange and pitiable creature, whose mind and body are traveling in different directions, is an ever-changing type, and new ideas have to be evolved to meet him at his different stages of mingled development and retrogression. The negro of 1859 was a fixed type and men could plan with this type as a basis; the negro of 1889 was a different man, and the negro of to-day is another. Fifty more years will, no doubt, bring another type more puzzling than those gone before, and at that time the problem will be a new one with the experience of the past, but little help to solve it.

The negro will never rise to a satisfactory place in the economies of the nation until laws are passed that

relate to him and him only, as laws are made for the Indian to-day. When diseased he should be registered and forced to take treatment before he offers his diseased mind and body on the altar of academic and professional education. In a word, he needs a paternal government—the fellowship of the republic is not his birthright or his right; he needs a Moses to bind him with a law.

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THE SURGICAL DIAGNOSIS AND TREATMENT OF TUMORS IN AND ABOUT THE SPINAL CORD

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The percentage of cures in operations for tumors in and about the spinal cord is given by Stursberg as 32.2 per cent. A perusal of the complete literature of the subject will readily convince anyone that this percentage will eventually be much higher.

After operation patients have died from excessive loss of cerebrospinal fluid, from sepsis, from shock, from exhaustion. The errors have been only partly surgical, for the patients have been rendered more liable to succumb to them through diminished resistance caused by delay in operating. In a large number of the recorded cases, the symptoms have preceded operation by two or three years or more; and pending the trial of futile treatments, notably the mercurial, the chances of cure have been scattered to the winds. Errors in diagnosis, unavoidable during the formation of a complete symptomatology of this rare disease, have also helped to swell the list of failures. Cases have been overlooked, either entirely or until beyond help; operations have been waived because certain symptoms, or the lack of them, seemed to undermine all basis for interference. I have seen more than one operation given up on the ground that the tumor was intramedullary, a diagnosis practically impossible to substantiate without operation; or because pain (which may be entirely absent) was not pronounced enough to make diagnosis sure.

Until now, perhaps, conservatism has not been misplaced. But the time has surely come to widen the operative horizon. We are now in possession of new clinical guides, notably serous meningitis as a complication or a disease, the occurrence of internal hydrocephalus with its choked discs and cranial nerve palsies, and the facts that tumors exert their chief pressure at the upper pole and that faint anesthesia may be of practical value equal to that of total anesthesia. We have also learned how erratic tumors in and about the spinal cord may be, in that the course may be rapid or slow, cardinal symptoms default and the whole clinical picture closely resemble some totally different condition. In the past diagnostic efforts have been directed chiefly to the determination of the variety of tumor and of its position with reference to transverse section of the cord. But now it has been forced on us that the diagnostic consideration which outweighs all others in importance is the ever-present consciousness that a spinal cord tumor may masquerade under the guise of any one of the several chronic spinal diseases. The question used to be, "Are we sure an operable tumor is present?" It now is in every case of paraplegia coming on without known cause, "Are we sure a tumor is not present?" So we are destined thenceforth to operate more freely on the spine. Fail-

ures will be encountered; the successes will more than counterbalance them.

In the present paper I have three new cases, with operations, for record; and the after-histories of three cases which were published several years ago, shortly after the operation.

I shall also discuss certain features of the disease which bear on surgical diagnosis, and shall express certain views on surgical procedure obtained from assistance at a large number of spinal operations.

REPORTS OF CASES

CASE 1.—History.—A man, aged 46, was admitted to the New York Hospital in February, 1903. Two years before he had begun to have pain in the left arm. At first it was intermittent, was not severe, and could not be definitely localized. It gradually ascended to the shoulder, appeared on the front of the chest and later involved the right arm. This state of things persisted for more than a year but did not require the patient to give up his work. Several months prior to admission, i. e., seventeen months from the beginning, the pain became more troublesome, and four months before admission had reached a degree of severity at which work was impossible. At this same time it extended and invaded the legs, which latter also began to tingle and feel numb, and the feet felt dead. Contemporaneously with the downward extension of these subjective sensory disturbances the lower extremities began to lose power, a condition which progressed so that on admission the left lower extremity was almost totally paralyzed, and the right was very weak. The arms became weak, but not totally paralyzed.

Examination.—The sphincters acted normally throughout. The type of paralysis in the legs was spastic; the knee-jerks were exaggerated, and positive Babinski with a tendency to flexor contractions was present. In the upper extremities paralysis was most marked in the small muscles of the hand and in the flexors and extensors of the wrist and fingers, all more pronounced on the left side. The thumb and interossei muscles on the left were atrophic. There was some blunting of sensibility, marked in the feet, but too indistinct for purposes of localization. Localization was arrived at by the type of motor paralysis, and operation was recommended.

Operation.—This was performed by Dr. Frank Hartley. Under the fifth cervical lamina, higher than expected, was found a cystic tumor about the size of a pigeon's egg, which bulged up in the wound on opening the dura. It was connected with the pia by a poorly vascularized pedicle. Beneath the tumor the cord was flattened and pushed over to the right. The tumor was readily removed and found to be a neurofibroma (glioma?).

The patient was emaciated and weak from two years of suffering, was a poor operative risk, and died from asthenia five days after the operation.

CASE 2.—History.—A woman, aged 45, three years before coming under observation began to have pain and weakness in the right leg. The pain was tearing in character and radiated from the toes up the leg to the inner side of the thigh into the perineum. This persisted and she tried many treatments without help. After two years she went to Germany and took the baths for seven months. The pain left her and she thought she was cured. But shortly after returning to this country the trouble in the right lower extremity returned, and to them were added similar ones in the left.

Examination.—This showed a partial spastic paralysis of both lower extremities, with exaggerated knee-jerks, foot-clonus and Babinski sign, all more marked on the right. She walked with great difficulty. As she lay quietly in bed she said she was free from pain. But any movement of the legs, either voluntary or passive, caused severe pains, which shot up the legs through the perineum to the back. There was partial anesthesia to all forms of sensory stimuli in both lower extremities. This was most profound in the feet. A line of demarcation separating normal sensibility from a slight blunting of tactile sensibility could be drawn midway between the umbilicus and pubes in front, and through the ninth dorsal spine behind. The ankles were slightly edematous, although

there was no kidney disease. She complained at times of difficulty in urination. The bowels were constipated. The vertebrae were not painful to pressure, though pressure over the ninth caused a tingling sensation in the legs.

Operation.—On Oct. 25, 1908, Dr. Robert Abbe removed the laminae of the eighth, ninth and tenth dorsal vertebrae. The dura was found congested, non-pulsating and resistant. On opening it a purplish sausage-shaped tumor measuring 2 by 5 cm. was found adherent to the pia and was removed; the cord was badly flattened. Pathologic diagnosis, glioma.

The patient made a good surgical recovery, but her improvement while she remained in the hospital was slight, and a report six months later was not encouraging.

CASE 3.—History.—A woman, aged 48, began to have sensations of pins and needles in the soles of the feet five years before admission. These increased and extended to the thighs. She then developed pain in the back, and two and a half years before admission began to lose power in the legs. She was operated on for tumor of the uterus, without relief, of course, to the spinal symptoms. The pain and disability became steadily worse. The legs and feet began to jerk involuntarily and the patient complained of a sensation as though something were tightly bound about her abdomen. The bladder and rectum gave no symptoms.

Examination (Nov. 8, 1908).—The patient walked with a cane, with difficulty and uncertainty, and apparently walking was painful. Both lower extremities were in a condition of spastic weakness. On both sides there were increased knee-jerks, ankle-clonus and Babinski, all most marked on the right. There was no pronounced anesthesia but there was a diminution of all forms of sensibility reaching to the inguinal folds in front and the crests of the ilia behind. There was no deformity of the spine, though tenderness to pressure was complained of over the eleventh dorsal vertebrae.

Operation.—This was performed on Nov. 8, 1908, by Dr. Robert Abbe. The tenth, eleventh and twelfth dorsal spines were removed. A distinct resistance was felt through the dura, and on opening this membrane, cerebrospinal fluid escaped freely, and a hard tumor 2 by 1.5 cm., adherent to the dura, was disclosed. The cord was much compressed. Hemorrhage was slight. The tumor was completely dissected away and the wound closed.

Almost immediately after the operation the pulse became rapid, of poor force, and the patient became cyanotic. The temperature and pulse rapidly rose. On the day of the operation the bedside notes show the following:

	Temperature.	Pulse.	Respirations.
8 a. m.....	103.2	132	28
12 m.	104.0	132	26
4 p. m.....	105.4	124	30
6 p. m.....	106.2	120	40
11 p. m.....	107.2	140	40

Shortly after 11 p. m. on the day following the operation the patient died. There was some discharge from the wound but no infection.

This case was seen in consultation with Dr. Joseph Collins, who will report it more fully elsewhere. It is one of the many instances of rapid death following operation on spinal-cord tumor. I cannot but feel that in it, and in cases similar to it, the cause is to be connected with changes in intracranial pressure which are brought about by losses in cerebrospinal fluid. It is true that in this case the loss was not greater than in many cases which proceed favorably. And, on the other hand, a similar death has occurred even when the spinal dura was not opened. But the evidence is sufficiently strong to make it probable that that operative technic is the best by which little or no fluid is lost.

The three cases which follow have already been published, but notes as to the present condition of the patients are of interest, as they show how permanently beneficial or curative laminectomy may be.

CASE 4.—The patient, a man, aged 39, operated on by the late Dr. A. J. McCosh in May, 1900, had suffered for fifteen months, and for six months prior to operation had been unable

to work.¹ The symptoms consisted in pain, great difficulty in walking, due chiefly to pain, and weakness in the left leg. The left knee-jerk had diminished, and the left leg was atrophied. There was some hyperesthesia and difficulty in urination. A soft subdural tumor was found in the region of the first lumbar vertebra. A few months after the operation the man returned to work and has been at work ever since (December, 1908). He is entirely free from pain. The knee-jerks are normal and the anesthesia has disappeared. The bladder and sexual functions are normal. The left calf is still one-fourth inch less than right. The only reminder he has of his former trouble, eight years after the operation, is that the left leg tires more easily than the right.

CASE 5.—The patient, a woman aged 32, had suffered for eleven years from the pain characteristic of spinal-cord tumor.² For six months before the operation it became even more severe and paraplegia developed, so that finally the patient could not walk and had to be lifted on the operating table. The left knee-jerk was absent and the right much reduced. There was anesthesia in the legs, with indefinite upper boundary. The operation, performed by Dr. Farquhar Curtis, in December, 1907, disclosed a fibrous tumor lying extradurally in the opening made by the removal of the first, second and third lumbar vertebrae. After a slow and painful convalescence, this patient recovered in every particular, so that in June, 1909, eighteen months after the operation, she is in perfect health. She walks without limp; she can run, jump, make quick movements and says she can walk ten miles. She has no pain whatsoever. The anesthesia has vanished, and the knee-jerks are both present, equal, though not lively.

CASE 6.—A boy who had suffered for years from pain and other symptoms of spinal-cord tumor consecutive to trauma, was operated on in March, 1905, by Dr. W. N. Dowd.³ The operation consisted of removal of parts of the third, fourth and fifth lumbar vertebrae, under which was found a subdural endothelioma, 2 inches long. Reexamination in November, 1907, showed that most of the atrophy had disappeared, the knee-jerks had returned to normal and there was no longer anesthesia. There had been no root pains since the operation, though the back was still stiff and sensitive to jars. The patient is active and able to work. By the original injury the sacrum had been badly fractured. The deformity and stiffness of the back, which were the results of this, remain; and such disability as the patient has are the consequence of this bone injury. All the tumor symptoms have disappeared.

DIAGNOSIS

It is not at all within the scope of this paper to discuss the various symptoms by which spinal-cord tumors are recognized. But before passing to considerations more practically surgical it may be said that Pott's disease, erosion of the vertebra through aneurism and syringomyelia may occasionally give symptoms similar to tumor. Hysteria can hardly be so mistaken. But multiple sclerosis can and frequently does give symptoms identical with those a tumor may give. No less an authority than Nonne confessed (more honor to him!) to having operated twice, when multiple sclerosis proved to be the cause of the symptoms.

That text-books give so little attention to the differentiation between primary and metastatic tumors is probably due to the fact that metastases are usually unmistakable both from the history and from the intense local tenderness in the spine. But the diagnosis may be difficult or impossible if the metastasis is not in the bone, or if, though situated there, it is atypical in giving neither local pain nor tenderness. It has happened more than once that the metastatic character of the compression became clear only at the time of operation. To

1. Jour. Nerv. and Ment. Dis., xxx, 99.
2. Jour. Nerv. and Ment. Dis., xxxv, 316, Case 1. Patient shown at meeting of Am. Neurol. Assn., May, 1909.
3. Jour. Nerv. and Ment. Dis., xxxv, 317, Case 2.

avoid such errors, thorough examination of the whole body and more general study of the metastases in the spine will be our greatest help.

Of the various tumors which may give rise to secondary deposits in the spine, carcinomas, especially of the breast and prostate, are the most frequent. Their metastases are almost always in the vertebræ. The metastases of sarcomas are usually in the form of direct extension from neighboring parts, especially of the ribs and pleura. These may involve the bone, or be seated in the membranes, having skipped the vertebræ, or in the cord itself, without involvement either of bone or membrane. The metastases of sarcomas when the primary focus is in the nervous system itself are rarely recognized during life.

Hypernephromas have a predilection for the vertebræ in their extensions. This form of tumor is of erratic behavior and often exists in the kidney for years, giving few or no symptoms. It is finally surgically recognizable by palpation of the abdomen and by the urine showing blood-cells and sometimes the reaction of Bence Jones. In its spinal metastasis it may not lead to rapid disintegration of the vertebræ. In two cases of this character seen in the past year, in both of which the cord was compressed, it was impossible to determine from local examination whether the growth was in the bones of the spinal canal or within the canal itself.

Fibromas cannot be regarded as metastatic tumors, but by their methods of spreading and dissemination they present features which are of importance in diagnosis. In the inoperable neurofibromas which attack the caudal end of the cerebrospinal axis, the fibrous nodules often extend beyond the canal and can be felt as painful lumps in the course of the peripheral nerves. In the cervical region a number of cases are on record in which a large connective-tissue tumor in the neck (usually lying under the trapezius) was connected by a pedicle through an intervertebral foramen with a tumor mass attached to the external surface of the spinal dura. It was not determined in these cases whether the extension had been outward or inward, but the palpable tumor in the neck might have thrown light both on the histologic character of the cause of the compression and on its location. Bruns has reported a somewhat similar case in which the symptoms began as a neuritis of a brachial nerve, consecutive to a fall on the hand and which went on to compression of the cord.

Dercum has called attention to the fact that a long-standing (and apparently simple) goiter may be followed by metastasis of rapid growth in the spine.

Examination of the cerebrospinal fluid has not proved to be of great practical value in diagnosis. The fluid is generally normal, the only exception being in cases of acute disseminated sarcomatosis of the central nervous system. In this disease, rapid metastatic extensions to the spinal pia proceed from the primary focus, which may be in the cord or more frequently in the posterior fossa of the skull. The primary focus may be of gradual or rapid growth. But the metastases are rapid, resembling meningitis in their course. At the time of the metastases the cerebrospinal fluid has been found to be of yellow or brownish color and to contain an increased amount of albumin and large mononuclear (tumor?) cells.⁴ The examination of the cerebrospinal fluid by means of the Wassermann test may help to throw light on the syphilitic origin of the disease. This is especially

important in the diagnosis of syphilitic pachymeningitis, in the relief of which Horsley⁵ has reported successful operation.

One of the chief difficulties in the clinical diagnosis of spinal-cord tumors is the extreme irregularity of their course. The onset of the disease, though usually gradual, may be very acute. A pain or a paresthesia, coming out of a clear sky, may suddenly initiate the trouble. It does not follow from such a beginning that the course of the disease is to be rapid. There is also considerable variety in the initial symptoms. While pain is the commonest one, paresthesia or motor paralysis or retention of urine may introduce the disease. The general rule that the symptoms of these tumors extend over months or years is also subject to many exceptions. Their course may be rapid enough to suggest an acute infectious disease; or they may exist, unrecognized for years, until finally the tumors find their way to the museum jars of almshouses and hospitals for chronic diseases. Even with growths of the same histologic structure and in the same position, the rate of progress varies widely. One intramedullary glioma was fatal in six weeks, while another lasted ten years.

Symptoms throughout the course of the disease may fluctuate considerably. A symptom once established rarely becomes entirely extinct, although it may become so very nearly. This is particularly true of pain. Neither the x-ray nor lumbar puncture have given much aid in clinical diagnosis.

In considering the course of spinal-cord tumors the history of trauma merits much attention. A number of cases are on record in which the symptoms were ushered in by an injury. Quesnel⁶ reports a case in which a fall on the back (nine feet) was followed in sixteen months by the symptoms of tumor; Putnam and Elliott report a case in which a cervical tumor developed three years after a severe injury to the neck; Schultze describes a case in which a fall on the hand was followed by various abnormal subjective sensations in the hand and finally by symptoms caused by tumor of the brachial plexus. In Case 5 of the present observations the pain in the back began immediately after a bicycle collision and remained constant in the same place; and in Case 6 the tumor developed at the site of a fracture of the sacrum. In addition to being an originating cause of spinal-cord tumor, trauma also has been noted as having the effect of causing an extension of symptoms already existing.

LOCALIZATION: (A) WITH RESPECT TO THE LONG AXIS OF THE CORD

The general rules for the localization of tumors are the same as for spinal diseases generally. But, through eagerness to localize by means of purely neurologic signs, one is apt to forget that symptoms given by the vertebræ outvalue all others in focal diagnosis. Tumefaction, if present, is in the immediate vicinity of the tumor. Deformity, though rare, may be useful, and Oppenheim claims a value for percussion. Continuous pain, localized in one or two vertebræ, and pain on pressure of the same vertebræ, and of these only, are almost diagnostic. When these surgical evidences agree with any of the purely neural focal signs, the site of the tumor is determined.

In view of the long intraspinal course of the nerve-roots, especially in the dorsal region, it is important for exact localization to determine whether focal symptoms, when confined to a root area, come from the root itself

4. Nonne: *Deutsch. Ztschr. f. Nervenhe.*, 1902, xxi, 396; Rindfleisch: *Deutsch. Ztschr. f. Nervenhe.*, xxvi, 135; Grund: *Neurol. Centralbl.*, 1906, p. 640.

5. Horsley: *Brit. Med. Jour.*, 1909, i, 513.

6. Quesnel: *Neurol. Centralbl.*, 1898, p. 482.

or the segment from which the root springs. Experience seems to have verified the truth of Brun's law, that such symptoms generally proceed from the segment itself, or at least from the segmental end of the nerve-root, rather than from the nerve-root in its course or at its exit from the vertebral canal; in other words, that spinal-cord tumors compress the segments of the cord rather than the roots which run over them. This is true for such symptoms as localized paralysis or anesthesia or loss of reflex. Hyperesthesia, which may be a valuable localizing sign, may result from pressure on the root itself. This symptom, therefore, forms an exception to the general rule. An instructive example of this is given by the case reported by Quesnel.⁶ There was an anesthesia in the eighth dorsal segment, and hyperesthesia up to the level of the sixth. By Brun's law the seventh segment would be involved. It was not, but the seventh root was. The tumor had surrounded the seventh root and compressed the eighth and ninth segment.

Too much reliance should not be put on the referred pains as localizing signs. They are apt to be too general and felt in too indefinite an area, and, further, may be referred to far distant points; for instance, pain in the foot in cervical tumor.

In localization in the lumbosacral region, the peculiarities of the anatomy must be borne in mind. The fibers which go to make up the cauda equina surround the lumbosacral cord intimately. Here a tumor may give rise to both cord symptoms and root symptoms, making accurate localization difficult or impossible. There are, however, certain points of distinction. Tumors limited to the cauda give sacral symptoms chiefly; i. e., paralysis and anesthesia limited to the sacral plexus; very severe pain in the sacrum, the anus and the sciatics, and an almost constant involvement of the bladder. As these cases are frequently metastatic, bone symptoms are prominent. The Brown-Séquard type of symptom does not occur. Both paralysis and anesthesia are apt to be in slight degree, and the course of the disease, if the tumor is primary, is slow.

In tumors of the lumbar region of the cord, on the other hand, there may be the Brown-Séquard complex, the lumbar plexus is more involved than the sacral plexus and is involved first, and the bladder may escape. Tumors in this region may cause an ankle-clonus, with loss of knee-jerk.

Certain facts dependent on the mode of growth have to be considered in localization. Oppenheim⁷ has brought up the important point that a tumor exerts its chief pressure at its upper pole. He reports a case in which the tumor extended the distance embraced between the eleventh dorsal and the second lumbar vertebrae (i. e., from the twelfth dorsal segment to the conus), but which compressed the cord at the upper limit only, as shown by the persistence of exaggerated knee-jerk and ankle-clonus. The fact that parts overlaid by a tumor can preserve their functions is well worth notice.

LOCALIZATION: (B) AS TO THE TRANSVERSE SECTION OF THE CORD

It is desirable, though not always possible, to determine the situation of the tumor with respect to the transverse section of the cord, i. e., to determine whether the tumor is pressing on the cord or growing in it, and whether it is anteriorly, posteriorly or laterally implanted. As to the first of these points, the most valuable information is furnished by the vertebral symptoms

and by the method of development of all symptoms. Tumors of the vertebrae, whether metastatic or primary, are characterized by extreme and early bone tenderness. It is most constant in the cervical region, the region of greatest spinal movement, and in the lumbosacral region. In the dorsal region it may be absent. Nonne,⁸ at one meeting of the Hamburg Medical Society, reported four cases of metastatic tumor of the vertebrae in which the vertebrae gave no objective signs whatever. In dural tumors, bone tenderness is not constant, is late in appearance and does not attain the severity found in tumors of the bone. Intramedullary tumors generally, though not always, have no bone tenderness.

Rapidity of growth gives a certain clue to the situation. Metastatic tumors are rapid as a rule, though they may last several years. Primary tumors of bone also are usually rapid. Extradural tumors, so frequently belonging to the classes of fibromas and lipomas, follow the longest course of all. Intradural tumors are the ones which follow the classical course, namely, a state of neuralgia, usually one-sided at first, lasting many months, with the gradual addition, one by one, of other symptoms.

Intramedullary tumors may follow a very rapid course, being fatal in a few weeks; or they, too, may exist for several years. A rapid extension upward of symptoms speaks for an intramedullary tumor.

Intramedullary tumors may give rise to the syringomyelic type of dissociation of sensations. But since this sign, so long regarded as conclusive of intramedullary involvement, is found in both extradural and intradural tumors, and in vertebral tumors, or since intramedullary tumors can also cause the exact opposite, viz.: a loss of tactile sensibility with preserved thermic and pain sensibility, this sign is no longer serviceable in differential diagnosis.

There are no reliable means for the determination of the position of the tumor, i. e., whether it is anterior, posterior or lateral. Tumors situated anteriorly cause the same characteristic pain as those situated elsewhere. Dr. S. E. Jelliffe informs me that in a case of his, verified by autopsy, an anteriorly situated tumor did not cause anesthesia. But in a case of mine, in which the extradural growth was entirely anterior to the posterior roots, objective sensory symptoms were distinct. It is well to bear in mind in this connection that a ventral situation of the tumor, as shown by Schlesinger's statistics, is rare.

OPERATIVE INDICATIONS AND TECHNIC

With a localized and increasing pain, and with the gradual addition of the symptoms of compression, no diagnosis is easier than that of a tumor in or about the spinal cord. But, as I have endeavored to show, this typical picture is by no means constant. Cases are constantly presenting themselves in which the clinical picture is either *sui generis* or else cannot positively be differentiated from other spinal diseases. All of the spinal-cord diseases which may counterfeit tumor in a way to deceive a skilful diagnostician are themselves incurable. So the question which both physician and surgeon are from time to time called to answer is whether an exploratory laminectomy is warranted in the presence of a condition which, totally inaccessible to medical remedies, might, by operation, be removed altogether, or to a degree to ensure comfort and years of usefulness to the patient.

7. Oppenheim: Neurol. Centralbl., xxvi, p. 538

8. Nonne: Neurol. Centralbl., 1903, p. 430.

Considerations as to age, general physical condition, duration of symptoms and extent of destruction in the cord may decide in the negative at once. But when these features do not of themselves contraindicate, it seems right that the facts should be fully stated either to the patients or their friends; they assume the responsibility of the decision, so that the surgeon, if he operate, operates by request.

Tumors of the vertebrae are not generally promising, though under certain circumstances operation has been successful. Sick⁹ reports the removal of the laminae of five dorsal vertebrae for an enchondroma which had extended from a rib. Recovery was rapid (report two months after the operation).

Israel,¹⁰ operating for a painful compression of the cord, found a chondrosarcoma growing in the body of the fifth dorsal vertebrae. This was removed by a sharp spoon. Three months later the patient walked again.

By reason of the extent of movement, rapidity of growth, failing resistance of the patient, and hopeless outlook, operations for metastatic tumors of the vertebrae are rarely feasible. Perhaps, when the rate of progress is slow, operation may be undertaken for the relief of pain. Thomas,¹¹ in writing of a case in which the metastatic nature of the tumor was revealed only at operation, reports a complete recovery from pain and paraplegia, the report extending for six months after the operation.¹²

If the symptoms are to the effect that the tumor is not in the bones, but is in the membranes, or in the cord itself, the indications for operation are much more positive. The only contraindications, then, are the enfeeblement of the patient or evidences of irremediable destruction. This is said with a full realization of the general hopelessness of operation in intramedullary tumor. Although a few of these, growing on the surface of the cord, have been successfully removed, the chances of success in such cases are poor. But the recommendation is made general for the reason that the diagnosis of intramedullary tumor cannot be made *intra vitam* with sufficient certainty to contraindicate an operation with so high a potential for good.

Laminectomy for spinal-cord tumor is hazardous. In 26 operations reported by F. Krause, 8 patients died as an immediate consequence of the operation. This high mortality is due, in part at least, to the poor resistance of the patients. For laminectomy for other conditions is not followed by any such death rate. One lesson taught is to operate early—before the advent of complete motor paralysis, or cystitis or trophic disturbances. Another lesson is to profit by every experience to reduce the dangers.

The fact that laminae may be removed without materially weakening the spinal column seems to have fostered the idea that the field of operation may be enlarged to suit the surgeon's convenience. Frequent reports mention the removal of five or six or even more laminae at a single sitting.

The removal of one lamina does not give sufficient exposure to judge of the condition of the dura. But with two chipped away, the dura comes plainly into view and can be satisfactorily palpated. Assuming the localization to have been accurate, the appearances now presented vary with the situation of the tumor, both as to whether it is vertebral, extradural, intradural or intra-

medullary and as to its situation with regard to the transverse axis of the vertebral canal.

In this connection it is of advantage to have in mind the probabilities of situation. These may be found in the table of Schlesinger. Intradural meningeal tumors exceed in frequency the extradural tumors in the ratio of 142 to 75. A large proportion are lateral or central in situation. Thus of 76 cases, 7 only were on the ventral half of the cord. The chances are about one in three, therefore, that the operative exposure of the dura shows the tumor immediately, and the chances that the tumor is hidden from view by being behind the cord (from the position of the operator) are very slight, indeed. When so situated, the cord may cover it so completely that it is invisible and the operation fails.¹³ If no tumor is found on exposure of the dura and if a probe or hook passed ventral to the dural sac encounters no obstacle, the dura must be opened. But before doing this, its color and consistency should be observed. Often in the upper or lower end of the bony gap the membrane is dark blue in color and resistant and non-pulsating. This may be taken as an indication as to which lamina should next be removed. The removal of this third lamina is nearly always necessary, but the postponement of it till this stage will often render it superfluous to remove more, and thus avoid unnecessary delay and shock. In palpation of the dura, too great delicacy can hardly be used. The increase in the paraplegia often seen after operations of this character is doubtless due to the palpation. Once the dura is opened, if the tumor does not appear immediately, the cord should be pulled gently to one side or the other to determine if the tumor is situated laterally; or a probe passed behind the cord to determine if the tumor may be situated anteriorly. If the tumor now is not found, and it is thought best to continue the examination further by removing more laminae, experience seems to teach that it is safer to go upward than downward. The question of escape of cerebrospinal fluid seems to me very important. Until very recently no particular attention has been paid to this at operation. But the question arises whether some of the sudden deaths following these operations may not have been partly attributable to this cause. At any rate, the avoidance of this danger, if it is one, is easy by having all such patients operated on in the Trendelenburg position, or at least on a table tilted head downward. The leaking of cerebrospinal fluid after the operation, which has been the assigned cause of meningitis in certain cases, should certainly never occur, and is easily avoided by careful suturing. Once the dura is opened and the tumor shown, the responsibility of the remainder of the operation is entirely with the surgeon. Few operations offer greater opportunity for a surgeon to show his handicraft. All cases should be left to those known to have both strength and delicacy of touch, as well as accuracy and speed.

Tuberculin in Progressive Paralysis.—W. v. Jauregg, of Vienna (*Wien med. Wchnschr.*, lix, 1909, p. 2123), announced recently good results in progressive paralysis by injecting tuberculin, beginning with minute doses and gradually increasing to 0.5 gm. This maximal dose is reached in from seven to twelve injections at two-day intervals, care being taken to avoid a temperature reaction over 39 C. (102.2 F.). He asserts that improvement was almost always apparent. In some cases prolonged remissions lasting up to two years occurred. He states that when recurrence took place resumption of the tuberculin treatment again put a stop to the disease. The article contains little to warrant the claims of the author.

9. Sick: *Deutsch. med. Wchnschr.*, 1905; *Neurol. Centralbl.*, 1905, p. 428.

10. Israel: *Neurol. Centralbl.*, 1903, p. 182.

11. Thomas: *Jour. Nerv. and Ment. Dis.*, 1902, p. 98.

12. Patient lived for four years.

13. Saenger: *Neurol. Centralbl.*, 1909, No. 3.

ANIMAL EXPERIMENTATION

THE PROTECTION IT AFFORDS TO ANIMALS THEMSELVES
AND ITS VALUE TO THE LIVE-STOCK INDUSTRY
OF THE COUNTRY *

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In subjecting to a careful analysis the results that have accrued from animal experimentation it is not easy to separate many of those which have benefited brute creation from those which have tended more or less directly to alleviate some form of human suffering. The animal experiments which led to the discovery of the facts that form the basis of our present knowledge of the action of the heart, the circulation of the blood, the mechanism of respiration, the functions of the various organs, the action of drugs, the causes of epizootics and the effects of different foods, are generally omitted in pointing out the extent and value of our knowledge of these vital subjects. As the life conditions of lower animals have been greatly benefited by the acquisition of knowledge derived from such experiments, it is not unnatural that those interested in the well-being of domesticated animals should not only wish to continue but also to add to these benefits by the use of methods already demonstrated to be efficient. On the other hand, the supporters of the propaganda against animal experimentation wish the work to be discontinued. In their arguments they fail to take into account the source of the very knowledge of physiology and pathology which they are pleased to possess, denounce the methods by which it was acquired and imply that we already possess sufficient information on subjects of this kind.

In the endeavor to ascertain the rightfulness of animal experimentation or to justify its continuance, we are confronted at the outset with certain basic questions, the answers to which must determine whether or not the routine, the investigations and the research which involve animal experimentation shall or shall not be stopped. These questions are: Shall the process of evolution of the knowledge of physiology and the diseases of animals and their prevention be arrested? Shall efficient methods of treatment be discarded? Shall the domesticated animals, dependent, as they are, on man for their protection, be subjected for future generations to the merciless cruelty of bacterial and protozoan diseases without the application of known methods to prevent them? Shall the animal industry of the country suffer continuously great losses from disease and death of animals because the methods of preventing them may cost the lives of a few individuals? Shall our export trade in animal products, which is carried on only because of the slaughter of millions of cattle, hogs and sheep, be interrupted, with all the attending consequences of this interruption in order to save the lives of a few experimental animals? In the interest of commerce, humanity and the animals themselves, the answer to each and all of these questions seems to be one and the same—no, emphatically no.

The spirit which dominates the work involving animal experimentation is the desire to add to our common knowledge new and important facts that will make pos-

sible the formulation of more efficient methods for preventing suffering and loss by death in the dumb creation. All further knowledge or better understanding of the subtle forces of Nature that produce disease and death in animals must be attained through the use of animals. The methods now in vogue for the control of epizootic diseases are based on the results obtained from animal experimentation. The diagnosis of an epizootic sometimes requires the use of animals, and many of the therapeutic agents as well as preventive vaccines demand the continued employment of living animals. No one uses sentient creatures experimentally from choice, but unfortunately there is no alternative. We must either use a few living animals as reagents and manufacturers of vital products, or subject our flocks and herds to the ravages of uncontrolled pestilences.

In the United States there are animals, exclusive of poultry, cats and dogs,¹ valued at \$4,331,230,000. The United States¹ has an annual export trade in animals and animal products of \$254,798,329. The acquiring of this great wealth in animals and the commercial interests involved have been possible because of the somewhat successful methods that have been formulated and applied for preventing and controlling epizootic diseases. Without their control this country could not enjoy the present benefits of its export trade. As soon as an epizootic, like contagious pleuropneumonia or foot-and-mouth disease, appears, the foreign ports are closed to the importation of animals from the infected districts. The prevention of the severe losses formerly sustained in the northern part of the United States from Texas fever has been made possible by the acquisition of knowledge pertaining to its specific method of dissemination. These illustrations are sufficient, although others could be cited, to show the importance of maintaining as complete a control as possible of epizootic diseases. From the humane side of the question, a further reason for the subjugation of these diseases is found in the alleviation of the suffering to the animals themselves from the inroads of such diseases. Again, the loss occasioned by the epizootic diseases to the individual animal owners is not entirely determined by the value of the animals that die. This is measured in part by the attending human suffering from want and privation, brought about by the loss of animals that were the only source of revenue for the purchase of necessary supplies.

In times of prosperity it is not customary for even the more thoughtful to consider seriously the sequence of events which make the existing success in the traffic of animals and their products possible. The number of the infectious diseases to which our domesticated animals are susceptible, and the suffering and loss which they formerly occasioned, are generally either unrecognized or forgotten. A mere glance at their history will show that the infectious and epizootic diseases baffled all attempts at prevention until a knowledge of their specific nature was determined as a result of animal experimentation. These investigations showed that the epizootic diseases are due to infection with some micro-organism. In certain instances the specific organism has not as yet been discovered, but its means of transmission has been determined, while in others the specific cause itself has been found. With this knowledge these animal plagues can be, and are, largely controlled. It is from the knowledge derived from animal experimentation alone that it has been possible to bring the great

* This article is one of a series issued in pamphlet form by the Council on Defense of Medical Research of the American Medical Association for circulation among the public. Ten of these pamphlets are now ready, taking up the relations of animal experimentation to ethics, diagnosis, cancer, vaccination, the live stock industry, tuberculosis, typhoid, dysentery, rabies, internal secretions, protozoan tropical diseases, etc.

1. Year-Book of the U. S. Dept. Agric., 1907.

scourges of animals, like rinderpest, contagious pleuropneumonia, anthrax, Texas fever, rabies, foot-and-mouth disease, and many others, under the present state of subjugation. This has not only prevented untold suffering to millions of animals, but it has also saved them for their owners.

The fact should not be lost sight of that the diseases mentioned, as well as many others, are liable to be, and often are, reintroduced after they are successfully eradicated. This is illustrated by the destructive malady known as foot-and-mouth disease, which has been introduced and eradicated from this country at least three times.² This fact calls for constant vigilance and often the employment of preventive vaccines as well as other precautionary measures. The true conditions relative to the relation existing between our live-stock industry and the control of disease may be better understood by reviewing somewhat briefly the history of a few of the more important epizootic diseases.

ANTHRAX

Anthrax has been known since very early times. It was primarily a scourge of cattle and sheep, but often of other animals and of man. It caused annually the death of thousands of animals until its cause was discovered, its method of dissemination determined and a preventive vaccine brought out by Pasteur. The successful vaccination against anthrax by the use of attenuated virus which was demonstrated to the satisfaction of the scientific world by Pasteur³ robbed anthrax of much of its terror for the cattle owners and enabled farmers to keep live stock in many localities where otherwise it would have been impossible. This was also true in America. The work of Chester⁴ in Delaware, in the production and use of anthrax vaccine, which enabled farmers in the pest-ridden sections to keep cattle with impunity, illustrates the value of this work to American agriculturists. The more recent method of vaccination, involving but one injection of virus with a quantity of immune serum, described by Sobernheim⁵ and used extensively in South America, is reported to have given excellent results. This means the saving of many animals.

In 1894 Chamberland⁶ reported that a total of 1,988,677 animals had been inoculated in France, and the loss from anthrax had diminished from 10 per cent. in sheep, and 5 per cent. in cattle, to less than 1 per cent. in sheep and 0.25 per cent. in cattle, a saving of over \$2,000,000.

Anthrax has been carried to many places in the United States, and were it not for the preventive measures that are being applied wherever it appears it would soon become a serious menace to the dairy and cattle industries of our country. This is illustrated by the outbreaks in northern New York, where in 1906 it appeared on eighty-four farms.⁷ There were 170 fatal cases before immunization by vaccination could be established. More than 3,000 animals were vaccinated and the ravages of the disease were stopped. Animal vaccination since then has kept the disease in subjugation.

The number of animals that are necessary in the preparation and testing of the vaccine and in making early and positive diagnoses is not large, but the number of deaths and the amount of suffering prevented are great. So thoroughly familiar are our people with the fact that there is a preventive treatment for anthrax that it forms a part not only of their basic knowledge, but also of their working methods in protecting their flocks and herds.

CONTAGIOUS PLEUROPNEUMONIA OF CATTLE

This disease is said to have originated in the highlands of central Europe, whence it spread to every cattle-raising country in the world. It was estimated that during the first quarter of the nineteenth century this disease cost England \$450,000,000 in deaths alone. The additional losses for deterioration were never estimated.⁸ It was probably introduced into the United States in 1843, in a cow imported directly from Europe and taken from shipboard into a Brooklyn cattle-shed. At first its spread was not rapid, several years elapsing before it became widely disseminated in the Atlantic states. It was not, in fact, until about 1880 that it became evident to those most familiar with the disease that if it were not eradicated it would, through some one of the increasing number of avenues of transportation, soon reach the cattle ranges of the West and ruin the cattle industry of this country.

The general dissemination of this disease was due to the ignorance of the people concerning its contagiousness. In 1851 experiments⁹ at Pomeraye and other places in France demonstrated its infectious nature and showed beyond doubt that it would spread from diseased to healthy animals. Owing to general skepticism, these results were not accepted until they had been many times repeated. This was particularly true in the United States. The American mind wanted additional evidence and the result was the well-known experiments made by Dr. D. E. Salmon¹⁰ in 1884 on Barren Island. These furnished such undoubted evidence of the infectious nature of the disease that it was not difficult to obtain from Congress the necessary legislation and appropriation for instituting methods for its complete eradication. As a result every trace of this disease was removed from the United States¹¹ within the brief period of less than six years at a cost (\$1,509,000.72) that was trifling in comparison with the losses likely to occur annually as soon as the disease had obtained a foothold among the cattle on the western plains.

GLANDERS

This is one of the oldest equine diseases known. The ancients describe it and speak of the extensive losses it produced. Many theories existed concerning its source, the most prevalent one being its transmission in some unknown way through the air. Toward the end of the eighteenth century it was demonstrated by animal experiment that the disease was transmissible by inoculation and communicable to man. In 1882 its specific organism was discovered. It is hard for us to appreciate at this time the difficulty experienced in establishing the infectiousness of this disease, notwithstanding the enormous losses it was causing annually. Skepticism died

2. Salmon: Foot-and-Mouth Disease, Year-Book, Dept. Agric., 1902, p. 643; Pearson: Circular No. 15, State Live Stock Sanitary Board of Pennsylvania, 1908.

3. Hamilton: Louis Pasteur, His Life and Labors, 1883, p. 238. D. Appleton and Company.

4. Chester: Anthrax Bacteriologic Work, Rep. Delaware Agric. Exper. Station, 1895, p. 64.

5. Sobernheim: Ueber das Milzbrandserum und seine praktische Anwendung, Deutsch. med. Wchnschr., 1904, Nos. 26 and 27.

6. Chamberland: Jour. d'Agric. prat., 1894, i, 627.

7. Burnett: The Control of an Outbreak of Anthrax, Am. Vet. Rev., 1908, xxxiii, 136.

8. Special Rep. No. 12, Dept. Agric., Washington, D. C., 1879, p. 233.

9. The report of the scientific commission appointed to make these investigations is translated in the Veterinarian, 1854, xxii, Series 3, vii, 335.

10. First Annual Report, Bureau of Animal Industry, U. S. Dept. Agric., 1885, p. 170.

11. Rusk, J. M., Sec. of Agric.: Proclamation, Eradication of Pleuropneumonia, Sept. 26, 1892.

out, however, when Loeffler and Schütz¹² were able to produce it with pure cultures of the bacillus they had discovered and, further, were able to show how its virus was disseminated through the nasal discharges from infected to well horses. Another victory was realized in the production of mallein from cultures of the glanders bacillus. By the use of this substance the disease can be detected in animals that have been exposed but which as yet do not show evidence of infection. By detecting and removing the infected horses before the disease comes in evidence and before the bacteria are escaping, the spread of the disease is checked. Glanders, like anthrax, is transmissible to man, and already a number of cases have been reported in men who have had the care of horses. Since the introduction of mallein and the enforcement of sanitary regulations compelling the destruction or isolation of infected animals, the spread of glanders has been greatly reduced. While general statistics are wanting, the importance of this disease can be understood from the fact that in ten years (1876-1886) in Prussia alone it destroyed 20,566 horses.¹³

In the United States glanders is of much significance, especially in the cities. Its early diagnosis and control are of great economic as well as sanitary importance. The methods by which to accomplish these results are the direct outcome of painstaking studies and experiments with animals.

RABIES OR HYDROPHOBIA

Among the diseases of man, none are more dreaded and in animals few are more pitiful than rabies. There is no longer any disagreement among pathologists as to the existence and dangerous nature of this disease or as to its being readily communicated from rabid to healthy animals. In the maladies heretofore cited, with the exception of contagious pleuropneumonia, the specific organism has been found, isolated and cultivated on artificial media. In rabies the search for the specific agent was unsuccessful for many years. The bodies discovered by Negri in 1903 are thought by many to be the cause. Prior to Negri's observations, however, the experiments in preventive treatment had become successful. The fact was established by experiments that when rabbits are inoculated with a bit of the spinal cord or brain of a rabid dog or other animal they will die after a certain length of time (usually from fifteen to thirty days) with definite and characteristic symptoms, and that when rabbits are inoculated by the same method with the spinal cord or brain of healthy dogs they will remain well. In 1884 Pasteur¹⁴ made the brilliant demonstration of his method of conferring immunity against rabies or hydrophobia before a commission of scientific men appointed to make an investigation into its merits. Concerning his first inoculation in man, Pasteur wrote:

Making use of this method, I had already made fifty dogs of various races and ages immune to rabies, and had not met with a single failure, when on July 6, quite unexpectedly, three persons, residents of Alsace, presented themselves at my laboratory. One of these, a boy of 9 years, who had been bitten in fourteen different places by a rabid dog, was saved.

At the Pasteur Institute in Paris, 9,433 persons were treated during the years 1886 to 1890 inclusive. The total mortality among those treated was 0.61 per cent. In 1890, 416 persons were bitten by dogs proved to be

rabid, and among these there was not a single death. In 1891, the number of persons treated was 1,539, with a mortality of 0.25 per cent., and, in 1893, 1,790 inoculations were made with a mortality of 0.22 per cent.

Rabies has spread extensively in the United States during recent years. In 1908 there were reported in the registration area 111 deaths in man and 534 localities infected with rabies. There were nearly 1,500 people who took the Pasteur treatment for this disease.¹⁵ In 1908 there were 1,168 positive examinations¹⁵ for diagnosis of rabies in animals made in the United States. At the New York State Veterinary College from 1899 to 1908 a total of 496¹⁶ examinations for rabies in animals were made. These have all come from the rural districts and the smaller cities of the state. The examinations in New York City are made at the laboratory of the City Board of Health. Of these 496 examinations, 424 were in dogs, the others in cattle, horses, sheep and hogs. The number of examinations is increasing, there being over 400 for the first ten months of this year. In Wisconsin¹⁵ 584 animals died of rabies during the past year. Of these, 100 were hogs, 400 cattle, 28 sheep and 56 horses. These facts are mentioned to show the significance of the disease for our domesticated animals.

The Pasteur treatment has been made so effective and inexpensive, as compared with former times, that, when desired, animals bitten by rabid dogs may be treated. The material may be sent from the laboratory where made, as from the New York City research laboratory for instance, and administered by the local veterinarian. The result of the work along these lines has not only proved to be a great blessing to humanity, but also a source of great relief to many animals. As a result of the fact that the method of dissemination of rabies has been determined, quarantine and other precautionary measures are possible to greatly lessen the number of animals infected.

SWINE DISEASES

The important infectious diseases of swine known to occur in the United States are hog cholera and swine plague. The first recorded epizootic of hog cholera in this country occurred in Ohio in 1833. It gradually spread until it became a menace to this branch of animal industry. In 1899 de Schweinitz estimated that the losses from this disease alone in the State of Iowa was \$15,000,000 annually. In other words, a disease supposed to have been introduced from Great Britain about 1830 had become a general and unquestioned plague by 1870. In 1903 de Schweinitz¹⁷ found that in the blood of hogs suffering from epizootic hog cholera there was a virus that would pass through a Berkefeld filter. Continued investigations in the Bureau of Animal Industry¹⁸ and elsewhere¹⁹ showed that swine could be immunized against this disease by the use of serum of hyperimmunized pigs. The result of this discovery has led several states to manufacture this serum for the purpose of immunizing hogs. The saving from suffering and death to swine and the gain to the pork industry of this country resulting from this work is enormous. No one who has witnessed the suffering of hogs in outbreaks of a chronic type of hog cholera can fail to appre-

15. Kerr and Stimson: The Prevalence of Rabies in the United States, U. S. P. H. and M.-H. S., 1909, p. 7.

16. Moore: Am. Vet. Rev., 1909, xxxi, 20.

17. de Schweinitz: Cir. 14, Bureau of Animal Industry, Dept. Agric., 1903.

18. Dorset, Bolton and McBryde: Bulls. 72 and 102, Bureau of Animal Industry, Dept. Agric.

19. King: Bull. 157, Kansas State Agric. Coll.; Reynolds: Bull. 113, Univ. Minn. Agric. Exper. Station.

12. Loeffler and Schütz: The Bacillus of Glanders, Deutsch. med. Wchnschr., December, 1882; transl. in Micro-organisms in Disease, New Sydenham Society, 1886, p. 388.

13. Friedberger and Fröhner: Therapie der Haustiere im Lehrbuch der speziellen Pathologie, 1908, ii, 435.

14. Vallery-Radot: The Life of Louis Pasteur, ii, 219-290.

ciate the great blessing that has come to this species of animals by bringing this scourge under control.

TEXAS OR SOUTHERN CATTLE FEVER

This disease, which has been called bovine malaria, has been known for many years in the South. It frequently gained entrance to the Northern states, where it caused heavy losses in the death of cattle. The following statement concerning the disease, which illustrates its mysterious nature as viewed in that time, is taken from Dr. Smith's report:

It was also discovered that southern cattle, after remaining for a short time on northern pastures, lost, in some mysterious way, the power to infect other pastures and were, for the remainder of their stay in the north, harmless. Again, cattle driven over a considerable distance lost, after a time on their way, the power to infect pastures. When pastures and trails had been passed over by southern cattle, it was observed that the disease did not appear at once in the northern cattle grazing on them, but that a certain period of not less than thirty days elapsed before the native cattle began to die. More curious than even these facts was the quite unanimous testimony of the stock-owners who had had more or less experience with this disease, that native susceptible animals did not transmit the disease to other natives, and that they were harmless.

In 1868, Texan cattle shipped up the Mississippi River to Cairo and thence by rail into Illinois and Indiana early in June caused during the summer of that year enormous losses of cattle in those states. Moreover, the east began to be aroused because western cattle infected with the disease had been shipped eastward for beef and were dying of Texas fever on the way, in the New York stock-yards, and elsewhere. The question as to the effect of such diseased flesh on human health was at that time entirely new and caused much uneasiness. The cattle commissioners of New York state and the Board of Health of New York City made a vigorous effort to check the importation of diseased cattle from the west, and to their effort we owe much valuable information of this disease.

By means of a careful series of experiments begun in 1889 Smith²⁰ found the cause of this disease to be a protozoon closely allied, if not identical, with the one discovered by Babes as the cause of a disease of cattle in Roumania, and that this organism was transmitted from the infected to the well cattle by means of the cattle-tick.

It has been repeatedly demonstrated by animal experiments that the cattle-tick is the carrier of the virus, and that in the absence of this tick Southern cattle can be shipped North at any time of the year with perfect safety to Northern stock, and that if ticks are removed from the pastures Northern cattle can live in the South. As the carrier of the virus is known, the disease can be prevented.

The discovery of the cause of this affection and its method of dissemination has led to most important results. Several of the Southern states²¹ have introduced methods of immunizing Northern cattle that were shipped into the South for breeding purposes, and more recently the government has undertaken to eliminate the cattle-ticks, thereby eradicating the disease. The value of the experiments which made possible these results to the live-stock industry, and which cost but a small number of animals, cannot be estimated, either in dollars or in the suffering of thousands of cattle they have saved.

TUBERCULOSIS

Of the diseases of cattle there is perhaps no other that causes as heavy losses as tuberculosis. This affection was known in very early times, but its means of spreading was very limited owing to the small traffic in cattle. In the nineteenth century it had become, however, a source of great loss, largely because the people did not know its cause or how it was spread.

In 1865 Villemin²² demonstrated, by inoculating healthy animals with tuberculous tissue, that tuberculosis was a communicable disease. In 1882 Robert Koch,²³ after repeated experiments on animals, discovered and isolated its specific organism. But for these and similar experiments, we should still be totally in the dark as to the cause of this disease and unaware of its communicability from animal to animal, or from animal to man.

The importance of these discoveries is too great for ready comprehension. Tuberculosis, while not characterized as an epidemic or epizootic disease, is estimated to be the cause of 14 per cent. of all the deaths in the human family, while from the post-mortem examination of the cattle slaughtered in the abattoirs of ten foreign cities and countries²⁴ cattle averaging nearly 18 per cent. have been reported to be tuberculous. In the United States it is estimated that probably 10 per cent. of the dairy cattle in the country are affected with tuberculosis. Dr. Melvin estimates further, on carefully collected data, that tuberculosis of food animals costs this country \$14,000,000 annually. Several herds have come to my notice in which on post-mortem examination from 75 to 90 per cent. of the animals were found to be diseased.

In order to determine the extent to which the disease has spread, I have collected and compiled the results of a number of tests made during the last two or three years, but largely in 1907, by a considerable number of veterinarians to whom the New York State College furnished tuberculin. The results show that of 421 herds tested 302 contained reacting animals.²⁵ These herds contained a total of 9,633 animals, of which 3,432 reacted. The official tests by the New York Department of Agriculture for the years 1904-6 inclusive, kindly furnished me by Dr. Kelly, include 262 herds with a total of 3,088 animals, of which 673 reacted. They were distributed in fifty counties. These herds all came under the operation of the law. Infected animals were found in one hundred and twenty-one herds.

Sanitarians have recognized the danger of human infection from the consumption of milk from tuberculous cows, and the presence of much tuberculosis in pigs and calves fed on such milk is a practical demonstration of the transmission of the virus through this medium. The conclusion by many investigators is that from 1 to 2 per cent. of human tuberculosis, especially the glandular form, is of bovine origin.²⁷

22. Quoted by Huttyra and Marek: *Spezielle Pathologie und Therapie der Haustiere*, I, 472; original article by Villemin in *Bull. Acad. Sc., Paris* (1865-6).

23. Koch: *The Etiology of Tuberculosis*, Mitt. a. d. Gesdhtsamte, 1884, II; *Tr. New Sydenham Soc.*, 1886, p. 67.

24. Statistics Collected by Freeman: *Med. Rec.*, March 28, 1896, p. 433. In detail they are: Berlin 4.37, Munich 2.44, Augsburg 2.44, Mulhausen 3.4, Hanover 60 to 70, France 5, Paris 6, Holland 20, Pomerania 50, Mexico 34 per cent.

25. Melvin: *The Economic Importance of Tuberculosis of Food-Producing Animals*, Proc. Sixth Internat. Cong. on Tuberc., 1908, IV, 504.

26. Moore: *Bull.* 250, Cornell Univ. Agric. Exper. Station, 1908, p. 286.

27. Smith: *Med. News*, New York, 1902, lxxx, 343; *Tr. Massachusetts Med. Soc.*, 1907.

20. Smith and Kilbourn: *Bull.* 1, Bureau of Animal Industry, U. S. Dept. Agric., 1893.

21. Francis and Connaway: *Bull.* 35, Texas Agric. Exper. Station, 1899; Connaway: *Bull.* 37, Missouri State Board of Agric., 1897; Dalrymple, Nirrgan and Dodson: *Bull.* 51, Louisiana Agric. Exper. Station, 1898.

There is a large literature on this subject. The report of the Royal Commission on Tuberculosis and the Proceedings of the Sixth International Congress on Tuberculosis are especially recommended for information on the transmission of bovine tuberculosis to man.

The cause of this disease, the manner of its dissemination, and the means (tuberculin test) by which it can be detected in its early stages, have been discovered by animal experimentation. The remaining step is to determine the best method for the elimination of the diseased animals. When this is ascertained, and the existing centers of infection removed, the enormous losses now annually sustained by deaths from this malady ought practically all to be averted. Judging from the known facts, it is highly probable that if attention had not been called to this disease in cattle, and a method for its early detection discovered, it would have become a more universal and destructive plague of cattle than any other that has yet visited the animal kingdom.

OTHER DISEASES

There are still other diseases of an epizootic nature that are worthy of mention and also those frequently of great local interest, which have been investigated by means of animal experimentation and robbed of much of their former terror. Blackleg and tetanus or lockjaw are prominent among these. Further, there are the animal parasitic diseases, such as trichina in pork, fluke diseases of cattle and sheep, and the tapeworm diseases of sheep. A nodular disease of the intestines of sheep²⁸ due to a small round-worm and one in fowls²⁹ due to a tapeworm were once supposed to be tuberculosis, and in the effort to eradicate them many animals were sacrificed. A disease in cattle known as the cornstalk disease, which was thought, especially in Europe, to be contagious and therefore requiring rigid quarantine, has been shown to be due to local causes and in no way transmissible from one animal to another.³⁰ Surra³¹ was recently kept out of this country, although it was brought to our shores, because a diagnosis was possible by means of animal inoculation. Much light has been shed on the infectious diseases of poultry, such as "blackhead" in turkeys and diphtheria and tuberculosis in chickens. A new disease of fowls, a filth disease, which is frequently called fowl cholera, has been discovered and can be prevented by the adoption of a régime of cleanliness, wholesome food and ventilation. Recently Mohler has identified a serious disease of sheep, which affects the lips and legs and which was thought to be foot-and-mouth disease, as an infection with the bacillus of necrosis. While it is of much local concern, the animal inoculations proved that it was not the much-dreaded epizootic foot-and-mouth disease. Attention should also be called to the great importance of animal investigations now in progress on various serums, toxins and antitoxins, for the purpose of securing efficient remedies for the various infectious and epizootic diseases.

In zootechny, or experimentation for improving breeds of domesticated animals, the investigations have been of unquestioned importance to the agriculturists.

Whatever the views on breeding may be, no one doubts for a moment that the modern breeds of farm animals are a great improvement over the original and native stock. While the natural resistance of these animals against infectious diseases may have been appreciably lessened from that of the native stock, the knowledge we possess of how to keep these diseases away from our flocks should encourage future experimentation for the purpose of raising better and swifter horses; cows to give more and richer milk; sheep to yield finer wool and more of it; and swine to grow more pork per bushel of corn.

FURTHER INVESTIGATIONS NECESSARY

A study of the efforts which have been made for the suppression of infectious diseases of animals both in this country and abroad shows that, while wonderful advances have been made, the desired results in many instances have not been fully attained. There are those who, ignorant of what has been done, and equally ignorant of what there remains to do, question the necessity for further investigations. Great as have been the achievements in the past, it must be evident to every well-informed and unprejudiced mind that still greater achievement—greater whether measured by relief of suffering or by financial gain—are within reach in the near future. The benefits to agriculture and mankind in general which have accrued from the investigations of the past are no nearer their maximum limits of success than was the practical application of steam when Fulton built his first steamboat. Knowledge of the diseases of animals made little growth until the development, by means of repeated experiments on animals, of the newer pathology, which tends to reveal the nature of these affections, thereby pointing to methods for their control. In spite of all that has been done, practical preventive medicine has barely passed its infancy, and the important investigations into the so-called general diseases and dietary disorders have hardly begun.

The demands for further investigations were never more pressing than they are to-day. If they are checked we shall experience in this country what Great Britain has already suffered. Owing to a crusade which finally found expression in a parliamentary enactment, animal experimentation has been so crippled in Great Britain that the country which should have done the most by virtue of her wide geographical possessions and vast live-stock interests for the improvement of methods of preventing and controlling infectious diseases, has done practically nothing. I quote from one of England's foremost veterinarians³² in a plea for animal experimentation:

No country in Europe has, possibly, sustained greater loss during the last thirty-five years than our own; yet no country, perhaps, should have suffered less. With the finest breed of horses, and the most magnificent herds and flocks in the world, and a teeming population, whose health and wealth are largely centered in these, we have entirely neglected to protect them from the ravages of disease of home and foreign origin, by forgetting to foster and encourage that science which alone can accomplish this. That neglect has cost Great Britain and her colonies untold millions.

Furthermore, experiments which have demonstrated important facts to us are not always accepted by others unless they can be and are verified. There is in human

28. Curtice: *Animal Parasites of Sheep*, U. S. Dept. Agric., 1890, p. 165.

29. Moore: *Circ. 3*, Bureau of Animal Industry, U. S. Dept. Agric., 1895.

30. Moore: *Bull. 10*, Bureau of Animal Industry, U. S. Dept. Agric., 1896; Mayo: *Bull. 49*, Kansas Agric. Exper. Station, 1895.

31. Mohler: *24th Annual Report B. A. I.*, U. S. Dept. Agric., 1907, p. 34.

32. Fleming, George: *The Contagious Diseases of Animals; Their Influence on the Wealth and Health of the Nation, and How They are to be Combated*.

nature an inherent demand for visible proof. In order not to retard progress, it is often necessary that the doubting Thomases should be convinced, and the only way to accomplish this is by repeating what has already been done. This is always necessary in teaching those who are to continue the work of controlling animal diseases. In other words, a certain amount of experimentation must be carried on as a means of education.

In the practice of veterinary medicine and veterinary sanitary science, it is often necessary, for purpose of diagnosis, to make inoculations immediately. At such times every hour of delay may mean the death of many animals. In charity to dumb creation itself, therefore, there should be no restrictions to delay the work.

In order to make diagnoses, to prepare vaccines and antitoxins with which to better the conditions of animals, it is necessary that animal experimentation be continued. It is the only humane thing to do. If this work were checked, it would entail a vast amount of needless suffering on animals exposed to the various infections, and threaten the prosperity of the animal industry of the country. To spare the very few experimental animals necessary in procuring life-saving results would require annually the sacrifice of tens of thousands of other and more valuable animals to all sorts of infectious diseases. The time has come when every humane individual must protest against interference with animal experimentation.

Most animal experimentation does not inflict great suffering. Anesthetics are freely used, and experimenters do not permit unnecessary pain. In most cases the animals used in experimentation have a more comfortable life and a far easier death than those that have the freedom of Nature and allowed to perish by the so-called natural diseases. Those who have witnessed the prolonged suffering endured by large numbers of wild animals that die from chronic diseases will verify this statement. The pain inflicted in those experiments in which anesthetics cannot be administered is not usually greater, and is often much less, than that resulting from the violent death experienced by many animals in their natural surroundings. No one who has observed the suffering of animals while they are dying with one of their many natural diseases, or because of the cruelty of beasts of prey, can feel that animal experimentation, as practiced in recent years, imposes as cruel a death as do the unalterable laws of Nature. The objectionable vivisection practiced in earlier days in veterinary colleges no longer exists.

When, therefore, the subject of animal experimentation is considered broadly, and in the light of natural laws which give a limited life period and certain death to every individual, it resolves itself into the simple question: Shall the lives of a few animals be shortened because of experimentation? Men and women are allowed wantonly to shoot and trap innocent animals and birds simply to gratify an appetite for brutal pleasure, or to procure furs and plumes for adornment and use. We permit unlimited slaughter of young animals for human food; why, then, should we hesitate to shorten the lives of a few that thousands of others may be protected from disease and suffering? The investigations involving animal experimentation have the broadest economic and humanitarian value, and they therefore should not be retarded by misguided sentimentalism.

THE ETIOLOGIC CONTROVERSY REGARDING PELLAGRA

HOWARD D. KING, M.D.

NEW ORLEANS

Who shall decide, when doctors disagree,
And soundest casuists doubt, like you and me?
Pope, *Epistle to Lord Bathurst*.

Since the inception of the discussion relative to the disease pellagra, which now occupies the attention and interest of the profession and the country at large, especially the South, much has been said and written concerning the malady. While on the whole the contributions contain much that is valuable, yet into the published reports of these investigations have crept many errors and divergencies, notably with respect to the etiology. The interest in the disease is apparently so extensive that I believe that I am justified in offering the subjoined review of the findings and theories of those members of the profession whose labors on the subject have justly caused them to be regarded as foremost authorities.

The expressions of the early clinicians who in dealing with this disease likened it to rare and little known forms of lues, leprosy and scurvy, while of some slight importance from the standpoint of comparative diagnosis, are only of historic interest to-day and a tribute to their labors, however unproductive. Benvenuti, Sprengel, Della Bona and Huester,¹ all of whom regarded it as a degenerate form of leprosy, as we know to-day, erred in their diagnoses. Pellagra is at this date regarded as a distinct disease, possessing morbid phenomena peculiar to itself. Those few students, among them Cecconi² and Le Fers,³ who believe the disease to be a symptom-complex or *morbus miserie* and regard the different symptoms as prodromal of some condition other than pellagra, are fortunately in the minority, and the evidence on the subject is almost conclusive that the members of that group are laboring under a false impression. Creighton⁴ says: "That pellagra is not a *morbus miserie*, pure and simple, wanting some more and specific cause, will be at once apparent when we consider that the misery of living is as old as the human race, whereas pellagra is a disease of the last hundred years or so, and that in Ireland, Russia, Upper Silesia, Galicia or other headquarters of the *morbus miserie*, pellagra is unknown."

The study of pellagra has resulted in the development of several classes of students, of which at this time we are chiefly concerned with two—the zeists and the anti-zeists. The zeistic advocates, while treating corn as the causative factor, in the main hold radically different views as to the means by which the disease is superinduced; that is, whether it is due to (a) deficiency in the nutrient value of the maize; (b) the existence of a definite toxic substance in normal maize; (c) postingestive elaboration of toxins; (d) elaboration of toxic substances during the decomposition of maize; or (e) bacteria, molds or protozoa. The antizeists decline to accept the corn theory, averring, on the contrary, that the cause may be other than the use of corn; they cite very force-

1. Sambon, Louis W. (quoting the other authors named): *Brit. Med. Jour.*, 1905, II.

2. Cecconi, H.: *Erythèmes pellagriques et érythèmes pellagroides*. Thèse, Paris, 1903.

3. Le Fers, F. L. M.: *La pellagre des Landes dans le passé et dans le présent*. Thèse, Bordeaux, 1907.

4. Creighton, Charles: *The Encyclopedia Britannica*, Ed. 9, xviii, 476.

ful, though not so authentic, arguments against it. The antizeists are evidently influenced by the work of such men as Sambon and Manson, who are rather inclined to believe the disease to be protozoal in its nature.

It is not too much to say that our knowledge of the causation of pellagra is purely conjectural. Despite the vast amount of work done by prominent investigators since the year 1776, when the *Società Patriotica di Milano* offered a prize for the determination of the cause of the disease and a means of combating it, the real cause appears to-day to be as remote as at any time in the past. The ultimate cause of pellagra is unknown. The almost universal belief is that there is some distinct relation between the use of corn as food and the appearance of the disease. This opinion, though built on purely circumstantial evidence, is too profound and deep-rooted to permit of rejection, except in the case of demonstrative proof to the contrary. What this exact relationship is or the precise manner in which the ingestion of the damaged maize proves itself the etiologic factor, has not yet been determined. Whether the disease is an ordinary intoxication (toxicochemical), an autointoxication (toxico-infectious), or a specific infection caused by bacteria, molds or protozoa, is also a matter which awaits solution. Apart from the view that damaged maize is the definite causative agent, there must be considered those conditions which tend to lower vital resistance and thus prove an indirect, though important, etiologic factor in the causation of the malady. The conditions referred to are alcoholism, excessive venery, lowered resistance (through previous illness, especially lues, malaria and ankylostomiasis), lack of nourishment, illiteracy, lowered moral atmosphere, poor hygienic surroundings, and the general conditions which usually accompany poverty and ignorance. Rohrer⁵ believes that chronic diarrhea and dysenteric disorders, especially of an ulcerative type, can also be regarded as possible predisposing causes. He further adds that impure drinking-water may bring about these intestinal lesions and thus open up avenues of entrance for infection with pellagra.

That the effect of the actinic rays has some remote bearing on the disease, especially the cutaneous lesions, is not improbable. Gherardini⁶ varied the usual systematic arrangement of the erythema seen in pellagra by displacing certain parts of the wearing apparel; and Hameau⁷ obtained differently shaped patches of erythema by fenestrated gloves. Kreibich⁸ has found that at the onset of summer sunlight affects the skin, which may become thickened and pigmented. These facts offer sufficient evidence that the actinic rays are not to be entirely disregarded, especially as to the production of the erythema, when considering the etiology of pellagra.

Notwithstanding that damaged maize is looked on as the incriminating factor in the production of the malady, we must bear in mind that sound maize is a food possessing high nutrient value, and to eliminate it from our dietary would not only be unscientific, but absurd.

Scores of investigators have at various intervals proclaimed the discovery of the cause of pellagra. Hardly

had their announcements been made than subsequent investigators discredited their findings. The laboratory findings of one investigator were never confirmed by those of another. Thus, to-day we have an endless array of those who claimed at one time or another to have discovered the etiology of pellagra. From corn many things have been extracted and held responsible for the production of pellagra. Selmi¹ demonstrated the presence of ammoniacal acrolein in damaged maize; Pellogio¹ (1876) extracted from spoiled maize an acrid substance which gave rise to symptoms of paralysis; Hansemann¹ extracted from diseased maize a narcotic tetanic toxin, to which he gave the name "maizina"; Monselice¹ (1881) analyzed various substances collected from damaged maize and was unable to find any alkaloid. He called attention also to the fact that there was a difference between artificially fermented maize and ordinary damaged maize. Tardieu⁹ claimed that pellagra was caused alone by cryptogenetic changes in this grain, but admits, with Bouchardet,¹⁰ that different cereals, such as maize, may be attacked by verdet or blight. Gintrac¹¹ also admits that if altered maize is not the only specific cause of pellagra it at least contributes greatly to the introduction of the malady in subjects of ill-nourished constitutions and living amid poor hygienic surroundings. It was Gintrac¹¹ who pointed out to Landouzy¹² the divergencies between the pellagrous erythema and the erythema of other conditions.

The theory as to the nutritive deficiency of maize was first advocated by Giambattista Marzari¹³ about 1810, when he called attention to the probable relation between maize and pellagra. He stated that corn, and especially the poorer qualities of it, lacked sufficient gluten to make a good food and was, therefore, the true cause of pellagra. Strambio, the elder,¹⁴ was of the same opinion as Marzari and asserted that the corn was deficient in nitrogen because it was sown late and gathered green. Lusanna and Frua¹⁵ and others later were of the same mind as Marzari and Strambio, though their efforts to prove that pellagra was due to lack of nutrient material in maize were futile. Costallat¹⁶ considered pellagra as due to slow poisoning from maize attacked by blight, which rendered it unfit for food in that it was deficient in gluten. He said that the maize was attacked by a mushroom parasite under the episperm of the maize, which became admixed with the starch of the grain.

The idea that sound maize contains certain toxic substances which cause pellagra is now a discredited theory, by reason of the fact that pellagra is absent in so many places where maize is and has been for long periods extensively raised and used as food. The experiments of Lucksch¹⁷ at Leipsic, in 1906, tend to show that an

9. Tardieu, Ambroise: Pellagre, Dictionnaire d'hygiène publique et de salubrité, Paris, 1854, pp. 38 to 48.

10. Bouchardet: Pellagra, Lancet-Clinic, Sept. 18, 1909, p. 310.

11. Gintrac, H.: Dictionnaire de médecine par E. Littré et Ch. Robin, Paris, 1865, Ed. 12, p. 1112.

12. Landouzy, M. H.: De la pellagre sporadique, Paris 1860; Deuxième leçon clinique, Précédé de l'examen de quarante pellagres réunis à l'Ecole de médecine, Paris, 1861.

13. Marzari, Giambattista: Saggio medico-politico sulla pellagra, Venezia, 1810; abstr. from Osservazioni del Dr. Cerri, intorno al saggio medico-politico sulla pellagra, Milan, 1811; Memoria sopra la pellagra, Venezia, 1815.

14. Strambio, Cajetan: De pellagra; observationes in regio pellagrossorum nosocomii factae a calendis anni 1784, usque ad finem anni 1785, Milan, 1785 (i), 1787 (ii), 1789 (iii); En allemand, par Charles Weigel, Leipsic, 1796.

15. Lusanna and Frua: Su la pellagra, Milan, 1856.

16. Costallat, A.: Réponse du Dr. Costallat à la lettre du Dr. Peyramale insérée dans le numero du 28 Avril 1860, du Journal de l'intérêt public de Tarbes, à propos de la pellagre, Tarbes, 1860; No es la pellagra, le enfermedad conocida en España con el nombre de flema salada, Madrid, 1861.

17. Lucksch: Ztschr. f. Hyg. u. Infektionskrankh., 1908, pp. 479-486.

5. Part of the transactions of the National Conference on Pellagra, held at Columbia, S. C., Nov. 3 and 4, 1909. Special abstract in THE JOURNAL A. M. A., Nov. 13, 1909, lili, 1659. A brief summary of all the papers read at the conference may be obtained in the Public Health Reports of Nov. 12, 1909, xxiv, No. 46. The complete transactions of the conference will soon be published under the auspices of the South Carolina Board of Health.

6. Gherardini, Michael: Descrizione della pellagra, Milan, 1780.

7. Hameau: De la pellagra des Landes. Bull. de l'Acad. de méd., ii, 7; x, 790.

8. Kreibich: Wien. klin. Wehnschr., 1904, p. 1459.

exclusive diet of cornmeal, even of good quality, when fed to animals (guinea-pigs, rabbits and dogs) over a long period of time, would produce emaciation, intestinal catarrh and, in the case of pigs, loss of hair, flaccid paralysis—symptoms, it must be confessed, suggestive of pellagra. Yet these experiments are not at all conclusive, for the question of personal susceptibility and idiosyncrasy must be taken into consideration. Then, again, if a man, or even an animal, lives on carbohydrates alone, the nitrogen necessary for metabolism must be derived from his tissues, and so far as this element is concerned he suffers from inanition. It is a well-known physiologic axiom that for the maintenance of healthy nutrition a proper combination of alimentary principles is absolutely necessary, no one class being capable of maintaining metabolic equilibrium for any definite period.

The toxico-infective theory is that from spoiled maize there is formed within the body certain toxic substances and that the infection is of an endogenous nature. Forcher¹⁸ and Roussel¹⁹ asserted that it was a disease of the corn itself which produced the toxin. Sturli's²⁰ conclusions are summed up in the following words: "We have to deal with an intoxication, most likely exogenous," and he adds that the toxic agent gains admission to the human organism with vegetable food.

FUNGI

Vincenzo Sette,²¹ in 1826, was the first writer to declare that the main cause of pellagra was a fungus, "scimelpige," growing on maize, which, according to his theory, produced an acid decomposition of the oils of "zein" of the corn; and from this have sprung the latter-day theories of the zeists and the toxizeists. The toxizeists consider corn pathogenic in so far as injurious substances are able, under outside influence, to develop on it.

Ballardini,²² in 1845, asserted that the disease was due to a living organism, a mold (hyphomycete), *Sporisorium maydis*, which he found in the greenish stain (*verderame*) frequently seen in the germ groove of maize grains. Lombroso²³ directed attention to the rarity of the sporisorium, and for that reason believed that it was not the cause of pellagra, but was of the opinion that Ballardini had confounded the *Sporisorium* with the *Penicillium glaucum*. Notwithstanding that a special commission reported against the probable correctness of his theory, Ballardini had many adherents both in Italy and France, notable among whom, in France, were Roussel and Costallat.

In the year 1860 Pari²⁴ attributed the disease to the maize smut, *Ustilago maydis*. Parsons²⁵ analyzed ustilago or corn smut and obtained an acid which he temporarily entitled "sclerotic acid," because of its apparent

similarity to the acid (one of the active principles) found by Draggendorf in ergot. The *Ustilago maydis* was described also by Imhof.

Ceni²⁶ in 1902 asserted that the disease was nothing save an infection engendered by two molds, *Aspergillus fumigatus* and *flavescens*, and that the condition was a true aspergillosis. Grohe, Block, Grawitz, Koch and Gaffny, Baumgarten and Miller, Kaufman and others¹ produced experimental aspergillosis and obtained results differing from those secured by investigators who claimed to have produced pellagra. Lichtheim¹ pointed out that these differences were due to the fact that not all species of aspergilli are pathogenic and he called attention to the harmless aspergilli, *glaucus*, *niger* and *repens*, and the toxic, *fumigatus*, *flavescens*, *subfuscus*, *nidulans* and *malignus*. The *Aspergillus flavescens* has frequently been found in the human ear. In February, 1883, Dr. L. H. von Gohren²⁷ reported a most interesting case of "otomycosis aspergillina," in which there were large epithelial casts mixed with vegetable parasites, the latter revealing themselves under the microscope as forms of aspergillus. They were accumulated near the tympanum, and that membrane itself was dotted with insular groups of these fungi. Workers in grain or flour frequently suffer from a pneumomycosis aspergillina, due to the grain or flour being contaminated with the *Aspergillus fumigatus*. Ceni asserts that the spores of the aspergilli ingested with food escape through the intestines and settle in the lungs, pleura, pericardium and pia mater, from which places he has been able to isolate them at necropsy. He states also that the aspergilli attain their greatest toxicity at that period of the year when pellagrous symptoms are most predominant and that this seasonal manifestation corresponds to the "cycle of annual biologic evolution of these hyphomycetes."

Later, in association with Besta,²⁸ and apparently disregarding his previous observation, he ascribed pellagra to toxic substances, elaborated by the *Aspergillus fumigatus* and *flavescens*. This is a virulent and a characteristic toxin which exists almost exclusively in the spores, and Ceni determined that the media on which they grow has but little to do with its production. More recently the same investigators describe two varieties of *Penicillium glaucum* as the causative agents of pellagra. One variety, it is declared, is responsible for the acute form, and the other for the chronic form of the disease. In a space of eight years Ceni and his coworkers have announced at three different intervals that they had determined the cause of pellagra, each time incriminating some new agent. Up to the present time none of either Ceni's or his associates' theories have been corroborated. Notwithstanding that Ceni and Besta relegated the aspergilli to obscurity and espoused the presence of the *Penicillium glaucum* as the causative agent, Rohrer,⁵ even at this late day, says: "It is generally conceded that the disease is caused by the *Aspergillus fumigatus*, and that the cases occurring in the fall may be due to the *Aspergillus flavescens*." Serena,²⁹ in 1900, remarks that the substances which are responsible for pellagra are the products of schizomycetes and not hyphomycetes.

26. Ceni, C.: Gli Aspergilli nell'etiologia e nella patogenesi della pellagra, Riv. sper. di freniat., 1902, xxviii, 149.

27. Von Gohren, L. H.: A Case of Otomycosis Aspergillina, New Orleans Med. and Surg. Jour., February, 1883.

28. Ceni, C., and Besta, C.: Principe tossici degli Aspergilli fumigati e flari e loro rapporto colla pellagra, Riv. sper. di freniat., 1902, xxviii, 528.

29. Serena, M.: Sui veleni ed antiveleni del mais guasto, Ann. d'ig. sper., Roma, 1900, New Series, x, 39.

18. Forcher: Read in conjunction with work by Roussel.

19. Roussel, Théophile: De la pellagre, Paris, 1845; Bull. de l'Acad. de méd., xii, p. 929; De la pellagre et des pseudo-pellagres: étiologie de la pellagre proprement dite, Gaz. hebdomadaire de méd., Paris, 1866, iii, 5.

20. Sturli: Ueber die Aetiologie de Pellagra, Verhandl. d. Gesellsch. deutsch. Naturf. u. Aertze (1905), Leipzig, 1906, Part 1, 269.

21. Sette, Vincenzo: Quoted by J. H. Randolph: Some Notes on Pellagra and Pellagrins, Jour. South. Med. Assn., July, 1909.

22. Ballardini: Della pellagra del grano turco quale cause precipua di quella malattia e dei mezzi per arrestarla, Ann. Univ. di Med., Milan, 1845, cxiv, 5, 241.

23. Lombroso, Cesare: Sull'eziologia della pellagra, R. Ist. Lomb. di sc. e lett., Rendic., Milan, 1871; Trattato profilattico e clinico della pellagra, Turin, 1892; Die Lehre von der Pellagra, 1898; transl. into German by Kurella.

24. Pari, A. G.: Essenza della pellagra degli agricoltari: nuovi studi teorico pratici—estesi anche ad una effettiva pellagra scolastica, dirette alle Inclite amministrative autorità, Udine 1864; Risposte alle domande ed al desiderio del Dott. Giustino Grossi sulla teorica della funginazione nella pellagra, spallanzini, Modena, 1873.

25. Parsons: See letter.

The general trend of all the investigations pursued by the European students of the disease appears to favor the *Penicillium glaucum* as the causative agent. That this should be so is most extraordinary, for the simple reason that it is the most common mold and is found everywhere and has a most varied distribution. This mold has played for the plant physiologist the same rôle that the frog has played for the animal physiologist, and has even been shown to grow on the most unlikely poisonous substances, e. g., solutions containing arsenic, copper and sulphuric acid. It is also an active agent in the destruction of wood. It does not show any particular choice in the selection of media. Maggiore and Gradenigo¹ found it within the Eustachian tube in two cases of otitis. Sandwith² says that there is a considerable consensus of opinion toward incriminating the *Penicillium glaucum* and that the majority of Italian literature dealing with the disease look on this fungus as the most possible cause.

Gosio³⁰ maintained that the commonest saprophyte of maize was the *Penicillium glaucum*, and after the preparation of a pure culture from this fungus he extracted a substance belonging to the aromatic series. Ferrati³⁰ experimented with a tincture of the penicillium and of the damaged maize and found it to be exceedingly toxic to rodents. De Pietro³¹ observed that only a certain variety of *Penicillium glaucum* had poisonous properties and that the toxic substances did not appear before the third day; and that it was a glucosid and was found only in the spores, and had nothing to do with the culture media. De Pietro's experiments on animals produced symptoms different from those obtained by Lombroso in his experiments. Both, however, considered their cases as being pellagra, despite the dissimilarity of symptoms. Fossati,³² in 1904, declared that he had produced pellagra by inoculating guinea-pigs with maize damaged either by *Aspergillus fumigatus* or *Penicillium glaucum*.

Constantin von Deckenbach,³³ of Jena, in 1907, in further investigating the relation between maize and pellagra, confirmed his former experiments and those of Tiraboschi³⁴ in 1905, and as a result is convinced that the fungus, *Oospora verticilloides* (Saccardo), which was found parasitic on the living maize plant and which produces a disease of the plant, is as important a factor in the production of pellagra as *Claviceps purpurea* is in the causation of ergotism. Tiraboschi, who made a very careful study of the hyphomycetes, found on maize grains in pellagra districts, states that he never found *Aspergillus flavescens* and believes that Ceni and Besta must have confounded it with *Aspergillus varians*, which is very common.

Minor³⁵ is led to remark that, after reading a chapter of Ozanam's work, entitled "Histoire médicale des maladies épidémiques," it is a wonder that no clinician has called attention to the many points of clinical similarity between pellagra and ergotism. Searcy³⁶ says:

In studying pellagra I have often been impressed with the similarity of the disease to ergotism. The onset, course and

much of the symptomatology of pellagra resemble gangrenous ergotism in a good many respects, and knowing that gangrenous ergotism is caused from eating a fungus growth on rye, one would naturally think pellagra was caused by eating some such substance on corn. In looking for such a fungus I find smut (*Ustilago*) resembles the ergot of rye very much. They are both fungus growths, which develop their spores in the ovary of the host plant and grow out in spurs, taking the place of grain. It would seem logical to call corn smut ergot of corn, just as you see ergot of rye, ergot of wheat.

In 1871 Lombroso²³ announced that pellagra was an intoxication, not an infection, caused by the ingestion of certain toxic substances which were elaborated in the parenchyma of the damaged maize by some form of saprophytic life. These toxins he held responsible for the disease. In association with Dupré, Erba and Brugnattelle, he extracted from maize undergoing fermentation a watery extract, an alcoholic extract, and a red oil, by means of which he declared that pellagra symptoms could be brought about in man and animals. He maintained that there were two different toxins, and the combination of the two was sufficient to produce pellagra in the same manner as sphacelinic acid and cornutin are believed to give rise to ergotism. The two poisons are (a) a narcotic substance somewhat similar to conium contained in the aqueous extract and (b) an alkaloid very much like strychnin, which is obtainable from both the alcoholic extract and the oil, which he entitled "pellagrozein." Lombroso inoculated fowls with these poisons and was able to produce the following symptoms: diarrhea, loss of feathers, wasting and death; in rodents, wasting, choreiform movements, muscular spasm and death; in men, emesis, diarrhea, desquamation of the epidermis, giddiness, dilated pupils and evidences of inanition.

Lombroso's theory is the most popular and current one to-day and is best known as the "verdet" theory. Manson³⁷ remarks: "These acute symptoms are in no way comparable to pellagra; identical results follow the administration or inoculation of analogous substances prepared by similar methods from wheat and other harmless foods."

Recent experiments conducted at the University of Illinois² indicate the most common cause of the disease of the ears of the corn to be a kind of diplodia, and this, along with *aspergillus* and *penicillium*, has been advanced as a cause of pellagra. There are well-founded instances of animals suffering from a toxemia superinduced by an excessive corn diet and also by a diet of corn gluten infected with molds. There is no doubt that there are several kinds of disease in some manner attributable to corn; but pellagra must be due to one and not to several kinds of corn-poisoning. Toxins may be developed in the intestines by fungi or bacteria as a result of a corn diet. Bonservizi³⁸ says that pellagra is frequent in Mantua owing to the moldy polenta eaten cold. He accounts for the scarcity of the disease in the mountainous regions of the Umbria by the fact that the polenta is eaten warm there. Recent experiments on molds have proved that none found could survive the heat of cooking. Of course, this does not exclude them as a cause of pellagra, but does it not make them seem less likely?

Majocchi,¹ in the year 1881, attributed the malady to the *Bacterium maydis*, a very motile micro-organism which he found in both good and bad corn. Claiming to

30. Gosio and Ferrati: Sull'azione fisiologica dei veleni dei mais invasi da alcuni infomiceti; contributo all'etiologia della pellagra, Riv. d'ig. san. pubbl., Roma, 1896, vii, 961.

31. De Pietro, M.: Sui veleni di alcune muffe (contributo all'etiologia della pellagra), Ann. d'ig. sper., Roma, 1902, New Series, xii; Glucosidi di elevato potere tossico trovate nelle spore del *Penicillium glaucum* (Contributo all'etiologia della pellagra), Riv. pellagrol. ital., 1902, ii, 63.

32. Fossati, G.: Contributo allo studio della etiologia e patogenesia della pellagra, Bull. d. Soc. med.-chir. di Pavia, 1904, 140-7.

33. Von Deckenbach, Constantin: Centralbl. f. Bakteriöl., 1907, xiv, 507.

34. Tiraboschi: Osservazioni, Riv. pellagrol., 1906, vi, 78.

35. Minor, Thomas C.: Pellagra, Lancet-Clinic, Sept. 18, 1909.

36. Searcy, George H.: Pellagra in Southern States, New Orleans Med. and Surg. Jour., lxi, No. 6.

37. Manson, Sir Patrick: Tropical Diseases, Ed. 4.

38. Proc. Third Ital. Pellagrol. Cong., Milan, September, 1906; abstr. in Thirteenth Ann. Rep. Egyptian Hosp. for the Insane, Cairo, 1908, pp. 55-59.

have found this organism in the blood, brain, liver, heart, kidneys, lungs and intestinal mucosa and in the cutaneous lesions, he ascribed the causation of the disease to it. Cuboni,³⁹ at a later date, found the same micro-organism in spoiled maize, the stools of pellagrins and the stools of healthy persons. Paltauf, in 1889, while employed by the Austrian government, in investigating the disease, examined fifteen subjects and found the micro-organism of Cuboni in the stool of but one pellagrin. In association with Heider,³⁹ he proved that maize toxins were due to certain changes induced by this organism. It is manifest that both Majocchi and Cuboni erred in their observations and that they had incriminated the ordinary potato bacillus (*Bacillus solanacearum*).

Carrarioli,⁴⁰ in the year 1896, reported finding a bacillus in the blood, stools and saliva of pellagrins, and to this organism he gave the name *Bacillus pellagræ*. By the inoculation of the toxic products of this organism he claimed to have brought about symptoms which he likened to pellagra. His work, however, was not borne out by subsequent investigators. Pelizzi and Tirelli,⁴¹ in 1894, made experiments on dogs and rabbits, administering by mouth or injecting subcutaneously or endovenously the toxic substances obtained from cultures of the bacteria of maize. The symptoms produced they considered characteristic of pellagra. Marie⁴² is of the same mind as Pelizzi and assumes it to be logical that necessary "pellagra-producing" elements once in the blood, decomposition occurs through the influence of certain bacterial ferments ingested with the maize, and undergoes toxic metamorphosis. It was Marie who suggested that the pellagrous poison may be polytoxic.

Neusser⁴³ is inclined to the belief that in some cases there is formed in maize a certain mother substance, a non-toxic glucosid, largely under the influence of the *Bacterium maydis*, and that in the intestines this body undergoes decomposition, producing a toxic substance. This decomposition and succeeding toxic formation can occur only when the bowel is in an already damaged condition.

De Giava,⁴⁴ in 1903, following an earlier inspiration of Di Donna, attached great importance to the action of the colon bacillus on sound maize after ingestion. He claims to have produced the anatomic lesions of pellagra in dogs by feeding them on porridge made with sound maize and also to have obtained the same symptoms and lesions in animals with a toxin produced *in vitro* by the cultivation of the *Bacillus coli* in maize media.

Tizzoni, in association with Fasoli⁴⁵ in 1906, states that he isolated from the blood and organs of pellagrous patients in the fulminating stage of the disease a bacillus which he found in the guinea-pig and produced therefrom a very suggestive clinical picture and anatomic lesions not unlike pellagra. In the year 1907, with

Panichi,⁴⁶ he conducted a series of experiments with guinea-pigs and rabbits. In 1909,⁴⁷ in a general summary of his previous labors, he announced the isolation of this same micro-organism from the stools and blood of chronic pellagrins as well as from spoiled maize. Two easily distinguishable and distinct strains of this bacillus are described by Tizzoni, and he thinks these strains correspond to the different grades of virulence, i. e., acute and chronic. To this organism he gives the name *Strepto-bacillus pellagræ*. Lavinder⁴⁸ was unable to isolate Tizzoni's *Strepto-bacillus pellagræ*, though he followed Tizzoni's technic in several cases. He states that by ordinary cultural methods and by experimentation on rats, guinea-pigs, rabbits and chickens he found the blood invariably sterile and non-pathogenic. As a result of his experiments Tizzoni arrived at the following conclusions:

1. The elective lesion is always in the intestine, which is always primarily involved.

2. The intestinal lesion is always followed by a specific general intoxication, especially manifested on the nervous system, blood vessels and red cells, and on the liver and kidneys.

3. The toxins elaborated always show a particular affinity for the nervous system, conducing ultimately to its profound disintegration.

Wood⁴⁸ states that he has isolated from the blood of a pellagrin in the active stage of the disease a bacillus which is very active and motile. He declares that, while his observations are not sufficient for a detailed report, he believes it highly probable that this is the same organism found at various times by Paltauf, Heider, Cuboni and Majocchi. If this be so, Wood has found nothing but the potato bacillus (which was discredited by Paltauf and Heider) and in addition repudiates the alleged *Strepto-bacillus pellagræ* of Tizzoni. He asserts that the organism he has found is similar to the one of Tizzoni, and accounts for the varying descriptions by reason of the organism having polymorphous properties, which Tizzoni so amply describes.

In the opinion of Aulde,⁴⁹ the cause of pellagra is to be found in magnesium infiltration, a pathologic condition in which there is depletion of the lime content of the nuclear proteid of the corn, bearing the same physiologic relation to that process which occurs in plant life when an excess of magnesium salts causes extinction and death of the protoplasm. His opinion is that the great preponderance of magnesium and the small amount of calcium is such as to produce the "disturbances of nutrition" exemplified in pellagra.

The antizeists believe that the cause of pellagra is to be found elsewhere than in the use of corn, and in support of their contentions advance many novel arguments, which should not, however, be too lightly dismissed, in view of our present state of uncertainty as to the definite cause of the disease. It was Sambon¹ who, in 1905, considerably strengthened the cause of the antizeists by his remarkable paper. It is stated that maize was in use as a foodstuff for at least two hundred years prior to the chronic appearance of pellagra as such. Frapolli⁵⁰

39. Cuboni, G.: Micromiceti della cariosidi di grano turco in rapporto colla pellagra, Arch. di psichiatri, 1882, iii, 353; Paltauf, R., and Heider, A.: Der *Bacillus maidis* (Cuboni) und seine Beziehungen zur Pellagra, Med. Jahrb., 1888, Vienna, 1889.

40. Carrarioli, A.: Sulla pellagra, Ufficiale san., Napoli, 1895, viii, 49.

41. Pelizzi and Tirelli: Sull' etiologia della pellagra in rapporto alle sostanze tossiche prodotte dai micro-organismi del maiz guasto, Ann. di freniat., 1893-4, iv, 304.

42. Marie, A.: La Pellagre, Paris, 1908.

43. Neusser: Die Pellagra in Oesterreich und Rumänien, 8, Vienna, 1877; Untersuchungen über die Pellagra, Wien. med. Wschr., 1887, xxxvii, 132-135.

44. De Giava, V.: Contributo alle cognizioni sull' etiologia della pellagra, Ann. d'ig. sper., 1903, New Series, xiii, 367.

45. Tizzoni, G., and Fasoli, G.: Saggio di ricerche batteriologiche sulla pellagra, Mem. dell' Acad. dei Lincei, Cl. Sc., April, 1906, Series 5, Vol. 6.

46. Tizzoni, G., and Panichi L.: Ulteriore ricerche sperimentale sulla pellagra, Mem. dell' Acad. d. sc. dell' Ist. di Bologna, Sessione 24, February, 1907.

47. Tizzoni, G.: Intorno alla patogenesi ed etiologia della pellagra, Estr. del Boll. d. Ministero di Agricoltura, Industria e Commercio, Rome, 1909.

48. Wood, Edward Jenner: The Appearance of Pellagra in the United States, The Journal A. M. A., July 24, 1909, liii, 274.

49. Aulde, John: Pellagra—An Inquiry, New York Med. Jour., Dec. 4, 1909.

50. Frapolli, François: Animadversiones in morbum vulgo pellagram, Milan, 1771.

maintained that the disease was as "old as the sun" and none other than pellarella, as would be seen by reference to the regulations governing admission of patients to the Hospital Major of Milan at that time. In a previous article,⁵¹ I have endeavored, with success, I believe, to prove the fallacy of Frapolli's statement.

One of the most forceful arguments vaunted by the antizeists is the uncertain correlation between areas of maize cultivation and the endemicity of pellagra, many instances being given of places where maize is extensively cultivated and largely eaten and yet pellagra is practically unknown. An examination into the method of harvesting, milling and drying of the corn in these areas will disclose certain methods not practiced in pellagrous regions. The existence of uncontaminated spots in pellagrous districts is always easily explained. Lombroso found one of these spots in Friuli, the inhabitants of which lived almost exclusively on fish. Babes found one in Roumania—a village situated in pellagrous territory, the inhabitants of which were Russian skopts (who ate no corn), and another in a district burdened with 3,000 pellagrins—a village where the people lived for the most part on wheat bread. In Ireland and in Burgundy, France, pellagra is unheard of, though corn is extensively used in both countries; but in both Ireland and Burgundy corn is dried in ovens as soon as harvested. Vezzani⁵² relates the ease of the commune of Carpendolo, formerly gravely infected with pellagra, but now quite free from it, in consequence of the introduction of horse flesh as a popular food.

Many keen antizeists have called attention to the prevalence of pellagra in certain districts where maize is not cultivated and among persons who have never used maize as an article of diet. Hardy,⁵² Schreiber,⁵³ Brown and Carruthers,⁵⁴ Brown and Low,⁵⁵ Slack and McCall,⁵⁶ and Van Wart⁵⁷ have reported cases of pellagra in which maize had not entered into the dietary. Kaposi⁵⁸ says:

Schreiber. I and others have also seen cases of pellagra in individuals who had never eaten maize but had lived like "well-to-do city" people. As some of these patients had never worked in the sun, and as one of my cases came from Bohemia where pellagra is not endemic, it is evident that there are many points in regard to the disease which are still obscure.

In the province of Badajoz, in Spain, where cornmeal is not used, cases having all the symptoms of pellagra have been noted. Lombroso⁵⁸ says: "The statement that in Spain people suffer from pellagra, without using maize, is due to the ignorance of the doctors there." Slack and McCall⁵⁶ state that, notwithstanding the work of Tizzoni, they are unable to accept the corn theory, but advance the argument that if corn were the cause, the disease among the negroes would be much more common. Hyde^{*} asserts: "It is certain that those who had never consumed corn have had pellagra," and further adds, "It is equally certain that experimental consumption of spoiled corn by man has not resulted in the development of the disease." Mongieri⁵⁸ says: "I have seen only two pellagrous patients at Constantinople

in twelve years, though much maize is used there." The deputy director of the Egyptian Hospital for the Insane, in 1906, reports that out of 182 patients admitted from maize-eating districts, "172 were found to suffer from pellagra."

Sandwith⁵ says:

One of the objections to the diseased maize theory of causation is that cases are sometimes reported of pellagra occurring among those who have never eaten maize. In examining more than 1,000 cases of pellagra, I have of course, often met with individuals who stated that they were not maize-eaters, but on cross-examination every one of them pleaded guilty of having occasionally eaten bread which was partly made from maize flour. I therefore venture to suggest that any undoubted case of pellagra should be thoroughly questioned before we inculcate a second cereal, or attempt to overthrow the belief that diseased maize is a potent factor in the etiology. . . . Two cases of pellagra^{54, 55} have recently been recorded in patients who had never been out of the British Isles, but the published accounts of the disease do not tally with the disease as I know it, though the symptoms were somewhat similar to pellagra. One of the patients had never eaten maize, but had devoured raw oatmeal and rice.

Sandwith offers the two following axioms which have proved true in Italy and Egypt and states that they will hold good in the United States as well:

1. Well-to-do people in pellagra districts, living on varied diet and consuming maize as an occasional meal, and not as the staple cereal, usually escape pellagra.
2. Pellagra distribution corresponds very nearly with the area on which human beings live who eat damaged maize, or products made from damaged maize.

Van Wart's⁵⁷ case of pellagra, with a history of a diet free from maize, afterward proved to be a doubtful one, as others who saw the case were inclined to believe that it was a case of alcoholic neuritis, as the patient was a dipsomaniac. In this case the ingenious argument was put forth that the patient might have drunk more corn than rye whisky.

Drs. C. C. Bass⁵⁷ and R. M. Van Wart⁵⁷ believe that cases to which corn cannot be ascribed as the cause are cases of pseudopellagra. It was Russell¹⁹ who coined this unfortunate term, "pseudopellagra," when he replied to the observations of Landouzy and others who reported a number of cases of pellagra in which there were no histories of corn in the diet of the victims. Lavinder⁶⁰ says: "This term, pseudopellagra, has itself been the cause of confusion to some and an object of ridicule to others." Manson³⁷ holds the term in contempt, and derisively observes: "The disease is pellagra when it fits in with the orthodox theory and when it can in any way be connected with corn, but when this is not possible the disease becomes pseudopellagra." Sandwith⁵ is led to observe: "I have never employed this word myself. I have never heard it made use of, and I know of no circumstances under which it need be used." De Jeanne,⁶¹ in 1871, subjected these cases of pseudopellagra to a very close scrutiny and wrote: "These are maladies differing widely among themselves, and all of them very different from endemic pellagra, not only in the etiology, but also in the nature and concatenation of the symptoms."

The antizeists call attention to the following facts in support of their claims: that Lombardy, always the greatest stronghold of the disease, was surpassed by Venetia in the total number of cases, according to the statistics of 1899; that there is an increase of the disease

51. King, Howard D.: Pellagra, Ancient and Modern, THE JOURNAL A. M. A., Nov. 6, 1909, lili, 1556.

52. Hardy, A.: *Traité des maladies de la peau*, Paris, 1886, p. 1107.

53. Schreiber: *Arch. f. Dermat. u. Syph.*, 1875, p. 417.

54. Brown and Carruthers: *Pellagra*, Practitioner, London, May, 1906.

55. Brown and Low: *Pellagra*, Edinburgh Med. Jour., September, 1909.

56. Slack and McCall: *Pellagra*, Jour.-Rec. Med., Atlanta, October, 1909.

57. Van Wart, Roy M.: Report of a Case of Pellagra, New Orleans Med. and Surg. Jour., lxii, No. 4.

58. Kaposi, M.: *Diseases of the Skin*, 1895.

* Hyde, James Nevins: *Am. Jour. Med. Sc.*, cxxxix, 1.

60. Lavinder, C. H.: *The Etiology of Pellagra*, New York Med. Jour., July 10, 1909.

61. De Jeanne: *De la pellagre en France*, Arch. gén. de méd., January and February, 1866.

in centers not formerly infected and a decrease of the malady in regions formerly considered plague-spots and, notwithstanding the conditions of alimentation or husbandry (and in some instances both), have remained the same and have not undergone any change or improvement. Attention is directed to the slow spread of the disease and the fact that this spread is wide and independent of maize cultivation, and also to the fact that, once pellagra establishes a foothold in a certain region, it becomes, in a sense, permanent, though exhibiting annually a marked variance as to the intensity of its prevalence.

A common argument advanced by those who decline to accept the corn theory is that the disease does not attack indiscriminately all those who live largely on maize, but only certain members of families are affected. Especial attention is called to the condition that where an entire family lives on a corn diet only one member may be affected, and this reasonably suggests the query, "Why does not the entire family contract the disease as would ordinarily be the case if the malady were due to a poison ingested equally by all at the same time?" As many cases of a toxemic type are communicable through lactation, and pellagra is not, the question arises, "Why this difference?" and we are at a loss for a positive and scientific answer. We well know that the most usual cause of defective lactation is anemia, and it is now becoming apparent that in pellagra there is a cachectic condition (anemia); may this not in a slight measure explain the non-transmissibility of the disease by lactation?

We are taught that the disease is one of middle life, the age incidence being usually between 20 and 50, and the number of children affected being remarkably small. Recently it has been well established that children do suffer from pellagra, and that the inability to recognize it may be due to coexisting conditions which obscure a positive diagnosis. Menage⁵ reports having seen pellagra in a child of 4 years, and states that the disease was then of two years' duration. Young⁵ has seen pellagra in a child of 17 months; and Sosnowski⁵ and King⁵ have reported in their practice several cases in childhood and early adolescence.

The appearance and, then again, the peculiar reappearance of the disease just preceding the spring, with the gradual abatement of the symptoms when the weather becomes cooler, is not altogether satisfactorily accounted for by the expert zeists. This seasonal recurrence of the cutaneous lesions with the nervous symptoms of pellagra, in asylums where maize is excluded from the dietary, appear, according to the antizeists, to suggest a living organism as a causative factor in the production of the disease.

Nichols⁵ recent observations in his study of the dietary and of the patients at the Peoria Hospital apparently point to a form of endogenous intoxication and the conclusion that protozoa play an important part in the seasonal production and absorption of an endogenous toxin. Pellagrins at the Peoria State Hospital showed a very high percentage of protozoan infections of the colon. Sambon¹ suggests that the cause of pellagra may be protozoan, and Manson is a strong adherent of this view. Dr. C. C. Bass⁶² of New Orleans, having obtained positive Wassermann reaction in four cases, suggested that the disease might be protozoan in origin; in a later report the same observer reported five Wassermann reactions in ten cases. After a final review of his work, Bass states that his observations are too few in number to

enable him to draw therefrom any definite conclusions. Fox,⁵ whose experience with the Wassermann reaction is more extensive than Bass' came to the following conclusions:

1. Cases of pellagra do not often give a positive reaction and when they do they are very weak.
2. The value of the Wassermann test is not affected by the findings of pellagra.

The complete fixation reaction with lipid substances has been found especially in leues, but also in trypanosomiasis, kala azar, and certain cases of malaria—all diseases of protozoan origin. The reaction has not, except in rare instances, been found in bacterial diseases.

Babes, Vasilin and Gheorghus⁶³ report highly beneficial results in the treatment of pellagra by atoxyl and arsenious acid. As a result of this therapeutic discovery they lay great stress on the probable correctness of Sambon's hypothesis, as it is well known that the almost specific therapeutic action of arsenical preparations on certain protozoan diseases (as on the manifestation of pellagra at least) suggest by analogy some conclusions as to a similar etiology. Coupled with the likeness between these diseases in respect to therapeutics is the fact that in pellagra and in trypanosomiasis there are the same characteristic perivascular small-cell infiltration and the mononuclear increase in the blood. The experiences of Wornock, Babcock, Wood, and Lavinder⁶⁴ do not bear out the testimony of the results obtained by Babes, Vasilin and others as regards this similar beneficial therapy. On account of the fact that malaria, trypanosomiasis and piroplasmosis have nearly the same geographical distribution as pellagra, some observers believe that they are justified in the assumption that for the transmission of pellagra some similar intermediate host is necessary, and for the infection or intoxication itself some microscopic, or possibly ultramicroscopic, animal parasite. Taylor,⁶⁴ in two able papers, reviews at some length the antizeistic literature and endeavors to show the disease to be protozoan in its origin.

Many believe that pellagra is possibly due to some change in the maize as a result of parasitic influence, and that from spoiled maize parasites may be conveyed to the predisposed human organism either direct or by means of insects or other organisms. Is it not possible that maize may bear the same relation to pellagra as the *Stegomyia fasciata* does to yellow fever? Of course, it must not be forgotten that an uninfected stegomyia is unable to communicate yellow fever to any human being.

Savage⁶⁵ stated that it was his belief that the eating of corn was in no wise responsible for pellagra, but that the condition was a degenerative nerve disease; Rushing⁶⁶ agrees with Savage as to corn having nothing to do with the disease, and attributes the affliction to sore-mouthed canines. The last-named observer believes that the disease prevails in dogs and is transmissible to man. That the canine may be a conveyer of the disease in the same manner as the rodent in plague is possible, though not probable. Dupont⁶⁷ published reports of two cases occurring in cats, which resembled pellagra very much in sev-

62. Bass, C. C.: New Orleans Med. and Surg. Jour., lxi, No. 6.

63. Babes, V., Vasilin, A., and Gheorghus, N.: Ueber kombinierte Behandlung der Pellagra mittels Atoxyl und Arseniger-Saure, Berl. klin. Wchnschr., Feb. 8, 1909, No. 6.

64. Taylor, J. H.: The Protozoan Theory of Pellagra, Jour. South Carolina Med. Assn., November, 1908; The Question of The Etiology of Pellagra, New York Med. Jour., Dec. 18, 1909.

65. Savage, Giles C.: Editorial—Continued Study of Pellagra, Boston Med. and Surg. Jour., Nov. 18, 1909.

66. Rushing, J. B.: Pellagra Contracted from Domestic Animals, New Orleans Med. and Surg. Jour., No. 8, lxi, 621.

67. Dupont: Arch. gén. de méd., Paris, 1857, ii, 592.

eral particulars. Baruing⁵¹ called attention to a somewhat similar condition in horses in which the animal became paretic and suffered with loss of hair.

Racial differences appear to have but little influence on the disease, the negro and the Caucasian both being affected. In those regions where the disease has prevailed for an extensive period, the Hebrew has shown a remarkable immunity. In the United States most of the cases seen in private practice up to the present time have been among the blacks. Hospital, asylum and institution cases show a majority of whites to be affected. The popular impression that pellagra prevails only among the poor is, of course, an erroneous one; the poorer classes show no more predisposition than those in affluent circumstances. While agricultural classes, as a rule, are most affected, yet no walk of life can be said to be immune from the effects of the disease.

Sex apparently exerts but little, if any, influence in predisposing to this affection, men and women being affected about equally, though nervous symptoms are said to be more dominant in the female than in the male.

The disease is not hereditary, but the offspring of pellagrous parents are generally weak and puny and of lowered vital resistance and quickly fall a victim to the malady. The disease is not contagious or infectious.

I believe that through the medium of the foregoing symposium of the theories of various students of pellagra I have presented sufficient evidence to indicate the confused situation existing with respect to the exact and precise causation of the disease. A concise summary, I believe, therefore, may be useful in arriving at a definite conclusion on this point.

As is, perhaps, natural at the outset of discussion of a new problem, or new phase of some particular subject, in science as in other branches, much is said and written until usually a certain conclusion is generally accepted or, as sometimes occurs, the subject is abruptly dropped. To this rule the topic of pellagra in its various phases is no exception. We have a mass of reports and observations, we have the testimony of researchers at places both far and near, and generally each worker has labored not only without regard to the results obtained by his predecessors, but followed, often blindly, his own theory or pet predilection, although, indeed, there are two main schools of etiologic theory, that of the zeists and that of the anti-zeists. The result is, indeed, far from satisfactory.

Foremost among the zeists—those who believe that the use of damaged maize is responsible for the disease—we find such eminent students as F. N. Sandwith, J. W. Babcock, E. J. Wood, and C. H. Lavinder, as we have noted above. They present their side of the case with ability and at times convincing earnestness; yet, on the other side, among the antizeists, who believe that the malady may be and is caused by other factors than the use of diseased corn, and notably by protozoa, we find Louis W. Sambon and Sir Patrick Manson, who labor no less zealously to prove the correctness of their theories.

The plain truth is that in few, if any, instances do their conclusions harmonize. Experiments of the most careful and doubtless accurate nature have been made by both groups, and the result is always the same—divergencies. Thus, for example, Tizzoni asserts that the *Strepto-bacillus pellagrae* is the cause of the disease, and shortly afterward his findings are not substantiated by Lavinder. This is but one illustration; innumerable others are found elsewhere in this article.

It remains only to add that in no instance brought to my attention have Koch's postulates been fulfilled.

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PRACTICAL DEDUCTIONS FROM URINARY FINDINGS IN DIABETES

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BROOKLYN

Since the days of Aretæus, 150 A. D., the first to use the term diabetes—the Greek word for siphon, the fanciful analogy being invoked by three of the cardinal symptoms of the disease, namely, thirst, emaciation and diuresis—the urine has always been looked on as the chief source for diagnosis in diabetes. Hippocrates, Celsus and Galen, in describing this malady, make continuous reference to the “sweet and honey urine.” Glucose was first isolated and demonstrated in the urine in 1770 by Matthew Dobson of Liverpool.

With the recent remarkable advance of medicine, particularly with the progress of pathology and physiologic chemistry, the finding of diabetic urine not only makes the diagnosis of the disease, but throws light on the etiology, gives valuable aid to the surgeon and obstetrician in solving their problems when diabetes occurs as a complication, and is the guiding star in diagnosis and treatment.

In order that our deductions may be of practical use, our findings must be correct. This, of course, is axiomatic. This leads me to consider the various sugar tests, and the mistakes frequently made, as found by practical experience.

1. Specimens of diabetic urine are frequently examined and no sugar found; for it is a well-known fact that during some hours of the day, particularly the early morning hours, the urine may be free from sugar; and unless a twenty-four-hour specimen is examined sugar tests may prove negative. The quantity of sugar excreted during the different hours of the day is so variable, depending largely on the amount and nature of food ingested, that for a correct quantitative sugar estimation a twenty-four-hour specimen is imperative.

2. Very important is the fact that in diabetes mellitus the sugar may at times disappear from the urine, while its elimination is replaced by excessive excretion of uric acid or phosphates. Glycosuria, however, may be brought on with ease by the ingestion of 100 gm. of glucose, as the examination of the urine three or four hours afterward will demonstrate.

3. Many undoubtedly have noticed how readily a diabetic urine becomes turbid on standing. This turbidity is due to the fact that diabetic urine is an excellent culture medium for the yeast-cell, and an extremely luxuriant growth takes place in a very short time, particularly in warm weather. This fact is of practical importance, as it indicates that suspected urine should be examined qualitatively and quantitatively as soon as possible; for yeast causes, as is well known, fermentation of the sugar; where the amount is small, it may cause a complete disappearance of the glucose, and in all cases will cause a reduction in the percentage of glucose on a quantitative examination.

The substances, aside from glucose, which will reduce the various copper solutions are legion. For practical purposes, those which are most frequently encountered in the urine, and which must be eliminated, are conjugated glycuronic acid (eliminated after the taking of certain drugs), alkapton, creatinin, uric acid in excess, blood and lactose. A word about the last two substances will not be amiss.

A point which I observed some time ago, and which I fail to find mentioned anywhere, is the fact that not infrequently the urine of menstruating women will reduce the various copper solutions. After making various tests, I am fully convinced that the reduction is due to the menstrual blood mixed with the urine. This fact is of prime importance, as it behooves us not to jump too readily from the results obtained by reduction tests to the conclusion of the presence of diabetes in those cases in which the suspected urine is liable to be contaminated by menstrual blood or by blood from any other source.

As to lactosuria, in a large percentage of cases, lactose is excreted in the urine, as recently shown by Henkel,¹ not only during the latter months of pregnancy and puerperium, but also when there is a blocking to the secretion of the mammary glands from any cause whatsoever. Therefore it is not at all infrequent to find a sugar reduction in the urine of such patients. But this comparatively insignificant lactosuria must not be confounded with diabetes, with which it has nothing in common. Such a case came under my observation recently in a doctor's wife. A lot of unnecessary worryment could have been avoided if, in addition to the Fehling, a simple fermentation test had been done; for yeast does not ferment lactose, but does ferment glucose.

The following are approved sugar tests:

Qualitative:

1. Fehling's test.
2. Trommer's test.
3. Phenylhydrazin test.
Korwarsky's modification.
4. Nylander's test.

Quantitative:

1. Fehling's test.
2. Pavy's test.
3. Rudisch's test.
4. Fermentation test.
(a) Einhorn's saccharometer.
(b) Lohnstein's saccharometer.
5. Polariscopic method.

It is surprising how easy it is to eliminate the previously mentioned reducing substances, other than glucose, by the simple Fehling test, provided that is properly done; that is, after boiling the solution and adding urine, drop by drop, it should not be boiled again, but simply warmed. The reason for this is that all the other substances mentioned require the boiling temperature before they reduce copper solutions, whereas glucose will reduce at a much lower temperature. Furthermore, if the reduction of Fehling is rapid, we can be reasonably certain that glucose is the reducing agent. But if it is slow and slight, and especially if the precipitate be yellow rather than red, other reducing agents must be considered and eliminated. The best method, to my mind, the most reliable of them all, should be resorted to, namely, the fermentation test. The only point to bear in mind is that, as yeast itself may cause a small evolution of gas, a control test with normal urine should always be made. The other substances mentioned do not ferment.

For quantitative sugar estimation Rudisch's test is both reliable and accurate.

With these precautions in mind, let us see what practical deductions we can obtain from the examination of a diabetic urine. We find that it is of pale straw color or almost colorless from the large quantity of water which it contains. In quantity it may reach 10 or 20

liters; usually, however, it ranges between 2 and 5 liters. This is due to the increased quantity of glucose in the blood, which consequently becomes hyperisotonic; the fluids of the tissues are absorbed into the circulation more rapidly than normal, resulting in an increased secretion of water by the kidneys. It is well to remember, however, that in certain cases there may be no increase in the urine, even when glycosuria is present.

The specific gravity as a rule ranges between 1030 and 1050. There is a general idea prevalent that if a urine has a specific gravity of 1020 or under no glucose can be present. I have found glucose in cases in which the specific gravity of the urine varied from 1008 to 1020. And, as Hirschfeld justly points out, in those cases in which the resorption of nitrogenous material from the digestive tract is below normal, the specific gravity is always comparatively low; about 1012.

Of course, the salient feature of the disease is the presence of glucose in the urine. The quantity of glucose varies from mere traces to 8 or 9 per cent. Namyn reports a case with 11 per cent., and some time ago, at the laboratory of the Jewish Hospital, I examined a urine that contained 12 per cent. of glucose. The severity of the disease cannot be measured by the amount of sugar eliminated. There is a certain class of cases which contain but mere traces of glucose, and yet run a rapid and fatal course.

The total nitrogen of the urine is increased, which is physiologic in diabetes, and caused by the increased quantity of proteid ingested. It becomes pathologic when, in addition, the body albumin is excreted, which occurs with a high sugar output. The greater the nitrogen loss the more the general nutrition suffers by the glycosuria. It is small when the food contains enough albumin and much fat. Great loss in nitrogen is caused by the toxic bodies of coma. For the same reason the urea is also increased.

What is the significance of the increased amount of ammonia present in diabetic urine, and how is it produced? According to Neubauer, the average amount of ammonia excreted by a normal individual on a mixed diet is 0.7 gm. daily. In diabetes, on the other hand, as first pointed out by Hallerworden in 1880, an excretion of 3 to 6 gm. is common; and Stadelman reports a case of a patient who excreted 11 gm. in the twenty-four hours. A high ammonia value means a severe case, and it becomes especially high when coma supervenes. It is an attempt on the part of Nature to protect the native alkalinity of the tissues by neutralizing the acids producing the acid intoxication. The ammonia determination gives an accurate estimation of the acidosis present, and one more easily arrived at than the direct estimation of the acidosis itself.

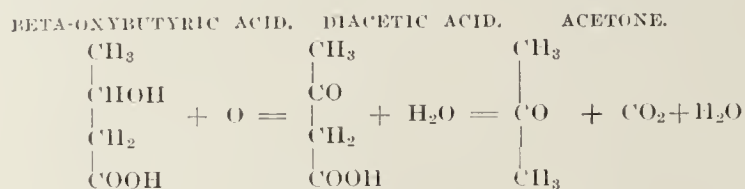
Can we by any urinary findings predict the coming of the dreaded and fatal coma first described by Knssman in 1874? Can we predict it sufficiently early to do any good? We can predict the onset of coma with almost mathematical precision and often sufficiently ahead of time to allow the institution of therapeutic measures which may not only prolong life, but even save it.

It is now generally conceded, as proved by Kulz, Minkowski, Walter and Stadelman, that diabetic coma is due to an acid intoxication by one of the acetone bodies, namely, beta-oxybutyric acid, which, circulating in the blood and acting on the respiratory center and the nerve cells of the brain in general, produces the symptoms of diabetic coma. Magnus-Levy, Geelmuyden and others have recently proved that beta-oxybutyric acid and its derivatives, namely, diacetic acid and acetone, originate

1. Henkel, Max: Deutsch. Med. Wchnschr., Nov. 19, 1909.

chiefly from the lower fatty acids of the organism and of the food.

A glance at their structural formulas shows their relation to one another:



It is the carbohydrates that provide the oxygen necessary for complete oxidation of fat into carbon dioxide and water. Deficiency of carbohydrates causes a defective oxidation in the tissues, hence defective fat metabolism, with resulting acetone formation. As a general rule, in mild cases, the addition of moderate amounts of carbohydrates to the diet causes a diminution in the excretion of acetone and beta-oxybutyric acid when present; the withdrawal of carbohydrates causes an increase. In the severest cases there are exceptions. It can be readily seen how important these facts are and what valuable deductions can be made bearing on the regulation of the diet when there are evidences of an acid intoxication in this disease.

Ketonuria, the term applied to the presence of acetone bodies in the urine, is, indeed, a very useful measure of the intensity of the diabetes; thus in the first stage of the disease acetone only occurs; in the second stage both acetone and diacetic acid; and in the third stage all three bodies appear—acetone, diacetic acid and beta-oxybutyric acid. The finding of beta-oxybutyric acid or diacetic acid in the urine, which may be present for days before coma supervenes, should always serve as a danger-signal of its approach. Nor is this the only red flag signaled to us. The increase in the ammonia output previously mentioned is equally important. The sudden marked diminution or complete disappearance of glucose in a urine previously loaded with sugar, the sudden appearance of innumerable granular and hyaline casts, rendering the urine turbid even on voiding, as first pointed out Külz, and the appearance of albumin in a urine previously free from it, have their equal significance of the approaching danger.

Recently the latitude of usefulness for the urinary findings in diabetes has been amply widened by the discovery of Cammidge's crystals, which throw light on the etiology of the disease. Cammidge² has succeeded in isolating from the urine hair-like crystals arranged in sheaves, and of the nature of a phenyl glucosazone, whose presence in the urine is due to specific substances circulating in the blood as a result of disturbed functioning of the pancreas, secondary to some pathologic lesion of that organ. Cammidge's findings in 83 specimens of urine from 48 cases of diabetes are of interest. In 36 cases (75 per cent.) there was a positive reaction, suggestive, as he believes, of their pancreatic origin. In 12 cases the reaction was negative. Four of these came to autopsy. In one the pancreas was found to be normal, both macroscopically and microscopically. In two the pancreas was stated to be normal, and in the fourth case the gland was not examined. Recently Kinnicutt³ reports 7 cases of diabetes occurring in the Presbyterian Hospital; 5, or 71 per cent., gave a positive Cammidge reaction and 2 were negative. This closely corresponds with the results obtained by Cammidge. In the Jewish Hospital laboratory we have had ample proof that a posi-

tive Cammidge reaction means that the surgeon will find a diseased pancreas at operation, but we regret to say that we have had no experience with diabetes.

In conclusion, it is evident that as a result of our urinary findings practical deductions can be made as to the etiology of the disease, and that these findings are of vital importance in the diagnosis, prognosis and treatment. Furthermore, to any one who has given the subject the least thought it is self-evident that in almost every stage of diabetes there must have been a mild or beginning stage amenable to treatment; and if more care were taken in the examination of the urine these patients would be saved from the severer forms of the disease, and, in fact, some would undoubtedly have been cured.

NOTE.—In addition to the references previously cited, the following may be found of interest:

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 907 St. Marks Avenue.

A NEW METHOD OF APPENDICOSTOMY

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SAN FRANCISCO

At the Civil Hospital, Manila, P. I., in May and June, 1907, I operated in three cases of chronic amebic dysentery, using an original method which is, for operative cases, considered an improvement on the modes of operating usually adopted.

The patients had been under treatment by high enemas of quinin solution and other methods, for considerable periods of time, without improvement. The operation was done by the following method:

MODE OF OPERATION

An incision three inches in length is made, directed downward, parallel with the fibers of the rectus muscle and about three-fourths of an inch internal to its outer border, beginning at a point half an inch below the level of the umbilicus. The superficial structures over the rectus muscle are divided in the same line, thoroughly exposing the rectus and retracting it toward the median line, after which incision is made into the abdomen through the tissues posterior. The fingers are introduced to determine the point of origin of the appendix. Over this point a vertical stab wound is made through the abdominal wall, using a small straight bistoury one-fourth of an inch wide. While making this incision, the intestines must be protected by a thick pad of gauze held on the inner surface of the abdominal wall at the proper place. In cases in which the meso-appendix is too short or too narrow to permit the appendix to be drawn out of the abdomen, it should be clipped on the free edge at a point well toward its termination in order not to interfere with the blood-supply of that portion of it which is

2. Cammidge: *Surg. Gynec. and Obst.*, 1909, vi, p. 22.

3. Kinnicutt, Francis P.: *Cammidge Reaction in Diseases of the Pancreas*, Med. Rec., April 10, 1909, p. 589.

to form the canal. A pair of narrow forceps is thrust through the stab incision, grasping the appendix and drawing it out until the intestine is in contact with the abdominal wall, after which it is held in place with several interrupted sutures at the opening in the skin. The large wound is closed with three layers of sutures and sealed with collodion or tincture of benzoin. The appendix is then removed at a point one-fourth of an inch beyond the skin, and a catheter inserted into the canal at once in order to keep it patent. Considerable swelling in its walls always occurs, and it is much easier to open the appendix and introduce the catheter immediately than to wait.

ADVANTAGES

1. This method is much cleaner than the operation of sewing the appendix in the large wound, for this can be sutured completely and sealed, leaving no port of entry for infection and rendering it possible to do a thoroughly aseptic operation.

2. The necessary irrigation with quinin solution can be begun at once. The appendix is in close contact with the tissues in its exit and the wound is very small, so that the peritoneal surface unites with these tissues almost immediately and it is not necessary to wait for complete union.

3. This operation completely removes the possible danger of secondary hernia following an operation in which the appendix is sewed in a large abdominal wound. The appendix emerges from the abdominal cavity by an opening too small to admit of such a possibility.

4. In the operation as done ordinarily, it is impracticable in many cases to make the incision over the exact site of the origin of the appendix, because there is much individual variation in different cases and it is extremely hard to determine its exact location. In such cases this point may be at some little distance from the line of the wound, resulting in a tortuous canal or one perhaps requiring considerable stretching of the appendix to bring it to the surface. Such a result is most reprehensible and may cause stopping of the blood-supply with a resultant sloughing of the appendix. In the new method the stab wound is made directly over its origin, after examination and results in a short straight canal, opening directly into the bowel.

5. The secondary operation for the repair of the sinus after the patient has recovered under treatment is much simpler than in former methods. Only a very small amount of scar tissue is formed in such a wound and the appendix can be easily dissected out and removed.

THE SOLUTION USED

The solution in most general use in the treatment of amebic infections, both for appendicostomy and for rectal injection, is a simple solution of quinin sulphate in warm sterile water, the treatment beginning with half a liter of a weak solution. Injections are given daily and both the quantity of fluid and its percentage of strength in quinin is increased each day, covering a period of several weeks or more and until it is being taken in large quantities. After the operation of appendicostomy, the entire bowel can be irrigated continuously with the solution for long periods of time, and the results of treatment are not altered when large quantities of the ordinary solution are not retained. The ordinary solution is distinctly an irritant to the bowel, and in some cases it can be retained in only comparatively limited quantities for rather short time. In the after-treatment

of the three patients operated on, it was found that the use of a physiologic salt solution at a temperature of 39 C. as a menstruum for the administration of the quinin was followed by complete alleviation of the irritating symptoms. It is superior to the ordinary solution; it is more penetrating in action against the ameba and hastens recovery. The ordinary solution of quinin is not an isotonic fluid, and it is possibly for this reason that it causes more or less irritation to the mucous membrane of the bowel, resulting in cramps and griping when any considerable quantity is retained. The addition of sodium chlorid in proper percentage always relieves the irritation completely, so that the patient is able to retain large quantities.

In cases of amebic infection which are not considered suitable for operation, but in which treatment by high enemas in the knee-chest position is administered, the use of physiologic salt solution is particularly effective because it is necessary to inject the fluid in a direction reverse to the normal peristalsis, and this is difficult if the fluid is an irritant. For a cure in such cases it is necessary to inject large quantities so that it may fill the colon and reach the seat of the disease in the cecum. When saline solution is used, such patients are able to retain very large quantities containing a greater percentage of quinin for a longer period of time. The amount of the solution taken is often doubled. At my suggestion this treatment was used with most excellent results in a number of cases of amebic infection under the treatment of Dr. J. D. Long at the Marine Hospital, San Francisco.

INDICATIONS

It is believed that the operation of appendicostomy should be reserved for those cases of amebic infection in which prolonged treatment by enemas per rectum has been ineffectual. Most cases of chronic dysentery and other forms of amebic infection in the Philippines are perfectly amenable to treatment with high enemas of quinin solution, but in a certain percentage it fails; possibly the solution does not get sufficiently high up to reach the seat of the disease.

The three patients operated on were discharged in a few weeks, recovered, and with no amebas in the stools.

BLINDNESS FROM HEROIN IN THE NOSTRUM "HABITINA"*

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It is well known that certain agents, when ingested in large quantities, or for a considerable length of time, cause an amblyopia which is due either to an acute interstitial inflammation of the central or macular nerve fibers of the optic nerves or a gradual degeneration of these fibers. Wood alcohol or some preparation containing it, Jamaica ginger, etc., are the agents more prone to cause the acute variety, while the habitual excessive use of tobacco and alcoholic beverages, the administration of stramonium, cannabis indica, chloral, etc., or long continued exposure to lead, bisulphid of carbon, naphthalin, etc., are frequently responsible for the chronic form.

That the heroin amblyopia vaguely referred to in various works on therapeutics and pharmacy belongs to

* Read before the Allegheny County (Pa.) Medical Society, Jan. 18, 1916.

* The nostrum is discussed editorially and in the Pharmacology Department in this issue.

the category of retrobulbar neuritis is evident from the following clinical history and ophthalmic findings:

History.—Mrs. M. P., aged 32, colored, married, was admitted to the Passavant Hospital, Nov. 6, 1908, in the service of Dr. Karl Emmerling, complaining of dimness of vision and pain in the head, shoulders, and abdomen. Her past history is unimportant. She frankly confesses to the morphin habit, which she states was contracted during an attack of enteritis about two years before. The patient is above the average in education and refinement for one of her race and there is no doubt that she is sincere in her expressed desire to throw off her drug habit, innocently contracted. To this end she had been taking for a month prior to her admission to the hospital, a preparation called "Habitina," beginning with ten drops four or five times daily and gradually increasing until she was now taking a teaspoonful six or eight times daily. Before beginning the "cure" she had been using about 6 grains of morphin daily. Her mental aberration and apathy were marked.

Examination.—The ophthalmic picture she presented was striking and characteristic of blindness; the pupils were widely dilated and reacted sluggishly to light and accommodation; either eye diverged markedly on covering. The subjective symptoms were diplopia and failure to recognize objects when looking directly at them; a large central scotoma could be demonstrated in each eye, with peripheral vision apparently but little diminished. The ophthalmoscope revealed a slight hyperemia of the discs, edges blurred, and decided fulness of the retinal veins.

Treatment.—Treatment was mainly eliminative and supporting. Some hypnotics had to be given and also an occasional dose of morphin during the first week. Caffein in one grain doses every four hours undoubtedly did much good toward clearing up her clouded intellect. Discharged Dec. 8, 1908, with vision 6/8 in either eye. She was seen several times during the ensuing summer by the intern who had her in charge, Dr. F. B. Shaffer, and declared to him she had no return of her craving for opium and felt in the best of health.

Two samples of the nostrum she had been taking were obtained for analysis. One, a small sample, had been sent to the patient's mother; the other, a two-ounce bottle, was readily purchased from a Market Street drug store. Each of these bottles had labels on which was printed the following statement: "This preparation contains 1 per cent. alcohol. One fluid ounce contains 16 grains morphin sulphate, 8 grains diacetyl-morphin hydrochlorid." Both of these samples were subjected to analysis by Dr. Julius Koeh, who determined the alcohol contained to be ethyl alcohol and that the proportion of morphin sulphate and heroin hydrochlorid coincided with the formula printed on the containers. No other drugs or poisons could be demonstrated in the specimens nor did any new combinations form.

This patient had, then, before contracting the "Habitina" habit, been taking about 6 grains of morphin per day. Beginning with ten drops of the "cure," or $\frac{1}{3}$ of a grain of morphin and $\frac{1}{6}$ of a grain of heroin, four or five times daily, the doses increased in direct proportion with her desire for the "cure" until she eventually was taking, when admitted to the hospital, 2 grains of morphin and 1 grain of heroin six or eight times daily!

Heroin is not a true alkaloid of opium. It is chemically obtained by heating pure morphin alkaloid with acetyl-chlorid, washing with water, then with dilute solution of sodium carbonate and, finally, purifying by crystallization from hot alcohol, the product being diacetyl-morphin or heroin. It is an unstable compound and appears to be susceptible to chemical changes when kept for any length of time, causing untoward symptoms when thus dispensed. Here mentions nausea and vomiting as the least of these, syncope, blindness, subnormal

temperature, even death following the use of large doses.

Its chief depressing action is on the respiration, which becomes deeper and slower in small doses and may cause complete cessation of respiration in larger doses. As a cough sedative it finds its most general use, although it has been used in place of morphin for the relief of pain. In this respect it certainly is much less efficient than morphin and infinitely more dangerous if enough be given to control the pain.

The doses commonly recommended, from $\frac{1}{10}$ to $\frac{1}{3}$ gr. are entirely too large for general use; $\frac{1}{24}$ gr. is usually sufficient for the relief of cough.

Consideration of the above report appears to emphasize the necessity of prohibiting by law the advertising and sale to the public of preparations containing opium. It is obvious that merely to require the publishing of the different ingredients contained in a nostrum in many instances serves only further to promote its sale.

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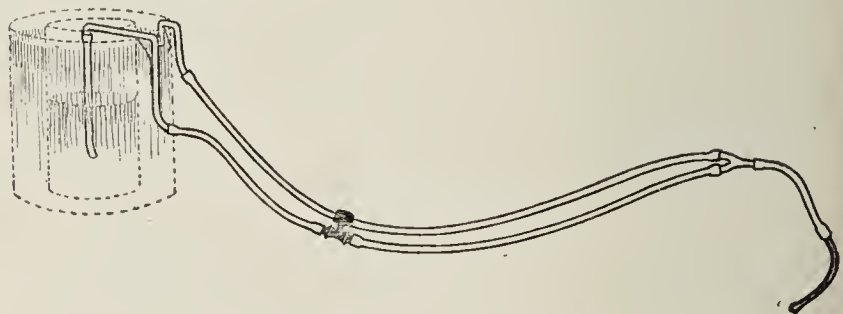
A SATISFACTORY, INEXPENSIVE AND PORTABLE PROCTOCLYSIS APPARATUS

EDMUND ADAM BABLER, M.D.

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ST. LOUIS

The internist, as well as the surgeon, acknowledges the great value of Murphy's method of saline proctoclysis. Every surgeon of wide experience has been repeatedly brought face to face with the fact that the present methods of introducing warm salt solution, drop by drop, into the rectum are usually unsuccessful. In more than 90 per cent. of the cases either the solution is cold by the time it reaches the rectum or the apparatus is expensive, clumsy or otherwise unsatisfactory. A visit to the various hospitals in our American cities will reveal the fact that the fountain syringe continues to be relied



Simple apparatus for proctoclysis.

on for this purpose, and all know the unsatisfactory results that must follow.

The most serious objection to the Elbrecht apparatus is its expensiveness. Hospitals usually limit their purchases to one apparatus. That designed by Saxon of Philadelphia is not conveniently portable. Having frequently been compelled to treat these cases of acute perforative peritonitis in the farm house, the necessity of an efficient, satisfactory and portable apparatus for saline proctoclysis was the mother of the device herewith presented.

The principal objection to the apparatus is its simplicity. The illustration is self-explanatory. The two arms of the Y are especially long and the stem of the Y is very short in order that the flatus may be expelled through the overflow arm with the greatest ease. This is a very valuable point. The siphon tube and the over-

flow tube are so made that they can be attached to a douche can, the outlet of which has been plugged with a cork. If the can is placed on an electric stove (in hospital practice) the results are ideal. In private city homes where an electric stove is not at hand, or in the farm house where the surgeon has the proctoclysis apparatus only, the same results can be obtained by placing the saline solution in a quart fruit jar or other receptacle and then placing the latter in a bucket, kettle or other vessel partially filled with hot water. The siphon and overflow tubes are then attached to the latter vessel and the flow regulated by the stop-cock in the siphon arm of the Y. The vessel containing the salt solution should be placed near the side of the bed of the patient, and less than a foot higher than the buttocks of the patient. The flow must not be faster than a drop a second.

The apparatus has been in use at the Deaconess Hospital, St. Louis, for some time and has been found ideal. By removing the overflow arm of the apparatus and attaching the piece of rubber hose on the siphon tube to the nose of the overflow tube it is possible to employ this apparatus successfully for hypodermoclysis.

4826 Delmar Avenue.

THE ELIMINATION OF HEXAMETHYLEN- AMIN BY THE MUCOUS MEMBRANE OF THE MIDDLE EAR

A PRELIMINARY NOTE: POSSIBLE APPLICATION TO THE
TREATMENT OF OTITIS MEDIA

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It has been known since the introduction of hexamethylenamin by Nicolaier, that the drug is eliminated in the urine partly as formaldehyd and partly unchanged, and since that time hexamethylenamin has been extensively employed as a genito-urinary antiseptic.

The discovery that it is eliminated in large amounts in the bile and cerebrospinal fluid, and that these fluids may be rendered sterile by it, we owe to Crowe, of Johns Hopkins. Many important therapeutic applications were suggested by Crowe, and based on these facts the drug has rightly assumed a position of great importance in the treatment of different pathologic states involving the biliary and meningeal tracts.

So far as I am aware, however, and so far as a cursory examination of the literature has enabled me to learn, no one has ever noted that hexamethylenamin is eliminated by the mucous membrane of the middle ear and that it can be demonstrated in the secretions from this organ.

Having recently determined this fact, it was considered sufficiently important to report the circumstance by which the discovery was made because it would seem probable that some useful therapeutic applications may result from it.

History.—J. R. B., a student in the medical department of Georgetown University, developed an acute sinistral otitis media, Jan. 24, 1910, after two days of malaise, pain in left side of face and nasal discharge from left side. When I first saw him, January 25, the mucous membrane of the auditory meatus was bleeding as a result of efforts made to remove a piece of cotton which was supposed to have passed into the canal. No cotton was present on examination. The drum-

membrane was inflamed. The only treatment employed was the introduction of a simple emollient after cleaning out the canal, and applying a cocain-adrenalin solution. His temperature was 101 and he felt ill, and suffered considerable pain in the ear. January 26, at 10 p. m., the membrane ruptured and a free muco-purulent discharge appeared. January 27 a microscopic examination showed the pus to contain a capsulated diplococcus morphologically identical with the pneumococcus. He was directed to irrigate the external meatus with hot boracic acid solution, and to keep the ear lightly plugged with sterile cotton. He was seen on January 28 by Dr. Walter A. Wells, professor of otorhinology in the medical school, who examined the ear and advised a continuation of the treatment. The discharge was profuse and kept up unabated from January 27 to February 2 and continued to contain the *Diplococcus pneumoniae*.

February 2 it occurred to me to determine whether hexamethylenamin (urotropin) would be eliminated in the secretion after internal administration, and if so determine what effect, if any, such elimination would have on the discharge. With this end in view the patient took 1 gram (15 grs.) of hexamethylenamin in divided doses of 0.3 gm. (5 grs.) during the evening of the second and early morning of the third. I saw him at 2 p. m. February 3 and found that the discharge had decreased in amount, roughly speaking, about 75 per cent.

He removed a piece of cotton which had been in the meatus all the morning, and this contained but a comparatively small amount of secretion. The cotton was triturated in a test tube with 3 or 4 c.c. of water and the solution tested according to the method used by Crowe in his investigations on cerebrospinal fluid. A drop of milk was added and the reagent, consisting of 100 c.c. of 96 per cent. sulphuric acid and one drop of 3 per cent. ferric chlorid solution, was poured to the bottom of the tube. At the line of juncture a deep amethyst color appeared, soon turning dark, showing the presence of a considerable amount of the drug. Another experiment was tried with the secretion which could be swabbed in a small amount from the meatus, representing discharge which had last emerged from the tympanum. The reaction was present but to a less degree.

The drug was a second time administered; 1 gram (15 grs.) in divided doses during the evening of February 3 and the morning of February 4, the last dose, 0.3 gm. (5 grs.), being taken at 7 a.m. A piece of cotton was kept in the meatus during the night. This cotton was treated in the same manner as on the previous day, and a positive reaction obtained. The color reaction appeared more slowly than on the previous day. The amount of discharge was extremely scanty and only a few pneumococci were found. On the evening of February 4 no discharge could be obtained.

It would appear therefore that hexamethylenamin is eliminated in the secretion of the middle ear, and that possibly it may be found to be of value in the treatment of otitis media. Certainly the case above reported of pneumococcus infection appeared to be rapidly cured by it. Whether other forms of purulent middle ear disease will be equally amenable to such treatment will remain for future investigations to decide.

1338 H Street, N. W.

Drop-Wrist Sign of Organic Central Paralysis.—J. M. Raimiste calls attention in the *Revue Neurologique* to a sign that differentiates organic central paralysis of the arm. The patient rests his forearm in pronation on a table beside him, and the examiner gradually raises this forearm, using both hands but very lightly, without pressure, until the forearm is vertical, the elbow still resting on the table. The patient's attention is then diverted and the examiner gently withdraws his supporting hands. The hand, the palm turned inward and forearm form a straight vertical line and thus remain in the healthy, but in case of cerebral paralysis the hand drops when the support is removed, forming an angle of 130 or 140 degrees with the forearm.

POST-OPERATIVE HEMATEMESIS WITH
REPORT OF A CASE

G. E. POTTER, M.D.

DETROIT

Among the grave post-operative complications that may befall a surgical patient is hemorrhage from the mucosa of the stomach. The condition known as post-operative hematemesis does not include secondary hemorrhage from the stomach due to poor surgical technic or to gross pathologic lesions located within the stomach wall, or the vomiting of blood swallowed during operation. Post-operative hematemesis follows far more frequently on operations on the abdominal viscera, especially when the stomach, duodenum or bile passages are the organs operated on, though cases of fatal hematemesis have occurred after operations on the head, genito-urinary tract and extremities.

The hematemesis usually begins within twenty-four hours following the operation, though cases are recorded in which it occurred as late as the tenth day. The patient may or may not have suffered from ether or chloroform sickness, but whether he has or not, there is usually an interval between the cessation of the anesthetic sickness and the commencement of the vomiting of blood. As a rule, the amount vomited at first is small, and occurs at intervals of one to two hours. There is rarely more than 60 c.c. to 300 c.c. at a time. The blood which is vomited has always been in the stomach a sufficient length of time to become partly digested, giving the vomit a black, coffee-ground appearance. The vomitus is intensely acid, and burns the patient's throat, mouth and lips, leaving a red streak where it trickles over the lip and chin.

The general condition of the patient soon changes from one of mental alertness and sensitiveness in the early stage, to that of profound depression. The pulse is small and rapid, the skin cold and clammy with sweat, temperature is often sub-normal. There is, as a rule, a progressive asthenia and collapse. The vomiting tends to become regurgitant at short intervals.

Patient.—M. L., aged 48 years, commission merchant, married, weight 196 pounds, height 5 feet 9 inches.

Family History.—Father died of cerebral apoplexy at 58 years. Mother had right hemiplegia at 62 years, died at 71 years of senility. One brother is living and well.

Previous History.—Patient had ordinary diseases of childhood; denies syphilis; does not use liquor or tobacco; enjoyed perfect health until 42 years of age, when he had a light sunstroke; complained of headache at times. Since that time, he has complained, for a few days at a time, of attacks of sour stomach and pain in epigastrium, after eating.

History of Injury.—April 25, 1904, while attempting to stop a runaway team he was crushed between the wagon and a telephone pole; when released he was suffering great pain in right side of chest, and on examination it was easy to determine that the fifth, sixth and seventh ribs on the right side were fractured in the mid-axillary line, for the relief of which the right side from axilla to costal margin was strapped with adhesive plaster. The patient, removed to his home and placed in bed, rested comfortably; had very little pain in chest, no cough. Temperature varied between normal and 100 F. for first four days; pulse never above 100. Second day following accident the patient complained of continuous dull pain in lower portion of right upper quadrant of the abdomen. Ice-bag was applied but gave no relief; there was some tympanites, bowels moved but condition was not improved.

April 29. Fourth day following accident at 2 a. m. patient was suddenly seized with intense pain in right upper abdomen; there was tenderness on pressure and muscular rigidity extended over right half of abdomen; the intestines soon became greatly distended with gas. Temperature registered

101, pulse 120, respiration 30. At 7 a. m. there was no cough, no increase of pain in chest, no discernible physical sign of pneumonia; the respiratory murmur on right side was diminished, and percussion note slightly dull; no exploratory puncture was made. Patient was moved to hospital and in consultation a probable diagnosis of perforation of a traumatic gangrenous intestine was made, and exploratory incision advised.

Operation.—The patient was operated on at 4 p. m. On entering abdominal cavity the intestine, much distended with gas, protruded into the wound. No peritonitis, adhesions or perforations were found. The entire abdominal viscera appeared free from any inflammatory condition; wound was closed. The patient vomited twice during the night; about 60 c.c. of bile-stained mucus and complained of some pain in right side of chest.

April 30. Temperature 102, pulse 130, respiration 34, cough. At 4 p. m. he vomited 90 c.c. of dark blood-stained material, which he continued to do during the night about every two hours. The following day he continued to vomit more frequently of the coffee-ground material, varying in amount from 60 c.c. to 300 c.c. at intervals of 30 to 40 minutes. Temperature 102, pulse 150.

May 2. Patient in collapse. Temperature 102, pulse 160; vomiting pus; basin full of dark blood every 15 to 20 minutes. The man died at 2 p. m., 46 hours from time hematemesis began.

Autopsy.—The autopsy was held two hours after death. Abdomen greatly distended; median incision found healing by first intention, with the omentum slightly adherent to the peritoneal incision. The entire intestinal canal was enormously distended with gas. No obstruction, no arteriomesenteric ileus. The omentum was of good color, not twisted, did not exhibit any evidence of traumatism. The abdominal cavity was free from fluid, no peritonitis. The liver, kidney, spleen, heart and pancreas were normal.

The right pleural cavity contained 75 c.c. of blood-stained serum. The lower half of the parietal and visceral surfaces of the cavity was in an acute stage of inflammation. The surface of the lower lobe of right lung opposite the points of fractured ribs was abraded in several places, and in the stage of red hepatization; left lung and pleural cavity normal.

The most important pathologic condition was that observed in the stomach. The organ, normal in size and position, contained when removed about 100 c.c. of thin, black blood; its walls were flabby; the blood-vessels leading to and penetrating the walls were engorged; the mucosa was extravasated with blood in places, and over the whole surface were ulcerative patches varying in size from a pin point to a bean. In outline some were circular, some slender, almost linear; in general they were more nearly oval, and more numerous toward the pyloric end of the stomach. The ulcers were shallow and did not extend into the submucosa.

INTERPRETATION OF THE SYMPTOM-COMPLEX AND POST-MORTEM FINDINGS

It probably has been observed by most of us that in some cases signs are either exaggerated, meager, absent or contradictory when viewed in the light of later developments of the case, or when compared with post-mortem findings. It happened in this case that the physical examination of the chest failed to disclose early in the history the nature and seat of the disease in the lung and pleura. There was a transference of the usual chest symptoms to the abdomen and an abeyance of the physical signs in the chest, as the patient was carefully examined. The sudden acute exaggeration of the abdominal symptoms on the fourth day following the accident was due to a right-sided traumatic pleural pneumonia. The explanation of the transference of pain to the abdomen in thoracic disease is clear when we recall the anatomical distribution of the anterior rami of the six lower intercostal nerves in the abdominal wall and parietal peritoneum as described by Ramstorm.

The post-operative vomiting of blood is best explained by the theory of sepsis as suggested by W. L. Rodman. The hemorrhage was from ulcers found in the gastric mucosa which were apparently of recent formation, and the multiple foci had their origin without a doubt in the infected lung and pleura. The question is whether emboli carried the infection to the gastric mucosa, or whether the infectious organisms alone were transported to and produced thrombi with subsequent emboli in the vessels of the stomach. Death in this case was due to hemorrhage from numerous acute ulcers of the gastric mucosa.

PROGNOSIS

The mortality of post-operative hematemesis is high. In a series of 29 cases reviewed by Purves,¹ the death-rate was 69 per cent. In 14 cases reported by Busse the mortality was only 21 per cent.

TREATMENT

The treatment can be conducted only along symptomatic lines, as the bleeding is from numerous erosions for which the primary operation is mainly responsible. The stomach should be washed out with a 2 per cent. solution of sodium bicarbonate, at a temperature of 100° F. to 120° F. until the fluid returns clear; to be followed by 2 c.c. of adrenalin chlorid (1 to 1,000) solution in 60 c.c. of water or normal saline solution. No food is given by mouth; rectal feeding is used. Ice-bag to epigastrium, a 2 per cent. gelatin solution, subcutaneously, or a 10 per cent. solution, by rectum, have proved useful. It is essential that the patient be kept as quiet as possible.

1491 Woodward Avenue.

CARCINOMA OF THE STOMACH

TWO CASES DIAGNOSTICATED BY THE X-RAY

SIDNEY LANGE, M.D.

CINCINNATI

The comparative meagerness of the literature on the Roentgen diagnosis of carcinoma ventriculi prompts the report of the following cases:

CASE 1.—Mrs. E. F., aged 45, was admitted to the east surgical service of the Cincinnati Hospital because of pain in the upper abdomen and persistent vomiting. The onset of the symptoms dated back only three months, during which time she had lost much weight.

Examination.—The essential physical findings were as follows: A somewhat tender rounded tumor mass about the size of a peach could be felt in the abdomen. Its position varied, at times being found in the upper left quadrant or epigastrium; at other times at or below the umbilicus. It was freely movable, transmitted an impulse from the aorta and descended with inspiration. The vomiting was very persistent and followed the ingestion of even the blandest of foods. Examination of the stomach contents revealed some diminution of the hydrochloric acid and the presence of much stringy mucus, but no lactic acid, blood or tissue shreds were found. A provisional diagnosis of cancer of the stomach was made because of the progressive emaciation, persistent vomiting and the tumor mass. But a positive Moro skin reaction together with the great mobility of the tumor and the negative stomach analysis suggested the possibility of an omental tumor of tubercular origin.

An x-ray examination of the stomach after the ingestion of 12 ounces of bismuth subcarbonate suspension revealed a vertical sac which extended two inches below the umbilicus. This

represented apparently the vertical or cardiac portion of the stomach. The horizontal or pyloric portion of the stomach was absent. The lower extremity of the vertical sac, instead of being continued into the pyloric spout, ended abruptly with a median serrated margin. After a wait of one-half hour the same skiagraphic appearance persisted, the pyloric portion of the stomach failing to fill with the bismuth suspension although from the shape of the stomach it was evident that the organ was undergoing vigorous peristalsis. The stomach was apparently prolapsed but not dilated.

The accompanying tracing from the skiagram (Fig. 1) shows the above described condition, which becomes more evident by a comparison with the tracing of a prolapsed but otherwise normal stomach (Fig. 2) in which the pyloric spout is especially well marked. An x-ray diagnosis of organic obstruction in the pyloric portion of the stomach was made, which obstruction in the presence of the tumor mass was interpreted as carcinoma.

Operation.—After two weeks of observation surgical intervention was recommended and accepted. At the operation a hard mass was found in the pyloric portion of the stomach, infiltrating the walls in circular fashion. The gastric mucosa was not ulcerated (which accounted for the absence of blood in the vomitus) and the pyloric canal was still patent to fluids. The mass was resected and a gastroenterostomy performed. The resected specimen was sent to the laboratory where the diagnosis of carcinoma was substantiated.

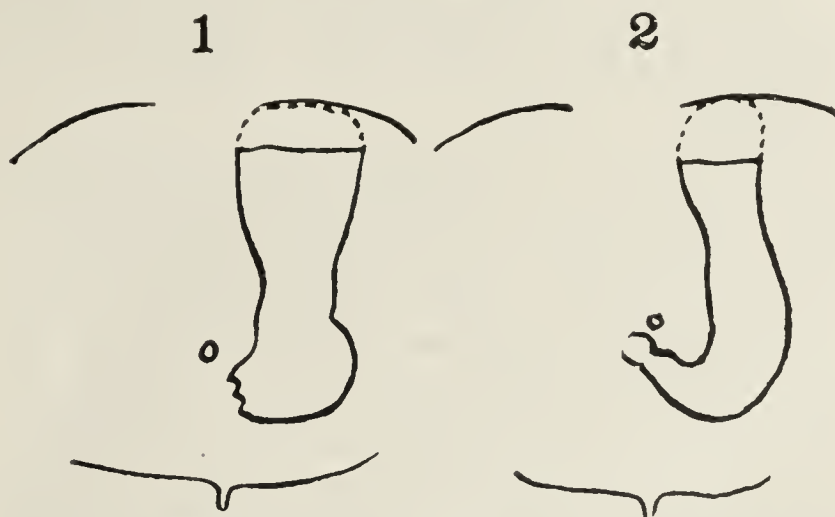


Fig. 1.—Tracing from skiagram showing apparent absence of pyloric portion of stomach.

Fig. 2.—Tracing from skiagram of prolapsed but otherwise normal stomach, showing pyloric portion.

CASE 2.—J. M., aged 65, was admitted to the east medical service of the Cincinnati Hospital because of pain in the stomach, occasional vomiting, loss of appetite and weakness. These symptoms began seven weeks before admission.

The pain which was referred to the epigastrium was dull, aching in character and was accentuated by pressure over this region. The patient was often nauseated and vomited on an average of twice a week.

Examination.—Analysis of the stomach contents revealed an absence of free hydrochloric acid. There was, however, no lactic acid or blood to be found. Physical examination proved entirely negative except for a slight tenderness in the epigastrium. There was no tumor mass to be felt.

An x-ray examination of the bismuth-filled stomach gave a skiagram almost identical with the one in the previous case. The vertical cardiac portion of the stomach was clearly outlined but the horizontal pyloric portion could not be seen. That there was no complete obstruction in the pyloric portion of the stomach was evidenced by the fact that the bismuth emulsion slowly escaped from the stomach, but the thick material could not enter the pyloric passageway in sufficient quantity to be skiagraphed. The contour of the stomach indicated active peristalsis.

Diagnosis.—A diagnosis of carcinoma of the pyloric portion of the stomach was made and an operation advised. The patient refused to be operated on and left the hospital.

On tracing the subsequent history of the patient it was learned that he died some six months after leaving the hospital with every evidence of cancer of the stomach.

¹ Edinburgh Med. Jour., March, 1902.

We have here two cases of carcinoma ventriculi which gave distinct skiagraphic evidence of their presence. That the diagnoses were not early ones is of course evident, and there were, moreover, in both cases clinical signs pointing to the possible nature of the condition. In the first case, however, the *x*-ray findings served to clinch the diagnosis while in the second case the diagnosis practically rested on the *x*-ray examination.

That the *x*-ray will be an important and not infrequently a determining factor in the early recognition of carcinoma ventriculi seems fairly certain. The fact that there is no early, constant and positive clinical sign of this condition gives the *x*-ray method much latitude.

22 West Seventh Street.

EXTRA-UTERINE PREGNANCY

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ATLANTA, GA.

This case is of especial interest as the right tube and ovary had previously been removed. The ovum found lodged and had developed in the uterine portion of the stump.

History.—Mrs. J. C. O., aged 30, married ten years, had one child 2½ years old. The right Fallopian tube and ovary were removed six years ago. Since that time her health has been good. September 10 last she missed her period but felt continually as if "about to menstruate." November 1 she was taken suddenly with an acute pain in the lower abdomen accompanied by diarrhea, nausea and vomiting. The next day she was better, but had a sore spot and a lump the size of a hen's egg below and to the right of the umbilicus. The physician who attended her paid no attention to it, as he thought it would pass off in a few days. During the evening of November 9 a second, but much more severe, attack came on. Dr. Austin of Charlotte, N. C., was visiting next door, and gave temporary relief. I was called two and a half hours after the attack began. The patient was in a state of profound collapse when I arrived. The abdomen was distended and the lower third dull on percussion. Dr. Austin agreed with me that an operation was imperative, so the patient was hurried to the Tabernacle Infirmary.

Operation.—The peritoneal cavity contained about five pints of fluid and clotted blood. There was a ragged opening three inches long at the right cornu of the uterus. A two-and-a-half-months fetus enclosed in the amniotic sac was found in the cul de sac of Douglas. There were no adhesions about the uterus or broad ligaments from the former operation. The left tube and ovary were healthy. The entire right broad ligament and the body of the uterus were removed and the stump stitched over with No. 1 plain catgut, the peritoneal cavity cleaned out, filled with hot saline solution and closed without drainage.

The patient has made an uneventful recovery.

Examination of Specimen.—There was a cavity the size of a small turkey egg at the right cornu, extending into the uterine wall as deep as the mucous membrane, and outward between the folds of the broad ligament. It communicated with the cavity of the uterus by means of the orifice of the right Fallopian tube. There were fragments of the placenta attached to the uterine portion of the cavity. There were a number of half-organized blood-clots between the folds of the broad ligament. These were evidently the result of the partial rupture of November 1. The present rupture occurred along the superior and posterior walls, the anterior and inferior walls remaining intact. The cavity of the uterus was filled with decidua which was protruding through the orifice of the tube.

834 Candler Building

CONGENITAL ABSENCE OF THE RECTUM

W. S. JOHNSON, M.D.

LOS ANGELES

History.—Male child, born Nov. 22, 1909. The mother had previously given birth to two children normal in every respect and both living. The weight of child at birth was 9 pounds. It was a fine, healthy-looking baby, but examination of the perineum revealed entire absence of the anus. A median raphe extended from scrotum to coccyx without so much as a dimple to indicate the usual location of the anus. There was no bulging of the perineum. The external genitals were normal and well developed.

Operation.—November 23, at 10 p. m., forty-two hours after birth. Under light ether anesthesia an incision was made in median line of the perineum. No muscle tissue was encountered. The dissection was carried inward through fibrous tissue to a depth of two inches and careful search was made from the urethra anteriorly to the sacrum behind, but there was no evidence of gut. The perineal wound was closed with catgut and after rapid preparation of the abdomen an incision was made in the left iliac region. A loop of sigmoid was exposed and sutured in the wound. The bowel was immediately opened by a longitudinal incision and a small amount of meconium was delivered. A gauze dressing was applied and the baby put to bed.

Result.—The child bore the operation well and required no stimulation. Within a few hours large quantities of meconium were passed. Twelve hours after operation the child nursed from the breast, and the subsequent convalescence was uneventful. On Jan. 10, 1910, the child weighed 12 pounds, a gain of three pounds in seven weeks.

717 Grant building.

Therapeutics

LACTIC ACID MEDICATION

During recent years much has been written about autotoxemia, and especially that form of this condition which is believed to be due to intestinal putrefaction.¹ This intestinal putrefaction is caused by, or at least accompanied by, the growth and multiplication of microorganisms. Two important varieties of this putrefaction are recognized and are distinguished as proteolytic, due to the putrefaction of proteids, and saccharolytic, due to the putrefaction of sugar.

It has been proposed to combat or prevent this putrefaction in three different ways: first, by regulating the diet so that the food ingested will be thoroughly digested and completely absorbed, and that consequently little material will be left for the putrefactive bacteria to work on; second, by administering drugs which will inhibit or prevent the growth of the putrefactive bacteria; and, third, to inhibit or prevent their growth by introducing into the alimentary canal, and encouraging the multiplication therein, of bacteria which are inimical to the other putrefactive bacteria already at work.

Up to the present the bacteria which give promise of proving most useful in preventing the development of the putrefactive bacteria in the intestinal canal are the lactic-acid-producing bacilli.

Lactic acid is described in the Pharmacopeia of 1900 (page 16) as "a liquid organic acid, composed of not less than 75 per cent., by weight, of absolute lactic acid . . . and about 25 per cent. of water, a colorless, syrupy liquid, odorless, of a purely acid taste, and absorbing moisture on exposure to damp air." The

1. Among other articles which may be referred to on this subject is one by Dr. C. A. Herter, in THE JOURNAL, Dec. 21, 1907, p. 2079.

Pharmacopeia of 1890 (page 16) contains the additional information that it is "usually obtained by subjecting milk sugar or grape sugar to lactic fermentation."

The bacilli of lactic acid fermentation, which cause the production of lactic acid in milk, are "bacilli which convert milk sugar into lactic acid. Several have this property, including *Bacillus acidi lactici*, *Bacillus prodigiosus*, *Bacillus caucasicus*, *Bacillus oxytocus perniciosus* and others" (Foster). *Bacillus acidi lactici* is, therefore, it is evident, "a term applicable to a number of bacilli which give rise to the lactic-acid fermentation in milk" (Foster).

Milk when allowed to stand undergoes two marked changes: first, the fatty matter, with a small part of the casein attached to or entangled with it, rises to the surface in the form of cream; second, if the milk is exposed to the air and the temperature is warm, lactic-acid fermentation takes place, which results in the milk becoming sour, and later, the casein coagulating, the milk becomes curdled. The curd consists chiefly of coagulated casein, and the liquid part consists of the watery portion of the milk with the salts and any milk sugar not changed into lactic acid.

When cream which has become sour is churned it separates into two parts, a hard part consisting chiefly of the fatty part of the milk, and a liquid part containing casein, in a sour liquid containing lactic acid. The latter, the sour liquid containing casein and lactic acid, is buttermilk. The casein in buttermilk is in a finely coagulated form and is more readily digested than ordinary casein.

Forty years ago Dr. Ballot, of Rotterdam (*Medical Times and Gazette*, 1870, vol. i, p. 331; see Bartholow) recommended the use of buttermilk as a food for infants on the ground that it was more easily digested than milk. Since then it has been considerably used, not only in the feeding of infants, but also in stomach diseases, in albuminuria, and in diabetes. In recent years it has been in considerable demand and has been furnished by milk dealers to customers who demanded it, and by the glass in many restaurants, and at lunch counters and soda fountains. The demand has become so great that various products of the dairy have been sold under the name of buttermilk.

H. G. Piffard, of New York, who contributed "A Study of Sour Milks" to the *New York Medical Journal*, Jan. 4, 1908, says that he has not been able to find any buttermilk throughout the whole Island of Manhattan; referring, he explains, "to the old-fashioned country buttermilk obtained when sour cream is churned." He learned from an officer of the company that the buttermilk sold by one of the large distributing concerns in New York is obtained in the following way: "The fresh milk, after cooling, is put through a separator, and the cream comes down to the city for distribution to our patrons. This leaves the skimmed milk on our hands. The health board will not permit us to bring sweet skimmed milk into the city, so the man at our skimming station puts in a starter in order to sour it as quickly as possible, and when sufficiently soured it is brought to the city. Here we mix it with some whole milk, churn it, and after removal of the butter it is ready for distribution." This is probably a fair description of the better class of buttermilk of commerce.

Buttermilk is one of the varieties of sour milk, and the one most commonly used in this country. Among other preparations of milk, made by the action of the lactic-acid-producing bacteria and containing lactic acid, is kumiss or kumys, introduced to the profession of

New York about thirty years ago by Dr. E. F. Brush. This beverage originated among the Kirghis tribes and the Tartars who live on the vast plains or steppes of southeastern Russia, bordering on the Caspian Sea. It is made from the milk of mares, preferably those which are light colored and unbroken, pasturing near mountain ranges where they can get running water and salt beds. They should be able to bathe frequently and must not be allowed to eat hay or oats (Burney Yeo). The milk undergoes both lactic and alcoholic fermentation, the lactos being converted partly into lactic acid and partly into alcohol and carbonic acid. Kumiss contains about 1 per cent., each, of proteins, fatty matter and lactic acid, 1.5 per cent. of alcohol and 2 per cent. of lactose (Friedenwald). On account of the impossibility of obtaining mares' milk in this country in sufficient quantity to manufacture kumiss for commercial purposes, it has been made by Brush and others from cows' milk.

In Asia Minor, Armenia, Persia, Turkey, Arabia and other eastern countries, cows' milk which has been boiled and then subjected to the lactic-acid fermentation has been extensively used, for many generations, as an article of diet. This is known in Turkey as toghoord and is also called oriental fermented milk. In the large cities of this country the demand for and sale of fermented milk have made its production a large industry. There are two kinds of this fermented milk: one thick, like jelly or condensed milk; the other liquid, like buttermilk or kumiss. The former differs from kumiss in not containing alcohol or carbonic acid in notable quantity. The casein is partially digested.

Following the extensive studies, during the last three or four decades, of the bacteria, and especially of the bacteria of fermentation, and in particular of the bacteria of the lactic-acid fermentation, the idea was conceived by the manufacturing pharmacists who offer bacteriologic products to the profession of furnishing pure cultures of various individuality of the lactic-acid bacilli group. These are recommended for use in two ways: (1) to sour milk and to produce a sort of artificial buttermilk; (2) to be taken into the stomach with the expectation that they will undergo multiplication there and in the intestines, and thus aid digestion and prevent or diminish the growth within the alimentary canal of other less useful and positively injurious bacteria, such as those which accompany putrefaction, and whose development is associated with the production of various toxic substances which give rise to toxemia.

The Profession and the Legislatures.—The *New York State Journal of Medicine* says that the profession has not fared well at the hands of legislators. The legislation secured to elevate the standard of the profession and protect the public from quacks has resulted, with the help of the same legislatures, in turning turkish-bath rubbers into doctors, and the optician has succeeded in usurping some of the most delicate functions of the physician. If the legislature continues to license successive schools of quackery we may well question the wisdom of state control of license to practice medicine. On account of this and on account of the general education in hygiene and preventive medicine, the income of the profession has been greatly diminished. The remedy would be to increase the fees, but this could not be effected without thorough organization and loyalty to each other on the part of the doctors. The *New York journal* says further that it is the universal opinion that an agreement in regard to fees would not be respected, and that this assertion is striking proof that there is real distress in our ranks, and that medicine is degenerating into a vulgar game of grab, a sordid struggle for mere existence.

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[For other information see second page following reading matter]

SATURDAY, MARCH 12, 1910

THE AMERICAN MEDICAL ASSOCIATION—ITS POLICIES AND ITS WORK

III. ORGANIZATION AND REORGANIZATION¹

During the past nine years the American Medical Association has accomplished more for the improvement of conditions in the profession and for the good of the public than during all the previous years of its existence. This is a strong statement, but a true one. What has been accomplished was made possible by the reorganization of the Association and its various branches in 1901. As the progress of the last nine years would have been utterly impossible without this reorganization, it will be well, before considering the work of the Association, briefly to review its history and development and to show what this change in the organization meant. To do this will be to repeat matter that appeared in *THE JOURNAL* previous to nine years ago, but, inasmuch as over 40,000 physicians have entered the medical profession since 1901 and as between 45,000 and 48,000 physicians are now reading *THE JOURNAL* who did not read it then, the matter will bear repeating.

The first meeting for the organization of a national medical association was held in May, 1846, in response to a call issued by the Medical Society of the State of New York: "That a national convention from medical societies and colleges in the whole union convene in the City of New York for the purpose of adopting some concerted action on the subject of medical education." At its February, 1846, meeting the same society adopted a supplementary resolution: "That the first resolution did not contemplate the appointment of delegates by county or merely local societies in those states whose delegates are appointed by the regularly organized state societies." The original intention, therefore, was to limit representation to state societies wherever such existed, and that local societies should be represented only where there was no state organization—an interesting point, in view of later developments. The second national convention (Philadelphia, 1847) was really the first meeting of the American Medical Association and the one at which the plan of permanent organization was adopted. This plan provided for representatives not only from "permanently organized medical societies," whether local, district or state, but also from medical

colleges, hospitals, asylums, etc. Each body entitled to representation could send one delegate for every ten members. Later, representation was limited to medical societies, the only addition being that the three government medical services were each allowed to send representatives.

At that time a physician could become a member of the American Medical Association only by being elected a delegate to the Association, and after his delegated powers had expired he could remain as a "permanent member," but without the right to vote. Restricting the right to vote to actual delegates, by the way, was continued in spite of repeated efforts to change the law. This right in the American Medical Association has always been limited to those who have been duly appointed or elected delegates. While the number of societies—and consequently the number of delegates and "permanent members"—continued to increase, no modification was made in the by-laws that specified which societies should be regarded as "affiliated,"² neither was the basis of representation changed.

The majority of the delegates in attendance at any gathering previous to reorganization came from those states contiguous to the place of meeting, and thus that portion of the profession living near the meeting-place always could—and frequently did—control the action of the whole Association. Hence the composition of the General Meetings—the business body—was fortuitous, depending almost entirely on the location; the meetings were frequently so large as to make it impossible to transact business or, on the other hand, so small that sometimes there were not more than a dozen present when important action was taken.³ At the annual sessions delegates with the right to vote were seated with "permanent members" (ex-delegates) and "members by application," etc., so that it was impossible to distinguish the voters from the non-voters. So large had the number in attendance at the "General Meetings" become that many received the impression that the Association was a mass-meeting of individual members and not a delegated body—an assumption without justification. The

2. There were in Chicago in 1901 the following "affiliated societies," each of which was entitled to send one representative for every ten, or major fraction of ten, of its membership: Chicago Academy of Medicine, Chicago Gynecological Society, Chicago Laryngological Society, Chicago Medical Society, Chicago Medico-Legal Society, Chicago Neurological Society, Chicago Ophthalmological and Otological Society, Chicago Orthopedic Society, Chicago Pathological Society, Chicago Pediatric Society, Chicago Physicians' Club, Chicago Society of Internal Medicine, Chicago Society of Medical Examiners, Chicago Therapeutic Society, County Hospital Alumni Society, North Chicago Medical Society, Scandinavian Medical Society of Chicago.

3. "On the first day the General Session is not scheduled to begin until 11 a. m., and the opening exercises and President's address, together with the reports, take up that day's session. The average time of the other three days will be less than 2½ hours, making a total of 7½ hours. The three orations and the time devoted to opening the meeting will take more than an hour each day. This leaves but 3½ hours to be devoted to miscellaneous business, including the necessary reports that come in day by day from the various committees appointed at the meeting. The last day's session is nearly always a short one, so that it is believed that the total time allowed for the transaction of business at each annual session of the Association does not amount to more than three hours. The fact that important business is neglected and that problems of vast import to the profession and the people are not considered, has been known and appreciated for years." See "Preliminary Report of Committee on Organization," *THE JOURNAL A. M. A.*, May 25, 1901.

1. Chapters 1 and 11 appeared last week, page 796.

large number of delegates made a roll-call or verification of the vote impossible, so that all measures had to be passed *viva voce*.⁴ Scientific matters, reports of committees, resolutions, and parliamentary tactics were so inextricably mixed as to make the orderly and effective transaction of business impossible.

That the need of reforms was realized is shown by the transactions of the Association from its organization to 1901. That the profession was anxious and willing to bring about better conditions is evidenced also by the fact that practically everything that the Association has done in the past nine years, and that it is now doing, had been suggested and discussed long ago: lengthy resolutions as to what ought to be done had been repeatedly and enthusiastically adopted. In other words, the Association had *expressed* itself on every possible topic, but, in actual constructive work, had *done* practically nothing. The reason for this is apparent when one considers what the annual meetings of the Association were and how its business body was constituted. The wonder is not that it did so little, but that it did so much; for the practical scope of the Association's activity, aside from purely scientific work, was limited to the passage of resolutions and the exercise of the moral influence of the organization.

As early as 1869, and particularly in 1874, 1881, 1887 and 1894, different propositions for changing conditions were suggested. In 1887 a committee that had been previously appointed submitted a new plan of organization, including a constitution and by-laws, which in their essential provisions were almost identical with those finally adopted in 1901. As a matter of fact, this plan was actually adopted, but later, through parliamentary technicalities, the question became involved in a tangle which was never satisfactorily straightened out.

Finally, at the Atlantic City session (1900), a committee of three was appointed to take up the whole matter and to suggest changes which would cover the entire country and unite the profession into a solid and well-organized body.⁵ This committee first studied the plans of other organizations, especially medical bodies, including particularly the various state and county societies. On the results a tentative plan was outlined which, however, differed essentially from that finally recommended and adopted. The committee held meetings in different cities, calling on local men for suggestions, advice and criticisms, which were forthcoming and resulted in modifying the original scheme. A plan

was then drafted and 500 copies of it were sent to as many physicians in the various parts of the country from whom many valuable criticisms and suggestions were received. The plan, still further modified and accompanied by an "argument" of some 5,000 words, was then printed in *THE JOURNAL* two weeks before the meeting in order that all members might have an opportunity to become familiar with it.⁶

At the St. Paul meeting, in 1901, the matter was referred to a large committee composed of one member from each state and of the standing business committee, itself including thirty-nine members, making in all a committee representative of the whole country. Several sessions were held and every phase of the subject was discussed with thoroughness, further modifications and changes being suggested. This committee finally recommended the new constitution and by-laws, and the next day the general meeting adopted them, almost unanimously.

Probably no subject of interest to the medical profession was ever given more careful thought and study by so large a number of competent men as was this problem of the reorganization of the national, state and county societies—in other words, the organization of the medical profession of the United States. The final result was not the work of a few men, but of hundreds of the most prominent and able members of the medical profession.

The real changes made, so far as the American Medical Association was concerned, were only three: (1) the right of representation was restricted to state associations; (2) the apportionment was so modified as to provide that the total number of delegates should not exceed 150; and (3) this body of 150 members, instead of coming together as a "General Meeting" of the American Medical Association, as was the case previous to 1901, was given the distinctive name of the House of Delegates of the American Medical Association. These three essential changes, and these alone, were made in the organic law of the Association, and yet how marvelous have been the results.

The organization of a distinct, representative, delegated business body, which could devote its entire time during an annual session to the transaction of business, made it possible for the Association to assume activities long contemplated, but never before realized. The most important results achieved are the systematic organization of the profession; the establishment of the Council on Pharmacy and Chemistry, with its epoch-making work; of the Council on Medical Education, which has done more for the improvement of educational conditions in medical schools in the last seven years than had been accomplished in the fifty-five years preceding; of the Committee on Medical Legislation, capable of adopting a permanent legislative policy and, through its bureau, of carrying it out into practical legislation; the compilation and publication in five years of two editions

4. In this connection an incident that occurred at the St. Paul meeting—the last held under the old plan—is worth recalling. An important motion was before the house and, before the vote was called for, a member insisted that the massing together of voters (delegates) and non-voters made a *viva voce* vote an absurdity and he demanded a call of the roll. Then some one asked how long it would take to call the roll and it was suggested that as there were 1,767 delegates present it would require several hours. It was therefore moved that the vote on the question be postponed until the following year—a motion that was carried, as the minutes show, "amid laughter."

5. This committee consisted of Dr. W. W. Keen, the retiring president, Dr. J. N. McCornack and Dr. George H. Simmons. After finding that the work of the committee as outlined would require too much time and travel, Dr. Keen resigned and Dr. P. M. Foshay, of Cleveland, was appointed in his place.

6. See *THE JOURNAL A. M. A.*, May 25, 1901.

of the American Medical Directory, together with the accumulation and arrangement of an enormous amount of biographical material of incalculable value; the public educational work of Dr. J. N. McCormack; the invaluable work of such committees as those on Ophthalmia Neonatorum, Nomenclature and Classification of Diseases, Defense of Medical Research, Public Instruction on Medical Subjects, etc.—in short, the carrying into actual effect of the suggestions and recommendations of the most progressive members of the Association for the last fifty years. These results fully justify the statement made in the beginning of this editorial, that the Association has actually accomplished more in the last nine years than had been accomplished in its entire previous existence.

The effect of reorganization on the state and county societies will be considered next week.

SOME RECENT OBSERVATIONS ON INHERITED SYPHILIS

After Schaudinn had brought forward the *Spirochata pallida* as the probable cause of syphilis, the finding that gave the strongest support to the claims of this organism as the long-sought specific cause of syphilis was undoubtedly the positive results obtained by investigation of children born dead with inherited syphilis. The presence of spirochetes, sometimes in enormous numbers, within the internal organs of syphilitic fetuses freshly delivered under aseptic conditions, could not well be explained on any other basis than that they are the specific etiologic factor of the disease, and the abundant verification of this fact soon compelled acceptance of the spirochete by many who at first had been skeptical. And until by successful cultivation and inoculation all the laws of Koch have been satisfactorily and repeatedly fulfilled it will be the findings in the congenitally syphilitic fetus, rather than the observations in acquired syphilis of adults, by which the defenders of Schaudinn's organism will resist the attacks of those who would deny its claims. Conversely, the demonstration of the spirochete and the subsequent introduction of the Wassermann reaction have thrown much light on the unsettled points in the pathogenesis of inherited syphilis, and especially on the true significance of that much disputed law of Colles.

From the very first the investigations of syphilitic fetuses demonstrated as a striking feature that the number of the spirochetes to be found in the fetal tissues was often very great, far more than were usually found in the lesions of adults. Also the spirochetes when present in the placenta were found only in the fetal portion, and practically never in the maternal elements.¹ These facts were thought by some to speak in favor of the view that paternal infection of the fetus might occur, with

secondary immunization of the uninfected mother, as has been assumed from the original statement of Colles' law. On the other side, the demonstration that the cause of syphilis was an organism of some size made it improbable that paternal infection of the ovum could be a cause of inherited syphilis; how could a spermatozoon laden with a large motile spirochete ever reach the ovum, and if it did reach and penetrate the ovum could successful development of the germ cells possibly take place in the presence of so pathogenic an infectious agent? That the spirochetes are more abundant in the tissues of the fetus than in those of the mother does not prove that they have first infected the fetus, but rather and more probably means that they find a less resistant soil in the undeveloped embryo; this view has support from the conditions existing in congenital tuberculosis, for in these cases, in which infection certainly occurs from the mother, the tubercle bacilli have been found in enormous numbers in the tissues of the fetus.

By combining the Wassermann test of both fetal and maternal blood with microscopic search for the spirochetes, Baisch² has reached more satisfactory conclusions as to the relations of mother and child in inherited syphilis than is possible by the use of either method alone. As has been pointed out by previous investigators, the positive result of the Wassermann reaction with the blood of the mother of a syphilitic fetus does not help us in our analysis of Colles' law, for if the fetus is syphilitic the mother might well have syphilitic antibodies in her blood without being infected, the antibodies being either derived directly from the fetal blood or formed by the mother in reaction to soluble toxic substances absorbed from the fetus. In this case, the assumption that the mother is rendered immune by her syphilitic fetus without herself being infected would be corroborated. However, Baisch seems to settle this point by finding that the hemolysis-inhibiting substance does not pass through the placenta in either direction, for in several cases it was found that the mother's blood gave a positive Wassermann reaction while the blood of the fetus gave a negative reaction, and in other cases the conditions were reversed. Also, of one hundred and sixteen cases of maternal syphilis there were twelve instances in which the blood of the mother gave a negative reaction in spite of the presence of a syphilitic fetus in which spirochetes were demonstrated. Baisch is convinced that the hemolysis-inhibiting substance is developed only in the organism in which the spirochetes exist, and also that the immunity of the mothers of syphilitic offspring always means that the mother has been infected with syphilis. This conclusion is entirely in harmony with the view arrived at by many careful clinical observers, and has also received support on the basis of the Wassermann reaction alone by Bergmann.³

Other findings of importance in connection with the application of the new methods of study to congenital

1. Mohn: Ztschr. Geb. u. Gyn., 1907, lix, 263; Pauli: Bull. Johns Hopkins Hosp., 1908, xix, 326.

2. Baisch, K.: München. med. Wchnschr., 1909, lvi, 1929.
3. Med. Klin., 1909, v, 1219.

syphilis that may be mentioned are the following: Of one hundred and two mothers giving birth to syphilitic fetuses, there were but twenty-seven, or 25 per cent., who showed any clinical evidence of either recent or old syphilitic lesions; the other seventy-five, however, all gave positive Wassermann reactions in spite of the absence of demonstrable lesions. Of all macerated still-born fetuses 80 per cent. of one hundred and forty investigated were the result of syphilitic infection, as shown either by the presence of spirochetes or positive serum reactions, but habitual abortion during the first four months of pregnancy was not found to be associated with syphilis. In the milk of syphilitic mothers antibodies may be present in large amounts,⁴ and it is possible that this fact may be utilized to advantage, for it would probably be of benefit to syphilitic infants to receive such milk. It is possible that when the maternal infection is not virulent the placenta may be impervious to the spirochetes and protect the child, but when separation of the placenta takes place infection of the wounded placental surface may occur, thus explaining the cases in which the first lesions of inherited syphilis appear some weeks after birth.⁵

In still-born syphilitic fetuses the spirochetes resist maceration surprisingly well, in spite of the fact that they lose their virulence so soon after death that it is traditional in autopsy rooms that infection from syphilitic cadavers is almost impossible, no matter how fresh they may be; apparently loss of virulence is not associated with loss of structure and staining power in the case of the spirochetes. They are remarkably widespread in dead fetuses, being most frequently found in the adrenals, in which they can be detected in 97.5 per cent. of all cases, according to Trinchese, while in 53 bodies Bab found them in the lungs in 87.5 per cent., in the pancreas in 80 per cent., and in the skin, nose and eyes in from 67 to 25 per cent. Children with symptoms or signs of hereditary syphilis give a positive Wassermann reaction in 100 per cent. of all cases examined (Bergmann), and it is also possible for a syphilitic mother to give birth to a healthy infant which gives a positive reaction without ever showing evidences of infection. Infants born apparently sound and later developing evidences of syphilis do not give a positive reaction until the signs of infection manifest themselves.

THE PHYSICIAN AS A CITIZEN

That physicians as a class neglect or evade the ordinary duties of citizenship, and do not measure up to their opportunities and obligations in the large questions of public welfare, is a statement that is often made. While we do not admit that this is true to any great extent, yet it cannot be denied that there are grounds for this impeachment. An editorial in the February number of the *Southern Medical Journal* on "The Physi-

cian as a Citizen" discusses this in an interesting way. It states that there is no sufficient reason why the physician should consider himself in a separate class from other men regarding the obligations of every-day life, but that this is a course which he has long pursued, and which is coming more and more to be criticized and condemned. In defense of this attitude, the *Journal* says that the word "duty" is as sacred to the physician as to any other man, but to the physician the most important problems of duty may seem those relating to his patients and not to society in general; and perhaps from the viewpoint of the patients it is well that it should be so. But the medical man, no less than other men, has solemn obligations to nation, state and municipality, and it is his attitude of evasion and inertia which has contributed to the perversion of law and the demoralization of politics. The editorial further says that it is no excuse for the physician to plead the exactions of his practice as a reason for failure to exercise his suffrage or to manifest a becoming concern in the proper administration of public affairs. The lawyer, the clergyman and the merchant, though absorbed in their several callings, cannot be charged with habitually ignoring the call of civic duty and the opportunities of enlightened citizenship.

This would seem to be putting the case too strongly. We are hardly willing to admit that the physician so completely neglects his civic or political duties as is here indicated. Physicians are found taking part in every branch of governmental affairs, in local offices, in state legislatures, in Congress, and in the diplomatic service. A closer investigation would, it is believed, reveal the fact that perhaps as large a proportion of physicians vote and attend to the ordinary duties of citizenship as of any other business or profession. Indeed, it is one of the present-day complaints that business men of the better class do not sufficiently interest themselves in politics. Besides, as stated in the editorial, on account of the peculiar relationship of the physician to the people, a critical public soon learns to look with distrust on the physician who concerns himself to any extent with politics, sport or any other extraneous pursuit.

The *Southern Medical Journal* concludes its editorial by suggesting the sphere in which the real opportunity lies and in which the obligation of the physician as a citizen may find its largest and most useful expression. It says that an awakening public is beginning to realize that the fundamental condition of all social and material prosperity is the health and vigor of the people. The present agitation in health matters is most remarkable. To insure the results which should follow a movement so widespread and so earnest, the forces at work must be wisely directed, else they will be wasted in fruitless effort. This guidance the medical profession must furnish or fall short of the full measure of its usefulness. This defines clearly the field in which the physician can best fulfil his duty as a citizen, and it is to be deplored that in the active public movement against tuberculosis,

4. Bab: *Ztschr. Geb. u. Gyn.*, 1907, ix, 161.

5. Lucas: *Lancet*, Feb. 1, 1908.

for instance, so many laymen rather than physicians have been the leaders. Other problems almost equally important press for solution, and the physician should take his proper place as leader and guide in the work. For, as stated in the editorial from which we have largely quoted, the broad-minded physician of the twentieth century, his talents dedicated to a life of service, cannot refuse to recognize the larger obligations of his calling, and should cheerfully and gladly assume his portion of the burden they entail.

HABITINA AND OTHER MAIL-ORDER DRUG CURES

One of the vicious mail-order drug "cures" which flood the market is discussed in this issue.¹ Free samples of this particular "cure" may be had for the asking, each sample containing enough morphin sulphate and heroin hydrochlorid to kill seven or eight healthy adults. Before the national Food and Drugs Act was passed this dangerous mixture could be sent through the mails with nothing on the label to show its tremendous potentialities for harm; now, fortunately, the label has to declare the amount of heroin and morphin the product contains. This is a splendid advance so far as it goes, but it does not go far enough. Most of the state laws recognize the principle that the public should be protected against itself; hence we find statutes forbidding the sale of dangerous drugs by pharmacists to laymen, except under certain restrictions. There is no law, however, which can be invoked against the ghouls who, for the sake of the dollar, take advantage of the impotency of the present postal regulations to sell that which will debauch and destroy their helpless victims. There is something radically wrong when irresponsible and conscienceless men, without even the pretense of scientific training or ability, should be able to use the United States mails and the express companies to scatter broadcast potent drugs of the most dangerous type. That it should be possible for the ignorant or the criminal to obtain without let or hindrance morphin and heroin in quantities limited only by the ability to pay for them, is a disgrace to a civilized country and a serious menace to public health.

THE PHARMACOPEIAL DELEGATES

We publish this week a supplementary list of delegates to the Pharmacopeial Convention. From these lists² it appears that, of the one hundred and twenty-seven institutions and organizations represented in the Convention of 1900, but seventy-three have thus far notified the committee of the appointment of delegates; while twenty-nine new organizations may be added. Only nineteen state medical associations and twenty-seven medical schools have appointed delegates; in the pharmaceutical list twenty state associations, five other than state, and twenty-five colleges of pharmacy have made appointments. The lists also show that there are

thus far appointed one hundred and thirty-six medical delegates and forty-five alternates; and one hundred and forty-three pharmaceutical delegates with one hundred alternates. In the latter list a number of names are duplicated, certain of them appearing in the lists of delegates and again among the alternates, showing a more diligent interest and definite determination to secure representation. The indifference of the medical schools is apparent; of the one hundred and forty-nine institutions listed in our Educational Number, Aug. 14, 1909, but twenty-seven have thus far indicated their interest in the Pharmacopeia by complying with the requirements and notifying the committee of the appointment of delegates. Notwithstanding all the agitation in the past few years, the much-advertised U. S. P. Propaganda, the get-together meetings of doctors and druggists and the as yet unsatisfied demand from many schools for competent pharmacologists who shall lay the foundations for a safe and sane therapy, our institutions are disregarding the tools already within their hands.

TACTICS OF THE PRESERVATIVE PEOPLE

The members of the American Medical Association all over the country are receiving from one H. L. Harris, "publicist," 100 William Street, New York City, typewritten copies of matter attacking the editor of *THE JOURNAL*. It is probably unnecessary to remind our readers that Harris, who sometimes signs himself as H. H. Langdon, "food expert," has been previously shown up in *THE JOURNAL* as the press agent for the Pacific Coast Borax Company, 100 William Street, New York City. The motives will be fully appreciated if the previous articles dealing with this gentleman's activities are read, and, for the benefit of those who have not kept the back copies of *THE JOURNAL*, reprints have been made and will be sent on request.¹

Medical News

CALIFORNIA

Only One Physician in County.—It is asserted by the *San Francisco Call* that there is only one physician in Trinity county, and that it recently became necessary to import a physician from another county to make up the commission required to pass on a case of insanity.

Hospital News.—The supervisors of Contra Costa county have accepted plans for the new county hospital to be erected in Martinez. The building will have a frontage of 118 feet, will be 68 feet deep, two stories and a basement in height, and will include accommodation for 36 ward patients and a number of private patients.—Dr. S. P. Purlenky, Fort Bragg, has purchased the Fort Bragg Hospital from Dr. Birney A. Lendrum.—Contracts are about to be let for the construction of a cement fireproof building for the St. Caroline Sanitarium Association at Redding, to cost \$20,000.

Personal.—Dr. Jonas Clark, Gilroy, has been appointed physician of San Jose county, vice Dr. Howard B. Gates, San Jose.—Dr. Charles E. Zerfing has been appointed police surgeon of Los Angeles.—Dr. William F. McNutt, Jr., has been appointed health officer of San Francisco; Dr. George W. Goodale, city physician; Dr. Edward S. Howard, chief surgeon of the Central Emergency Hospital; Dr. Emmett LeR. Wemple,

1. Pharmacology Department: "Habitina," page 889; also Original Articles Department: "Blindness from Heroin in Nostrum 'Habitina,'" page 869.

2. The first list, to which the present one is supplementary, appeared in *THE JOURNAL*, February 26.

1. Send a stamped addressed envelope for reprint. The articles appeared in *THE JOURNAL*, Oct. 5, 1907, p. 1191; Feb. 13, 1909, p. 562, and Jan. 1, 1910, p. 55.

Jr., medical inspector of schools, and Dr. Sidney R. Dannebaum, city bacteriologist.—Drs. John F. Richards and John F. Sullivan have been appointed members of the Pension Board of San Francisco Police Relief Fund.

Public Health Degree at Oakland College.—The Oakland College of Medicine and Surgery has elected Passed Assistant Surgeon W. Colby Rucker, U. S. P. H. and M.-H. Service, professor of public health and mental hygiene, and at his suggestion the college will offer next year to graduate physicians a course leading to the degree of Doctor of Public Health. This course will cover one year and will include personal and general hygiology; epidemiology; practical sanitation, parasitology; tropical medicine; sanitary law; inspection of milk, meats and other food products; factory inspection; public water supply; sanitary chemistry; sanitary architecture; vital statistics, and the economics of disease.

GEORGIA

Society Wants Permanent Home.—The Georgia Medical Society, Savannah, at its February meeting, discussed plans for the establishment of a library and the building of a permanent home for the organization, containing club quarters and laboratories.

Fined for Selling Cocain.—Dr. Henry B. Stanley, Savannah, formerly coroner of Chatham county, is said to have been fined \$1,000, with the alternative of imprisonment, for violation of the state anticocaine law.

Joint Tuberculosis Hospital.—Fulton county has joined the city of Atlanta in the movement to build a tuberculosis hospital for the treatment of local patients. The county commissioners have appropriated \$15,000 for the fund and the city of Atlanta has already made an appropriation of \$10,000 for the purpose.

Reelected Member of Hospital Board.—Dr. Walter A. Crowe, Atlanta, who resigned recently from the medical board of Grady Hospital, was unanimously reelected a member of the board, February 22. The board consists of eighteen members, six each from the Atlanta College of Physicians and Surgeons, the Atlanta School of Medicine, and the city at large.

ILLINOIS

Hospital Incorporated.—The M. A. Montgomery Memorial Sanatorium has been incorporated at Charleston with a capital stock of \$12,000. The object is stated to be to conduct a hospital and training school.

Gift to Retiring Superintendent.—At an informal gathering at the Elgin State Hospital, February 26, Dr. Vaclav H. Podstata, the retiring superintendent, was presented by the employees with an order for a library of medical books.

Tent Colony to Be Established.—Dr. J. Rex Sholl, health commissioner of Peoria, has completed arrangements for a summer tuberculosis colony on the Galena Road, on a tract of land owned by Dr. George A. Zellar, superintendent of the Peoria State Hospital. On this tract a large tent is to be erected for kitchen, dining-room and administration headquarters, and small tents will be provided for patients. The colony will open about April 15.

Personal.—In the Sangamon County Circuit Court, on February 24, Dr. Harry C. Blankmeyer, Springfield, was found not guilty of malpractice in the suit brought against him by John Nealon, in which damages of \$5,000 were claimed.—Dr. Thomas C. Buxton, Decatur, coroner of Macon county, has been elected secretary of the Coroner's Association of Illinois.—Dr. Guy J. Wormley is reported to be seriously ill with pneumonia at his home in Sandwich.—At the annual meeting of the Alton Medical Society, February 24, Dr. Thomas L. Foulds was elected president; Dr. James M. Pfeifferberger, vice-president; Dr. J. Bernard Hastings, secretary, and Dr. Waldo Fisher, treasurer.

Chicago

Vice Commission Named.—A vice commission of thirty to investigate and report on the social evil has been named by the mayor, including criminologists, socialists, educators, jurists, lawyers, and the following physicians: Drs. William A. Evans, William Healy, Anna Dwyer, James Nevins Hyde, William L. Baum and Louis E. Schmidt.

Maternity Hospitals.—It is proposed by the board of directors of the Chicago Lying-In Hospital to erect maternity hospitals on the south, north and west sides, to cost approximately \$150,000. The site for the south side institution has already been chosen, and the north side institution may be located near the Children's Memorial Hospital.

The Work of the Pasteur Institute.—The Chicago Pasteur Institute for the Preventive Treatment of Hydrophobia and the Study of Infectious Diseases, in its nineteenth annual report, announces that since its inauguration, 4,158 patients have received anti-hydrophobic treatment. Of these 1,583 came from Illinois, 659 from Ohio, 355 from Wisconsin, 224 from Iowa, and 208 from Indiana. Only 8 patients died, equivalent to a mortality of 1.9 per 1,000. Of the cases reported, 3,651 were bitten by dogs, 151 by cats, 134 by horses, 37 by skunks, 6 by wolves, 65 by cows, 14 by calves, 2 by burros, 7 by coyotes, 8 by mules, 9 by pigs, 2 by sheep, 14 by squirrels, 1 each was bitten by a rat and a monkey, and 56 were infected by hydrophobic human beings.

INDIANA

Personal.—Dr. and Mrs. George W. Spohn, Elkhart, leave for Europe this month.—Dr. Isaac W. Inlow, Blue Ridge, is reported to be critically ill with cerebral hemorrhage.—Dr. Samuel C. Darroch, Cayuga, was thrown from his buggy while crossing a flooded culvert, February 22, and suffered severe cuts and bruises.—Dr. Charles F. Kne, intern at the Indianapolis City Dispensary, has resigned and will practice in Indianapolis.—Dr. D. L. Field has been elected president and Dr. Oliver P. Graham, secretary of the Jeffersonville Board of Health.

Society Meetings.—Hamilton County Medical Society, at its annual meeting and banquet in Noblesville, February 18, had as a guest Dr. Thomas C. Kennedy, Shelbyville, president of the Indiana State Medical Association, who delivered an address on the "Relation of the State Society to the County Society," and Dr. J. P. Simmonds, pathologist of the state laboratory, who read a paper on the "Early Recognition of Diphtheria." Dr. Thomas O. Redden, Jolietville, was elected president; Dr. Milton C. Haworth, Noblesville, vice-president; Dr. Julian E. Hanna, Noblesville, secretary-treasurer, and Dr. Frederick A. Tucker, Noblesville, delegate to the state medical association.—At the annual meeting of the Physicians' Club of Mishawaka, February 7, Dr. Henry C. Holtzendorff was elected president and Dr. James G. Bostwick was reelected secretary.

KANSAS

County Society Meeting.—The Franklin County Medical Society, at its seventh annual meeting, held in Ottawa, January 26, elected Dr. John M. McWharf, president; Dr. Edward B. Gossett, vice-president, and Dr. James Ball, secretary-treasurer, all of Ottawa.

Personal.—Dr. R. A. Young has been appointed a member of the medical staff of the Topeka State Hospital.—Drs. S. T. Zinke and Clarence C. Goddard have been suggested by the Leavenworth Medical Society as sanitary officers to serve without pay and to hold office until December 31.—Dr. Samuel T. Gillespie, Lawrence, has been appointed health officer of Douglas county, vice Dr. John C. Rudolph, Lawrence.—Dr. Henry A. Nave, Kansas City, has been appointed police surgeon.—Dr. Francis C. Herr, Ottawa, has been appointed physician and health officer of Franklin county, vice Dr. Willis L. Jacobus, Ottawa.

KENTUCKY

University News.—The mayor of Louisville has transferred to the general council the names of Mr. Bruce Haldeman and Mr. Marion E. Taylor as trustees of the University of Louisville for ten years, the terms of the Hon. David Fairleigh, president, and Dr. Louis Ryans having expired. The council has been asked for an appropriation of \$25,000 for the support of the academic department.

Infected Books.—A plan has been formulated by the librarian of the Louisville Free Public Library for handling books in homes where a communicable disease has been reported. In cases of smallpox and diphtheria the books are destroyed; in other cases a notice is sent to the infected house, requesting that library books there be delivered to the health officer when the house is disinfected. The health officer is notified that books are being held for disinfection, and after disinfection, a certificate to that effect is placed in the book by the disinfecter.

Personal.—Dr. Thomas C. Evans, dean of the Medical Department of the University of Louisville, has resigned, to take effect July 1. His successor has not yet been appointed.—Dr. Americus V. Menefee, Williamstown, has been elected secretary of Grant County Board of Health.—Dr. James E. Stone has been elected secretary of the Hopkinsville Board of

Health.—Dr. Darwin Bell, Gracey, has been elected a member of the Christian County Board of Health.—Dr. Henry C. Smith, Allen Springs, is reported to be critically ill with pneumonia.

MARYLAND

Pure Food Bill Passed.—The pure food bill, championed by Dr. Thomas A. Ashby, Baltimore, passed the House of Delegates unanimously and without change, March 4, and has now gone to the senate.

Publicity Campaign Against Blindness.—The Maryland Society for the Prevention of Blindness has issued an appeal for a publicity campaign to instruct the public regarding the means of preventing ophthalmia neonatorum and other diseases which may cause blindness.

Lunacy Bill Amended.—The bill providing for the state care of the insane has been amended, and now provides for a bond issue of \$600,000, for the purchase of 250 acres of land for the negro hospital, and an appropriation of \$100,000 for the use of that institution; \$270,000 to the Springfield Hospital; \$80,000 for the Spring Grove Hospital, and \$150,000 for the Owings Mills Institution for the Feeble-Minded.

Society Meeting.—At the annual meeting of Georges Creek Medical Association, held in Frostburg, February 26, the following officers were elected: President, Dr. John H. McGann, Barton; vice-president, Dr. James C. Cobey, Frostburg; secretary, Dr. James C. Holdsworth, Eckhart Mines; treasurer, Dr. W. Oliver McLane, Frostburg, and censors, Drs. Timothy Griffith, and J. Marshall Price, Frostburg, and Frank L. Clymer, Midlothian.

Personal.—Captain J. Wright Downey, Newmarket, assistant surgeon, First Infantry, Maryland National Guard, has been placed on the retired list.—Drs. Henry P. Fahrney and William G. Bourne, Frederick, have been appointed physicians of the Montevue Hospital.—Dr. John R. Littlefield has been placed in charge of the Emergency Hospital opened at the Western Maryland Central Station, Cumberland.—Drs. Henry M. Hurd and Thomas S. Cullen, Baltimore, left March 4 for a trip through Florida and Cuba.

MICHIGAN

County Medical Society.—At the meeting of the Ontonagon County Medical Association, held in Ontonagon, February 24, Dr. William B. Hanna, Mass, was elected president; Dr. Rudolph, Rockland, vice-president; Dr. John S. Nitterauer, Ontonagon, secretary-treasurer, and Dr. Andrew L. Swinton, Ontonagon, trustee.

Sanatorium Notes.—At a meeting of the Ann Arbor Tuberculosis Society, February 6, it was decided to recommend the purchase of the Coleman site for a sanatorium, for \$3,500. Dr. Alfred S. Warthin was elected secretary of the society.—Fire in the heating plant of Otter Lake Sanatorium, February 14; did damage to the extent of \$200.

Founders' Day.—The University of Michigan, Department of Medicine and Surgery, celebrated its sixtieth founders' day, February 15. The principal address was made by Prof. W. E. Parker, whose subject was the work of Dr. George E. Frothingham, Detroit, who resigned from the faculty because the regents refused to move the clinical department of the university to Detroit.

Personal.—Dr. George E. Potter has been made a member of the Detroit Board of Health.—On the occasion of the fortieth anniversary of the entry of Dr. Walter H. Bills into practice, he entertained his professional brothers of Allegan with a dinner, at which he was presented with a signet ring.—Dr. Daniel A. Z. Vannoppen, city health officer of Niles, has been appointed deputy state dairy and food inspector.—The members of the Ottawa County Medical Society presented their president, Dr. Thomas G. Huizinga, Zeeland, with a gold-headed cane on the occasion of his fiftieth birthday anniversary.—Dr. Jesse E. Wilson, Rochester, celebrated his eighty-first birthday, January 31.—Dr. Nushan H. Kassabian has been elected secretary of the newly organized Coopersville Antituberculosis Society.

Mortality of Michigan in 1909.—The total number of deaths, exclusive of still births, registered during 1909, numbered 35,586, or 13.3 per 1,000 of population. The rate for the previous year was 13.6 per 1,000. The months of maximum mortality were March, April and August. The month of minimum mortality was November. The deaths of infants under one year decreased from 7,451 in 1908 to 7,115 in 1909. The deaths of children from one to four years of age decreased

from 2,348 in 1908 to 2,270 in 1909, and the deaths of individuals sixty-five years of age and over increased from 10,667 in 1908 to 10,985 in 1909. The deaths from pulmonary tuberculosis numbered 2,140, a decrease of 24 over the preceding year. Typhoid fever caused 613 deaths, or 43 more than in 1908. Diphtheria caused 375 deaths, or 51 more than in the previous year. There were 82 more deaths from scarlet fever in 1909, and a great increase was noted in the number of deaths from measles. Deaths from pneumonia and bronchopneumonia were 2,150, or a slight decrease over last year. A notable decrease is noted in deaths from diarrhea and enteritis of infants, when 1,515 were noted, as compared with 2,030 for the previous year. The mortality from meningitis, influenza, cancer, violence and smallpox decreased during the year.

MISSOURI

County Society Elections.—At the annual meeting of Jackson County Medical Society, held in Kansas City, March 1, Dr. Herman E. Pearse was elected president, vice Dr. Bennett C. Hyde, resigned, on account of ill health; Dr. Jefferson D. Griffith was installed as vice-president; and Dr. William F. Kuhn, as treasurer. Dr. Edward L. Stewart, the secretary, was installed at the previous meeting; all of Kansas City.

Personal.—Dr. Ashman H. Vandivert, Bethany, has been made acting superintendent of State Hospital No. 2, St. Joseph.—Dr. William R. Strickland has been made postmaster of Rockport.—Dr. Forrest V. Keeling, Elsberry, who was operated on for appendicitis in St. Louis, February 3, has returned home convalescent.—Dr. H. V. Good, Henry W. Westover, Oliver C. Gebhart, James K. Graham, Emmett S. Ballard, and Daniel Morton, all of St. Joseph, have been elected directors of the Buchanan County Society for the Prevention of Tuberculosis.

St. Louis

Demonstrates Circulation of Blood.—At the February meeting of the Medical Society of the City Hospital Alumni, Dr. William H. Luedde demonstrated the circulation in the human conjunctiva by means of the binocular microscope with special illumination. The red corpuscles were plainly visible, coursing with variable velocity in the smaller arterioles and capillaries. Attention was called to its use in detecting the earliest changes in arteriosclerosis and the variation in the velocity of the blood current.

MONTANA

Society Elections.—At the annual meeting of Silver Bow County Medical Society, held in Butte, February 23, Dr. Creswell T. Pigot was elected president; Dr. Michael J. Scott, vice-president; Dr. Phoebe A. Ferris, secretary, and Dr. Donald Campbell, treasurer, all of Butte.—At a recent meeting of Missoula County Medical Society, held in Missoula, the following officers were elected: Dr. Harry C. Smith, president; Dr. George M. Jennings, vice-president; Dr. W. Buchanan Parsons, secretary-treasurer; Drs. James P. Aylen, Harry B. Farnsworth, George T. McCullough and William E. Shea, delegates to the state society, and Drs. John G. Randall, Frank D. Pease and Emanuel M. Rundquist, alternates, all of Missoula.—The Tri-County Medical Society of Custer, Dawson and Rosebud counties, at its annual meeting at Glendive, January 5, elected Dr. Thomas A. MacKenzie, Miles City, president; Dr. Francis S. Gray, Miles City, vice-president, and Dr. Ambrose L. Hammerel, Glendive, secretary.

NEBRASKA

Hospital Opened.—St. Marks Episcopal Church, Hastings, has leased a house at 235 East 7th street, and has opened it as a hospital, to be known as St. Mark's Hospital. The institution will accommodate twelve patients.

Personal.—Dr. DeWitt C. Bryant has been reelected president and Drs. Dellizon A. Foote, vice-president of the Physicians Casualty Association, Omaha, and Drs. Frank S. Owen, William F. Milroy and Ralph W. Connell have been reelected directors.—Dr. Harry L. Wells, West Point, has been appointed physician of Cuming county.

Society Meeting.—At the annual meeting of Scotts Bluff County Medical Society, held in Mitchell, in January, Dr. George R. Gilbert, Morrell, was elected president; Dr. Claude D. D. M. M. S. Langrall, Minatare, vice-president; Dr. Byron Bailey, Gering, secretary-treasurer; Dr. Andrew J. Faulk, Mitchell, delegate to the state association, and Dr. Alfred J. Stewart, Mitchell, alternate.

To Test License Law.—On the request of a number of physicians of Omaha, the State Board of Health has decided to

ask Dr. Archibald L. Muirhead, Omaha, to go before the grand jury at Omaha at the next session and testify regarding the conduct of Dr. John T. Mathews, Omaha, alleged to be practicing without a license. Dr. Mathews is said to have had his license revoked about two years ago, but asks a rehearing of the matter on the ground of newly-discovered evidence.

NEVADA

Hospital Reopened.—The Peoples Hospital, Reno, which has been closed for some time, was reopened February 15 as St. George's Hospital.

Personal.—Dr. Edward S. Grigsby, Rhyolite, has purchased the practice of the late Dr. Charles L. Hammond, Tonopah. Dr. Sidney Clark has returned to Tonopah with his sight almost restored, after a severe attack of facial erysipelas. Drs. John A. Lewis and William H. Hood, Reno, left for a trip around the world, February 5.

New Officers.—The physicians of Tonopah, at a meeting, February 23, organized the Nye County Medical Association, and elected the following officers: President, Dr. Sidney Clark, Tonopah; vice-president, Dr. John R. Cunningham, Tonopah; secretary-treasurer, Dr. C. J. Richards, and board of control, Drs. William W. Ashley, Goldfield, Reynold J. Mapes, Tonopah, D. P. McLeod, Tonopah, and Edward S. Grigsby, Rhyolite. At the annual meeting of Humboldt County Medical Society, held in Winnemucca, January 27, the following officers were elected: President, Dr. Charles E. Swezy, Winnemucca; vice-president, Dr. J. A. Russell, Lovelocks; secretary-treasurer, Dr. Sammel J. King, Winnemucca, and censors, Drs. John P. Martin, Lovelocks, Patrick J. Mangan, Winnemucca, and John Schaffner, Golconda.

NEW YORK

Personal.—Dr. A. L. Benedict, Buffalo, wishes it announced that the publication of extracts from his article on "Some Prevalent False Notions About Diet," that appeared in New York newspapers, was entirely without his knowledge and consent.

Coroner's Physicians Under Civil Service Law.—A bill has been introduced into the legislature providing that there shall be four coroner's physicians in Manhattan, four in Brooklyn, two in Queens, two in the Bronx and one in Richmond. The vacancies are to be filled by the coroners in the boroughs in which they occur, subject to the civil service law. The salaries are to be fixed by the board of estimate and apportionment, but are not to exceed \$3,000.

Yonkers' Infected Water.—The mayor of Yonkers has conferred with the mayor of Greater New York to see if any arrangement can be made by which Yonkers can be permitted to tap the Croton water supply. Dr. William S. Coons, Health Officer of Yonkers, insists on the immediate abandonment of the present source of supply as absolutely unfit, and as responsible for the present outbreak of typhoid fever and for former epidemics. A bill has recently been introduced into the legislature permitting the tapping of the Croton Aqueduct by Westchester towns and cities.

The State Insane.—The annual report of the State Commission in Lunacy shows that the number of insane committed in the public and private hospitals at the close of the fiscal year was 31,541, of whom 15,107 were men and 16,434 women. The net increase in all institutions was 1,084; in state hospitals alone, 1,015. The total cost of maintaining the insane during the year amounted to \$6,899,287. The commission submits an estimate, for 1910, of \$8,420,315, \$2,385,315 of this sum being required to provide additions to existing hospitals and for the beginning of work at the newly-acquired site at Yorktown. The estimated cost of maintaining each patient during 1910 and 1911 is \$190 a year as against \$185 in 1907, and \$184.44 in 1908.

New York City

Harvey Society Lecture.—The eighth Harvey Society lecture, given March 19, by Prof. A. Magnus-Levy of the University of Berlin, is on "Pathology and Therapy in Diseases of Metabolism."

Hospitals Unite.—The consolidation of the New York Infant Asylum with the Nursery and Child's Hospital under the name of the New York Nursery and Child's Hospital has been approved by Supreme Court Justice Platzek.

Crusade Against Spitters.—Members of the health squad have been traveling on trains, trolley cars and boats, warning

passengers that they must use cuspidors and not spit on the floors of those vehicles. Many arrests have been made and fines imposed.

Consumptives to Be Concentrated.—The Board of Estimate and Apportionment recently took steps toward the concentration of consumptive patients in one hospital. This plan will save the city a large amount of expense annually. This board has been inspecting the property near Otisville, Orange county, where the new sanatorium is to be erected unless too strenuous opposition is made on the part of the residents of that section.

OHIO

Medical Periodicals in Public Library.—The Columbus Medical Library Association has furnished the librarian of the Columbus Public Library a list of 40 domestic and 28 foreign medical periodicals, which are to be placed on file in the library.

Pasteur Institute Plan.—A bill has been introduced in the senate to appropriate \$1,000 to organize and equip a Pasteur institute for the treatment of hydrophobia, at the Ohio State University, Columbus, and to appropriate \$1,000 annually for maintenance.

Personal.—Dr. William L. Dick has been reelected medical inspector, and Dr. James A. Beer, chemist and bacteriologist of the Columbus Board of Health. Dr. Harry H. Drysdale, Cleveland, has been appointed a member of the State Board of Charities. Dr. Robert W. Crume has been elected district physician of Hamilton, vice Dr. Harry Silver.

Will Not Admit Advanced Cases.—The superintendent of the State Sanatorium, Warrensville, has ruled that all applicants must appear before an admittance board, and that persons suffering from advanced tuberculosis will not be admitted, as the object of the sanatorium is to treat incipient cases.

Society Meetings.—The Union Medical Association of the Sixth Councilor District met in Akron February 8, and elected Dr. Jacob F. Marchand, Canton, president; and Dr. John H. Seiler, Akron, secretary-treasurer. At the annual meeting of the North Side (Columbus) Medical Research Society, February 15, Dr. James A. McClure was elected president; Dr. George K. Colville, vice-president; Dr. Adam G. Elder, secretary, and Dr. Earl W. Evans, treasurer.

Cincinnati

Hospital Changes.—The following changes in the staff of the Cincinnati Hospital are announced: junior surgeon, Dr. Dudley W. Palmer; assistant radiographer, Dr. William Daugherty, and curators, Dr. Albert J. Bell, vice Dr. Charles S. Rockhill, recently appointed physician of the Branch Hospital, and Drs. Joseph T. Kennedy, Goodrich B. Rhodes and Eugene S. May.

Personal.—Dr. Henry Martin Fischer, formerly professor of physiology in the University of California, has been appointed to the lately-endowed Eichberg chair of physiology in the Ohio-Miami Medical College, and Dr. Charles Goosmann has been appointed demonstrator of pathology in the college. Drs. Nathaniel P. Dandridge, clinical professor of surgery, Alexander G. Drury, professor of hygiene, and Edmund W. Baehr, assistant professor of physiology in the Ohio-Miami Medical College, have resigned.

PENNSYLVANIA

Philadelphia

Resolutions Regarding Dr. Stanton.—The staff of the Henry Phipps Institute for the Study, Treatment and Prevention of Tuberculosis, at its meeting February 21, adopted resolutions eulogistic of the late William Bancroft Stanton, and expressing its sense of profound grief and irreparable loss in his death.

Fills Vacancy.—At a meeting of the trustees of Jefferson Medical College, Dr. Francis T. Stewart was elected professor of clinical surgery, to occupy the place made vacant by the promotion of Dr. W. Joseph Hearn to emeritus professor. Dr. Stewart is also professor of surgery in the Polyclinic Hospital, out-patient surgeon to the Pennsylvania Hospital, and surgeon to the Germantown Hospital.

Milk Licenses.—The Department of Health and Charities is having trouble in enforcing its new milk laws. As the only means of protecting the public against impure milk, the department is insisting that all restaurants and all other distributors or sellers of milk in any way must procure licenses.

according to the law imposed on all dealers of milk. Groceries, soda water fountains and restaurants will all come under the inspection of the department's employees.

Forced to Pay for Insane Patients.—The assistant city solicitor estimates that \$3,000,000 have been lost to the state through the failure of the various counties to enforce the law requiring relatives to pay the board of insane patients in the state hospitals. Much of this money is not now collectable, as the accounts have been outlawed, but in the six years since the solicitor's office began to proceed against the delinquents, more than \$200,000 has been recovered. On March 2, more than 40 delinquents appeared in Quarter Sessions court and \$1,600 was collected. Many other delinquents failed to appear and for these bench warrants were issued.

Postgraduate Course in Tuberculosis.—A postgraduate course will be given in the clinic-room and wards of the Philadelphia Hospital on pulmonary tuberculosis, by Drs. Albert P. Francine, William G. Turnbull and Sidney J. Repplier. This course is open to graduate physicians of Pennsylvania of either sex, from May 16 to June 4. The class will meet at 2:30 p. m. daily, except Saturdays and Sundays, in the clinic-room of the hospital, where clinical conferences will be held for an hour on some phase of tuberculosis. Demonstration of the diagnostic tuberculin reactions will be made and an opportunity will be given for the class to become familiarized with the technic of these tests: The value of the x-ray with demonstration of plates and their interpretation will be discussed, as well as heredity, sources and routes of infection, immunity, the viability of the tubercle bacillus, its localization, the classification and types of the disease, etc. Following these daily conferences, the class will be taken into the wards and assigned cases individually for study under supervision of instructors, who will subsequently demonstrate fully the cases to them. The class will be limited to 15, applications will be considered in order of receipt, and must be made in advance to Dr. Albert P. Francine, 218 South Fifteenth street, Philadelphia.

SOUTH CAROLINA

State Conference for Good Health.—At the State Conference for Public Health, held in Columbia, February 22 and 23, the chief topics discussed were the communicability, curability, and preventability of tuberculosis, the responsibility of the physician, the legal powers and responsibilities of health officials, methods of administration and financing health work, preventive medicine, malaria and its eradication, the responsibility of the people as regards public health, the hookworm disease, and typhoid fever.

County Society Meetings.—Laurens County Medical Society, at its annual meeting January 14, elected Dr. William D. Ferguson, Laurens, president; Dr. Thomas L. W. Bailey, Clinton, vice-president; Dr. Jesse H. Teague, Laurens, secretary; Dr. Absolom J. Christopher, Laurens, treasurer, and Dr. Theodore J. Peake, Laurens, censor.—Newberry County Medical Society, at its annual meeting, January 14, held in Newberry, elected Dr. Jacob S. Wheeler, Prosperity, president; Dr. William E. Pelham, Newberry, vice-president, and Dr. Frank D. Mower, Newberry, secretary-treasurer.—Spartanburg County Medical Society, at its annual meeting held in Spartanburg, elected the following officers: Dr. Algernon R. Fike, Spartanburg, president; Dr. William A. Smith, Glendale, vice-president; Dr. William J. Chapman, Inman, secretary; Dr. James L. Jeffries, Spartanburg, censor, and Drs. G. E. Thompson and William P. Coan, Spartanburg, delegates to the state association.—Greenville County Medical Society, at its annual meeting in Greenville, elected Dr. Ernest W. Carpenter, president; Dr. Charles O. Bates, secretary, and Dr. R. D. Smith, treasurer, all of Greenville.

TENNESSEE

Health Officers to Meet.—An official call was sent out February 7, from the office of Dr. James A. Albright, Nashville, state health officer, for a meeting of city and county health officers of the state in Nashville, April 5 and 6.

Medical Society Organized.—Physicians of Wilson county met in Lebanon, February 5, organized the Wilson County Medical Association, and elected Dr. Thomas O. Bratton, president; Dr. Jerry J. McFarland, vice-president, and Dr. James R. Bone, secretary, all of Lebanon.

Site for Sanatorium Donated.—The Chattanooga City Water Company has donated to the Tuberculosis Sanatorium Association, eighty acres of land near Tyner's Station, on which a

tuberculosis sanatorium for the poor of Chattanooga and Hamilton county is to be erected.

Personal.—At the ninth annual banquet of the Sigma Mu Chi Chapter of the Phi Chi Medical Fraternity, held in Chattanooga, February 17, a silver loving-cup was presented to Dr. Hiller P. Larimore on behalf of the fraternity.—Dr. T. A. Kearley has been elected a director of the Methodist Hospital, Nashville.

WISCONSIN

Society Meetings.—At the annual meeting of the Milwaukee Physicians' Club, January 25, Dr. Fred W. Riehl was elected president; Dr. Alexander J. Heller, vice-president; A. A. Cooper, secretary, and Dr. William V. Nelson, treasurer.—Sheboygan County Medical Society, at its annual meeting, January 25, elected Dr. Emil Gunther, Sheboygan, president; Dr. Charles W. Pfeiffer, Sheboygan Falls, vice-president; Dr. William F. Zeirath, Sheboygan, secretary-treasurer; Dr. James R. Kingsley, Sheboygan, censor; Dr. Gilbert H. Stannard, Sheboygan, delegate to the state society, and Dr. Edward Felter, Plymouth, alternate.—The amalgamation of the Milwaukee Medical Society and the Milwaukee County Medical Society is practically assured. Joint conferences have been held, but formal action has not yet been taken.

GENERAL NEWS AND COMMENT

To Replace Fire Loss.—A deficiency appropriation of \$367,000 has been recommended to Congress by the Secretary of War, to replace the medical supplies destroyed by fire at the Army Medical Supply Depot, New York City, February 4.

Tuberculosis Sunday.—The National Association for the Study and Prevention of Tuberculosis has announced that April 24 has been selected as National Antituberculosis Sunday, on which day it is planned that sermons on tuberculosis will be preached in all churches in the country.

Railway Surgeons Meet.—The Joint Association of Surgeons of the Illinois Central, Yazoo and Mississippi Valley and Indianapolis Southern railroads held its annual meeting in New Orleans, February 23 and 24, and elected the following officers: President, Dr. John E. Owens, surgeon-in-chief of the Harriman lines, Chicago (reelected); vice-presidents, Drs. Luther Sexton, New Orleans, and Dr. Frank T. Fort, Louisville, and secretary, Dr. Thomas P. Ranney, Chicago. Memphis was chosen as the next place of meeting.—Dr. Charles B. Fry, Mattoon, Ill., the retiring secretary of the association, was presented with a mahogany hall clock by the association.

Medical Societies to Meet.—The Association of American Medical Colleges will hold its twentieth annual meeting at Baltimore, March 21 and 22 in the hall of the Medical and Chirurgical Faculty of Maryland, under the presidency of Dr. George H. Hoxie of the University of Kansas.—The spring meeting of the Medical Society of Missouri Valley will be held in Omaha March 17 and 18. The oration in surgery will be given by Dr. Leonard Freeman, Denver, Colo., on "Local Anesthesia," and the oration in medicine on "The Physical Basis of Mental Diseases" by Dr. Frank P. Norbury, Hospital, Ill. Dr. John E. Summers, Jr., Omaha, is secretary of the committee on arrangements.

Death of a Philanthropist.—James J. H. Gregory, the wealthy seed merchant of Marblehead, Mass., died Feb. 20, 1910. That this item is of special interest to the medical profession lies in the fact that Mr. Gregory is the gentleman to whom we referred on several occasions as one who was distributing the reprints of the "Great American Fraud." Since Mr. Gregory retired from business, he devoted himself to philanthropic work, and among other activities, took great interest in doing what he could against the evils of "patent medicines" and quackery. He recognized the great value of Mr. Adams' book and up to the time of his death had circulated 45,000 copies; even as late as three weeks ago he sent for 1,000 copies.

Atlanta Antivaccinationists.—A noble band of would-be antivaccination martyrs, who were willing and anxious to sacrifice themselves on the altar of principle and smallpox, held a meeting in Atlanta a few days ago. Their dream was rudely interrupted and their pipes put out by Dr. J. P. Kennedy, the vigilant and energetic health officer of Atlanta, who walked into the meeting-place, and catching the eye of the president of the antivaccination society, announced that he

was a health officer and was there for the purpose of seeing that every one present was vaccinated. He was supported in his assault on the sacred rights of personal liberty by a number of police officers. After the martyrs had recovered from the first shock of surprise they became very indignant and the health officer was denounced in no uncertain terms. On taking a census of those present it was found that two-thirds of them were already protected by vaccination and some of them had been vaccinated only recently. Presumably these were londest in their protests. The names and addresses of those not vaccinated were taken, and after a grand-stand play in the local courts the vaccination will be made unanimous. City Health Officer Kennedy is to be commended for his prompt action in thus forcibly calling the attention of those misguided individuals to the fact that they were not only violating the ordinances of the city, but were endangering the lives of their neighbors and friends by not being vaccinated and by attempting to influence others against vaccination.

FOREIGN

Deaths Abroad.—Among recent deaths reported from Great Britain is that of Dr. Thomas Dixon Savill of London; a consultant of high repute; a nerve and skin specialist, and author of the well-known "System of Clinical Medicine," who died January 10, from skull fracture, the result of a fall from his horse in Algiers, aged 52.

Urologic Society Founded at Bucharest.—A new national urologic society has just been founded at Bucharest, Rumania, with Professor Heresco as the leading spirit. Professor Guyon of Paris, editor of the *Annales des Maladies des Organes Génito-urinaires*, was elected honorary president of the new society at its first meeting.

Ramon y Cajal Made a Senator for Life.—The king of Spain recently appointed Professor Cajal a senator of the realm for life. The prime minister in presenting the name of Cajal for this honor stated "Señor Ramon y Cajal is the greatest glory of the Spanish fatherland." One of the three editors of the *Siglo Medico*, Dr. C. M. Cortezo, is likewise a *senador vitalicio*, as also three other physicians.

Prize for Physiologic Research.—The academy of sciences at Bologna, Italy, announces the foundation of a biennial prize of \$600 (3,000 lire) by one of its corresponding members, Prof. Elie de Cyon, with the object of promoting researches in the subjects in which he has done so much important work. Competition is open to the world, and the prize will be awarded for the best work on: 1, the functions of the heart, or cardiac and vasomotor nervous system; 2, functions of the labyrinth of the ear; or, 3, the functions of the thyroid, hypophysis and pineal gland. The prize will be awarded for the first time March 1, 1911. Address the *Segretarie della Classe di Scienze Fisiche della R. Accademia di Bologna*, Via Zanaboni, 33, Bologna, Italy.

LONDON LETTER

(From Our Regular Correspondent)

LONDON, Feb. 26, 1910.

Death Under Jonnesco's Method of Spinal Anesthesia

Jonnesco's method of spinal anesthesia has not yet been much used in Great Britain. A death under it has been reported, although its author claimed for it perfect safety. However, the circumstances were unfavorable. A man, aged 60, suffering from valvular disease of the heart, was operated on for strangulated hernia. Spinal anesthesia was induced by the injection of 1½ grains of stovain, dissolved in 17 minims of strychnin solution containing 1/65 of a grain, and the operation was commenced. The patient never lost consciousness, but sank under the operation. Death was attributed to the heart disease, aggravated by the shock of the operation and peritonitis.

The Reduction of Infant Mortality from Diarrhea

The mortality of infants from diarrhea is very high, particularly among artificially-fed infants in whom it is fifteen times greater than in the breast-fed. The mortality is most marked in the manufacturing towns of the North where the demand for female labor in factories causes mothers to abandon suckling. After weaning, there is also a considerable mortality from diarrhea in consequence of improper feeding, and the insanitary conditions of the dwellings of the poor. Evidence is now accumulating that insanitary conditions, such

as manure heaps, ashpits, surface soil polluted by drainage, and dirty houses, all play a part in the production of infantile diarrhea. In recent years many agencies, municipal and voluntary, have come into operation for the purpose of instructing mothers in the care of their children and thus preventing the high mortality of infants. Of these agencies, the most important has proved to be women health visitors. These began to be appointed by local health authorities about fifteen years ago, but until recently their numbers have been small. At first their work was wanting in method. They heard of a birth, visited and talked with the mother, and visited occasionally again. But as the registration of the birth of a child need not be made for six weeks, the best opportunity for advice was often lost. In 1907, the Notification of Births Act was passed. This enables a local health authority to render compulsory notification within thirty-six hours to the health officer of all births. This act has now been adopted in many towns and has rendered the work of health visitors much more effective, as they visit the mother at once. A considerable reduction in infant mortality has resulted. For infant visitation, women trained in the nursing of infants, with a knowledge of midwifery and sanitation, are employed. Their visits take the form of friendly advice rather than inspection, and thus they avoid causing hostility among the mothers, who are encouraged to talk about their families and thus enable the visitors to form an estimate of the dangers to which each baby is exposed. The visitors weigh the babies periodically and record the result on cards. One most valuable result of the visits is to raise the proportion of breast-fed infants. Under the mistaken belief that the milk of the mother is insufficient for the infant, breast-feeding is often abandoned. The value of the work may be illustrated by taking the statistics of St. Helens, a large manufacturing town. In 1901, before the system of infant visitation, the percentage of breast-fed infants was 80; in 1901, when the system was in full working it was 95.3. This reduction of the percentage of artificially-fed infants from 20 to 6.7 has been accompanied by a fall in the mortality from diarrhea in infants under 1 year from 59 to 43.2 per 1,000.

PARIS LETTER

(From Our Regular Correspondent)

PARIS, Feb. 25, 1910.

The Health of the French Army

In discussing the appropriations for the army, Dr. Lachaud addressed the chamber of deputies on the causes of the morbidity in the army. In the first place, he said, one reason why the German army has 50 per cent. less morbidity than the French is because they have a larger supply to draw from, one recruit out of five men, while in France the recruit is selected from only four or three men. The inspectors are thus compelled to admit men to the military service who are below the average standard. Comparing the French army with the Belgian, where conditions otherwise are much alike, he called attention to the fact that since the barracks in Belgium have had the wooden floors replaced by cement floors, permitting daily cleansing, typhoid fever, measles, mumps and scarlet fever have entirely disappeared from the barracks and they are thus totally free from epidemics. An article recently appeared in a Paris daily, signed by M. F. Masson, a member of the French academy, claiming that the barracks in France are deadly: "*On meurt dans les casernes*" was the title of the article. He arraigned the medical officers of the army as responsible in large part for the high mortality in the barracks, but Dr. Lachaud protested that the army doctors are not responsible; they have to admit men to the service they know are unfit, their advice frequently is not heeded, and their number is too small for the work. Austria has one medical officer to each 238 men, Germany one to 288, Italy one to 294, while France has only one to 421. The total French force enrolled is now 606,303 men; the total number of horses is 141,436, and the horses have one veterinary surgeon to each 264 while the men have only one physician for each 421.

Aid for Medical Sufferers from the Flood

The Paris Society of Medicine has decided not to hold its annual banquet but to take up a special subscription for the benefit of physicians who suffered by the flood, the funds to be distributed directly by the administrative council of the society.

The executive board of the *Syndicat des médecins de la Seine* has voted to extend financial aid to physicians who have

suffered from the flood, loaning money to them without interest, irrespective of whether they belong to the organization or not.

Efforts to Influence Legislation on Medical Matters

The same organization was recently addressed by Dr. Vimont urging the members and physicians generally to confer with the candidates for the approaching elections and present to them the wishes of the medical profession in regard to legislation concerning the free choice of a physician by every citizen, the poor, the insured, the public functionaries, etc., and legislation in regard to medical expert testimony, striving to obtain pledges from the electoral candidates.

Professional Secrecy and the Mutual Benefit Societies

The *Union des Syndicats médicaux de France* has asked the minister of labor for the annulment of a requirement in the statutes of the mutual benefit societies exacting from their physicians a statement of the exact diagnosis of the diseases of their members. The minister has replied that he has just requested the societies in question to erase all such requirements from their statutes. Certainly these societies cannot have considered the bearing of a demand in opposition to the laws governing the medical profession. It was not absolutely necessary to carry the question before the minister of labor; the physicians might have stood on their legal rights and merely have refused to comply with the conditions imposed by the benefit societies.

The *Syndicat médical* of Paris has passed a resolution (1) that the physicians of organizations (benefit societies, municipalities, public and private enterprises, etc.) should not be bound in any case to state the diagnoses of the diseases of their patients; (2) that only the following formula should be used: "morbid state entailing an incapacity for labor of so many days, justifying the payment of the insurance against disease."

Typewriting and Chirography in Prescriptions

Dr. F. Marre recommends the use of the typewriter for prescriptions, especially long ones prescribing complex régimes and prolonged treatments. In such a prescription there are really two parts, one containing the immediate medicinal prescriptions and the other the dietary regulations. The second part, composed rather of advice than of formulas, is just that which the patient ought to be able to read and understand without a shadow of uncertainty. It might easily be typewritten at leisure from notes taken at the bedside of the patient, and would thus be complete, clear and easy to read; moreover, a duplicate, to be retained by the physician, could be easily made. Prescriptions for immediate use would continue, as in the past, to be made out by hand; but they should be always simple and short, containing not more than a paragraph as a rule. The danger of errors would thereby be much reduced.

The Increase of Medical Fees Recognized in the Courts

The Federations of the Physicians of Paris and of the Seine a few months ago decided to increase medical fees (*THE JOURNAL*, Nov. 6, 1909, lili, 1576). It is interesting to note that in a case which dealt with the rates of medical fees, tried in a local court of Paris, the judge took as a basis the scale fixed by the medical societies.

A Recent French Recipient of the Mary Kingsley Medal

The Liverpool school of tropical medicine has just awarded the Mary Kingsley medal to Dr. Raphael Blanchard, professor of parasitology and of medical natural history at the Paris college of medicine, in recognition of his services to the study of tropical medicine. Up to the present Professor Laveran has been the only French recipient of this high honor. Among the other recipients of the medal have been Lord Lister, Sir Patrick Manson, C. Finlay, D. Bruce, W. A. Haffkine, and Robert Koch.

Death of Prof. A. Bordier

Dr. Arthur Bordier, professor of natural history at the medical school of Grenoble, has just died, aged 69.

Honors for Medical Centenarian

Dr. J. C. Boullé of Saint-Valérien (Yonne) celebrates his hundredth birthday March 3 and the municipality is organizing imposing festivals in his honor on that date. His health is perfect.

BERLIN LETTER

(From Our Regular Correspondent)

BERLIN, Feb. 17, 1910.

Personal

Professor Olshausen will resign his position as director of the first gynecologic clinic of the Berlin university at the end of the summer semester. This determination is readily understood when we remember that Olshausen is 75 years old. Various persons have repeatedly expressed their astonishment that so old a man should still continue to operate. However, Olshausen has so far enjoyed unusual vigor and so it is quite excusable that he has been slow to consent to a cessation of his activity.

Professor Windscheid died a few days ago at Leipsic, aged 48, of intestinal cancer. This man so early deceased was distinguished as an investigator and teacher of nervous diseases, especially those due to traumatism. His death will also be sincerely regretted on account of his character.

Warning Against the Use of Raw Meat

As your readers will remember, about two years ago there occurred in the Rudolf Virchow Hospital an epidemic of meat poisoning which was referable to the use of raw ground meat. Under the authority of the department of education the scientific commission for medical affairs has taken up this matter and its report of the causes of the epidemic and the measures to be taken against it has just been published. The epidemic was due to the use of raw meat which had been infected with the bacteria of enteritis in some unexplained way and these bacteria had probably multiplied in the raw meat. Hence the commission warns against the use of raw meat and especially of raw ground meat. The supplying of raw meat as a foodstuff for institutions like hospitals and prisons is earnestly advised against. In accordance with this report the minister has required his subordinate officers to use their efforts to prevent the future use of raw meat as a foodstuff in such institutions.

International Exposition of Hygiene in Dresden

The preparations for the international exposition of hygiene for 1911 are already in active progress. On February 12 about 200 hygienists assembled in Dresden for a conference, among whom were the representatives of most civilized nations and the presidents of the various departments and sections. According to a report of the president of the directory of the hygienic exposition, privy counsellor for commerce Lingner (better known as the manufacturer of Odol), the exposition will include five departments: historical, scientific, popular, industrial and athletic. A systematic representation of the entire science of hygiene is to be furnished by the exposition. The historical department, the supervision of which has been accepted by the medical historian, Professor Sudhoff, will exhibit the history of hygiene from the earliest antiquity to the beginning of the last century. In the athletic department all forms of sport will be exhibited. An attempt is to be made in a scientific way to show the influence of athletics on the various organs experimentally, and for this purpose a special laboratory is being established. It is to be shown in this department that excessive athletics should be opposed and how this is to be done. Athletic competitions are to be held. Six hundred prominent firms have already signified their intended representation in the industrial exposition. The kingdom of Saxony and the capital, Dresden, have appropriated \$125,000 (500,000 marks) for the exposition, President Lingner has himself contributed a not inconsiderable sum.

Collective Investigation by the Imperial Health Office on Tuberculosis from Milk

The imperial health office in Berlin has ordered a collective report on the question what danger is imminent to man from the use of milk and milk products from cows with tuberculous udders and as a result of the official reports from the various states Weber has published an interesting report in the last number of the journal, *Tuberculosis Researches from the Imperial Health Office*. From the beginning of 1905 to April, 1909, 113 cases of tuberculosis of the udder were reported to the health office; 628 persons had used the milk of these cows, mostly for a long time. In 69 cases the milk and milk products were consumed raw, altogether by 360 persons, of whom 159 were children. Of these 360, five were indubitably infected with tuberculosis through the use of

the milk; among them two children between one and two years of age. In both cases the tuberculosis of the udder was very extensive. The children had taken the milk of these cows from one to one and a half years. In both cases the milk was used raw by all the members of the family, the parents and several children; all these people remained healthy. In the sick children there was merely an affection of the cervical glands in which tubercle bacilli of the *typus bovinus* were demonstrated by bacteriologic tests. There were no other symptoms. In addition to these positive determinations there were a number of doubtful cases reported in which there was a suspicion of a *perlsucht* which could not, however, be confirmed by bacteriologic investigation. In other cases the disease suspected to be tuberculosis was certainly demonstrated to be not tuberculosis. Among the 268 persons who used the boiled milk of cows with tuberculous udders, swelling of the cervical glands was found twelve times among 133 children and once among 135 adults; the number suspected of tuberculosis is relatively higher than among those who had used the milk raw. Finally Weber comes to the conclusion: The danger which threatens man through the use of milk and milk products of cows with tuberculous udders is very small compared with that which the man affected with open pulmonary tuberculosis imposes on his associates. The collective investigation of the imperial health office sustains therefore the view of Robert Koch that in the campaign against tuberculosis measures against the conveyance of the disease from man to man play the most important part.

VIENNA LETTER

(From Our Regular Correspondent)

VIENNA, Feb. 15, 1910.

The Distribution of Practitioners in Austria

A report of the official statistic committee contains a few figures which well illustrate the amount of work thrown on the shoulders of the *"Amtsarzt"* (the officer of health) and explains also why the financial position of physicians in Austria is not an enviable one. There were altogether, in 1908, not more than 12,050 graduated physicians in Austria itself (without Hungary) for a population of 29 millions or one physician per 2,500 inhabitants. Nearly 70 per cent. of these held public or municipal or corporation appointments; 18 per cent. were appointed by the state, 48 per cent. by public municipal bodies, the rest by the *Krankenkassen* (sick clubs) and other corporations. The distribution in cities was far from satisfactory from the standpoint of the income of the doctor; the figures are: one doctor for 300 inhabitants in Prague, for 500 in Graz, for 600 in Vienna, for 1,000 in Trieste. In the country districts the outlook is better. The general practitioner could reckon with from 2,000 to 3,000 persons as possible patients in 30 per cent. of the districts. But in the other districts it is quite different. In 20 per cent. the figures were one doctor for from 3,000 to 6,000 persons, in 25 per cent. there were from 6,000 to 10,000 inhabitants dependent on the services of one doctor, while there were 13 per cent. of the country districts where the number of such persons was between 13,000 and 17,000. Of course such conditions make it impossible to render the services in such a manner that it would satisfy both physician and patient, especially as often this physician is also an officer of public health too, whose duties encroach on his time for private practice. The impossible conditions are the more visible if one considers the area which the doctor is expected to "serve." While in some districts there is one doctor to every half a square mile (altogether in 4 districts) in 3 per cent. there is one doctor per 2 square miles, in 28 per cent. one doctor for 6 to 10 square miles, in 25 per cent. one doctor for from 10 to 20 square miles, in 35 per cent. one doctor for from 20 to 30 square miles, and there are even districts where in an area of nearly 40 square miles, one cannot find a doctor in case of need. The explanation for such an uneven distribution of medical men is to be found in the poverty of the rural population, who cannot afford to pay the doctor in a way which would induce able men to settle down among them more densely. Very aptly Professor Fraenkel puts it that the state takes better care of the spiritual welfare of its citizens than of their health, for in every village or parish, a chapel with a priest is indispensable. Nevertheless, the number of medical students is increasing, for the prospects to obtain an appointment are better now, it must be conceded, than they were before, and the wealth of the population is also increasing, although slowly. The new sickness insurance act, which will become law in a few years' time at the utmost, will necessitate the appointment of at least 1,200 new doctors, or about 10 per cent. of the entire number of practitioners, roughly speaking.

Miscellany

The Action of Radium on the Tissues.—The experiments of G. Guyot (*Centralbl. f. allg. Path. u. path. Anat.*, xx, 243, 1909) tend to show that the first action of radio-activity is one of stimulation of the vitality of the cells of the epidermis and of the fatty glandular tissue, which leads to a hyperplasia of these tissues. Soon, however, retrogressive processes set in. The entire process is one of acceleration of the normal cycle of cell activity in the epidermis. The normal slow replacement of the superficial cells by new cells from the germinal epithelium is greatly hastened by the stimulation of the radium rays, and there results an overproduction of cells and a consequent rapid involution in the newly formed cells. Within a short time the germinal epithelium seems to become exhausted and there follows a halt in the germination of new cells, while the rapid involution of the recently formed cells and the natural death of the more peripheral ones continue. This, as is evident, leads to a complete extermination of the epidermis. The muscular tissues seem to be particularly resistant to radio-activity. The experiments were carried out on mice. The animals were placed in a lead-lined satchel in an opening in the lid of which the metal capsule containing the radium was placed. The exposure lasted as long as forty-eight hours and the animals died from three days to seven months after exposure.

The Problem of the House Mosquito.—In New Jersey the work done in the salt marshes since 1904 has practically eliminated the migratory species of mosquito, says Smith (*Bull.* 216, *New Jersey Agricultural Exper. Station*, November, 1908), but the local breeding house mosquito still annoys to a greater or less extent, depending on favorable conditions of season and moisture. It breeds in one or two weeks in every conceivable sort of place where there is even the smallest quantity of stagnant water, and its extinction depends on constant vigilance in destroying its breeding-places. The impregnated female hibernates in cellars, garrets, cold rooms, dark and sheltered places, hollow trees, under loose bark, and even in burrows or holes in the ground. In the spring the eggs are laid on the surface of water and soon hatch. In cellars and similar inclosed places they may be killed by fumigation with phenol and camphor or by burning stramonium. All cisterns, rain-barrels, etc., should be kept covered and all pools drained and filled, or covered with oil. Even sewer catch-basins afford breeding-places for them and these should be looked after. In New Jersey water in which mosquito larvae breed is declared by statute to be a nuisance; local boards of health are given power to abate it and their orders may be enforced against municipalities as well as individuals.

Pneumococcus Colitis with Hyperpyrexia.—Porter, Munnery and W. Hale White (*Proc. Royal Soc. Med.*, December, 1909) report the case of a woman aged 31 suffering from a severe diarrhea with the passage of a considerable quantity of blood. Examination with the sigmoidoscope revealed a red, spongy mucous membrane with obvious oozing of blood. A diagnosis of acute hemorrhagic colitis was made. An appendicostomy was performed and the hemorrhage stopped by astringent irrigations through the appendix. Twelve hours after the operation the temperature was 105.6 F. and ran rapidly up to 109 in spite of sponging with ice water. Continued sponging and irrigation through the appendix with cold water brought the temperature down in the course of two hours to 100, and it later fell to 95, but the next day shot up again to 107. By the above methods it was kept between 101 and 103 until the twelfth day after the hyperpyrexia when the patient died. An examination of washings from the bowel with plain water showed *Bacillus coli* and other colon organisms, and pneumococci which were isolated and grown in pure culture, and to the latter organism was attributed the colitis. The lungs remained healthy, there were no cardiac murmurs, nor evidence of pneumococcus infection in any other part of the body.

Pharmacology

CACTUS GRANDIFLORUS

Report of the Council on Pharmacy and Chemistry

The Council voted that cactus grandiflorus should not be accepted for New and Nonofficial Remedies, and that a statement be prepared for THE JOURNAL giving the reasons for this action. Accordingly the following report has been adopted by the Council and its publication authorized.

W. A. PUCKNER, Secretary.

CACTUS GRANDIFLORUS

The therapeutic value of this plant has been variously estimated by different observers. Experimental evidence as to its action is scanty and no complete chemical examination has ever been made.

Reputable men have testified that some of the plants of the cactus family contain very active principles, but so far experiments seem to prove that cactus grandiflorus has neither the action of digitalis nor that of strychnin. The principal contributions, clinical and experimental, for and against the drug, are set out below.

EXPERIMENTAL EVIDENCE

O. H. Myers¹ worked with a product which he calls cactina and which he regards as the active principle of the drug. (As no such substance as cactina is described in any materia medica, it is impossible to state what Myers really used.) He found that it had a strychnin-like action and raised the blood pressure.

Hatcher comes to the conclusion: "Either Myers' work was a pure fabrication or he was dealing not with cactin but with a substance similar to the pellotin of Heffter, the action of which resembles that of strychnin to a certain extent."

E. Boinet and J. Boy-Teissier² experimented with an aqueous extract, an alcoholic extract, and with an alkaloid which they call "cactine." They concluded from three sets of experiments on frogs that extract of cactus produces, in ten minutes, a temporary increase in the heart's action which frequently repeated doses are required to maintain; and that large doses slow the heart and produce arrhythmia.

L. E. Sayre³ experimented with a preparation of cactus, made from the stem of the plant, by injecting it into the dorsal lymph space of the frog. There was seemingly an increase in the amplitude of the heart's action and an indication of a strengthened beat or increased force.

R. A. Hatcher⁴ states that it is possible that cactus grandiflorus, under certain conditions, may contain a principle with a strychnin-like action. But Hatcher made 10 experiments on frogs, 4 on cats, 6 on dogs, 2 on rabbits, and 1 on a guinea-pig, with Cactina pillets of the Sultan Drug Company and the cactin of the Abbott Alkaloidal Company. From 1 to 15 pillets in frogs and up to 25 in dogs were used at each dose. In no single instance was there any evidence of a digitalis-like or strychnin-like action, or, in fact, of any decided action of any kind whatever.

Gordon Sharp⁵ was unable to obtain either alkaloid or glucosid from the plant, but found a series of resins that caused contraction of the blood vessels of a frog. This was not a digitalis-like contraction, but depended, he believed, on simple acidity. On the heart of the frog the resins have little or no effect, comparisons being made with digitalis in the same animals. There is no proof that cactus grandiflorus itself shortens diastole, or in fact, that it has any special action on the heart muscle at all. Sharp experimented on himself with large doses of an extract made with alcohol 1 to 5, but got no noticeable results. He thinks that the plant may have some slight diuretic action.

Sayre submitted the preparation which he used in his experiments for more careful testing to E. M. Houghton, who reported that it had practically no action on the heart.

In commenting on Houghton's results, Reid Hunt said that they were confirmed by his own experiments. He did not deny, however, that the drug might have some therapeutic effect and that, in very large doses, it did affect the kidneys.

S. A. Mathews⁶ found one preparation of cactus (cactin—Abbott) absolutely inert so far as any effect on the heart is concerned. He found that cactina (Sultan Drug Co.) in very large doses depressed both the circulation and respiration. In this regard it differs from strychnin, and it has no resemblance to the action of digitalis, strophanthus or any of the heart stimulants. A dose of from 10 to 12 pillets administered intravenously to a 10 to 12 kg. dog exerted little or no influence on the heart or circulation; the larger dose may cause a slight fall in blood pressure. When 70 or more pillets were administered within two and a half hours the animal generally died.

The work of Boinet and Boy-Teissier also has been criticized by Hatcher on the ground that their most positive results were obtained with an alkaloid which no one at this day is able to prepare. The results quoted in this report, however, were obtained by the use of extracts of cactus so that it does not seem that they should be entirely rejected, whatever their value may be.

CLINICAL EVIDENCE

Clinical observations have been more abundant than exact, and a favorable action of the drug in some organic diseases of the heart has been reported; other observers would limit its use to functional arrhythmia, insisting that it is not a substitute for digitalis or aconite, but that it occupies a place distinct from either of those remedies.

P. W. Williams⁷ recommends cactus for functional heart disease, but, as a rule, found it useless in organic disease. He thinks it one of a class of remedies which act on the accelerator nerves and sympathetic ganglia, shortening the diastole and stimulating the spinal vasomotor nerve centers. Williams apparently relied on Myers for his knowledge of the pharmacologic action, and his paper is a fair example of the clinical studies of cactus.

Ellingwood⁸ claims that cactus is a cardiac tonic, acting on the accelerator nerves and heart ganglia, increasing muscular force and arterial tension. He recommends it in both organic and functional diseases.

Boinet and Boy-Teissier found that therapeutic doses of forty drops of tincture of cactus were without effect on the normal heart. In patients with noisy asystole (*asystolie bruyante*) the same dose produced no appreciable effect. In the period of latent non-compensation of true cardiac patients, from 80 to 100 drops a day increased the force of the failing heart. In patients with secondary heart disease with arrhythmia of nervous origin, daily doses of 80, 100 and 120 drops of the tincture were well tolerated for weeks; they seemed to increase the fulness of the pulse and regulated its rhythm. In spite of such large doses these observers never noticed any symptoms that could be attributed to a cumulative action. It must be remembered that the precise preparation of cactus which they used is not known.

Aulde⁹ recommends it as a cardiac tonic free from cumulative effects.

Gordon Sharp says: "The therapeutics of the subject, I think, are clear enough. Cactus grandiflorus cannot be included in our list of cardiac drugs. It is not even a simple stomachic tonic and at most all one can say is that it has small diuretic action."

Hatcher says: "Clinical testimony is so conflicting that between the extreme views of Gordon Sharp and those of Ellingwood there is room for an honest difference of opinion concerning cactus grandiflorus."

1. New York Med. Jour., 1891, llii, 681-683.

2. Bull. Gen. de Therap., 1891, cxxi, 343-349.

3. Am. Pharm. Assn., 1906, liv, 405.

4. THE JOURNAL A. M. A., Sept. 21, 1907, pp. 1021-1024.

5. Practitioner, London, 1894, iii, 444-446.

6. THE JOURNAL A. M. A., March 21, 1908, I, 956-958.

7. Practitioner, London, 1891, xlvii, 266-273.

8. Med. Rec., New York, 1905, lxvii, 857.

9. Practitioner, London, xlvii, 223; Therap. Gaz., 1890.

Matthews himself took 100 granules of cactin (1/67 gr.—1 mg. each), 25 every four hours, without experiencing the least effect.

CONCLUSIONS

Reliable conclusions regarding the therapeutic use of *cactus grandiflorus* are rendered difficult on account of several factors.

1. It is uncertain what part of the plant contains the active principle if one exists; and its nature is unknown. The National Standard Dispensatory states that its "activity must be confined to the flower in some special stage of its development or to a certain part of it or to some parts gathered with it." This uncertainty may explain the negative results obtained by some observers but it makes the drug one that cannot be generally relied on and gives an excellent opportunity for the exploitation of proprietary preparations.

2. Some of the experimental work and much of the clinical evidence has been obtained and published under proprietary auspices. For this reason many of the therapeutic claims made for the drug must be viewed as merely the reflection of the exaggerated statements made by the advertisers of proprietary preparations.

3. The value of clinical evidence when unsupported by animal experimentation is much diminished by the tendency of enthusiastic and untrained observers to attribute to the drug given the effect really due to general remedial measures, psychic suggestion and so forth. While it must be admitted that valuable remedies may exist whose therapeutic properties cannot be revealed by animal experimentation, yet in the absence of such experimental evidence conclusions should be drawn with extreme caution.

Bearing these conditions in mind, the following statements seem to be justified: (a) The botanical, chemical and pharmacological properties of *cactus* are not sufficiently determined to make any available preparation a reliable remedy. (b) There is some evidence that *cactus* may be capable of affecting the animal heart and nervous system, but its action is not that ordinarily attributed to it. It does not increase the force of the heart beat. (c) While there is some clinical testimony as to its usefulness in functional diseases of the heart, the indications for its administration are at present too uncertain to afford a safe basis for recommending it.

4. While the drug may be deserving of further experimental and clinical investigation, this should be carried on in reliable pharmacologic laboratories and in clinics provided with facilities for exact observation.

HABITINA

A "Morphin Cure" that Makes Drug Fiends

A chapter in the Great American Fraud entitled "The Scavengers" deals with those individuals who claim to cure the drug habit by mail. Mr. Adams apostrophizes them thus:

"At the bottom of the noisome pit of charlatanism crawl the drug-habit specialists. They are the scavengers, delving amid the carrion of the fraudulent nostrum business for their profits. The human wrecks made by the opium- and cocaine-laden secret 'patent medicines' come to them for cure, and are wrung dry of the last drop of blood. By comparison with these leeches of the uttermost slime, the regular 'patent medicine' faker is a pattern of righteousness. . . . They deliberately foster the most dreadful forms of slavery, for their own profit. They have discovered a money-making villainy worse than murder, for which, apparently, there is no legal penalty."

Of the "cures" themselves he says:

"Practically all of these advertised remedies are simply the drug itself in concealed form. No effort is made to save the patient. The whole purpose is to substitute for the slavery to the drug purchased of the corner pharmacist the slavery to the same drug, disguised, purchased at a much larger price from the 'Doctor' or 'Institute' or 'Society.'"

One of these vicious and dangerous "cures" is "Habitina," a nostrum advertised by the Delta Chemical Co., of St. Louis,

for the "positive cure" of the "morphin and other drug habits." The Delta Chemical Company is, according to reports, practically owned by one Ryland C. Bruce, who was previously in the insurance business; the "chemical company" is said to have its preparation put up by other houses according to demand.

A few of the claims made for "Habitina" are:

"An Antidotal, Eliminative and Supportive Compound."

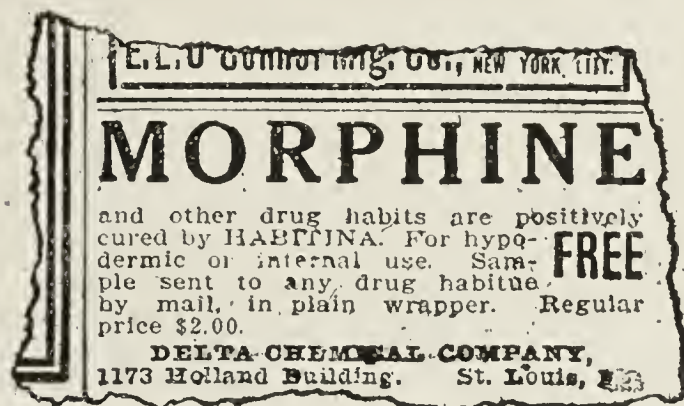
"Does not Poison the System Like Plain Morphine."

"Gives Pleasant Stimulation and Perfect Support from First Dose."

"A Gradual Reduction Treatment for all Pain-Alleviating and Sleep-Producing Drugs."

The advertisements state that a "free sample" of this "cure" may be had on application; and this is true. Those writing for it receive a half-ounce bottle of liquid containing eight grains of morphin sulphate and four grains of heroin hydrochlorid.

This means that under the present lax state of affairs any man, woman or child who cares to go to the trouble of writing for this stuff can, at a total expenditure of two cents, get enough morphin to kill seven or eight people. There is not a reputable drug store in the United States that would dare to give a layman eight grains of morphin on no other authority than his simple request. Yet the human vultures that carry on this body- and mind-destroying traffic in "drug cures" are permitted under our present laws—or lack of laws—to put



A typical advertisement of "Habitina." While it implies that free samples will be sent only to drug habitues no such discrimination is made in scattering this deadly poison.

into the hands of the ignorant or the criminal, for the mere asking, the most dangerous and treacherous of poisons.

Probably only those physicians whose work brings them in daily contact with the pitiful wrecks resulting from the misuse of narcotics can appreciate to the full the ghastly irony of the claims made by the purveyors of this poison that "Habitina is intended strictly as a treatment and not as a substitute." What actually occurs is well shown in the report of a case of blindness resulting from the use of this dangerous nostrum that appears on another page.¹ Here, the patient before taking "Habitina" was ingesting 6 grains of morphin daily; after taking this "morphin cure" she was taking 16 grains of morphin and 8 grains of heroin a day. A "Gradual Reduction Treatment" indeed! Another physician wrote to THE JOURNAL regarding some patients who had taken "Habitina:"

"These patients are in worse mental condition than before; without 'Habitina' they are miserable and cannot derive satisfaction from even twice the dose of morphin."

Such results may be expected when morphin habitues attempt to cure themselves with a "remedy" that is itself loaded with morphin and heroin. That poor helpless wrecks of humanity are daily being dragged down still deeper into the slough of despond by this damnable product cannot be doubted. Why can such things be? Because of the insatiable greed on the part of the few who engage in this villainous traffic, and of the intolerable negligence on the part of the many who stand idly by and make no effort to enact laws that shall stamp it out.

1. Stieren, E.: Blindness from Heroin in the Nostrum Habitina, p. 869, this issue.

List of Additional Pharmacopeial Delegates

Dr. Murray Galt Motter, secretary, Washington, D. C., sends the following list of delegates to the Pharmacopeial Convention of 1910, supplementary to that in THE JOURNAL, Feb. 26, 1910. He states that it is offered for publication "without prejudice," it being understood that such publication does not of necessity mean that these delegates will be received and seated by the convention, as their credentials have not yet been passed on by the Committee on Credentials and Arrangements.

Attention is invited to a ruling of the Committee on Credentials and Arrangements, that it can "not recognize the right of any one individual to represent more than one organization or institution."

HOWARD UNIVERSITY MEDICAL COLLEGE, DISTRICT OF COLUMBIA.—William H. Seaman, John W. Mitchell, J. Herve Purdy; alternates, D. S. Lamb, Collins Marshall.

HOWARD UNIVERSITY PHARMACEUTIC COLLEGE.—Paul Bartsch, George N. Perry, Herbert C. Scurlock; alternates, Edgar B. Keener.

GEORGIA PHARMACEUTICAL ASSOCIATION.—Max Morris, George D. Case, R. L. Palmer.

SOUTHERN COLLEGE OF PHARMACY, ATLANTA.—R. C. Hood, H. Crenshaw, William B. Freeman; alternates, J. N. Brawner, G. M. Niles.

HIGHLAND PARK COLLEGE OF PHARMACY, DES MOINES, IOWA.—O. H. Longwell, S. R. Macy.

KENTUCKY PHARMACEUTICAL ASSOCIATION.—C. Lewis Diehl, L. A. Broan, James H. Martin; alternates, James O. Cook, G. Orville Patterson.

LOUISIANA STATE PHARMACEUTICAL ASSOCIATION.—Philip Asher, F. C. Godbold, Adam Wirth; alternates, J. A. Lengendre, A. O. Kaczoroski, M. T. Breslin.

NEW ORLEANS COLLEGE OF PHARMACY.—M. T. Breslin, C. D. Sauvinet, A. O. Kaczoroski; alternates, A. di Trapani, John E. Scott, George W. McDuff.

MAINE PHARMACEUTICAL ASSOCIATION.—Charles H. Davis, Frank R. Partridge, E. S. Everett; alternates, George O. Tuttle, Frank T. Crane, H. D. Pennell.

BALTIMORE MEDICAL COLLEGE.—William Caspari, Charles O'Donovan.

COLLEGE OF PHYSICIANS AND SURGEONS, BOSTON.—Ephraim Cutter, I. E. Leonard, Charles Edward Buck.

MASSACHUSETTS STATE PHARMACEUTICAL ASSOCIATION.—Charles F. Nixon, Ernest O. Engstrom, F. A. Hubbard; alternates, L. G. Heimitz, Walter S. Doane, L. A. Lamson.

MASSACHUSETTS COLLEGE OF PHARMACY.—Elie H. LaPierre, Irving P. Gammon, Julian W. Baird; alternates, Herman Heinritz, C. Herbert Packard, William H. Glover.

MICHIGAN STATE PHARMACEUTICAL ASSOCIATION.—Leonard A. Seltzer, J. M. Francis.

UNIVERSITY OF MICHIGAN, SCHOOL OF PHARMACY.—Walter H. Sawyer, J. O. Schlotterbeck, A. B. Stevens; alternates, S. Lawrence Bigelow, O. C. Johnson, E. D. Campbell.

MISSISSIPPI STATE MEDICAL ASSOCIATION.—S. Myers, P. M. Rowland; J. A. S. Bennett.

MISSOURI STATE MEDICAL ASSOCIATION.—O. A. Wall, R. T. Sloan, J. Block.

UNIVERSITY OF MISSOURI, SCHOOL OF MEDICINE.—W. O. Emory, H. D. Shantz, W. H. Schultz.

WASHINGTON UNIVERSITY MEDICAL SCHOOL.—Henry M. Whelpley.

NEW JERSEY COLLEGE OF PHARMACY.—Rudolph Breeves, Adolph Marquier, J. C. Gallagher; alternates, William O. Kuebler, Albert Plaut, Philemon E. Hommel.

NEW MEXICO MEDICAL SOCIETY.—C. Taylor Goodman, C. G. Duncan, G. K. Angle; alternates, A. L. Breeding, F. F. Doepp, H. M. Smith.

CORNELL UNIVERSITY MEDICAL COLLEGE.—Robert A. Hatcher, Alexander Lambert, Warren Coleman.

NEW YORK COLLEGE OF PHARMACY.—Albert Plaut, George C. Dickman, Henry H. Rusby; alternates, Thomas F. Main, C. O. Bigelow, William Mansfield.

JEFFERSON MEDICAL COLLEGE OF PHILADELPHIA.—H. A. Hare, J. W. Holland, H. A. Thornton; alternates, Oscar Wilson, Leighton F. Appleman, Alfred Heineberg.

WOMAN'S MEDICAL COLLEGE OF PENNSYLVANIA.—Arthur A. Stevens.

TEMPLE UNIVERSITY, MEDICAL DEPARTMENT.—Horace Binney Morse, Mervyn, Ross Taylor, Earl L. McDaniel; alternates, B. B. Rogers, R. S. Dorsett, G. M. Ilman.

ALLEGHENY COUNTY MEDICAL SOCIETY.—Thomas Turnbull, Jr., William J. McAdams, A. J. Barchfield; alternates, J. C. Burt, T. W. Grayson, A. R. Matheny.

PHILADELPHIA COLLEGE OF PHARMACY, ALUMNI ASSOCIATION.—Charles H. LaWall, E. Fullerton Cook, Joseph W. England; alternates, Clement P. Lowe, W. L. Cliffe.

RHODE ISLAND MEDICAL SOCIETY.—William J. McCaw, Charles W. Higgins, Simeon Hunt; alternates, William E. Wilson, James F. Duffy, George W. Bailey.

SOUTH CAROLINA MEDICAL ASSOCIATION.—C. P. Aimar, C. L. Napier.

TENNESSEE PHARMACEUTICAL ASSOCIATION.—Richard Smith, Samuel C. Davis, J. O. Burge; alternates, R. White, F. Ward, D. Rosenthal.

TEXAS STATE MEDICAL ASSOCIATION.—C. L. Milburn, S. J. Francis, W. Clarence Kluttz.

TEXAS PHARMACEUTICAL ASSOCIATION.—J. C. Buckner, E. G. Eberle, Herman Nester.

VIRGINIA PHARMACEUTICAL ASSOCIATION.—C. B. Fleet, John E. Jackson, Gordon Blair; Alternates, H. C. Littlejohn, George T. Mankin, C. D. Fox.

Correspondence

An Attempt to Blackmail Physicians

[The following communication concerning an attempt to blackmail physicians is published with a two-fold purpose. Its publication will cause physicians to be on their guard against similar schemes, which may be attempted in any community, and it will serve as a caution to physicians, in view of the fact that the laity is inclined to believe that physicians sometimes recommend operations when they are not needed.—Ed.]

To the Editor:—There has been bad feeling between many of the physicians of Racine and the Kradwell Drug Company, the cause of which or who is at fault has no particular bearing in this case. In this letter I want to show how a blackmailing scheme, intended to be operated over a broad extent of this country was nipped in the bud.

March 28, 1909, a man introducing himself as James Rounds came into my office and said he feared he had appendicitis. I examined him and found his temperature normal and pulse 80. His actions were peculiar. I thought perhaps he had taken morphin for pain. I could discover no objective symptoms, but he claimed there was a marked tenderness on pressure at McBurney's point. I informed him that if he had had appendicitis, he was over the acute stage, and by going to the hospital for a few days, under close diet, he would probably get over this attack without an operation. He gave a history of repeated attacks, each of which laid him up from a week to ten days, and stated that he wished to have an operation and avoid further attacks. He informed me that on account of trouble with his wife and brother-in-law his money was tied up, but that if a letter were written explaining his condition the brother-in-law would send the money to pay for an operation. I wrote the letter. In a few days I found that three other physicians, Dr. S. C. Buchan, Dr. G. Bjorkman and Dr. L. E. Fazen had been visited by the same person and they had written similar letters, his stories varying a little, but always giving a history that indicated appendicitis.

We had all heard rumors through leaks from the Kradwell Drug Company of something that was to be done to the erring doctors. Nothing, however, was heard directly until Nov. 17, 1909, when the above mentioned doctors and myself received the following letter, with an inclosed clipping¹ from a newspaper:

Chicago, Ill., Nov. 17, 1909.

Dr. Bjorkman, 704 Park Ave., Racine, Wis.:

Inclosed you will find an article from the *Chicago Record Herald* of Nov. 13, 1909. This will doubtless recall to your mind, the 28th of March, 1909, when you examined one James Rounds at your office, Racine. You will no doubt remember, that three days after the examination you gave a signed statement to the effect that an immediate operation of my appendix was necessary, showing your intention of operating in case the fee was guaranteed. You may not be surprised that your opinion was contradicted within two days after your examination by several reliable physicians in Racine and Chicago. The accompanying article will show you why you was given a chance to examine Mr. Rounds. Being the principal in this case, the result of my investigation in Racine is in my possession. If you would be interested in having your statement and result of my investigation withheld from publication, you may communicate with Theodore Marrin, Private Secret Service Operator, 159 East Erie Street, Chicago.

P. S.—Theodore Marrin and James Rounds are the same man.

The letters were practically the same and were all turned over to the United States postal authorities, but were hardly deemed strong enough to convict the writer. Correspondence was carried on with Marrin and arrangements were made by me to meet him at the Great Northern Hotel, December 6. I went to the hotel as arranged, registered, and went to the room provided for me by the postoffice inspectors, who were in an adjoining room.

In about fifteen minutes Marrin came in and identified himself by the letters written to him. He told me what has since been confirmed by G. V. Kradwell on the witness stand, that he was introduced to the Kradwell Company by Clarke Helme Loomis, and engaged by them to investigate certain doctors. He further told me that there were two lists, the

1. Editor's Note: The article referred to is a sensational one based on an alleged interview with Dr. G. G. Burdick, Chicago, who was quoted as saying that many patients have been operated on by physicians to correct ailments, particularly appendicitis, which they never had, and that the operations sometimes consist only in an incision in the skin and no complete operation is performed. This is done, it was charged, not through a mistake in diagnosis, but for the purpose of making business.

physicians that he was to get evidence against and the ones that were favorable to the Kradwell Drug Company, and that his instructions as to what he should tell the physicians on each list were different. The ones he was to get evidence against were Doctors Buchan, Bjorkman, Pope, Collins, Fazen, Taylor, and he thought Nott, and he said boastfully, "I got every one that I went after." Drs. DePierre, Williams, Brown and McNitt were not on the list. In fact, Loomis went to McNitt and Brown with Marrin.

To substantiate his statement, that his instructions were different in regard to the two lists, he showed me a letter from Loomis, reading as follows:

Racine, Wis., April 20, 1909.

Mr. Theodore Marrin, 363 E. Ohio St., Chicago, Ill.

Dear Sir: I am enclosing herewith letter which will introduce you to A. J. Ochsner, M.D., 710 Sedgwick St., Chicago. This is the other physician that I spoke about, and I would like you to go and have yourself examined by him as per our conversation. You need not try to mislead him by statements as to your condition, as in that case he might become suspicious and not make the examination at all—or not give me any report on same. He will send his report direct to me. The time to see him will be between four and six o'clock any day, but if you will call him up and make an appointment you will not have to wait to see him when you do call. Please attend to this as soon as possible and oblige.

Very truly yours,

CLARKE HELME LOOMIS.

Dr. DePierre was at that time (1909) doing business with the Kradwell Drug Company, but since he is not so closely associated with them. I asked Marrin why the Kradwells had not published the letters. He answered that they were afraid to do so, as they had been told by their friends that it would hurt their business.

The last day Marrin was in the employ of the Kradwells in Racine he was instructed to get T. W. Thiesen, of the Red Cross Drug Company, Kradwell's strongest competitor. He represented himself as Dr. Hanson, of Chicago, who wished to locate in Racine, became confidential, and told Mr. Thiesen of the large commissions the Kradwells had offered him, but Mr. Thiesen told him he had better stay by the Kradwells.

I asked Marrin how much he wanted to keep the matter quiet and keep it out of the papers. He wanted me to set a price, but I could not do it, so he agreed to take \$600 from four of us, \$150 from each, and if the money was not paid he would publish the letters in the Racine papers. If they refused to publish them he would publish them in the *Chicago American* and would distribute them thoroughly in Racine. If I paid him, he would omit my name and only publish the letters of those who did not pay him. I informed him that his telegram came after banking hours, that I only had a letter of credit on New York, which I showed, and \$50 in cash, but that I could give him a check. This he did not want, so I told him I would give him \$40 on account. He said he was of a very suspicious nature, and looked under the bed and in the closet before taking the money, which was marked. He folded it and put it in his pocketbook and the pocketbook in his pocket. Just then Inspector Mullen came in from the next room. Marrin tried to get rid of the money, but didn't have time. I opened the door and let Inspector Germer in from the hall. Marrin admitted writing the letters and was taken to the federal station, underwent an examination, and was brought before the grand jury the next day and promptly indicted.

His case was called for trial Dec. 19, 1909. The testimony of the physicians substantiated the statements made to me by Marrin that there were two lists. To the physicians who were not on what the district attorney designated as the black-list, no mention of appendicitis, no symptoms of same, and no history of repeated attacks were given. It is unnecessary to say that the defense did not call Dr. Ochsner.

Dr. Lowell of Rogers Park, who also examined Marrin, was subpoenaed by the defense, but on hearing the testimony in the court-room for a few minutes made the attorney understand that he would not make a good witness for the defense and was excused.

Clarke Helme Loomis on the stand said, the purpose of the investigation stated to him (Marrin) by the Kradwell Drug Company was to bring to light certain alleged practices by certain physicians and certain druggists in Racine contrary to public policy and to the detriment of the Kradwell Drug Company.

G. V. Kradwell testified that he named the doctors he wanted investigated—i. e., Drs. Bjorkman, S. C. Buchan, Fazen, Pope, Collins—and there might have been others.

In face of all this, G. V. Kradwell, in a communication to the three newspapers of this city, states that Marrin was never employed by the Kradwell Drug Company nor was he ever paid money by them, nor did he admit having employed Mr. Marrin. Mr. Kradwell further states that he is more than satisfied with the evidence he has, which was collected solely as a protection to his firm and to the people of Racine. It is unnecessary to comment on this statement.

The defendant was found guilty and sentenced to two years at Fort Leavenworth and fined \$750. Judge Landis, in sentencing the prisoner said that Mr. Kradwell was in bad company. You have heard the old saying, that birds of a feather, etc.

In justice to the other druggists of this city, I will say that a number of them were approached and some even offered inducements to go into the so-called investigation, but would have nothing to do with it.

G. V. Kradwell is a member of the State Board of Pharmacy, but was not the choice of the state society.

The contemptible feature of this transaction is the procuring of a private detective without character to deceive certain reputable physicians and attempting to secure opposing opinions from others, not going to all under the same conditions, but endeavoring by this means to bring into disrepute those who had fallen under the ban of the Kradwell Drug Company.

E. A. TAYLOR, M.D., Racine, Wis.

Omit Whisky and Brandy from the Pharmacopeia

To the Professors of Materia Medica and Therapeutics in the Medical Colleges, and to the Medical Delegates to the Pharmacopoeial Convention:

The Department of Medical Temperance of the National Woman's Christian Temperance Union respectfully requests that you consider carefully the following arguments for the omission of whisky and brandy from the next revision of the Pharmacopeia, and requests that you use your influence to secure this:

1. The Pharmacopeia is claimed to reflect the best medical practice of the time. This department has collected statistics from hospitals all over the world, and the opinions of many of the leading physicians of this and other countries. These statistics show conclusively that the use of alcoholic liquors as medicinal agents has diminished in all hospitals and in the practice of most physicians; in fact many physicians state that they never have occasion to prescribe alcohol in any form. It seems to us that in view of these facts the retention of whisky and brandy in the U. S. P. places the medical profession in a false light. In this connection it may be noted that only two pharmacopeias recognize whisky, that of Greece and our own. If a substance which has been known so well, and for so long a time, possessed valuable medicinal properties, is it conceivable that other nations would not have included it in their pharmacopeias? The therapeutic committee of the British Medical Association has recommended the omission of brandy (the only distilled liquor in the British Pharmacopeia) from the British Pharmacopeia.

2. The retention of whisky and brandy in the Pharmacopeia deceives the public in regard to the medicinal value of these substances. One of the strongest arguments advanced by the liquor dealers and the manufacturers of "patent medicines" is that whisky and brandy, or the ingredients of the "patent medicines," are contained in the Pharmacopeia, and thus receive the sanction of the medical profession. It is difficult for the individual physician, who is advising his patient against the use of whisky and "patent medicines," to counteract the false impression thus conveyed. W. C. T. U. workers find the same difficulty in trying to teach women to avoid the self-prescription of alcoholic liquors and "patent medicines," a work which has the endorsement of all good physicians.

3. As is well-known, the whisky interests are thoroughly organized, and are using every means possible to secure the endorsement of the medical profession for the use of alcohol. There is nothing else in the Pharmacopeia which has such

vast commercial interests as whisky; it is probably more important commercially than all of the drugs in the Pharmacopeia combined, and it is certain that those interested in it will use every effort to get it endorsed by the convention. Is it not unfair, both to the medical profession and to the public, which looks to the medical profession for guidance in such matters, for a substance of such extremely limited value, if it has any, medicinally, to occupy such a conspicuous position? It seems to us unfortunate for the Pharmacopeia to be exploited commercially. The chairman of the present Committee of Revision has frequently spoken of the bribes (in one case amounting to \$5,500) offered him if he would change certain words in the Pharmacopeia. It would be most unfortunate for the influence of physicians for any suspicion to be cast on the motives governing the attitude of the Pharmacopeia, and we believe that there is no subject in which this attitude could be more easily misunderstood and misrepresented than in the case of whisky.

There are other preparations in the U. S. P. to which we should like to direct your attention. The International Conference for the Unification of Formulas for Potent Medicaments urged that no such medicaments be made in the form of wines; this action was taken entirely for scientific reasons. Nearly all of the pharmacopeias have discontinued the use of wine as a pharmaceutical agent. The U. S. P., however, contains at least eight such wines, one of which, wine of coca, has the reputation of being used as a beverage rather than as a legitimate drug. Others of these wines are, no doubt, used for beverage purposes also. May we not urge you to use your influence in securing the omission of these preparations which are admitted to be unscientific, and which we know are a foe to temperance, and which place the medical profession in a false light, that of being on the side of the liquor-seller in the present struggle against intemperance?

MARTHA M. ALLEN, Superintendent of Medical Temperance for the World's and National W. C. T. U., Marcellus, N. Y.

Wanted: Relief or Cure for Progressive Muscular Atrophy

To the Editor:—A man of means has a member of his family afflicted with progressive muscular atrophy, the diagnosis having been established with certainty after consultation with some of the highest neurologic authorities of New York City and various cities of Europe. These physicians are unanimously of the opinion that the case is incurable, inasmuch as, up to the present, there has been published no form of treatment or medication which is positively known to have cured or arrested the inroads of this malady.

This man wishes to spare no effort to bring relief. He believes that perhaps, somewhere, some physician may have successfully hit on some method of curing a patient with progressive muscular atrophy, but through his inability to corroborate his results, owing to rarity of cases or through modesty, or for fear of being discredited, has failed to publish a report of his case. This man's idea is to try to bring this record to the surface by making an appeal to the profession through THE JOURNAL.

The case itself presents the characteristic picture and is typical of progressive muscular atrophy in every particular. The patient is fifty years old, married, and in excellent general health. About one and one-half years ago, the disease made its appearance in the left hand, progressed, and within a few months involved the right hand. Its progress since has been very slow. The family of this patient wish to announce that any physician who supplies a complete history and detailed description of the method of treatment he may have successfully used in any case of progressive muscular atrophy, the trial of which method leads to the cure or arrest of the disease in their relative, will be rewarded by a liberal cash prize.

Requests for further particulars and replies should be addressed to

ENQUIRER,

Care of THE JOURNAL A. M. A.

[COMMENT: The above letter is from a New York physician, acting for a wealthy New York merchant, who has a sister suffering from the disease mentioned. Last December

this merchant, through his physician, sent us an advertisement for insertion in THE JOURNAL. This advertisement offered a considerable reward for a cure for the disease. The advertisement was refused and reasons given. Three or four weeks afterward the merchant wrote:

"My sister is now being treated by a very reputable doctor, who has succeeded not alone in stopping the development of a similar trouble, but has placed his patients on the road to recovery. With two of these patients we had a personal interview, and therefore, we hope that the same favorable results will be accomplished with my sister."

Thus the matter ended until the receipt of the letter which we have quoted above. Whatever replies are received will go through the hands of the family physician.—Ed.]

The von Recklinghausen Testimonial

To the Editor:—National committees have been formed to receive contributions from the friends and former students of Prof. F. von Recklinghausen, who three years ago retired from the professorship of pathologic anatomy which he had held with distinguished success for thirty-five years in Strassburg, where he is still working with undiminished energy and industry in completing investigations begun over ten years ago.

In conformity with his known preference, the funds contributed are to be used for a "von Recklinghausen Foundation" for educational and scientific purposes, but the determination of the precise terms and uses of the foundation is to be left to Prof. von Recklinghausen.

The opportunity is given to his American friends, admirers and students, who desire thus to honor this great teacher and master of pathologic anatomy, to send their names and contributions either to one of the undersigned members of the American committee or to the "*Aktiengesellschaft für Boden- und Kommunkredit*" in Strassburg i. Els., Germany. The receipt of contributions, which will close on May 1, will be duly acknowledged.

J. GEORGE ADAMI, Montreal; WILLARD BARTLETT, St. Louis; F. FORCHHEIMER, Cincinnati; G. FÜTTERER, Chicago; A. JACOB, New York; W. OPHÜLS, San Francisco; B. SACHS, New York; JAMES TYSON, Philadelphia; W. H. WELCH, Baltimore; FRANCIS H. WILLIAMS, Boston.

The Public Service

Medical Department of the Army

Changes for the week ended March 5, 1910:

Snyder, Craig R., capt., granted leave of absence for 2 months.
Oliver, Robert T. E., and S. D. S., February 24, par. 1, S. O. 288, Dec. 11, 1909, War Dept. is so amended as to assign him to duty and station at Fort Hamilton, N. Y., instead of Fort Hancock, N. J.
Pillsbury, Henry C., lieut., leave of absence extended 1 month.
Truax, Jesse P., 1st lieut., M. R. C., relieved from further duty at Fort Ward, Wash., and will proceed to his home. He is relieved from active duty in the Medical Reserve Corps, to take effect April 5, 1910. Leave of absence extended to include April 5.
Lafamme, F. L. K., dental surgeon, left Fort Sheridan, Ills., en route to Philippine Islands for duty.
Jones, Percy L., capt., granted 4 months leave of absence, to take effect on his arrival in the United States.
Huggins, John B., capt., granted 20 days' leave of absence about April 1, 1910.
Stallman, George E., dental surgeon, left Fort Logan H. Roots, Ark., en route to station at Fort Sam Houston, Tex.
Graham, George D., dental surgeon, reports for temporary duty at Fort Crook, Neb.
Maddux, Henry C., 1st lieut., M. R. C., ordered to Fort Monroe, Va., for duty.
Marietta, Shelley H., 1st lieut., M. R. C., ordered to Fort Des Moines, Iowa, for duty.
McLaughlin, William F., 1st lieut., M. R. C., ordered to Fort Hancock, N. J., for duty.
Pulver, Arthur L., 1st lieut., M. R. C., ordered to Fort Porter, N. Y., for duty.
Register, Edward C., 1st lieut., M. R. C., ordered to Fort Du Pont, Del., for duty.
Whitham, Jay D., 1st lieut., M. R. C., ordered to Plattsburg Barracks, N. Y., for duty.

Medical Corps of the Navy

Changes for the week ended March 5, 1910:

Furlong, F. M., surgeon, orders of February 14, modified, unexpired leave revoked, ordered to duty at Naval Hospital, Boston.
Leys, J. F., surgeon, detached from duty with department of sanitation, Canal Zone.

Bell, W. H., surgeon, ordered to duty with department of sanitation, Canal Zone.

Garrison, P. E., asst.-surgeon, detached from duty under instruction at Naval Medical School, Washington, D. C., and ordered to duty at the Naval Hospital at that school.

Brown, E. M., P. A. surgeon, detached from Naval Recruiting Station, Los Angeles, Cal., and ordered to the Naval Station, Guam, M. I., via *New Orleans*.

Straeton, R. J., asst.-surgeon, detached from duty at Naval Station, Guam, M. I., and from duty on board the *Supply*, and ordered to Washington, D. C., for examination for promotion.

Munger, C. B., P. A. surgeon, detached from the Naval Station, San Francisco, and ordered to the Naval Recruiting Station, Los Angeles, Cal.

Hermesch, H. R., asst.-surgeon, detached from the *California*, and ordered to the Naval Training Station, San Francisco.

Public Health and Marine-Hospital Service

Changes for the week ended March 2, 1910:

Wasdin, Eugene, surgeon, granted 1 month's leave of absence from Feb. 22, 1910, on account of sickness.

Magruder, George M., surgeon, reassigned to duty at Portland, Ore., effective Feb. 23, 1910.

Cumming, Hugh S., P. A. surgeon, directed to proceed to Cape Charles Quarantine Station, Va., and assume command. Granted 7 days' leave en route to station.

Lunsden, L. L., P. A. surgeon, directed to proceed to Berkeley Springs, W. Va., on special temporary duty.

Phillips, W. C., P. A. surgeon, on being relieved by Assistant Surgeon H. J. Warner, directed to proceed to Fort Stanton, N. Mex., and report to the medical officer in command for duty and assignment to quarters.

Roberts, Norman, P. A. surgeon, granted 1 day's leave of absence, Feb. 26, 1910, under Paragraph 191, Service Regulations.

Warner, H. J., asst.-surgeon, on being relieved by Passed Assistant Surgeon Hugh S. Cumming, directed to proceed to Arundel Cove, Md., and report to the Superintendent, Revenue-Cutter School of Instruction, for duty.

Kolb, Lawrence, asst.-surgeon, granted 2 days' leave in February, 1910, under Paragraph 191, Service Regulations.

Burland, B. W., acting asst.-surgeon, granted 7 days' leave of absence from March 1, 1910.

Robertson, Herman, acting asst.-surgeon, granted 6 months' leave of absence, without pay, from March 1, 1910.

Stewart, W. J. S., acting asst.-surgeon, granted 30 days' leave of absence, without pay, from Feb. 23, 1910.

Townsend, F., acting asst.-surgeon, granted 12 days' leave of absence from Feb. 23, 1910.

Association News

NEW MEMBERS

List of new members of the American Medical Association for the month of February, 1910:

ALABAMA

Burns, W. A., Birmingham.
Farill, J. P., Farill.
Gaines, Tonhuin, Mobile.
Holliday, W. H., Birmingham.
McCall, D. T., Mobile.
McClendon, H. L., Waverly.
Newburn, G. W., Pritchard.
Stallings, H. S., Troy.
Tisdale, M. L., Mt. Vernon.
Ward, H. S., Birmingham.

ARKANSAS

Cansey, G. A., Swifton.
Chatlin, C. W., Moro.
Hathcock, A. M., Harrison.
Johnston, Wm., Hardy.
McGraw, S. J., Wesson.
Nishett, Frank, Brookland.
Osborne, J. M., Howell.
Stinson, H. C., Little Rock.
Wadley, B. L., Little Rock.

CALIFORNIA

Berg, Adolph, San Francisco.
Lissner, H. H., Los Angeles.
Molony, M., San Francisco.
Nelson, J. E., Lodi.
Sanderson, H. E., Stockton.
Sawyer, W. A., Berkeley.
Sinclair, O. W., Eureka.

COLORADO

Bancroft, F. W., Denver.
Denison, H. S., Denver.
Hoel, G. L., Fort Collins.
Ingraham, C. B., Denver.
Needham, C. N., Grand Junction.
O'Brien, R. L., Akron.
Pankhurst, C. T., Brush.
Van Der Schow, G. E., Fowler.
Singer, W. F., Pueblo.
Winslow, W. H., Fort Collins.

CONNECTICUT

Beach, C. T., Hartford.
Biggs, T. J., Stamford.
Purney, John, New Britain.

DISTRICT OF COLUMBIA

Reeves, W. P., Washington.

FLORIDA

Douglas, J. H., Jacksonville.
Howard, N. deN., Sanford.
Julian, A. J. P., Lake City.
Renshaw, F. G., Pensacola.
Terry, C. E., Jacksonville.
Webb, DeWitt, St. Augustine.

GEORGIA

White, A. D., Gainesville.

IDAHO

Barrows, F. L., Moscow.
Chue, C. M., Idaho Falls.
Wiik, J. C., Moscow.

ILLINOIS

Adams, J. F., Hazel Dell.
Allen, A. W., Roblison.
Ayling, C. H., Gridley.
Baker, R. W., Peoria.
Bath, T. W., Bloomington.
Baldwin, H. H., Joliet.
Beeson, H. B., Beul.
Bell, C. R., Peoria.
Bemisderfer, J. R., Monee.
Best, E. H., Freeport.
Blakely, J. S., Mt. Erie.
Boles, D. S., Herrin.
Boughton, T. H., Chicago.
Bourland, I. N., Equality.
Britton, J. A., Chicago.
Bundy, J. A., Iroquois.
Buxton, T. C., Decatur.
Chittum, J. D., Sorento.
Clayton, J. W., Johnston City.
Coss, W. A., Danvers.

Cromwell, J. H., Altona.
Crow, O. L., Assumption.
Davis, E. L., Peoria.
Dew, W. A., Belleville.
Dixon, W. A., Decatur.
Dudley, F. J., Decatur.
Ducey, D. R., Belleville.
Floyd, T. W., Peoria.
Fuller, Erlan, Gardner.
Galley, W. W., Jr., Bloomington.
Gale, F. C., Pekin.
Gardner, W. H., Bloomington.
Garrison, F. F., Havana.
Gavin, E. F., Wankegan.
Glasford, S. T., Danvers.
Goodwin, P. B., Snmmum.
Gott, W. A., Washington.
Graham, S. A., Clinton.
Hasson, Edward, Peoria.
Heffernan, M. T., Decatur.
Henderson, H. C., Milford.
Hogan, J. H., Chicago.
Houston, W. W., Good Hope.
Hummeland, K., Orland.
Kelso, C. E., Champaign.
Larson, J. M., Sycamore.
Maienthal, B. L., Decatur.
Mayes, J. W. D., Illinois.
McClelland, C. E., Decatur.
McMahon, M., Palmyra.
Morris, R. L., Decatur.
Morrow, G. W., Anna.
Moter, R. L., Browns.
Muehlmann, C. G., Pekin.
Orner, C. T., Bloomington.
Perkins, J. B., Franklin.
Pollock, J. R., Nebo.
Reinhardt, O. F., Aviston.
Ricker, S. J., Aurora.
Roberts, J. C., Peoria.
Russell, Ben, Armington.
Sanders, J. W., Decatur.
Seippel, Clara P., Chicago.
Sloan, E. P., Bloomington.
Spannagel, W. C., E. St. Louis.
Staib, O. W., Bartlett.
Stokes, C. A., Edinburg.
Taxis, H. J., Plano.
Thomas, C. R., Roodhouse.
Trewyn, W. T., Peoria.
Tweedy, W. R., Mulkeytown.
Watts, G. W., Chicago.
Wilcox, C. H., Princeville.
Yarnell, Oscar, Decatur.
Yarnell, O. B., Wenona.
Yoder, H. L., Morton.

INDIANA

James, N. A., St. Meinrad.
Muncie, H. L., Brazil.
Myers, A. W., Monro City.
Tabbs, G. R., West Point.
Waters, S. C., Middletown.

IOWA

Bradley, H. M., Manchester.
Clark, H. F., Stuart.
Free, S. P., Perry.
Hoenes, A. J., Denison.
Innocent, S. A., Mineola.
Husted, H. L., Muscatine.
Luehrsman, B. X., Dyersville.
Moore, E. A., Harlan.
Niblock, G. F., Derby.
Peck, J. H., Iowa City.
Potter, W. W., Kinross.
Ruth, O. J., Earlham.
Talley, L. F., Diagonal.
Williams, J. A., Belle Plaine.
Williams, J. C., What Cheer.

KANSAS

Appleby, Clyde, Lenora.
Beckner, E. J., Selden.
Blake, C. D., Ellis.
Brown, G. H., Chanute.
Collins, D. W., Arrington.
Eagan, R. E., Springhill.
Grubbs, L. Y., Topeka.
Little, G. R., Wichita.
Moses, H. N., Salina.
O'Neil, F. E., Prescott.
Pearson, W. H., Kensington.
Stewart, R. B., Topeka.
TenBrook, A., Parsons.
Vannoy, H. E., Linwood.
Vanghn, C. K., Leavenworth.
Zane, T. M., Emporia.

KENTUCKY

Bone, R. L., Madisonville.
Charlton, C. C., Wingo.
Fallis, W. E., Louisville.
Johnson, W. G., Murray.
Lewis, J. C., Lexington.
McCord, H. E., Indlow.
McRee, A. V., Murray.
Rice, D. B., Denver.

LOUISIANA

d'Aquin, J. J., New Orleans.
Elliot, J. M., New Orleans.
Tudury, R. A., New Orleans.

MARYLAND

Conrad, T. K., Chevy Chase.
Geatty, J. S., New Windsor.
Hurdon, Elizabeth, Baltimore.
Lumpkin, R. G. L., Baltimore.
McCormick, G. C., Sparrow Point.
White, J. M., Crapo.

MASSACHUSETTS

Ameno, J. L., Quincy.
Blanchard, W. S., Boston.
Brady, J. E., Brockton.
Call, Emma L., Boston.
Devenny, J. H., Dorchester.
Drake, R. A., New Bedford.
Fenwick, G. B., Chelsea.
Morse, Irene May, Clinton.
Schmidt, F. S., Roxbury.
Stewart, R. C., Lowell.

MICHIGAN

Aurin, E. C., Cedar Springs.
Barnes, J. W., Prattville.
Campbell, J. D., Grand Rapids.
Gibson, F. J., Jackson.
Winslow, R. C., Sault Ste. Marie.
Karraker, C. W., Detroit.

MINNESOTA

McBroom, D. E., Elyslan.
Murray, D. D., Duluth.
Thimms, N. C., Hayfield.
Tyrrell, C. C., Minneapolis.

MISSOURI

Belden, W. E., Columbia.
Benson, B. G., St. Louis.
Brown, J. E., Florida.
Britton, T. S., Seymour.
Chilton, J. A., Van Buren.
DeVilbiss, Frank, Eugene.
Dixon, J. C. B., West Plains.
Downing, B. R., Farmington.
Drew, F. W., Ethel.
Einbeck, W. F., New Haven.
Hochdoerfer, D. F., St. Louis.
Huggins, U. L., Frisco.
Kelley, I. D., Jr., St. Louis.
Malsch, A. F., Manchester.
Mardorf, W. C., St. Louis.
McGann, P. J., St. Louis.
Michie, T. A., Cooter.
Mitchell, G. B., Forsyth.
Num, J. C., Novinger.
Owens, I. M., Beaufort.
Owens, J. H., Sweet Springs.
Pollman, W. H., St. Louis.
Rabeman, W. J., Fordland.
Rodman, W. W., Pierce City.
Ross, Mary S., Hannibal.
Schisler, Edwin, St. Louis.
Shafer, F. M., Edgerton.
Steele, A. J., St. Louis.
Stevenson, F. S., Aurora.
Taulbee, J. B., Joplin.
Thierry, C. W., St. Louis.
Welch, J. C., Salem.
Westbrook, G. W., St. Louis.

MISSISSIPPI

Adkins, G. E., Louise.
Duke, B. F., Scranton.
Turner, T. F., Salles.

NEBRASKA

Brenn, C. P., Western.
Byrnes, M. R., Crete.
Douglas, W. J., Atkinson.
Gorder, J. W., Weston.
Penner, H. G., Plymouth.
Sturdevant, C. L., Atkinson.

NEW JERSEY

Fyfe, G. D., Jersey City.
Gruessner, Anthony, New Brunswick.
Hart, E. P., Jersey City.
Keller, S. C., Newark.
Spence, Henry, Jersey City.

NEW MEXICO

Garmany, J. F., Portales.

NEW YORK

Andrews, C. H., Buffalo.
Bookman, M. R., New York City.
Chapman, S. U., New York City.
Cherry, T. H., New York City.
Dean, W. L., Lyons.
Finley, H. L., Brooklyn.
Jankovski, A. S., Brooklyn.
Mason, F. S., New York City.
Riesefeld, E. A., New York City.
Schapiro, Jos., New York City.
Weingarten, F. S., New York City.
Wilson, H. H., Stockbridge.

NORTH CAROLINA

Bolton, Mahlou, Rich Square.

NORTH DAKOTA

Aaker, A. O., Velva.
Blanchard, H. B., Columbus.
Blatherwick, W. E., Drake.
Cain, W. T., Underwood.
Strong, T. J., Enderlin.

OHIO

Rind, R. C., Springfield.

OKLAHOMA

Beasley, A., Hobart.
Buchanan, M. W., Watonga.
Colley, K. L., Bigheart.
Edwards, F. M., Fairland.
Fowler, Wm., Alderson.
Haynie, W. D., Powell.
Hes, H. C., Prague.
Lewis, E. F., Kingston.
Lowery, Allen, Blackwell.
McDonald, J. G., Okfuskee.
Rentfro, J. F., Sapulpa.
Stone, S. M., Edmond.
White, L. C., Adair.

PENNSYLVANIA

Blough, H. K., Elizabethtown.
Griscom, J. M., Philadelphia.
Kemper, C. A. S., Bethlehem.
Pollock, G. W., Wilkesburg.
Pottenger, G. F., Hamburg.

SOUTH DAKOTA

Abbott, G. A., Watertown.
Hart, R. S., Hazel.

TENNESSEE

Brook, R. A., Sweetwater.
Linn, H. P., Palmyra.
Miller, R. C., Evansville.
Padgett, H. C., Nashville.
Stephenson, C. V., Centerville.

TEXAS

Von Brunow, V. E., Pampa.
Dawson, I. J., Marble Falls.
Edgar, T. O., Gainesville.
Evans, Rebecca M., Denton.
Grant, S. H., Deport.
Long, R. L., Atlanta.
Mayo, S. L., Belton.
Smith, C. Z., Anna.

UTAH

Nielson, A. J., Ephraim.

VIRGINIA

Miller, E. R., Harrisonburg.

WASHINGTON

Ghiglione, Aug., Seattle.
Monzingo, A. S., So. Tacoma.

WEST VIRGINIA

Glass, E. F., Wheeling.
Waldron, T. C., Coalwood.

WISCONSIN

Berger, A. J., Johnson Creek.
Cooke, J. M., Darlington.
Donnell, J. E., Cuba City.
Elliott, E. S., Fox Lake.
Fiedler, Otho, Athens.
Hamlin, F. J., Beloit.
Hayward, J. C., Marshfield.
Hoffmann, M. A. T., Campbellsport.
Kleinschmidt, George, Milwaukee.
Morrison, Morris, Cashton.
Rodermund, A. M., Athens.
Sperry, S. B., Milwaukee.
Vornahl, R. A., Elkhorn.

Your committee recommends that state examining boards shall require practical examination in the following subjects: diagnosis, pathology, histology, bacteriology, urinalysis, obstetrics and anatomy. While this may sound formidable the committee is convinced that it is feasible. For example, on the basis of 100 applicants a physical diagnosis examination can be completed in 5 hours by providing 10 subjects, taking the class in relays of 10, each to examine one case and to be allowed half an hour for such examination. The practical in anatomy can be carried on concomitantly, each relay passing from one to the other. The committee recommends that the present written examination in anatomy (which is necessarily book anatomy) be dispensed with, and a practical examination consisting of a description of prepared specimens be substituted, believing that one such specimen correctly described is of more value as a test of anatomic knowledge than ten answers which may involve only the question of memorizing from a quiz compend. The committee also recommends that the practical examination in histology, pathology and bacteriology shall consist in the identification of a sufficient number of microscopic slides and gross specimens. The committee further recommends that there shall be a practical chemical and microscopic examination of one or more specimens of urine.

Practical Examinations in Ohio

DR. GEORGE H. MATSON, Columbus, Ohio: In a supplementary statement Dr. Matson, a member of the committee, called attention to the results of practical examinations which were inaugurated by the Ohio board in June, 1908. Since that time applicants' grades in the laboratory branches show a marked improvement over the grades given before such tests were adopted. There is reason to believe that the improvement was due directly to the added requirement and that in future examinations this improvement will be more pronounced.

What has been accomplished by the laboratory tests can be duplicated by practical examinations in other branches. The examination, in addition, of blood, sputum, feces and stomach contents is also suggested. Examination in clinical medicine may be inaugurated by presenting cases of readily recognized heart and lung lesions, enlarged liver and spleen in satisfactory subjects, syphiloderms and easily recognized skin diseases. In anatomy, the applicant may be asked to indicate and name points of interest on a given bone, to outline the various organs in the living subjects, and to locate points of interest that may be required of him. As these examinations progress, the cadaver may be used and minor surgery added to the list of practical subjects.

In obstetrics, the manikin may be used and it is suggested that the applicant be required to demonstrate and diagnose positions and to demonstrate the treatment of abnormal position. He should also be required to demonstrate the use of the pelvimeter. If the time permits, practical work in refraction may also be added. Omitting refraction, the entire examination here suggested need not extend longer than one and a half hours. Six examiners could examine seventy-two applicants in six hours. Proctors rather than examiners are needed to conduct the written work. The details of such an examination could easily be arranged.

There is a spirit of unrest among the laboratory members of the various faculties that will not be satisfied until practical tests have been given a fair and impartial trial at the hands of examining boards. Students who contemplate such examinations will govern themselves accordingly, and medical colleges doubtless will improve the character of their work to meet the demands for it. A sentiment in favor of practical tests prevails and the efforts in this direction deserve further recognition. It is also my opinion that position on medical boards will be more dignified and the influence of the board greatly increased by the addition of these practical tests.

Discussion on Practical Examinations

DR. S. D. VAN METER, Denver, Colo., a member of the committee, opened the discussion as follows:

I heartily agree with the results of practical examinations as given by Dr. Matson. There is no state examining board

Society Proceedings

COMING MEETINGS

Alabama, Medical Association of State of, Mobile, April 19-22.
Am. Laryn., Rhin. and Otol. Society, Washington, D. C., April 28-30.
Arizona, Medical Association of, Phoenix, April 20-21.
California, Medical Society of State of, Sacramento, April 19-21.
Conf. State and Prov. Bds. of Health, Washington, April 28-29.
District of Columbia, Medical Association of, Washington, April 26.
Florida, Medical Association of, Jacksonville, April 6-8.
Georgia, Medical Association of, Athens, April 20-23.
Maryland, Med. and Chirurgical Faculty of, Baltimore, April 26-28.
Missouri Valley, Medical Society of, Omaha, March 17-18.
Mississippi State Medical Association, Oxford, April 12.
South Carolina Medical Association, Laurens, April 19-21.
Tennessee State Medical Association, Memphis, April 12-14.

CONFERENCE OF THE COUNCIL ON MEDICAL EDUCATION AND OF THE COMMITTEE ON MEDICAL LEGISLATION OF THE AMERICAN MEDICAL ASSOCIATION

Held in Chicago, Feb. 28—March 2, 1910

(Monday Morning Session, Continued from page 814)

Report of the Special Committee on Practical Tests at State License Examinations

DR. W. S. FULLERTON, St. Paul: The members of your Committee on Practical Examinations beg to report: After about a year's trial in their respective states they find the practical examination on certain subjects in the curriculum for state licensure eminently satisfactory. The state boards which have adopted it began in a tentative way, but experience leads the committee to believe that it is capable of considerable extension and development and worthy of universal adoption by state examining boards. The committee believes that the practical examination, more than any one thing, compels the candidate for license to come before the board with real knowledge in the subjects to which it is applied, obtained by well-directed work, and that it effectually does away with the "quiz-compend applicant" superficially and specially crammed to meet the ordinary written examination.

in the country that cannot conduct a practical examination in urinalysis, pathology, anatomy and diagnosis. In conducting practical examinations in these branches, however, I can see how many boards will have difficulty in carrying them out along the lines indicated by Dr. Matson. It does not take long for the experienced examiner to tell whether an applicant for licensure can tell the difference between the abnormal and the normal. For these practical examinations the Colorado board has used a well-developed man and the applicant is expected to point out the anatomic landmarks on him. In anatomy we have used the stereopticon after the manner of Cunningham and have found it very useful. I think the time is coming when surgery and all other specialties will require a supplementary license in this country.

DR. W. J. MEANS, Columbus, Ohio: Practical examinations have been a hobby of mine for many years. A written examination simply requires a censor who sees that each applicant is doing the fair thing. This does not require of the applicant any particular skill but a practical examination brings out his ability.

DR. JAMES R. GUTHRIE, Dubuque, Iowa: These reports indicate gradual evolution and development of proper scientific examinations of our students, and no fact is more potent in the increase and development of that system than the requirement of special examinations for licensure for the practice of specialties, and if the Council on Medical Education voices to the profession of this country its decision or conclusion based on this principle it will have done the cause of general medical education and the people at large a service which will be lasting and will benefit the whole domain of education.

DR. EDWIN J. BARTLETT, Hanover, N. H.: I do not know what the teacher of anatomy is to do during the mixed periods when some examining boards are insisting on a verbal examination while the more enlightened boards are insisting on practical examinations, because we cannot prepare men for both examinations at the same time.

DR. E. J. WILSON, Columbus, Ohio: I feel that the field of practical examinations ought to be enlarged, and there is no reason why it should not cover the field of diagnosis because the criticism that has been made of our state examinations all over the country is that they have been too academic, or mere tests of memory. These examinations should be as practical as possible.

DR. C. P. FALL, Nebraska: We have adopted the practical method of examination for licensure in Nebraska, and this examination includes urinalysis, pathology, physical diagnosis and bacteriology. We have also adopted a practical test in refraction.

DR. B. D. HARISON, Detroit, Mich.: If the system of having practical examinations could be carried out it would overcome many objections now raised to the state license examination.

DR. F. C. TODD, Minnesota, a member of the Council on Medical Education's subcommittee of ten appointed a year ago on diseases of the eye, ear, nose and throat, said that in considering subjects which should be taught in ophthalmology the committee decided unanimously that refraction work should not be taught, because they were educating men to become general practitioners.

DR. GEORGE W. WEBSTER, Chicago: While I would welcome as heartily as any one anything that would enable us to make an adequate, fair and reasonable test of an applicant's fitness to practice medicine, still I think we have not arrived at the entire solution of that by adding the so-called practical test to the examinations.

DR. EDWARD T. ABRAM, Dollar Bay, Mich.: I believe that there are some examinations which can be conducted in a practical way, but this cannot be done by four or five men. Practical examinations should be conducted by examiners who are well versed in the particular branches or studies on which applicants are to be examined.

DR. H. D. ARNOLD, Boston: The Massachusetts Medical Society has decided that an applicant should pass a written examination first before being eligible for a practical examination.

MONDAY AFTERNOON SESSION

Discussion on the Addresses of Mr. Brown, President Pritchett, President Schurman and Dr. Vaughan

[As stated in THE JOURNAL, March 5, page 814, these addresses will be published in the Original Articles Department of THE JOURNAL later.]

MR. GEORGE E. MACLEAN, President of the University of Iowa: Education has come to be recognized by the professions as one of the great social movements of the age; education has made as much progress in its ideals, in its methods, and in its accomplishments as has been made by inventions in the industrial and commercial worlds, and to-day is the day of the coordination of these great movements. That the medical profession, so ancient, so honorable and so sacred, should recognize the educator, the despised and underpaid teacher, is one of the most significant features of promise for the future of medicine and of medical education. No longer can we hope for anything that is segregated, that is, without thorough cooperation, to give results in education or in medicine. The central thought of a university is research or investigation. Universities are experiment stations for truth, for the discovery of new truths, and the new applications of principles, and medicine is the application of science. A college of medicine is as much a college of applied science as is a college of engineering; therefore, the medical college must be in a university. It cannot be affiliated at arm's length. It cannot be a bifurcated institution. It must be an integral part of the university.

DR. CYRUS NORTHROP, President of the University of Minnesota: Medical education is an exceedingly important subject. Nothing is more essential to the welfare of the human family in the way of education than is medical education. If a member of my family has typhoid fever I want a physician of clean character, a man of high principles and purpose, a man of knowledge and skill. Knowledge and skill are not the same thing. A boy may study in the laboratories of a university year in and year out; he may understand chemistry, and botany, and all the otherologies, and still lack a certain something that comes pretty near being classified under the head of common sense, and not be able to apply this to any particular case. He may understand chemistry and biology and everything else, and then designate a case of summer heat as measles or something of that kind. I do not want such a doctor as that and you do not. We want a physician who knows better than that. The first years of the medical course should be taught by men who are scientific men, devoting their whole time to the work, whether it be bacteriology, embryology, histology or anatomy. They ought to be men who are teachers of these sciences. When it comes to the clinical side, what objection is there to a man teaching who is engaged in the practice of medicine? I see no objection to it. The practicing surgeon can more successfully teach surgery than one who has only a theoretical knowledge of the subject. The same holds true with regard to the teaching of other branches.

DR. B. F. TURNER, Memphis, Tenn.: Inspired by the remarks in each of the addresses we have listened to, the inference has been drawn that the majority of the existing medical colleges should die. I ask: Which ones shall die? The answer to that question is involved in the evolution of the colleges that exist. If we go back forty years in the history of America we find a great country without regulation concerning the practice of medicine and we find on the part of a devoted few an honest effort to elevate professional standards by the process of education and organization; and, therefore, I take it, the cause for the existence of more than one institution is not that it was organized as a money-making institution, but by an effort on the part of some one to develop a higher ideal and to elevate a noble profession. Certainly that is true in certain sections of our country where educational advantages have been notably deficient. These institutions are asked to-day to get out of the way, and told that there is no need for them. Who will determine which shall cease to exist? The answer is, those shall become extinct who do not conform to standards of a certain altitude. Some medical

schools have expended hundreds of thousands of dollars for equipment and for teaching purposes, and some of these could only reach high ideals by degrees.

DR. A. D. BEVAN, Chicago: There is no section of the country in which to-day the educational problem is being so thoroughly thought out as it is in the South, and it is not going to be many years before the South will have first-class four-year medical schools which will come to the front. We know what splendid work Southern medical men have done and are doing and we are proud of the South, and so far as the Council is concerned I am sure their ideas are helpful in every way and if any of the schools that have been criticized desire to have a detailed statement of the criticism, I am sure the members of the Council will furnish it to them. However, we want the Council to be helpful, and we shall attempt to make it of service in every way.

TUESDAY MORNING SESSION

Report of the Committee on Organization of a State Board of Medical Examination and License

DR. W. H. SAWYER, Michigan, chairman, read the report of this committee:

Should there be a separate board of medical examiners or should the state board of health also have examining and licensing powers? Without question, there should be a separate board of medical examiners. Several states have tried the combined board of health and medical examination, but have, after experience, separated them, and those states in which the two boards are already combined are endeavoring to have the division made.

Should the examining board be single or multiple? Single. Most of those states which have tried the multiple board have changed to the single board.

Should the examining board be sectarian or non-sectarian? A non-sectarian board by all means, if possible. However, under existing circumstances it does not seem practicable or possible of accomplishment. In 19 states the law provides for a mixed or sectarian board. Of 17 states in which the law is silent as to sect, 14 reported through the secretary of the board, 7 advocating a mixed board, 3 a non-sectarian board, and from 4 there was no expression.

Should the examining board be appointed by (a) the governor; (b) the governor on nomination of the state society, and (c) the state society? By the governor on nomination of the state society. Any other attempted method at this time would more than neutralize the good effect of the medical board on the profession and people at large.

Should the secretary be a member or an employee of the board? When possible he should be a member of the board, but not necessarily so.

Should the examining board be a part of the state university, or should it be entirely distinct from all educational institutions? It should be entirely distinct from all state educational institutions. This applies to every state in the union except New York, where the University of the State of New York is a corporate institution, executive in its character and non-teaching.

In connection with the report of Dr. Sawyer, Dr. W. Jarvis Barlow, California, presented some statistics from that state which gave a general idea of the fitness of such schools to educate students in medicine.

DISCUSSION

DR. EDWIN J. BARTLETT, Hanover, N. H.: How are competent examiners to be secured on the laboratory branches, such as chemistry, physiology, bacteriology, biology, which are advancing so rapidly, if examining boards are to be made up of men outside of colleges and universities? Practitioners of medicine are unfit to examine in these branches.

DR. W. H. SAWYER: The members of faculties of colleges or universities should not be members of examining boards, but provisions should be made whereby the laboratory work may be done by men outside of the board itself.

DR. E. J. WILSON, Columbus, O.: Is it not true that state boards have the authority to make such provisions?

DR. SAWYER replied to this in the affirmative.

DR. WILLIS G. McDONALD, Albany, N. Y.: Formerly in the New York law there was a clause which prohibited the appointment of members of faculties of medical colleges on boards of examiners, but in the new law which was passed this clause was wisely left out. In the purely scientific division of medicine it is difficult to select a suitable examiner in pathology, bacteriology and bio-chemistry. For instance, an examiner in anatomy without a great deal of experience in teaching would find it extremely difficult to frame suitable questions.

DR. W. S. NAY, Vermont: The proper examiner should be the bedside practitioner. If he is not qualified to examine students who come before him I do not know who is.

DR. H. W. BRIGGS, Delaware: In 1907 an act was secured in Delaware regulating the practice of osteopathy, requiring osteopaths to come before one of the boards of the state or before the Medical Council with the selection of one osteopath, and since that time no osteopath has applied to the state for license to practice.

DR. L. B. McBRAYER, Asheville, N. C.: I do not think that members of faculties of medical colleges should be on the board of examiners.

DR. E. J. WILSON, Columbus, Ohio: I believe that the members of examining boards should not be on the faculties of medical colleges.

DR. C. P. FALL, Nebraska: The consensus of opinion among the profession in Nebraska is that professors in medical colleges should not be members of the state board, although there is a professor on the state board at present.

DR. EDWIN F. BARTLETT, Hanover, N. H.: I have looked over the papers of many states and find that some examiners set questions that can be answered by yes or no. In my opinion, no competent examiner would do that.

The subject was further discussed by DR. GEORGE W. WEBSTER, Chicago, and the discussion closed by DRs. SAWYER and BARLOW.

Report of the Committee on Qualifications of Applicants

DR. S. D. VAN METER, Denver, chairman of the committee, presented this report:

It is unquestionably desirable that all applicants for license to practice medicine should be required to furnish proof of having received preliminary and collegiate education equal to that standard recommended by the Council on Medical Education. The members of the committee feel that all boards cannot afford to adopt these requirements for all applicants. Nothing can be said against its adoption for those making application for license on credentials, but to deny those wishing to make application by examination the right so to do raises a very serious question. The committee believes that only the fundamental branches should be included in the list of subjects for examination and that all questions on materia medica and therapeutics should be excluded. It is not advisable for the state to encourage sectarianism in medicine and it has no more right to recognize a school of medicine than one of theology. Examinations, in the opinion of the committee, should be oral, clinical and written. They should be practical and designed to furnish the examining board with adequate information on which to determine the educational and moral qualifications of those examined. The committee believes that examining boards should have the authority to determine the good standing of colleges. They should arrive at their conclusions by an unbiased review of all obtainable data, but owing to the cost and physical impossibility of making personal investigations of colleges at a distance, boards must of necessity at present reply chiefly on the reports of the Council on Medical Education and the Carnegie foundation for the Advancement of Teaching.

Vote on Examining Boards

The Conference took a vote on the following questions:

1. Should there be a separate examining board distinct from the board of health? A large majority voted in the affirmative.

2. Should there be only one examining board for all sects? Forty-three votes were cast in the affirmative, and four in the negative.

3. Should sectarianism be recognized on the board (osteopaths not included)? Thirty-nine votes were cast in the affirmative, and seventeen in the negative.

4. Should teachers in medical colleges be on the board? This question was answered by a very large negative vote.

5. Should graduation from a reputable medical college be a requirement for license? Affirmative vote, forty-nine; negative, three.

As to whether examinations should be oral or written, this matter was left to the various boards with the recommendation that examinations be made as practical as possible.

The question of whether or not state examining boards should determine the standing of colleges, as to whether they are reputable or not, was carried unanimously by an affirmative vote.

There were forty-two affirmative votes cast in favor of examinations in materia medica and therapeutics, with four opposed.

Report of the Committee on the Definition of the Practice of Medicine

DR. L. M. HALSEY, New Jersey, a member of this committee, stated that owing to the absence of the chairman, and failure to send his report, the committee was not able to present to the conference a very full report.

He presented the following:

1. Should a specific definition of the practice of medicine be included in the model act? Yes, in the judgment of the members of the committee present, a specific definition should be incorporated.

2. If so, what is the ideal form of such a definition? A person practices medicine and surgery within the meaning of this act, who holds himself or herself out as being able to diagnose, treat, operate or prescribe for any human disease, pain, injury, deformity, physical or abnormal mental conditions, and who shall either offer or undertake by any means or methods to diagnose, treat, operate, or prescribe for any human disease, pain, injury, deformity, abnormal, mental or physical conditions.

3. Should limited practice, as midwifery, massage, optometry, osteopathy, mental healing, Christian science, mechanotherapy, neurotherapy, etc., be defined and provided for in the model practice act? No.

The committee suggested the elimination of midwifery, which should be under a special act requiring midwives to present a diploma from a reputable college of midwifery, and to pass a satisfactory examination before the board of medical examiners. The other practices should be regulated by a special act which shall specifically define their necessary qualifications and requiring applicants for license to pass a satisfactory examination before the state board of medical examiners.

Provision for Educational Standards in a Model Medical Practice Act

DR. N. P. COLWELL, secretary of the Council on Medical Education, Chicago: No practice act can be considered a model which does not provide for a single board of medical examiners, or a single authority for the enforcement of its requirements. Nor can it well be considered a model unless it provides that the members of this board are to be selected because of their special qualifications for the duties involved, rather than for political or other reasons. Unless these two points are safeguarded any provision for educational standards will be of limited value. With our form of government, a single board of capable medical examiners is the best and only legal barrier which can be placed between a suffering humanity and the hordes of would-be practitioners being turned out annually from the one hundred and sixty or more medical institutions in this country, many of which adhere to no definite standards, and have little or no facilities for the satisfactory training of medical practitioners. Taking it for granted that a single board of able medical examiners is provided for by the practice act, then the simplest wording of the clause, providing for educational standards is the best. A model practice act should not attempt to define educational standards nor what should constitute a medical college in good standing because standards are rapidly changing.

The requirements of graduation from a reputable medical college, as shall be determined by the board, affords a double assurance that all applicants granted licenses are well qualified to practice medicine. First, a medical college which the board knows is reputable has certified to the applicant's fitness to practice medicine by having granted him its diploma; and, second, the state board has subjected the applicant to its examination, which must have been satisfactorily passed before the license is granted. In the protection of a sick and suffering but credulous humanity from the crowds of ignorant and untrained would-be practitioners could a model practice act provide for less than this?

Report of the Committee on Reciprocity and Registration

DR. CHARLES H. COOK, Massachusetts, read the report of this committee:

1. What provision for reciprocity should be included in a model practice act? 2. Should reciprocity be based on mutual recognition or on a standard adopted by the board of the state from which the applicant comes?

The committee considered these two questions together. All medical legislation is embraced under what is called the police power and has to do with the protection and benefit of the public. Legislation relating to reciprocity should have for its object the public welfare, else such legislation cannot be justified. To justify a law establishing reciprocity between states it must be made clear that it would result in better protection to the inhabitants of the respective states.

For what purpose are the various state boards of registration established? To protect the inhabitants of the respective states from unqualified physicians.

Can the duty and the responsibility of thus protecting the inhabitants of any state be delegated to the examining boards of other states? There can be but one answer to this and that is that each state board is the only board to pass on the merits of applicants for registration in its state and such powers cannot constitutionally be delegated to anyone else.

The committee could not recommend any law providing for general reciprocity. The suggestion was made instead that each state board be given authority to pass on the merits of each physician applying from another state, and whenever his credentials, affidavits and general qualifications would warrant such action that he be registered without full examination.

What provisions for the registration of licentiates should a model law contain, and should any provision be made for county registration? If so, before what officers? As the purpose of registration is the establishment of a legal record accessible to the people whom it is intended to protect, the records should be sufficiently convenient to permit of prompt reference. The entry of registration should not only be with the state board, but with and before the local registrar of legal records, whether it be county, town or district or other subdivision of the state existing. Also a record of registered names of the whole state should be accessible in each subdivision of records to permit of knowledge of the standing of any licentiate who may come from a neighboring or a distant county in the state.

How can the registration system of state boards be made more effective and of more practical value? This question is defective in the judgment of the members of the committee in that it implies that the system employed by the various state boards throughout the country is the same. This is not true at the present time. In all the states, prior to three years ago examinations were conducted wholly in writing. This system still prevails in a majority of the states and must continue to prevail in them until their laws are so modified as to give the boards larger discretionary powers.

Report of the Committee on Revocation of License and Penalties

In the absence of the chairman of this committee, Dr. E. L. Stevens, Iowa, the report was presented by Dr. B. R. McClellan, Ohio:

1. Should the state licensing board have power to revoke a license; if so on what ground? Yes, subject to an appeal by the defendant to the district court.

2. Should such revocation by the state board be subject to the review of the courts; if so, should this include only a review of the proceedings of the board, or should the review include the questions at issue and the evidence introduced? Yes, on appeal, in which case the courts should review the proceedings of the board and consider the merits and all the questions at issue in the case, with the thought of justice to all concerned and the further thought of protection of the public.

3. Should a model medical practice act impose a penalty for obtaining money from patients through false representation, as well as for practicing medicine without a license? Yes, the medical practice act should impose a penalty for obtaining money from patients through false representation. Such penalties, if possible, should require restitution as well as fines and imprisonment. Such penalty should be as severe, more severe than frauds, in banking or insurance.

4. What should be the penalty for practicing medicine without a license? Should it be fine, imprisonment, or both? Both fine and imprisonment.

5. What should be the penalty for falsely representing one's self to be a legally qualified physician? If this question be interpreted as implying that the one thus falsely representing himself also attempts to practice under such misrepresentation, he should be subjected as suggested in the answer to question three.

6. Should revocation of license be temporary or permanent? Either permanent or temporary, pending on the evidence and public welfare.

7. Should unprofessional conduct or criminal abortion be considered a justifiable cause for the revocation of a license? Yes.

8. What other causes should justify revocation of license? Perjury while on the stand as expert witness.

9. What penalty should be imposed on limited practitioners who exceed their functions? The same penalties as those for practicing without any kind of a license.

(To be continued)

PHILADELPHIA COUNTY MEDICAL SOCIETY

Meeting held Feb. 9, 1910

The President, DR. HENRY LEFFMANN, in the Chair

INFANTILE SCURVY

The Cause and Symptoms of the Various Phases of the Disease

DR. J. P. CROZER-GRIFFITH: No disease is so easy to recognize or is so often mistaken by physicians as infantile scurvy. In the experience of the majority of observers it is a disease of the better social class. The most important factor is the food. In the series of cases collected by the committee of the American Pediatric Society the food employed when the child developed scurvy was sterilized milk alone in 68 cases; pasteurized milk alone in 16; breast milk alone in 10; ordinary milk alone in 4. There were many other cases in which sterilized milk was used but in combination with proprietary food. It is safe to conclude that the exciting cause of infantile scurvy is the employment of food, which is suitable for the individual child, but in which there is something lacking, or the presence of some detrimental element, the nature of which is not at all understood. That there must be also some individual predisposition is borne out in my observance of cases. It is a mistake to think that scurvy is a disease in which the gums become purple. They do become purple, but the man who waits for this symptom before making a diagnosis will make a mistake in many cases. The most frequent first symptom is pain, which is usually situated in the lower extremities and sometimes comes so suddenly that trauma is suspected. It is at first moderate, is intermittent and there follows the development of pseudoparalysis. In the involvement of the gums the swelling is sometimes so great that the teeth are obscured. It is a mistake to say that the gums are not involved when there are no teeth. The disease is a distinctly hemorrhagic one and hemorrhage from the kidneys is

much more frequent than is ordinarily supposed. Anemia, cachexia and edema are not infrequently associated conditions. Moderate fever, diminished weight, and disturbance of the bowels are sometimes present.

Prognosis and Differential Diagnosis of Infantile Scurvy

DR. THEODORE LE BOUTILLIER: In the ordinary case seen early and not complicated by any intercurrent disease the prognosis is good. In cases seen late and in which no diagnosis, or an incorrect one, is made when the symptoms are advanced the prognosis is unfavorable. Death may be due to sudden hemorrhage, cardiac failure or exhaustion. It is important to lay stress on the diseases from which scurvy can be differentiated. The disease most often mistaken for it is rheumatism. About four-fifths of all cases of scurvy have at one time or other been diagnosed as rheumatism. It is well to emphasize the strong probability of scurvy in children under two years of age with pain and tenderness of legs with or without swelling near the large joints, and in the presence of spongy, swollen or purplish gums with tendency to hemorrhage. This is frequently corroborated by the history of artificial feeding. Rapid improvement on antiscorbutic diet will clear up all doubts.

Treatment of Infantile Scurvy

DR. MAURICE OSTHEIMER: The treatment of infantile scurvy is specific, *i. e.*, the administration of orange juice or other fruit juices. If the cause appears to lie in some proprietary food, condensed milk or sterilized milk, on which the infant has been fed, the food should be stopped, substituting for it uncooked milk. Recovery results rapidly in every case unless the diagnosis be made too late for the treatment to be effective. Drugs are of no value in infantile scurvy. In those rare cases in which the child is breast fed, having the mother eat several oranges a day benefits the child. Rest is essential with as little handling of the child as possible.

Discussion on Infantile Scurvy

DR. J. C. GITTINGS: The question of predisposition as well as the autointoxication theory is of importance. The bacterial theory could never be substantiated after the numerous failures to attach any one bacterium to the disease and particularly because of the fact that the cure is so certain in the use of orange juice. The comparative rarity of infantile scurvy is explained by the campaign waged against it.

DR. ALFRED HAND, JR.: The existence of this disease is one of the most important arguments for the necessity of clean certified milk. The treatment of the attack itself is, of course, only orange juice or fresh fruit juice of some kind. The treatment of the development of scurvy goes back to remedying all the wrongs in the care of the child, especially those of the diet. Baked potato has been claimed to be a specific given in connection with orange and other fruit juices.

DR. HENRY LEFFMANN: During several years service as port physician of the Port of Philadelphia I had opportunity to see many hundreds of sailors just after sea voyages. In all that time I recollect seeing only a few cases of scurvy and those not severe. These were on a ship that had been about six months coming from Calcutta. The shorter voyages of to-day and improved methods of food preservation have prevented the appearance of the disease which did so much harm in the days of the Tudors and Stuarts. The modern systems of food preservation do not, however, wholly overcome the tendency to scorbutic trouble. An explorer who spent four months in Alaska said that the warmest day was 31° below zero; the coldest 85° below. Severe scurvy occurred but the symptoms abated as soon as fresh food, even a few potatoes, could be obtained. The British maritime regulations require each vessel to carry lime juice as an antiscorbutic. It may be a question whether the extensive development of cold-storage systems may bring about a scorbutic condition not sufficiently marked to secure prompt or correct diagnosis. Ultimately, we may be worse off than under the régime of salicylic acid and sodium benzoate. We may have a sort of demographic scorbutic period and the maintenance of the public health will require still greater supervision than that now accorded to it.

Medical Economics

THIS DEPARTMENT EMBODIES THE SUBJECTS OF ORGANIZATION, POSTGRADUATE WORK, CONTRACT PRACTICE, INSURANCE FEES, LEGISLATION, ETC.

THE PUBLICATION OF A BULLETIN BY THE COUNTY SOCIETY

By Henry Glover Langworthy, M.D.

DUBUQUE, IOWA

There can be little question that every county medical society with a membership of forty-five or more would be greatly benefited by having some form of a regularly printed quarterly or monthly bulletin. The several reasons for the advocacy of such a plan are as follows:

1. The work, while naturally devolving on the society secretary, is not at all burdensome. A four-page bulletin (program and bulletin) would be sufficient.
2. The expense will be little more than publishing the average society program.
3. Interest in society work is apt to be increased in direct ratio as members are kept in touch with their own community.
4. The bulletin plan is probably the most practical way I know of raising the medical standards of a county.
5. I can attest that this method is successful, having followed it since December, 1907, as secretary of the Dubuque County Medical Society at Dubuque, Iowa.

The bulletin becomes at once the official program and bulletin of the society and as such is an index of the practice of medicine in the locality. It serves the double purpose of stimulating society life as well as issuing a warning against possible evil doers and certain unethical practices. The plan suggested may be roughly outlined as follows: For the initial year or eighteen months of its existence the bulletin should be a small one of not more than four pages and of sufficient size to readily slip into a letter envelope. This can be mailed unsealed. On the first page may be printed "Program of the _____ County Medical Society," followed by the name of the city, state, day of the week, month, year, and, for example, "At _____ Public Library, 8 p. m." The second page will naturally contain the full program of the meeting. At the bottom of the program page may also be stated that the meeting will be called to order by the president promptly at 8 p. m. Often it will be found advantageous to mention that the members of an adjoining county medical society are expected to be the guests of the evening. The upper part of the third page includes the complete list of the officers of the society. The remaining half of this third and all of the last or fourth page is to be used as the bulletin proper. The strictly bulletin part can be devoted to all sorts of miscellaneous medical news and society announcements.

My own monthly bulletin began by stating that the bulletin would be issued one week in advance of the meetings. Other news and notices were also included which seemed in keeping with early notices. The less complicated the beginning, I think, the less friction the strictly bulletin part is apt to encounter. Such announcements as, "Those who desire to exhibit pathologic specimens, etc., kindly notify the president or secretary at least ten days before the date set for meeting," tends to arouse interest and increase the attendance. Official notification by the treasurer and other officers fit in nicely. After three or four issues one cautiously begins the insertion of, perhaps, personal items concerning the men who are doing commendable work in one line or another. Personal mention, however, is often a prolific source of ill feeling.

In order to stimulate interest in the program itself, it may seem wise to mention that the program committee or the secretary is at work outlining the program for the ensuing year and that short papers on medical topics will be welcomed. On account of the limited time at the meetings no address or paper should occupy more than fifteen or twenty minutes in its delivery and no member be expected to speak longer than

seven minutes in discussion. In small societies where the men are not engaged in original research the post-graduate course as outlined in *The Journal* of the American Medical Association may be followed in a general way.

The last month of every year the bulletin should publish a list of all county members with addresses. Notices of the county meetings in the vicinity I have found very good insertions for the bulletin part as they are always well received. Comments on such subjects as medical libraries, enlarging the membership, creating a state auxiliary laboratory if the place is large enough to warrant it, notes relating to society life, possible permanent headquarters for meetings, medical ethics, editorial remarks on many of the better papers presented, discussion of office business methods, nostrum evils, establishment of a public antituberculosis society, publication of portions of the revised by-laws, etc.—all will have their place as time goes on.

The censors will be found an excellent body to which doubtful bulletin insertions may be referred. An honest effort should always be made to avoid mistakes. It is surprising what can be accomplished with even a slight effort on the part of any progressive secretary, and the bulletin, no matter what its size, will be thoroughly appreciated by the entire membership after the publication has once been coming regularly. The criticisms (and there will be some according to the extent of selfish feeling of men who may consider their personal interest jeopardized) will really count for little. With tact and giving all an equal chance to read papers and appear prominently before the society the program and bulletin will soon be found a pleasure and well worth while.

A secretary carrying the above plan out in a conscientious manner will probably find it difficult to resign his position for years at least. It is surprising how far reaching even the simplest society organ becomes. If the society has a membership of forty-five and growing a bit, one hundred copies may be issued each month or quarterly and extra copies forwarded to men in adjacent counties who might probably attend if given the opportunity. Occasionally it is well to invite a few men from out of town to enjoy a good-fellowship dinner.

While I do not expect or advocate that every secretary shall become a medical editor, it would seem that a society of any size should be able to find some one interested enough in its general welfare to spend the time necessary for the work, not to mention the individual good resulting to the one taking it up. The bulletin plan is hardly called for in locations where the majority of members do not reside in the same town. Where a county is thinly settled and not more than three or four physicians are to be found together and members can meet each other only by driving long stretches, such a plan is hardly necessary, nor is the time yet ripe for it. Almost every city, however, with a registration of thirty physicians will find the program and bulletin plan well worth trying.

POSTGRADUATE COURSE FOR COUNTY SOCIETIES

DR. JOHN H. BLACKBURN, DIRECTOR
BOWLING GREEN, KENTUCKY

[The Director will be glad to furnish further information and literature to any county society desiring to take up the course.]

Seventh Month—Fourth Weekly Meeting

PROPAGANDA AGAINST TUBERCULOSIS (CONTINUED)

METHODS (CONTINUED): 3. *Treatment*: Establishment of dispensaries and clinics for tuberculosis. Clinics for adults, for children. Evening clinics for incipient cases. Free examinations. Dispensaries and sanatoriums, public and private, for charity cases, for those able to pay moderate fees. Tuberculosis classes. Day camps. Special relief of consumptives in their homes, paying rent, providing food, clothing, etc.

4. *Legislation*: Creating sentiment and securing enactment of legislation to control causes of contagion. Antisputting ordinances. Compulsory notification of cases. Inspection and disinfection of schools, factories, tenements, public conveyances, etc. Periodic examination of school children.

factory employees. Segregation of open cases of tuberculosis. Tenement house laws. Ventilation of schools, factories, public buildings. Regulation of bovine tuberculosis. Securing appropriations for clinics, dispensaries, sanatoria.

Monthly Meeting

What the County Society May Do to Prevent the Spread of Tuberculosis.

Status of Tuberculosis in this City (County).

The Early Diagnosis of Tuberculosis in Children.

The Practical Value of the Laboratory Aids in the Diagnosis of Tuberculosis.

Marriages

FRANCIS B. ROTHROCK, M.D., to Miss Nancy Ewing, both of Colorado Springs, February 23.

WALTER LLOYD FINTON, M.D., to Miss Ella S. Hobart, both of Jackson, Mich., February 16.

MARION COWAN, M.D. and Charles I. Burrows, both of Lynn, Mass., at Philadelphia, recently.

JOHN I. PENNINGTON, M.D., Baltimore, to Miss Blanche Bantz, at Annapolis, Md., February 17.

CHARLES LEROY LOWMAN, M.D., Los Angeles, Cal., to Miss Elizabeth Arnold, of Galesburg, Ill., recently.

Deaths

George G. Groff, M.D. Long Island College Hospital, 1877; formerly a member of the American Medical Association; a member of the Medical Society of the State of Pennsylvania, Association of Military Surgeons of the United States and American Academy of Medicine; professor of natural history and later of anatomy and physiology in Bucknell University, Lewisburg; assistant surgeon in the National Guard of Pennsylvania; major and brigade surgeon of volunteers during the Spanish-American War, and afterwards secretary and treasurer of the Superior Board of Health of Porto Rico; for several years president of the State Board of Health; a member of the State Board of Agriculture, and of the State Medical and Dental councils; coroner of Union county; and school director of Lewisburg; died suddenly at his home on College Hill, Lewisburg, February 18, from angina pectoris, aged 58.

Anson Hurd, M.D. Starling Medical College, Columbus, Ohio, 1852; Kentucky School of Medicine, 1882; a member of the Ohio State Medical Association; president of the Northwestern Ohio Medical Society in 1876; for several terms a representative in the legislature; assistant surgeon of the Twentieth Indiana Volunteer Infantry, and later surgeon of the Fourteenth Indiana Volunteer Infantry during the Civil War; for many years local surgeon of the Lake Erie and Western Railroad at Findlay, and for seven years secretary of the local board of pension examiners; for several terms a member of the city council; president of the board of trade in 1887; president of the Findlay Improvement Association in 1888; died at his home, February 18, from senile debility, aged 85.

James Enoch Tuell, M.D. Jefferson Medical College, 1884; a member of the American Medical Association; formerly president of the Kennebec County (Maine) Medical Association; and a member of the Maine Academy of Medicine and Science, and American Public Health Association; surgeon to the Augusta City Hospital; health officer of East Machias from 1890 to 1893, and a member of the Augusta Board of Health in 1895 and 1896; died at his home in Augusta, February 11, from pneumonia, aged 55.

Timothy Lawrence Barber, M.D. University of Pennsylvania, 1882; a member of the American Medical Association and American Electro-Therapeutic Association; ex-president of the West Virginia State Medical Association, Kanawha County Medical Society and Kanawha County Board of Health; for many years secretary of the local board of pension examiners; a member and formerly president of the West Virginia State Board of Health; died at his home in Charleston, February 24, from pernicious anemia, aged 56.

Christian Jonsson, M.D. Medical College of Reykjavik, Iceland, 1888; a member of the American Medical Association; a member of the staff of Mercy Hospital and president of the staff of Agatha Hospital, Clinton, Iowa; formerly president of the Clinton County Medical Society, and president of the local board of pension examining surgeons; from 1889-1891 surgeon on the Thingvalla Line; died in the Agatha Hospital, Clinton, February 26, from cancer of the stomach, aged 47.

Ezekiel W. Cooper, M.D. University of Pennsylvania, 1866; a member of the Delaware State Medical Society; for several years president of the State Board of Health; a member of the medical examining board of the state society; a member of the constitutional convention which framed the new constitution of 1896-1897; surgeon of volunteers during the Civil War; died at his home in Camden, February 21, from cerebral hemorrhage, aged 72.

Marion L. Heffelfinger, M.D. Kentucky School of Medicine, Louisville, 1887; a member of the State Medical Association of Texas; surgeon of volunteers during the Spanish-American War, and after its close, contract surgeon in the army with Philippine service; died February 17 at his home in Chicota, as result of injuries received in a railway accident, six months before, aged 43.

Charles George Burhenn, M.D. Western Pennsylvania Medical College, Pittsburg, 1899; a member of the American Medical Association; surgeon to the Pittsburg, McKeesport and Greensburg Street Railway Company; a member of the Jeanette (Pa.) Board of Education; died at his home, February 21, from septicemia, due to a bite on the finger from a diphtheria patient, aged 34.

Harleigh B. Hoechst, M.D. Maryland Medical College, Baltimore, 1900; Baltimore Medical College, 1901; a member of the Adams County (Pa.) Medical Society; assistant demonstrator of anatomy in the Maryland Medical College in 1900; a member of the Board of Health of the Borough of East Berlin; died at his home in East Berlin, February 24, from heart disease, aged 33.

Alonzo M. Barnes, M.D. Penn Medical University, Philadelphia, 1858; surgeon of the Third U. S. Colored Infantry during the Civil War; a member of the visiting and consulting staff of St. Luke's Hospital, Philadelphia; died at his home in that city, February 25, after an invalidism of two years from injuries received from a fall from a carriage, aged 72.

Edgar B. Shumway, M.D. Rush Medical College, 1874; a member of the American Medical Association; a member of the legislature in 1882 and of the state senate in 1884; formerly local surgeon for the Illinois Central and Big Four systems at Peotone, Ill.; died at his home in Chicago, March 2, from cerebral hemorrhage, aged 58.

Theodore S. Christ, M.D. University of Pennsylvania, 1860; assistant surgeon of the Fourth and Forty-fifth Pennsylvania Volunteer Infantry, and later brigade and division surgeon during the Civil War; president of the Center County Medical Society; died at his home in State College, Pa., February 16, from senile debility, aged 80.

Benjamin R. Parke, M.D. Jefferson Medical College, 1870; a member of the American Medical Association; a veteran of the Civil War; for twenty years a member, and at the time of his death president of the Wellsville (Ohio) Board of Education; died at his home, February 18, from cerebral hemorrhage, aged 67.

John Wilson Martin, M.D. New Orleans School of Medicine, 1846; one of the oldest practitioners of southeastern Arkansas; a Confederate veteran, and for several years president of the Merchants' and Planters Bank of Warren; died at his home in that city, February 11, from cerebral hemorrhage, aged 91.

Thomas Browning Mansfield, M.D. Medical College of Ohio, Cincinnati, 1878; a veteran of the Civil War; for many years a practitioner of Sac City, Iowa; local pension examiner for more than 25 years; died at his home in Ocean Park, Cal., February 11, from septicemia due to an operation wound, aged 65.

James M. O'Kelly, M.D. Kentucky School of Medicine, Louisville, 1877; a member of the Medical Society of the State of North Carolina; and at one time president of the Durham Medical Society; died at his home in that city, February 17, from chronic parenchymatous nephritis, aged 57.

Monroe Budd Long, M.D. College of Physicians and Surgeons, New York City, 1875; a member of the American Medical Association; dean of the staff of Muhlenberg Hospital, Plainfield, N. J.; twice coroner of Union county; died at his home, February 20, from heart disease, aged 60.

John A. Beauchamp, M.D. University of Nashville, 1861; a member of the American Medical Association; for many years superintendent of the Central Hospital for the Insane, Nashville; died in that institution February 25, from heart disease, following an attack of influenza, aged 70.

Frederick von Buelow, M.D. University of California, San Francisco, 1877; for nearly half a century a practitioner of San Francisco; died at the Central Emergency Hospital in that city, February 24, from the effects of a fall in which his skull was fractured, aged 79.

Charles F. Spangler, M.D. Jefferson Medical College, 1881; of Kane, Pa.; a member of the American Medical Association; consulting physician to the Kane Summit Hospital; formerly coroner of York county, Pa.; died in York, Pa., February 13, from heart disease, aged 50.

James Thompson, M.D. Jefferson Medical College, 1870; a member of the Missouri State Medical Association; professor of materia medica in the Medico-Chirurgical College of Kansas City, Mo.; died at his home in Kansas City, February 13, from heart disease, aged 65.

Augustus Richter, M.D. Pennsylvania Medical College, Gettysburg, 1851; an honorary member of the Medical Society of the State of Pennsylvania; and one of the founders of the National Science Association; died at his home in Williamsport, February 20, aged 87.

Frederick Austin Patterson, M.D. Central Medical College of St. Joseph, Mo., 1899; a member of the Missouri State Medical Association; acting superintendent of State Hospital for the Insane No. 2, St. Joseph; died in that institution, February 18, from uremia, aged 46.

George M. Reddish, M.D. University of Louisville, 1885; a member of the American Medical Association; a member of the school board of Somerset, Ky.; local surgeon of the Queen and Crescent Route; died in Oklahoma City, February 19, from facial erysipelas, aged 55.

William A. Miller, M.D. Missouri Medical College, St. Louis, 1897; a member of the Wyoming State Medical Society; local surgeon of the Burlington System and city physician of Sheridan; died in the Sheridan State Hospital, February 12, from peritonitis, aged 36.

George Monroe Darrach, M.D. Pennsylvania Medical College, Gettysburg, 1850; formerly of Cumberland, Ind.; one of the organizers of the Marion County Medical Society; died at the home of his son in East St. Louis, Ill., February 25, from influenza, aged 83.

Chester E. Albright, M.D. Pennsylvania Medical College, Gettysburg, 1854; for more than fifty years a practitioner of Muncy, Pa.; a member of the Medical Society of the State of Pennsylvania; died at his home, February 2, from gastritis, aged 78.

John Emil Traub, M.D. College of Physicians and Surgeons, New York City, 1886; a fellow of the New York Academy of Medicine; assistant attending physician to St. Luke's Hospital; died at his home in New York City, Dec. 25, 1909, aged 45.

Neal McInnes, of Augusta, Ga.; chairman of the Jury Commission of Richmond county; a member of the board of education, and president of the County Reformatory Board; died in Walters Park Sanitarium, Pa., Aug. 25, 1909, from aneurism, aged 65.

Stanley H. Brooks, M.D. University Medical College, of Kansas City, Mo., 1885; of Mound City, Kan.; a member of the American Medical Association; died in the University Hospital, Kansas City, February 17, from gallstone disease, aged 46.

William David Williams, M.D. Kentucky School of Medicine, Louisville, 1889; of Olive Hill, Ky.; a member of the Kentucky State Medical Association; died in the Pope Sanitarium, Louisville, February 17, from cerebral hemorrhage, aged 54.

Richard F. Lamson, M.D. Cincinnati College of Medicine and Surgery, 1877; surgeon of volunteers during the Civil War; a practitioner of medicine for 48 years; died at his home in Bryan, Ohio, February 10, from senile dementia, aged 71.

Emma Josephine Miner Mitchell, M.D. University of Michigan, Ann Arbor, 1901; a member of the American Medical Association; died at her home in Lafayette, Ind., March 1, from septicemia, following an ulcerated sore throat.

Ora Clay Swift, M.D. University of Buffalo, 1900; a member of the Brooklyn Medical Society, and a member of the staff of the Bushwick and Mutual hospitals; died at his home in Brooklyn, Dec. 21, 1909, from pneumonia, aged 35.

James Whitsett Quinn, M.D. University of Nashville, 1855; chief surgeon of the Refugees' and Freedmen's Hospital, Little Rock, Ark., in 1864; died at the home of his daughter in that city, February 1, from senile debility, aged 81.

Theophilus P. Taylor, M.D. Eclectic Medical Institute, Cincinnati, 1881; formerly a member of the Ohio State Medical Association; died at his home in Celina, February 19, from cerebral hemorrhage, aged 51.

Joseph Melville Deacon, M.D. University of Vermont, Burlington, 1883; for several years in charge of a private hospital in Milltown, N. B.; died suddenly at his home in that place, February 20, aged 46.

Arthur Sinclair Kenaga, M.D. Rush Medical College, 1896; a member of the Illinois State Medical Society; of Kankakee; died at the home of his father in that city, February 26, from uremia, aged 35.

William Preston Lyon, M.D. Vanderbilt University, Nashville, 1900; a member of the State Medical Association of Texas; died at his home in Stone Point, February 20, from pneumonia, aged 34.

Willard Porter Woodbury, M.D. Harvard Medical School, Boston, 1904; a member of the Massachusetts Medical Society; died at his home in Beverly, Mass., February 26, from acute nephritis, aged 31.

Joseph Roberts Clausen, M.D. Jefferson Medical College, 1882; formerly a member of the Medical Society of the State of Pennsylvania; died at his home in West Philadelphia, January 8, aged 70.

John W. Redwine, M.D. Missouri Medical College, St. Louis, 1882; a member of the Illinois State Medical Society; died at his home in White Hall, February 12, from pulmonary tuberculosis, aged 51.

L. Barstow Irish, M.D. Berkshire Medical College, Pittsfield, Mass., 1861; Bellevue Hospital Medical College, 1862; died at his home in Brooklyn, N. Y., February 17, from arteriosclerosis, aged 76.

Harry J. Boyd, M.D. University of Maryland, Baltimore, 1888; of Belair, Md.; died in the Union Protestant Infirmary, Baltimore, February 14, three weeks after a surgical operation, aged 41.

John Skinner, M.D. Harvard Medical School, 1856; a member of the Massachusetts Medical Society; died at his home in Roxbury, Boston, Dec. 27, 1909, from cerebral hemorrhage, aged 85.

Samuel Warren Vance, M.D. Medical College of Ohio, Cincinnati, 1855; one of the oldest practitioners of southeastern Indiana; died at his home near Connersville, February 14, aged 89.

Burr Thad Wise, M.D. Southern Medical College, Atlanta, 1882; a member of the Medical Association of Georgia; died at his home in Plains, February 12, from pneumonia, aged 51.

Benjamin F. Johnson, M.D. University of Louisville, 1884; a member of the State Medical Association of Texas; died at his home in Stockdale, February 18, from pneumonia, aged 60.

James W. Swagerty (license, Texas, 1894); at one time an officer in the U. S. Marine-Hospital Service; died at his home in Groveton, Texas, February 10, from pneumonia, aged 41.

Leonard N. Miller, M.D. John A. Creighton Medical College, Omaha, 1908; died at the home of his mother in Kennard, Neb., January 21, from lymphosarcoma, aged 22.

Howard E. Munn, M.D. Eclectic Medical College of the City of New York, 1873; Toledo (Ohio) Medical College, 1884; died at his home in Toledo, Nov. 23, 1909, aged 59.

George W. Kirkland, M.D. Medical College of Georgia, Augusta, 1868; a Confederate veteran; died at his home in Summertown, Ga., February 20, aged 64.

William Carl Ziepprecht, M.D. Germany, formerly a surgeon in the German army; died at his home in Dubuque, Iowa, June 8, 1909, from angina pectoris, aged 82.

Walter Thomas McKnight, M.D. University of Nashville and Vanderbilt University, 1888; of Marlin, Texas; died in Austin, Texas, February 12, aged 50.

Thomas D. Williams, M.D. Hospital College of Medicine, Louisville, 1876; died at his home in Bardstown, Ky., February 14, from pneumonia, aged 70.

George Howard Palmer, M.D. New York University, New York City, 1884; died at his home in Brooklyn, February 18, from cerebral hemorrhage, aged 47.

Edward H. Osborne (license, Kan.; examination, 1901); for thirty-seven years a practitioner; died at his home in Kansas City, Kan., Oct. 26, 1909, aged 69.

James G. Parshall (license, verification, Texas, 1908); a practitioner for 38 years; died at his home in Clifton, January 10, from diarrhea, aged 73.

Benjamin E. Throckmorton, Louisville Medical College, 1888; of McKinney, Texas; died in a sanitarium in Dallas, February 24, from heart disease, aged 44.

George F. Hamilton, M.D. Bennett Medical College, Chicago, 1870; a veteran of the Civil War; died at his home in Augusta, Wis., Dec. 30, 1909, aged 70.

Frank E. Matchette, M.D. Medical College of Ohio, Cincinnati, 1877; died at his home in Greenville, Ohio, February 16, from pneumonia, aged 59.

James Hennessy Hanley, M.D. Queens University, Kingston, Ont., 1900; of Watertown, N. Y.; died at his father's home in Ottawa, Ont., February 8.

Andrew Wailes Horton, M.D. University of Alabama, Mobile, 1899; of Pelham, Ala.; died in a sanitarium in Atlanta, Ga., February 25, aged 35.

Charles Henderson Watkins, M.D. Washington University, St. Louis, 1877; died at his home in Joplin, Mo., February 24, from uremia, aged 58.

George Little, M.D. Eclectic Medical Institute, Cincinnati, 1883; of Crawford, Ga.; died in a sanitarium in Atlanta, February 17, aged 45.

John Morrison, M.D. McGill University, Montreal, 1872; died at his home in Pierson, Man., January 26, from acute gastritis, aged 67.

William Ward, for nearly 70 years a practitioner of Ohio; died at his home in Harveysburg, Dec. 10, 1909, from angina pectoris, aged 88.

Jesse Russell, M.D. University of Louisville, 1870; died at his home near Allensville, Ky., January 21, from heart disease, aged 61.

Josephus Goodenough, M.D. Eclectic Medical Institute, Cincinnati, 1858; died at his home in Clarkston, Mich., February 18, aged 79.

Henry Paul Lewandowski (license, examination, 1874); of New York City; died in the Sydenham Hospital, Dec. 4, 1909, aged 61.

Daniel Stone Lyman, M.D. Medical College of Ohio, 1847; died at his home in Goshen, Ohio, February 27, aged 88.

Walter Franklin Weber, M.D. University of Maryland, 1909; died at his home in Oakland, Md., February 9, aged 25.

Medical Education and State Boards of Registration

COMING EXAMINATIONS

ARIZONA: Phoenix, April 4-5. Sec., Dr. Ancil Martin.
CALIFORNIA: San Francisco, April 5. Sec., Dr. Charles L. Tisdale, 929 Butler Building.
COLORADO: Denver, April 5. Sec., Dr. S. D. VanMeter, 1723 Tremont Place.
FLORIDA: Jacksonville, April 4-5. Sec., Dr. J. D. Fernandez.
IDAHO: Boise, April 5. Sec., Dr. O. J. Allen, Bellevue.
MINNESOTA: State University, Minneapolis, April 5. Sec., Dr. W. S. Fullerton, 214 American Nat'l Bank Bldg., St. Paul.
MONTANA: The Capitol, Helena, April 5. Sec., Dr. W. C. Riddell.
NEW MEXICO: Santa Fe, April 11-12. Sec., Dr. J. A. Massie.
NORTH DAKOTA: Grand Forks, April 1-4. Sec., Dr. H. M. Wheeler.
OKLAHOMA: Lone Hotel, Guthrie, April 12. Sec., Dr. Frank P. Davis, Enid.
RHODE ISLAND: State House, Providence, April 7-8. Sec., Dr. Gardner T. Swarts, Room 315, State House.
WEST VIRGINIA: Wheeling, April 12-14. Sec., Dr. H. A. Barbee, Point Pleasant.

The Teaching of Pediatrics

The following communication, which will explain itself, is an important addition to the present active discussion of the medical curriculum. Particular attention is called to paragraph *h* referring to a hospital and dispensary for children as a chief essential in the teaching of pediatrics by any medical school:

To the Editor:—The Committee on Teaching of Pediatrics appointed by the Association of American Teachers of the Diseases of Children at its meeting in Chicago, June 1, 1908, made a preliminary report at the meeting of that body in Atlantic City, June 7, 1909.

The objects of this committee were "To secure detailed information as to the present status of the teaching of pediatrics in this country; to define its proper scope; to determine an ideal and also a minimum syllabus for the teaching of pediatrics in our medical colleges; to confer with the Association of American Medical Colleges, with the Council on Medical Education of the American Medical Association, and with the Confederation of State Boards of Examination and Registration, with a view of securing adequate place and time in college curricula, and state examinations in this branch, and to regulating the conditions of the clinical facilities and the equipment necessary for the proper teaching and study of children and their diseases."

The report of the committee embraced numerous data collected from teachers in forty American medical colleges, and other sources, and its details are too voluminous for insertion here. The committee consisted of the following teachers: S. W. Kelley, Cleveland College of Physicians and Surgeons; A. C. Cotton, Rush Medical College, Chicago; H. M. McClanahan, University of Nebraska, Omaha; W. C. Hollopeter, Medical-Chirurgical College, Philadelphia; W. W. Butterworth, Tulane University, New Orleans.

The report, which was received and adopted unanimously by the association, concluded as follows:

(a) Every medical school should have a chair of pediatrics. It should be a full professorship, quite independent; i. e., not subordinate to any other chair.

(b) Pediatrics should be compulsory; i. e., required for graduation.

(c) The number of men on the teaching staff may vary in different schools according to the number of students, but the teaching force should be large enough to devote personal attention to the work of each student.

(d) Exact time allowance has not been figured precisely from our data collected from teachers. It should be as much as that devoted to any other practical branch. Ten per cent. of the third and fourth years, or certainly not less than 190 hours, should be the minimum.

(e) Pediatrics should be studied in both the junior and senior years, the course being graded.

(f) The course should include the anatomy, physiology and all the ordinary abnormal conditions of infancy and childhood, both medical and surgical. When preferred the surgical side may be taught in the department of surgery, but it should not be ignored or only casually referred to as it usually has been. At some future time it may prove expedient to introduce a special course in anatomy into the department of anatomy, as some colleges are now giving special attention in the anatomic department to surgical anatomy, brain and nerve anatomy, etc. It is quite as essential that the special anatomy of the developing period should be presented.

(g) Didactic lectures still have a useful place; but a large part of the teaching should be clinical, both in hospital and dispensary. The class should be divided into sections of not more than ten or twelve students for most effective clinical teaching, giving the student actual experience under the teacher in handling the patients.

(h) Clinical cases in ample numbers and variety to illustrate the hygiene of normal infancy and childhood and all the ordinary malformations, injuries and diseased conditions, including the contagious diseases, are a necessity. We find more schools open to criticism for lack of clinical material and its proper utilization than for any other short-coming. This lack of clinical facilities is most frequently noticeable in regard to the contagious diseases. No college without a hospital or dispensary for children is prepared to teach pediatrics.

(i) A separate laboratory of pediatrics is not a necessity, but laboratories for general medical and surgical examinations should be available and be supplemented for the pediatric work.

(j) The anatomic and pathologic museums should be supplied with specimens, and the college library with text-books, reference books and periodicals on pediatrics.

ALFRED C. COTTON, President, Chicago.

Book Notices

IMMUNITY AND SPECIFIC THERAPY. By W. D'Este Emery, M.D., B.Sc., Clinical Pathologist to King's College Hospital and Pathologist to the Children's Hospital, Paddington Green. Cloth. Pp. 448, with illustrations. Price, \$3.50 net. New York: Paul B. Hoeber, 1909.

Emery's book is an excellent presentation of the main facts, principles and theories concerned in these subjects of immunity and specific therapy. From the literary point of view it is unusually good, considering that the subjects are difficult to present interestingly. Its interest and instructive value are further increased by the many apt illustrations and analogies which the author has at his command.

The first chapter, "Introductory and General," defines immunity and considers the various types, as natural and acquired, active and passive, mixed immunity and local immunity; discusses the character of the virulence of micro-organisms and the means of increasing it or lowering it for purposes of vaccination; and, finally, devotes two pages to the theories of immunity. Emery's definition of immunity seems very wide in at least this regard: that he sometimes refers to the non-occurrence of a disease (as gout) as indicating immunity on the part of those concerned, whereas it is just as reasonable to suppose that the individuals are free from the disease because the causative conditions are not present. The discussion of the different types of immunity to bacterial diseases is excellent. In the second chapter, on the "Nature of Toxins," the subject is considered under the two headings of "exotoxins" and "endotoxins." The various specific and cytolytic bacterial toxins are described, and the author leans to the view that the endotoxins are true specific toxins, for which it may be possible to obtain specific antitoxins. The third chapter, "The Phenomenon of Antitoxin Formation," would seem to be mislabeled, since it really deals with the means by which antitoxins may be produced practically, referring only incidentally to the antitoxin "curve" in the immunized horse.

In discussing the "Interreactions of Toxin and Antitoxin" (Chapter 4), the complicated theories and experiments which led Ehrlich to his conclusions regarding the constitution of toxin and antitoxin are presented in a good deal of detail and for the most part with clearness. There is some evidence of careless proofreading on page 78, where it would seem that "c.c." is used in several places where "parts" is intended, and at the top of page 79 where "antitoxin" seems to have been used accidentally instead of "toxin." The physico-chemical view of Arrhenius and Madson, and the absorption theory of Bordet are given some consideration.

Ehrlich's theory is dealt with in a special chapter (5) entitled "The Origin of Antitoxin—The Side-Chain Theory." It is a clear statement. "Immunity to Toxins" is described under three headings: (1) Active, as in disease or in vaccination; (2) passive, as in the administration of antitoxin; and (3) those cases of natural immunity to toxins which are not accompanied by the presence of antitoxins in the blood. The next three chapters deal with "Bacteriolysis and Allied Phenomena" (hemolysis, etc.), "The Agglutinins" and "The Precipitins." Phagocytosis is dealt with rather extensively, from a description of Metchnikoff's first observations on the daphnia, to the more recent data on the opsonins. Credit seems to be given rather grudgingly to Denys and LeClef and others for their pioneer work on the influence of serum on phagocytosis, which, together with the method of Leishman, is really at the basis of the colossal reputation built up by Wright through the invention of the opsonic index and its vigorous exploitation. Reversing the expression used by Emery, it may be said that the invention of the opsonic index and the advocacy of vaccine therapy on a broader scale in no way detract from the importance of the fundamental observation of Denys and LeClef, namely, that some property of the serum is of the utmost importance for phagocytosis. The agglutinins are discussed in this chapter, which, throughout, holds the interest of the reader.

Two chapters of particular interest are those on "Reactions and Similar Phenomena" and the "Colloidal Theory of Immunity." In the former the tuberculin reaction in its

various forms, the complement fixation reaction for syphilis, von Pirquet's conception of "allergie," anaphylaxis, and the serum disease are discussed; in the latter, the properties of colloids, and certain analogous properties in relation to immunity reactions. A chapter on "Immunity to Bacteria" is followed by a section on "Practical Applications," in which some of the more important infections in their relation to immunity are considered.

The book is a valuable addition to those which offer a summary of the subject of immunity.

FOOD INSPECTION AND ANALYSIS. By Albert E. Leach, S.B., Chief of the Denver Food and Drug Inspection Laboratory, Bureau of Chemistry, U. S. Department of Agriculture. Second Edition. Cloth. Pp. 929, with 278 illustrations. Price, \$7.50. New York: John Wiley & Sons, 1909.

This book is intended for public analysts, health officers, sanitary chemists and food economists, and its claimed purpose is not to go beyond the strictly chemical and physical processes involved in making the analyses by which the proximate components of the food are determined. This purpose in the present work has especial reference to adulteration, sophistication, substitution, the addition of more or less harmful preservatives, and the other more or less subtle methods of manufacturers and firms or individuals engaged in the preparation of beverages, foods and food-products. Diet and metabolism are not discussed, but the work of Atwater and his co-workers is mentioned. Methods of manufacture or preparation of foods and beverages are given briefly, and complete working directions for the analysis of every class of foods and drinks and approved tests for the detection of impurities, adulterations, coloring-matters, preservatives, etc., are set out. The work has numerous illustrations of apparatus and abounds in tables of reference, percentage tables, etc., and contains 40 pages of photomicrographic plates of the histologic structure of the various grains. The descriptions of chemical processes, methods of analysis and tests are clear, and nothing seems to have been overlooked to make the book a practical working exposition for the food analyst. There is not a great deal of critical comment in the book on the effects of adulterations, etc., the aim being simply to state the facts. An exception, however, is found in the case of meat-extracts and meat-juices: the author calls attention to the rather wide discrepancy between the claims of some manufacturers as to their products and the results of their analysis. Meat-extracts, he says, have practically no food-value and are useful only as stimulants, much like tea and coffee. He finds that commercial meat-juice is far different in composition and food-value from the juice made in the laboratory, and says that it appears to be impracticable so to preserve true meat-juice that it can become an article of commerce. That it should require a book of 954 pages to set out the adulterations and sophistications of products including every form of food used by man, and the methods for the detection of such adulterations and sophistications, is a rather severe commentary on the ethics of business. A reading of the book suggests that a large number of men from technical schools are devoting much energy, ingenuity and ability to the more or less devious methods of food sophisticators. Even a superficial reading of this book by the physician will be useful and suggestive to him of the possible etiology of much of the morbidity with which he comes daily in contact. It is a complete book on a subject that calls for increasing vigilance on the part of officials and others interested.

CLINICAL EXAMINATION OF THE URINE AND URINARY DIAGNOSIS. By J. Bergen Ogden, M.D., New York, N. Y., Medical Chemist to the Metropolitan Life Insurance Co., N. Y. Third Edition. Cloth. Pp. 427, with illustrations. Price, \$3 net. Philadelphia: W. B. Saunders Co., 1909.

That three editions of this popular and well-known book have appeared in such a short time is sufficient evidence of its merit. The subject-matter has been brought up to date by the omission of much unnecessary and unimportant material and by the addition of many of the newer and more important tests for various normal and abnormal constituents of the urine. It is true that many accurate, reliable, and satisfactory tests are omitted; but this should not militate against the usefulness of the book, as it is to be remembered

that an author necessarily recommends those tests and methods which he himself has found to be the most satisfactory for such work. If the student, general practitioner, or specialist masters the examination of the urine as outlined by Ogden, he need have no fear of getting into difficulties in his clinical examinations. The details of the various tests and methods are given in a clear and concise manner, so that no doubt should exist on the part of the worker as to the methods to be followed. The clinical significance of the various urinary findings is given in sufficient outline to permit of the proper interpretation of abnormalities.

In the sections treating of the urinary changes in various pathologic conditions, both renal and general, one will find a thoroughly up-to-date treatment of such variations. This section should be especially valuable to the practitioner, who is frequently at a loss to interpret his findings and who is rarely cognizant of the physiologic variations in such a complex fluid as the urine. This phase of urinary examinations is too often insufficiently discussed in text-books.

In this edition, Ogden has taken the opportunity of adding a section of 13 pages on the "Examination of the Urine for the Purpose of Life-Insurance." Here many important points are brought out which should be absorbed by all having to do with such details. It is, doubtless, true that many examinations of the urine are of little value, and, indeed, often farcical and unreliable for the purpose of establishing the value of a "risk," yet this is unquestionably due to the gross ignorance of the examiner and is no reflection on the conscientious physician, who does his work carefully and who knows how to interpret his urinary findings in the light of the clinical examination of the applicant.

The typography of the book is excellent and its illustrations numerous, accurate, and thoroughly satisfactory. The arrangement of the subject-matter is admirable. The diction is clear and concise and the text is extremely orthodox in its teaching. This work is highly commended both to the student and practitioner.

SMALLPOX AND VACCINATION IN BRITISH INDIA. By S. P. James, M.D., London, D.P.H., Major, Indian Medical Service. Cloth. Pp. 105, with 14 diagrams. Price 7 shillings 6 pence. London; W. Thacker & Co., 2 Creed Lane, 1909.

This volume contains in convenient form a compilation of the government reports regarding vaccination in India. As the author remarks in the preface, "in all countries in Europe where vaccination has been extensively carried on, an appeal to the figures of smallpox mortality has given in favor of the practice an answer as unequivocal as it is satisfactory and it is obviously of great interest to ascertain whether a similar answer results from inquiry in a country like India where the difficulties attending the introduction and progress of vaccination have been enormously greater than in Europe."

Among the difficulties enumerated are the enormous population (230,000,000 of people) scattered over a territory of more than a million square miles; the fact that only 5 or 6 per cent. of the natives can read or write their own language and that the great majority of them, beside being exceedingly ignorant and childish, are so apathetic that they take advantage of protective measures only when they are free of cost and are brought to them. Beside the fact that nearly all the natives of India are suspicious of any measure not sanctioned by the custom of ages and are especially suspicious of any measures advocated by the British government, there is the additional difficulty to overcome that, since very early times, the people of India have worshiped a goddess of smallpox and that certain castes regard it as a religious duty to take no precautions whatever against the disease, its visitation being regarded as a sign of the favor of the goddess. Dr. James mentions many other curious superstitions of the native population which form additional obstacles.

The introductory chapters of the book are devoted to a historical sketch of smallpox and of smallpox inoculation, and of previous attempts at vaccination in India. In Chapter 4 the value of vaccination in India is considered. This chapter is plentifully interspersed with statistics and graphic tables showing the annual smallpox mortality in the various provinces for a long period of years. By way of contrast, the smallpox death-rate in the early years of the nineteenth cen-

tury is quoted, showing that in Calcutta in 1833, the death-rate from smallpox was 11,796 per million, and that in 1850 this disease caused nearly 47 per cent. of all the deaths in Calcutta. Tables for each of the provinces are given, showing the reduced mortality from 1868-75, when vaccination was first undertaken in any systematic manner, to the present time, when the mortality reports show its ravages to be greatly diminished. In reply to the usual antivaccination argument that the enormous decrease following vaccination is due to "improved sanitary conditions," the author shows that cholera and other epidemic diseases have remained stationary or have increased in virulence during the same time.

Major James' book should be read by every one interested in the prevention and extermination of smallpox.

STUDIES IN IMMUNITY. By Prof. Jules Bordet, Professor of Bacteriology at the University of Brussels, and his Collaborators. Collected and Translated by Frederick P. Gay, A.B., M.D., Instructor in Pathology, Harvard Medical School. First Edition. Cloth. Pp. 529. Price, \$6. New York: John Wiley & Sons, 1909.

When we consider that it was Bordet who discovered that the action of a bacteriolytic serum depended on the combined effect of two substances in the serum (the substances which afterward became the amboceptor and complement of Ehrlich); that he was the first to recognize the phenomenon of specific hemolysis by serums and its dependence on two substances of the same type; that he has made contributions of fundamental importance to the subjects of agglutination of bacteria, the action of antitoxins on toxins, and phagocytosis; that, with Gengou, he made certain observations on the fixation of alexin (complement) which later (in the hands of Wassermann) grew into the hemolytic or complement fixation test for syphilis; that he and Gengou have discovered what they believe to be the micro-organism of whooping-cough; and, finally, that he stands as the most prominent and most consistent opponent of the side-chain or chemical theory of immunity proposed by Ehrlich—when we consider these achievements, we cannot fail to have a sense of gratitude that Bordet consented to the collection and publication of this series of thirty papers, which include those of greatest importance by Bordet and those who have worked with him or under his direction.

By way of throwing light on this most interesting man of science, the following may be quoted from Dr. Gay's preface: "Although for more than fifteen years a protagonist in the modern development of immunity, Bordet has continued an investigator instead of becoming a generalizer; he has been led by thoroughness of observation and brilliancy of inductive reasoning to the collection of successive significant facts rather than to the assimilation of scattered data in support of a preconceived theory. Whereas others have been willing to venture more fully explanatory theories of immunity, Bordet, although contributing a disproportionate number of important facts, has contented himself with the hypotheses which bridge from one experiment to another, and has fully realized the necessarily fragmentary nature of our present knowledge in this field of science."

There is no need to discuss the individual papers which are reprinted, in English, in the volume. It is sufficient to state that among them are the original articles in which some of the most important phenomena of immunity were first described.

The last chapter of the book consists of "A General Résumé of Immunity," by Bordet, written expressly for this volume. It is particularly welcome, since it summarizes in a very clear manner the objections which Bordet proposes to the theory of Ehrlich, and describes the alternative hypotheses which he entertains in explaining the phenomena of immunity and serum reactions.

A study of the papers and of the "Résumé" must heighten the respect which the scientific world at present entertains for Bordet, and the work should be the means of affording greater publicity to the views held by the scientist.

AIR AND HEALTH. By Ronald Campbell Macfie, M.A., M.B.C.M., Author of "The Romance of Medicine," etc. Cloth. Pp. 328. Price, \$2.50. New York: E. P. Dutton & Co., 1909.

In this day when the importance and value of fresh air and the fresh-air treatment of disease are so clearly recognized a work on air and health is timely. This book treats of fresh air more with reference to the improvement of the general health and well-being of communities and individuals, than in

the treatment of particular diseases, such as tuberculosis. The author believes that while treatment of tuberculosis in sanatoria will benefit a few individuals, and its educational value to the general public is great, yet more could be accomplished by establishing open-air schools for children, and he gives examples and results of experimental schools of this sort established at various places in Europe.

The book deals with the physics and chemistry of the air and atmosphere, respiration and its physiology, air pressure, temperature, humidity, solar radiation, radioactivity, electricity and air, etc., and then takes up impure air, smoke, fog, gases in mines, sewer air, dust and germs, ventilation, breathing, artificial atmospheres, climate, and, briefly, open-air treatment of "consumption." The author in a sensible way explodes many of the theories of physical-culture faddists and others regarding the development of the chest breathing exercises, and shows that a big chest is not necessarily an indication of vital capacity, and that oxygen intake depends on the activity of metabolism. In a study of the various substances polluting the air, he cannot make a strong showing against any one of them, but affirmatively he emphasizes the salutary effects of fresh, pure air, and therefore makes a strong plea for the open window and open-air life. The chapter on climate is interesting, but only the higher Alps, the sea and Africa are mentioned, as might be expected from a British author; Colorado and California are mentioned only incidentally in a quotation.

Much of the statistical and tabulated matter is old, and although the title-page says the book was first printed in 1909, and the author seems to be conversant with the recent work and investigations, yet the book gives one the impression of being rather ancient history. For instance, a table showing the annual death-rate in London from phthisis dates back to 1898.

OPHTHALMIC SURGERY. A Treatise on Surgical Operations Pertaining to the Eye and its Appendages with Chapters on Para-Operative Technic and Management of Instruments. By Charles H. Beard, M.D., Surgeon to the Illinois Charitable Eye and Ear Infirmary. Cloth. Pp. 674, with 9 plates and 300 other illustrations. Price, \$5. Philadelphia: P. Blakiston's Son & Co., 1910.

This book is the fruit of twenty-six years of study and work in hospitals, dispensaries and private practice. The chapters dealing with the subject of preparation for the operation, including the preparation of surgeons, assistants, patient, instruments, dressings, etc., and the selection and care of instruments are particularly valuable, especially to younger practitioners of ophthalmology. The consideration of operative procedures is made interesting and instructive by a concise and clear account of the history of such operations, showing how in many instances there has been gradually evolved that measure which, in the judgment of the author, is the best.

The careful description of the technic is commendable, and the liberal and excellent photogravure illustrations add greatly to the practical descriptive matter. Special mention should be made of the chapter on plastic operations on the eyelids and of that on cataract extraction. The author's experience in the treatment of deformities of the lids as surgeon to the Illinois Eye and Ear Infirmary, enables him to speak with authority on this difficult subject. The various methods that have been proposed for the correction of entropion and ectropion are well described. The chapter on "Extraction of Cataract" receives added value from a recital of the accidents and complications that may occur in the course of the operation and the preventives and remedies that apply to them.

Altogether, it is one of the best books on the subject in the English language, and is especially valuable in that it reflects so well the practice of modern American ophthalmic surgery.

DIAGNOSTIC METHODS. Chemical, Bacteriologic and Microscopic. By Ralph W. Webster, M.D., Ph.D., Assistant Professor of Pharmacologic Therapeutics and Instructor in Medicine in Rush Medical College, University of Chicago. Cloth. Pp. 611, with 211 illustrations. Price, \$6.00 net. Philadelphia: P. Blakiston's Son & Co., 1909.

The author has succeeded in giving a practical exposition of laboratory diagnostic methods, including many which are not ordinarily found in such books, as for instance, the methods of examining the secretions of the nose and conjunctiva. The section of the blood is especially complete. Along with the methods described, the author has endeavored

—and successfully—to present sufficient physiologic and clinical facts to enable just conclusions as to the value and bearing of the various methods on diagnosis; and in some places he has not hesitated to express his very decided opinion of the unavailability of some modern methods, especially, for instance, the methods of determination of the functional capacity of the kidney. Cryoscopy, electric conductivity, and the methylene blue tests are unhesitatingly condemned. Webster regards the phloridzin test as the best one advanced which can in any way aid the diagnosis. He concludes that for the medical man these tests are rarely of value; but admits their utility for the surgeon. We are glad to see emphasis laid on the necessity of control of the diet in order to make quantitative determinations of urea valuable. The book is finely illustrated, to a large extent by original drawings, and a large number of illustrations are presented as colored plates. The book will be highly appreciated by those who desire a guide to the most recent methods of diagnosis, and can be commended especially on account of the accuracy and clearness of the description of these various methods.

Umwelt und Innenwelt der Tiere. Von J. von Uexküll, Dr. med. hon. c. Paper. Pp. 259. Berlin: Verlag von Julius Springer, 1909.

This book is a review of the physiology of the invertebrates. It is written by one of the Heidelberg group of neo-vitalists and is interesting as showing how the life processes of these animals look from their standpoint. Besides his own observations, the author gives a review of the literature, defining the position of the various writers in reference to his own conceptions. The nervous system is especially considered, and the relation of the animal to its environment is studied in each form. This makes the work especially valuable to psychologists and neurologists.

Vitalistic conceptions are discussed at length, the author believing that some vital force, neither physical nor chemical in nature, is an important factor in every biologic process. The work of biologists in the past is destructively criticized because they did not consider vitalism more and physics and chemistry less.

The book is attractively written, and those who are interested in the subject and who read German, will find in it much to provoke serious and thoughtful consideration, even though they may not be in sympathy with some of the iconoclastic speculations.

INDEX DU PROGRÈS MÉDICAL. 37^e Année, 1909-1910. Cloth. Pp. 1016. Paris: Progrès Médical, 41 rue des Ecoles.

This is an expansion of the annual students' and practitioners' number of the *Progrès Médical*, and contains a variety of statistics and useful information. The first part consists of a collection of laws governing the French universities, the outlines of the organizations of the educational and affiliated institutions in Paris, including the University of Paris, the Sorbonne, the military and naval medical schools, the hospitals and clinics, the schools for nurses, the insane asylums, the schools for backward children, the private courses of medical instruction, medical and scientific societies, the dental and veterinary schools in Paris; the second part covers the same subjects for the provinces and colonies, and in addition gives the names of the principal French medical journals. The third gives a verified official list of French physicians. The fourth part gives a list of the principal medical schools throughout the world, with their faculties, and considerable other information. The fifth part contains a compendium of legislation and administrative orders bearing on the medical profession in France.

A TEXT-BOOK OF MEDICAL TREATMENT. (Alphabetically arranged.) By William Caldwell, M.A., M.D., Physician, Royal Victoria Hospital, Belfast. Cloth. Pp. 630. Price, \$4.50. New York: Longmans, Green & Co., 1910.

This book, the author tells us, is the offspring of twenty years' experience in teaching the principles as well as the application of modern therapeutical knowledge. The work has been done with the aid of a number of collaborators. The arrangement is alphabetic, and includes the ordinary scope of internal medicine and the diseases of the skin. The treatment includes hygienic, dietetic and physical measures, as well as drugs.

Medicolegal

A Sponge Case in the Federal Courts

The United States Circuit Court of Appeals, Eighth Circuit, says that the case of *Ruth vs. Johnson* (172 Fed. R., 191) was brought by the latter party to recover damages which he claimed he suffered by reason of the negligent performance of an operation on him for appendicitis, the act of negligence specified being that the defendant unskillfully, negligently, and inattentively permitted a sponge or pad of gauze to remain in the abdominal cavity after the sewing up of the wound.

The operation was performed March 30. When the defendant opened the abdomen, he found extensive adhesions caused by frequent recurrences of the attacks of appendicitis. He immediately placed pads of gauze in the opening to wall off the infected area. The appendix was then brought up, the cecum with it, and as the appendix was brought up the sack ruptured, and the defendant called to his assistant to get a pad quick. The assistant got the pad, and the defendant called for another. Another pad was gotten and placed in the body. The defendant did not remember how many pads he put into the abdomen. The case was one known to surgery as a pus case. When the defendant had finished the operation, the sponges or pads of gauze that were removed were dropped into a tub. A stab drain was put in so as to give a direct outlet from the cavity.

About two weeks after the operation a lump formed at the lower end of the main incision, and kept getting larger until it was about the size of a hen's egg. The defendant, on examination, decided that it was an abscess, and treated it as such by opening it and putting in a tube. He also instructed the plaintiff's home physician to treat it as an abscess, after he left the hospital, May 2, and it was treated, as also the stab wound, with pieces of gauze one-fourth of an inch wide and four or five inches in length, although sometimes the pieces of gauze were eight or ten inches long, but narrow. But the condition of the patient kept getting worse, until July 7, when another surgeon, assisted by the attending physician, opened the abdominal cavity by cutting down so that the end of the incision that was made united with the lower end of the original incision made by the defendant. The surgeon introduced his finger and could feel gauze. He then put in his forceps and pulled out the gauze in question, of which 2½ or 3 inches had penetrated the ascending colon. On January 1 the wound had healed.

The evidence further tended to show that the size of the piece of gauze taken out was 9½ by 11½ inches. That the pads used at the time of the operation by the defendant were from eight to ten inches square. That with free open drainage such as existed in this case the gauze could have remained in the abdominal cavity without any further disturbance than did actually occur. That the gauze pad had been in the abdominal cavity from 90 to 100 days. That, after the plaintiff went home, there never was at any time prior to the operation last mentioned an opening in his abdomen large enough to have permitted the introduction of the pad of gauze removed therefrom. That the presence of the gauze in the abdominal cavity was the cause of his illness subsequent to the operation for appendicitis.

There was also evidence tending to show that all of the pads of gauze that were placed in the abdominal cavity of the plaintiff at the time of the operation for appendicitis were removed, but no witness had any actual knowledge as to whether they were or not. The defendant testified himself that he did not know how many pads were placed in the abdominal cavity, and the nurses who seemed to have charge of furnishing the pads or sponges at the hospital could only testify that the pads were removed by reason of the fact that they were always removed in every case. No witness had a distinct recollection of what was actually done in this particular case with reference to removing the gauze pads.

It thus appeared that when all the evidence was in there was one question for the jury, and that was, Did the defend-

ant sew up the wound after his operation on the plaintiff and allow a pad of gauze 9½ by 11½ inches to remain in the abdominal cavity? This was the only question left to the jury by the court; it being conceded that, if the defendant did do this, he was guilty of negligence. The jury found the issue submitted to them in favor of the plaintiff and against the defendant, and no court would be authorized to say that there was not sufficient evidence to support their finding.

Then it was assigned as error to allow three physicians to answer hypothetical questions in the following language: "Assuming that an operation was performed for appendicitis, and the main incision was closed up and a stab wound made with a drainage tube in it, and a pad of gauze 9½ by 11½ inches was sewed up in the wound and remained there for a period of about 98 days, state whether or not to leave it there that length of time would be the exercise of ordinary care, skill and attention on the part of the surgeon in charge of the operation." But even if the questions in the form they were put were for the jury and not for the witnesses, which the court does not stop to determine, the court is constrained to hold their allowance was not prejudicial error for the reason that there could be no contention, and counsel for the defendant made none, that the placing of the gauze pad in the abdominal cavity of the plaintiff and leaving the same there after the operation for appendicitis would not be an act of negligence. The only question over which there was a contest in the trial of the case, and the only question submitted to the jury for decision, was as to when and where and by whom the gauze was put into the cavity and allowed to remain.

Wherefore, a judgment for the plaintiff (amount not stated) is affirmed.

Validity of Statute and Grounds for Refusal of Verification License

The Court of Civil Appeals of Texas says that the case of *Morse vs. State Board of Medical Examiners* (122 S. W. R., 446) was brought by said Morse to compel the board to issue to him a verification license to practice medicine. The defense was that he had been guilty of grossly unprofessional or dishonorable conduct, of a character likely to deceive and defraud the public, section 11 of the medical practice act of April 17, 1907, being relied on to support the position taken. This section provides that the board may refuse to issue the certificate provided for in case of the presentation of a license, certificate or diploma illegally or fraudulently obtained, or when fraud or deception has been practiced in passing the examination; for conviction of a crime of the grade of a felony, or one which involves moral turpitude, or procuring or aiding or abetting the procuring of a criminal abortion; or for "other grossly unprofessional or dishonorable conduct of a character likely to deceive or defraud the public," etc.

It was contended that this last clause was too general and uncertain, and that it should therefore be disregarded and the statute administered as though the clause were eliminated therefrom, but the court does not think the statute subject to the objection urged against it, and affirms a judgment for the board.

An important distinction, the court says, exists between granting a license and revoking a license, which distinction may justify the application of different rules of law. Many courts hold that the cancellation or revocation of a license to practice medicine constitutes a penalty; but such result does not follow from a refusal to grant such license. A license to practice medicine is a privilege or franchise granted by the government, and a refusal to grant such franchise, whatever the reason may be for such refusal, does not constitute a penalty.

The particular clause of the statute assailed in this case not only requires proof of unprofessional or dishonorable conduct, but it must be other grossly unprofessional or dishonorable conduct of a character likely to deceive or defraud the public. It is not unreasonable to conclude that, by the use of the word "other," the Legislature intended that the conduct

referred to should be similar in its nature to that designated in the preceding subdivision of that section and defined as "a crime of the grade of a felony, or one which involves moral turpitude, or procuring or aiding or abetting the procuring of a criminal abortion." Not only that, but such conduct is further qualified by the use of the word "grossly." Furthermore, such conduct must not only be grossly unprofessional or dishonorable, but it must be of a character likely to deceive or defraud the public. It has been held, in construing a similar statute, that the language "unprofessional or dishonorable" was not intended to describe two classes of conduct, and that the word "unprofessional" was used in the same sense as "dishonorable," and not as signifying "unethical." *State vs. State Medical Examining Board*, 32 Minn., 324.

Nearly if not all the states have statutes requiring applicants for license to practice either medicine or law to present satisfactory evidence of good moral character and this court knows of no case in which it has even been held that such a statute was invalid because of uncertainty. It would seem that statutes of the latter class afford as much room for difference of opinion as does the statute under consideration in this case.

Legal Effects of Neglect to Observe Directions of Physicians

The Supreme Court of Arkansas says that the case of *Maryland Casualty Co. vs. Chew* (122 S. W. R., 642), as it is now entitled, was brought by the latter party to recover indemnity on a policy of accident insurance. One of the defenses was that the plaintiff did not use due diligence to secure the recovery of his injured arm. It has been held in cases of personal injury that no damages should be allowed the injured party for any impairment of health or physical condition occasioned by his neglect to observe the directions of his physician. On the same principle, no indemnity should be allowed to an insured in actions like this on account of an extension of the injury where such extension is occasioned by his neglect to observe such directions. But the failure of the plaintiff to observe reasonable care in following the advice of his physician could not affect the defendant unless it increased the indemnity and the defendant would have no right to complain.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

New York Medical Journal

February 26

- 1 *Management of Glycosuria in Elderly Persons. V. C. Vaughan, Ann Arbor.
- 2 Case of Pellagra. H. Fox, New York.
- 3 Chronic Joint Diseases. J. M. Taylor, Philadelphia.
- 4 Visceral Angioneurosis. S. S. Cohen, Philadelphia.
- 5 Inflammatory and Suppurative Conditions of the Retropharynx of Infants. E. M. Sill, New York.
- 6 *Osteomyelitis. J. E. Moore, Minneapolis.
- 7 Bier's Hyperemic Treatment in Surgery. E. Adams, New York.
- 8 An Hereditary Chart. J. F. Munson, Sonyea, N. Y.
- 9 Certain Lumbar Punctures at Bloomingdale Hospital. G. S. Amsden, White Plains, New York.

1. **Glycosuria in Elderly Persons.**—The glycosuria of elderly life is due, in many instances at least, to excessive carbohydrate feeding; this excess is usually confined to some special carbohydrates, sugar and wheat starch; the early glycosuric of this class is often easily able to care for other carbohydrate foods; the harmful carbohydrates should be detected and eliminated from the food; those that can be assimilated should be determined and permitted; there is a specificity in the metabolism of carbohydrates as there is in that of proteins; the presence of a small amount (from 0.5 to 2 per cent.) of sugar in the urine should not be regarded as a matter of trivial importance. In many persons the capacity for assimilating carbohydrates is largely determined by the time of

day when the food is taken. Glycosurics who cannot metabolize carbohydrates when taken for breakfast, may dispose of one hundred grams of bread taken at a 6 o'clock dinner. Why this is true, Vaughan cannot say, unless it is due to the more hurried way in which many things, both foods and medicines, pass through the body when taken in the morning.

The third point is the value of the open-air treatment of this form of glycosuria. In a general way it is stated by most authorities on diabetes that life in the open air is beneficial, but Vaughan does not think that this has been sufficiently emphasized. He thinks that porch sleeping is quite as beneficial to the glycosuric as to the tuberculous.

6. Abstracted in *THE JOURNAL*, Feb. 19, 1910, p. 648.

Boston Medical and Surgical Journal

February 24

- 10 The Mother and the Child in the Tuberculosis Problem. E. O. Otis, Boston.
- 11 Jaundice in New-Born Infants. J. L. Morse, Boston.
- 12 *Scarlet Fever Prophylaxis with Streptococcus Vaccine. R. M. Smith, Boston.
- 13 Alcoholic Cirrhosis of Liver in a Boy of Four Years. D. N. Blakely, Boston.
- 14 Stray Thoughts on History of Medicine. J. E. Donley, Providence, R. I.
- 15 Why the "Optometry" Legislation should not Pass. G. S. Derby and R. S. Loring, Boston.

12. **Scarlet Fever Prophylaxis with Streptococcus Vaccine.**—The reasonableness of the use of streptococcus vaccine in scarlet fever would seem to be dependent on the acceptance of the streptococcus as the cause of scarlet fever. The results obtained are believed by many to establish the primary rôle of the streptococcus in scarlet fever. The only cases in which the vaccines are withheld are (1) in patients having a high temperature, and recently, since the conviction that no harm is done has been established even these have received doses without evident untoward results; (2) in very young infants or patients who, from some cause or other, are greatly exhausted; and (3) in those having nephritis. Smith urges that vaccines should be given a wider application in this country to prove or disprove the contentions of the Russian physicians who have used them extensively.

Medical Record, New York

February 26

- 16 *Modern Views of Heredity: Study of a Frequently Inherited Psychosis. C. L. Dana, New York.
- 17 Traumatic Affections of the Knee-Joint. R. Hazen, Brentwood, L. I.
- 18 The Wassermann Reaction. D. E. Hoag, New York.
- 19 *Tuberculosis with Periodical Hemorrhages from the Bowel. D. I. Macht, Baltimore.
- 20 *Treatment of Carcinoma with Body Fluids of a Recovered Patient. E. Hadenpyl, New York.
- 21 Ophthalmic Instrument Case, Sterilizer and Tray Combined. M. Talmey, New York.
- 22 Letters to a Neurologist (continued). J. Collins, New York.

16. **Modern Views of Heredity.**—Dana says that the teachings of advanced investigators show that in improving and educating poor stock, including defectives and retarded minds, education is of little value and does not affect racial progress. Mendel's law applied to human nature will show that a mixture of races having distinctly different characters produces a hybrid stock which never altogether breeds pure. Mixed races which have opposite character units will not produce a new, pure type unless we segregate the impure and hybrid three-quarters. A helpful indication from Mendel's law is that by the third generation the breed is pure in certain strains. With a family psychosis a pure record of three generations in direct line will remove all liability to the psychosis.

19. **Tuberculosis with Hemorrhages from Bowel.**—Macht asserts that women who have tuberculosis are unfavorably affected by the occurrence of the menstrual period, having fever and pains at that time, with increased cough, and more marked physical signs. They also have vicarious hemorrhages from the lungs. He describes a case in which hemorrhages from the bowels occurred at each menstrual period, which he ascribes to the bleeding of tuberculous ulcerations of the bowel at the time of the menstrual pelvic congestion.

20. **Carcinoma and Body Fluids.**—About 4 years ago, Hadenpyl became interested in a case of carcinoma of the breast in a

woman then 37 years of age. The clinical history and the morphology of the tumor were typical of a rapidly growing malignant cancer. In spite of radical operation, multiple recurrences appeared in the neck and in the primary scar. After the thorough removal of these, secondary growths appeared which were morphologically typical of rapidly growing carcinoma. Still other tumors developed in the neck and breast, which, owing to local complications, and the debilitated condition of the patient, were not removed. Later large tumors developed in the liver, which nearly filled the abdominal cavity followed by the occurrence of excessive chyloform ascites. The prognosis was unqualifiably bad and the patient's death seemed imminent.

But nevertheless, the tumors in the neck and breast gradually dwindled and disappeared. The abdominal tumors gradually grew smaller and became imperceptible, while the liver became smoother and smaller. About four years after the first operation the liver is approximately normal in size and position. With the exception of the scars and decreasing emaciation, and extreme chyloform ascites, requiring frequent tapping, there is now no indication of the original disorder. The ascitic fluid was placed at Hodenpyl's disposal. To test theoretical conceptions, a series of mice, which had developed tumors after implantation of some of the well-known strains of mouse cancer cells, were injected with varying amounts of the ascitic fluid. These injections were made near the tumors, into the tumors, and into the body at large. The effect of these injections was to lead to marked necrosis of the tumors, to a noteworthy diminution in their size, or to their complete disappearance.

After experimental tests of the harmlessness of the fluid, first in animals, then in human beings, injections of the fluid in cases of carcinoma of various types in man were undertaken. These injections have been made in small quantities, near or directly into the tumors, or in large quantities into the veins. The general effects of these injections in man has been nearly uniformly to induce a temporary local redness, tenderness, and swelling about the tumors, which soon subside. Then occur softening and necrosis of the tumor tissue, which is now absorbed or discharged externally, with the subsequent formation of more or less connective tissue. In all cases, the tumors have grown smaller; in some they have disappeared altogether. In no instance has any tissue in the body other than the tumor, shown the least reaction after the injections, nor have any systemic effects been manifest even after large venous infusions. The author promises a full report later.

Lancet-Clinic, Cincinnati

February 19

- 23 Venereal Diseases: Their Antepartum, Partum and Postpartum Effects. E. J. Kehoe, Cincinnati.
- 24 Hirschsprung's Disease. E. W. Walker, Cincinnati.
- 25 X-Ray Study of 25 Cases of Aortic Aneurisms. S. Lange, Cincinnati.

Virginia Medical Semi-Monthly, Richmond

February 11

- 26 Actinomycosis: Two Cases from Virginia. H. B. Stone, University.
- 27 A Bureau of Health. J. G. B. Bulloch, Washington, D. C.
- 28 Infantile Hypertrophic Pyloric Stenosis. M. Newton, Richmond.
- 29 Enlarged Prostate—Two Specimens Removed Suprapubically. G. S. Peterkin, Seattle, Wash.
- 30 Hygiene and Prophylaxis of Typhoid. R. Mason, The Plains.
- 31 Technic and Treatment of Certain Dermal Diseases and Deformities with Carbon Dioxid. C. A. Simpson, Washington, D. C.
- 32 Pathology and Treatment of Typhoid. Z. V. Sherrill, Marion.
- 33 Early Diagnosis and Treatment of Pulmonary Tuberculosis. W. D. Tewksbury, Catawba.

Journal of the Minnesota State Medical Association and Northwestern Lancet, Minneapolis

February 15

- 34 Excision of the Head of the Radius. A. E. Wilcox, Minneapolis.
- 35 Diagnosis and Pasteur Preventive Treatment of Rabies. O. McDaniel, Minneapolis.
- 36 Rabies. C. E. Cotton, Minneapolis.

Kentucky Medical Journal, Bowling Green

February 1

- 37 The State Journal and the State Medical Society. J. M. Peck, Arlington.
- 38 *What more can our Profession do to Decrease the Spread of Tuberculosis? J. Glahn, Owensboro.

- 39 *Diagnosis of Incipient Tuberculosis. O. W. Rash, Owensboro.
- 40 *Dangers of Animal Tuberculosis to the Public Health. F. T. Eisenman, Louisville.
- 41 Perineorrhaphy. L. Bloch, Louisville.
- 42 *Management of Burns. C. G. Garr, Lexington.
- 43 *Diagnosis, Prognosis, Pathology and Treatment of Compound Fractures. J. G. Carpenter, Stanford.
- 44 Treatment of Compound Fractures. W. L. Mosby, Bardwell.

38, 39, 40, 42, 43. Abstracted in THE JOURNAL, Nov. 27, 1909, pp. 1854, 1855.

Archives of Internal Medicine, Chicago

February

- 45 *Effect of Digitalis on the Ventricular Rate in Man. A. W. Hewlett, Ann Arbor, Mich., and T. B. Barringer, New York.
- 46 Emphysematous Gangrene Due to a Member of the Colon Group. R. G. Owen, Iowa City, Iowa.
- 47 Experimental Study of the Antitryptic Activity of Human Serum. R. Weil, New York.
- 48 *Cases of Low Temperature. J. F. Munson, Sonyea, N. Y.
- 49 Problems of Experimental Nephritis. R. M. Pearce, New York.
- 50 The Presphygmie Period of the Heart. G. C. Robinson and G. Draper, Philadelphia.

45. **Effect of Digitalis on Ventricular Rate in Man.**—Of the various cardiac irregularities produced experimentally by digitalis, the earliest to appear in most instances is an occasional omission of ventricular contractions, owing to an interruption of the stimulus between the auricles and ventricles. Somewhat later, or even immediately after this, the heart may assume a most peculiar rhythm in which the auricles and ventricles are beating quite independently of each other. This irregularity differs from the ordinary rhythm of complete heart-block in that the ventricular rate is not slow, but approaches and usually exceeds the auricular rate; so that, for example, one may count 16 ventricular to 15 auricular contractions. This rhythm is common in carefully graded digitalis poisoning in dogs, but this form of irregularity has never been described in man.

Hewlett and Barringer report such a case. The heart was distinctly enlarged. There was a soft systolic murmur at the apex transmitted to the axilla and back. The second pulmonic sound was accentuated. The pulse was weak, of small volume, and occasionally irregular. The man had a slight but continuous fever and showed a mild anemia. Blood cultures were negative. The venous tracings taken one day before the patient died were remarkable in that they showed a regularly recurring cycle of changes. Each cycle required about seven seconds for its completion, and included about 14 ventricular contractions. At certain portions of the cycle, a single, sharp, positive wave occurred in the jugular pulse just after the onset of ventricular systole. Midway between these groups of sharp waves, each ventricular systole was represented on the venous pulse by two waves of almost equal height connected by a more or less distinct plateau. The authors regard it as evident from the duration of these cycles (seven seconds) that they were independent of the respiration, for the respiratory rate was constantly about 30 a minute.

On inquiry it was found that the patient had been taking drugs of the digitalis series in considerable quantities over a long period of time. During all this time his heart failure was gradually becoming worse. Although the daily amount of digitalis and its allies did not seem excessive, nevertheless in view of the fact that the type of arrhythmia corresponded to that seen in experimental digitalis poisoning, it seems probable to the authors that the irregularity was due to a cumulative action of the drug. If this be true, it illustrates how difficult it may be to ascertain when enough digitalis has been given, for at no time was marked slowing of the pulse observed. This peculiar irregularity is believed by them to be due to the action of the digitalis in increasing the spontaneous ventricular rate.

48. **Low Temperature.**—Munson reports 18 cases in which the temperature ranged below 92 F.; in some instances falling as low as 73, 76, 78 and 79 F. He says that the possibility of any error was eliminated entirely. The majority of the patients were of low mental grade, and some infectious condition was present in almost all. Pneumonia, tuberculosis, erysipelas and pyelonephritis were among those noted, together with acute abdominal conditions. Chronic conditions lowering

the vitality of the patient were often present. The low temperature was usually agonal or preagonal.

Ophthalmology, Seattle, Wash

January

- 51 Heterophoria and Heterothropia in Duction and Version. E. Lauder, Cleveland.
- 52 Size and Position of the Angle Alpha by a Simple Modification of the Javal-Schiötz Ophthalmometer. L. Howe, Buffalo.
- 53 Mixed Astigmatism with Meridians of Astigmatism not Crossing at Right Angles. W. L. Pannell, New York.
- 54 A Pocket Ophthalmoscope. J. H. Claiborne, New York.
- 55 A New Skiascope. C. T. Cooke, Seattle.
- 56 Temporary Monocular Amblyopia Possibly Due to Embolus in the Optic Nerve. H. F. Hansell, Philadelphia.
- 57 Sympathetic Ophthalmitis. D. Roy, Atlanta, Ga.
- 58 Visible Movement of Blood in Retinal Vessels. C. S. G. Nagel, San Francisco.
- 59 Massage as an Occupation for the Blind. L. W. Fox, Philadelphia.
- 60 Conjunctival and other Reaction Tests to Tuberculin in Tuberculosis of the Eyeball and its Adnexa. C. A. Oliver, Philadelphia.
- 61 Tuberculin Treatment of the Eye. Dr. Junius, Cologne, Germany.
- 62 Injury to the Eye from the Presence of Anilin Pencil in the Conjunctival Cul-de-Sac. A. C. Snell, Rochester, N. Y.
- 63 Transfixion of Cornea by Hatpin Without Injury to Lens. A. G. Bennett, Buffalo.
- 64 Increased Intraocular Tension in Cases of Epidemic Dropsy. F. P. Maynard, Calcutta, India.

Journal of the Indiana State Medical Association, Fort Wayne

January

- 65 *Facts Concerning Diphtheria Revealed by Laboratory Examinations. J. P. Simonds, Indianapolis.
- 66 *Umbilical Hernia Containing all the Abdominal Viscera. J. R. Eastman, Indianapolis.
- 67 Sketches of the Medical History of Indiana (continued). G. W. H. Kemper, Muncie.
- 68 Chronic Non-Tuberculous Arthritis. J. V. Reed, Indianapolis.
- 69 Tumors of the Tongue. L. D. Brose, Evansville.
- 70 Cesarean Section as a Means of Rapid Delivery in Eclampsia. W. Schell, Terre Haute.

65. **Diphtheria.**—Since diphtheria is vastly more prevalent during the school months, and since school children, who so frequently have chronically diseased throats, may easily become diphtheria bacillus-carriers, Simonds urges systematic school inspection with subsequent proper treatment of pathologic throat conditions. The fact that a large number of cases diagnosed "not diphtheria" clinically prove positive on bacteriologic examination, and *vice versa*, demonstrates the importance of taking cultures from every sore throat, regardless of the age of the patient or the severity of the symptoms. It is likewise important in combating the spread of this disease to take cultures from the throats of every person who has come in contact with a case of diphtheria. All persons whose throat cultures contain diphtheria bacilli, whether suffering from any symptoms of the disease or not, should be placed in quarantine and kept there until at least one culture or, better, two consecutive cultures, show that these bacilli have disappeared. The administration of antitoxin has little or nothing to do with the disappearance of diphtheria bacilli from the throat. Simonds believes that an arbitrary time limit of quarantine in diphtheria is not justifiable. Release from quarantine should be governed entirely by the results of bacteriologic examination of subsequent cultures from the throat of the patient.

66. **Umbilical Hernia Containing all the Abdominal Viscera.**—The sac in Eastman's case had but one coat—a peritoneal coat—which, though somewhat thickened, was quite transparent, making it possible to determine with considerable precision the contents from without. Two days after the birth of the infant, a fruitless attempt was made to return the contents of the sac to the abdominal cavity. It was found that the extruding organs were for the most part firmly adherent to each other and replacement was impossible. The abdominal cavity was very much smaller than the sac. The extrusion having taken place, no doubt, two or three months before birth, the abdominal cavity therefore failed to develop to its normal relative capacity. An autopsy was not permitted. In the sac were the liver, gall-bladder, spleen, pancreas, stomach, most of the large and small intestines, and the bladder. The child was a female. The extruding sac was round and measured approximately 17.5 centimeters in diameter. The child died on the fifth day.

Maryland Medical Journal, Baltimore

February

- 71 Value of the Proctoscope. J. D. Reeder, Baltimore.
- 72 Acute Alcoholic Poisoning in Children. E. Anderson, Rockville, Md.
- 73 Stahl, Hoffman, Boerhaave, Haller, Cullen and Brown. H. M. Cohen, Baltimore.
- 74 *Septic Heart Pause. A. K. Bond, Baltimore.

74. **Septic Heart Pause.**—Bond's patient has not a slow heart; he has a definite heart-pause of about 15 seconds, with beats at normal intervals when they did occur. He has for many years had an old aortic stenotic murmur of unknown origin, which ordinarily produces no disease distress whatever. The patient is married and has children. He has never contracted venereal diseases; he uses neither alcohol, coffee nor tobacco.

The first time Bond saw him was in May, 1906, during convalescence from an alarming attack of heart disturbance, following overstrain. It came on suddenly during great muscular exertion, following a heavy meal. His family physician said that the patient's pulse had been down to the neighborhood of 27 beats a minute, with intermissions sometimes of 10 seconds, and thought he had rescued him from death by the use of heart stimulants. The bowels had moved well under purges. The patient was eating, digesting, and sleeping well. There was flatulence; the urine showed no albumin. The apex beat at that time was normal, with no sign of hypertrophy or dilatation; a soft but distinct systolic murmur was heard all down the sternum and up the length of the carotids, with about equal intensity; all the valves closed normally. Several attacks had occurred in recent years, always after exertion on a full meal, during one of which Osler saw him and was said to have considered it acute heart-strain on a chronic valve lesion. After each of these attacks the man came back into full health. Bond believes that these attacks were due to intestinal sepsis.

Bulletin Johns Hopkins Hospital, Baltimore

February

- 75 *Cases of Purpura Hemorrhagica Due to Benzol Poisoning. L. Selling, Baltimore.
- 76 *Anerythremic Erythremia (?). R. S. Morris, Baltimore.
- 77 Excretion of Creatinin in the Infant: Its Occurrence in Amniotic Fluid. S. Amberg and L. G. Rowntree, Baltimore.
- 78 *Method of Splitting Skin Grafts. J. S. Davis, Baltimore.
- 79 *Practical Method of Imitating the Normal and Abnormal Heart Sounds for Teaching. C. W. Larned, Baltimore.

75. **Purpura Hemorrhagica Due to Benzol Poisoning.**—The three cases reported by Selling occurred at a factory for the manufacture of tin cans, in the suburbs of Baltimore, and were confined to one department, the so-called "coating room." The only essential difference in the processes as carried on here and in the rest of the factory consisted in the use of a substitute for solder; a mixture composed of pure rubber, a rosin, and a coloring matter, dissolved in commercial benzol. Twenty-three people were employed in the coating room; 5 men as machinists, 4 girls as inspectors, and 14 girls between the ages of 14 and 16 at the coating machines themselves. It is among these last that most of the cases, and all of the serious ones, occurred. Ten gallons of benzol a day were used and allowed to evaporate in this room. In spite of the wide-open windows and excellent ventilation—the cases occurred in summer—the space immediately about the coating machines was pervaded by a well-marked odor of benzol, while the same odor, much weaker, was noticeable throughout the room. Two of the patients died. An examination of the other employees working in the coating room was undertaken, and 4 were found, 2 men and 2 girls, who showed a few purpuric spots. They were entirely free from symptoms, their blood showed a slight grade of anemia and a leucocyte count varying from 3900 to 5200 per cmm., that is, either subnormal or on the lower limits of normal.

76. **Anerythremic Erythremia.**—During the last two years Morris has had under observation two patients whose histories were somewhat similar, and further similarity was strikingly present in their physical conditions. Without a blood count, the diagnosis of erythremia was immediately suggested. But this could not be definitely established. In neither case could a history of malaria or syphilis be obtained to account for a splenic tumor; a splenic anemia did not exist, nor was there

any evidence of amyloid disease. The blood examination excluded leucemia, and there were no grounds on which to base a diagnosis of Hodgkins disease. There was no valvular disease of the heart, and no pulmonary emphysema to account for the cyanosis present. Sulph-hemoglobinemia and methemoglobinemia were thought of as possible explanations of the cyanosis. The latter is not uncommon in these cases, but differs in that it resembles more the ashen hue of argyria, as contrasted with the plethoric cyanosis of erythremia. Splenic tumor was found in both patients. Furthermore, repeated spectroscopic examination in the other revealed only the bands of oxyhemoglobin, even in concentrated solution, thus excluding sulph-hemoglobinemia and methemoglobinemia. With a negative tuberculin test in Case 1, confirming the physical findings, it is reasonably certain that an active tuberculous process is not the base of the patient's condition. Morris says that were it not for the normal blood counts, both of the cases reported above would be characteristic examples of erythremia.

78. Splinting Skin Grafts.—There are many partial "takes" and failures for the reason that grafts are not properly splinted after they are applied, and in consequence slip down with the dressings, or are floated off by blood or serum collecting beneath them. In order to overcome this difficulty it is necessary to reinforce the grafts with some material which has enough body to act as a splint, and at the same time is not too rigid to shape itself readily to any desired location. It is also very important that it should not adhere to the grafts and granulations, or cause too much pressure, and that there be free escape of any secretions into the dressings.

After experimenting with various materials, Davis tried a coarse, meshed net, such as is used for curtains. It is made of loosely woven flat bars of cotton thread, surrounding openings about 1 cm. in diameter. It is necessary to have the openings approximately this size as smaller ones often become clogged. This proved too flimsy, and also became adherent to the grafts. So in order to increase the body of the fabric, after washing out the sizing and drying, he soaked the material in a rubber solution made up of pure gutta-percha, from 15 to 30 parts (depending on the stiffness of material required), and chloroform 150 parts and found that after the chloroform had evaporated and the material was dry there was enough stiffness to give a very satisfactory splinting material. When prepared the net should be of a slight grayish-brown color throughout.

The sterilization before application is as follows: Cut in pieces as large as may be desired and separate them with one or two thicknesses of gauze. Place in a sterile jar, and fill it with 1 to 1,000 bichlorid of mercury solution. Change this solution three times with twelve-hour intervals, and finally allow the mesh to remain permanently in 1 to 1,000 bichlorid solution. It can be kept for a considerable time in this way, although it is better to make up small quantities and often. The dry permeated material will keep indefinitely. No hot solution must come in contact with the mesh during the sterilization or application. After the grafts are in place the mesh is taken out of the bichlorid solution and thoroughly rinsed with salt solution, then dried with a sterile towel. A piece is cut large enough to allow a margin around the grafted area of from 5 to 10 cm. Then the material is applied and pressed snugly down on the grafted area and surrounding skin or granulations. Should the conformation of the part or wound not permit the mesh to be evenly applied, a few cuts with scissors will allow an infolding and accurate fitting, which is necessary in order that the splinting may be successful. The overlapping edges may be secured to the skin by strips of adhesive plaster when necessary. After the net is in position the dressing selected is applied, and the whole secured by a bandage. When the overlapping material rests on granulation tissue, it will be found that it can be lifted up at any time without causing pain or bleeding, as the granulations do not adhere to or grow into the parts of the impregnated material. With this mesh in place the grafts can be observed from time to time with little or no danger of displacing them.

79. Imitating Heart Sounds.—Four methods are described by Larned of producing outside the body tones which, when

conveyed to the ear, represent with a reasonable degree of exactness, at least in force and rhythm, the sounds heard through the stethoscope placed on the patient's chest. In all instances the sounds are produced by taps, strokes, and what Larned terms tap-strokes and stroke-taps, on the conductor employed.

Method 1.—The left forearm is used as a conductor, the left hand being closely applied over the left ear, the taps and strokes being made on the elbow. **Method 2.**—This is the same, except that the taps and strokes are made not on the elbow but on the dorsum of the hand. **Method 3.**—The stethoscope is used as the conductor, the palm of the left hand being placed over the bell and the taps and strokes made on the dorsum of the hand. **Method 4.**—The stethoscope is used as the conductor and is applied to the right side of the bared chest, the taps and strikes being made on the chest at a distance of some 2 to 4 inches from the bell. Distant and faint sounds by tapping over the ribs.

By "taps" is meant the gentle drawing of the tip of the finger over the dorsum of the ear hand, a short stroke for short murmurs, a long stroke for long murmurs, the intensity of the murmur being indicated by the force of the stroke. By tap-stroke is meant the direct merging of a tap into a stroke without any interval of time. It is made by ending the tap with a stroke before lifting the finger. By stroke-tap is meant the direct merging of a stroke into a tap without any interval of time. This can only be done by the use of two fingers, the tap occurring simultaneously with the elevation of the stroking finger.

The normal heart sounds as heard at the apex: A light but rather long tap is made for the first sound followed by a lighter and shorter tap for the second sound, care being taken to observe the proper interval between the first and second sound, and the second and first sound. Mitral insufficiency as heard at the apex—the murmur following and not replacing the first sound: A tap-stroke is made with the index finger to indicate the first sound and murmur followed by a light tap with the middle finger to indicate the normal second sound. Aortic insufficiency as heard at the base, the murmur replacing the second sound: A light tap is made with the index finger to indicate the first sound, followed by a stroke with the middle finger to indicate the diastolic murmur:

(1) Mitral stenosis; (2) mitral stenosis and insufficiency; (3) mitral stenosis and insufficiency and aortic insufficiency, all as heard at the mitral area: (1) A rapid succession of four crescendo taps is made beginning with the little finger and ending with the index finger, the last tap being sufficiently strong to indicate the shock of the first sound and immediately followed by a light tap to indicate the second sound. (2) To bring out a systolic associated with the pre-systolic murmur the culminating tap is converted to the pre-systolic rumble by a culminating tap-stroke, the stroke being lateral toward the little finger, light and short. (3) To bring out a diastolic murmur associated with the presystolic, or the presystolic and systolic make, instead of the tap which represents the second sound, a short gentle stroke, provided the murmur replaces the second sound, otherwise a tap-stroke is made, in either instance being lateral, toward the thumb. These two lateral strokes, one for the systolic, the other for the diastolic murmur, are best produced by a rocking motion at the wrist, first to the ulnar then to the radial side.

Aortic stenosis as heard at the base: A firm long scratch-like stroke is made with the nail of the index finger to indicate the harsh systolic murmur, followed by a very gentle tap with the middle finger to indicate the relatively faint second sound.

The pistol-shot sound heard over the arteries of the extremities in aortic insufficiency can be well imitated by a sharp tap over the knuckle of the metacarpophalangeal joint of the middle or index finger. Gallop rhythm, pendulum rhythm, reduplications, splitting of the first and second sounds, and a variety of other conditions can all be well imitated.

Journal Delaware State Medical Society, Wilmington

February

80 General Principles Underlying Modern Therapeutics. A. Robin, Wilmington.

Surgery, Gynecology and Obstetrics, Chicago

February

- 81 *Chronic Osteomyelitis. Diagnosis and Treatment. C. Beck, Chicago.
- 82 The Vesicula Seminales. C. E. Barnett, Fort Wayne, Ind.
- 83 *Use of Oil in Abdominal Surgery. D. P. D. Wilkie, Edinburgh, Scotland.
- 84 Floating Head and Elective Abdominal Delivery. D. Longaker, Philadelphia.
- 85 Intussusception in Children. J. M. Elder, Montreal.
- 86 *Premature Detachment of Normally Situated Placenta. M. T. Goldstine, Chicago.
- 87 Actinomycosis of the Uterine Appendages. C. Wagner, Chicago.
- 88 Subcutaneous Perforation of the Intestine. F. A. Palmer, Morris, Ill.
- 89 Pelvic Transplantation Metastasis as a Means of Recognition of Hopeless Abdominal Carcinoma. D. W. Palmer, Cincinnati.
- 90 Congenital Diverticula of Bladder. H. Fischer, New York.
- 91 Postural Treatment and Lavage of the Renal Pelvis for Relief of Pyelitis of Pregnancy. P. M. Pilcher, Brooklyn.
- 92 Harris Dressing for Fracture of the Clavicle. W. Hessert, Chicago.
- 93 *New Method of Performing Operations on the Skull. W. H. Hudson, Atlanta, Ga.
- 94 Figure Eight Purse String in Appendectomy. F. B. Walker, Detroit.
- 95 Flexion of the Pelvis in the Trendelenburg Position. E. Rixford, San Francisco.
- 96 Saline Proctolysis Apparatus. P. B. Magnuson, Chicago.
- 97 Anesthesia in Obstetric Practice. H. M. Stowe, Chicago.

81. **Chronic Osteomyelitis.**—The main object of Beck's paper is to show the necessity of correct diagnosis by systematic x-ray examination, and the absolute necessity of radical operation, if we want to obtain results. Diagnosis without radical operation will never result in a cure. Radical operation, on the other hand, without a correct diagnosis, will do more harm than good. For instance, if a surgeon removes three-quarters of the femur, it is radical enough. Also, if a surgeon removes the whole jaw and nine-tenths of it is normal, it is radical enough; but if he does not put in a prosthesis or does not prevent the periosteum from shrinking, the case will be very disastrous. Correct diagnosis and radical operation must go together.

83. **Use of Oil in Abdominal Surgery.**—Relative to the use of sterile petrolatum oil in abdominal surgery to prevent or to limit the formation of adhesions, Wilkie carried out 6 experiments on cats and rabbits. The procedure was as follows: The animal's abdomen was opened with septic precaution, the surface of the small intestine over about 16 inches of its length was scrubbed with dry gauze and scraped with a knife till bleeding points appeared. Six weeks or two months later the abdomens of the 12 animals so treated were reopened and in all adhesions were present, though they were never very extensive. These adhesions were broken down, leaving raw surfaces. In 6 of the animals, oil was then smeared over the raw surfaces and the abdomen closed. In the control animals the adhesions were broken down, but no oil used. The animals were opened again 4 weeks later, and it was found that in those in which oil had been used, the adhesions were very much fewer and less dense than in the controls. At the end of a month all trace of oil had disappeared from the peritoneal cavity. Wilkie found 15 days to be the longest time for oil to remain in macroscopic quantity in the peritoneal cavity in aseptic cases. He concludes, therefore, that sterile oil may be advantageously used for mopping over denuded surfaces in operations for peritoneal adhesions.

86. **Detachment of Normally Situated Placenta.**—Rupture of the membranes and leaving delivery to Nature are, in Goldstine's opinion, only justifiable when the uterus is contracting vigorously and the os is fully dilated. He says that rupture of the membranes and rapid delivery should not be done until the uterus is contracting rhythmically, the patient rallied, and the os undergone some degree of dilatation. The tampon and binder should be used when there are no contractions of the uterus, no dilatation and when the patients are in a collapsed state, and its use continued until such time as the patient and uterus have recovered. An external hemorrhage is converted into a concealed hemorrhage by the use of the tampon, if the uterine walls are incapable, directly or indirectly, of withstanding a pressure within them equal to the maternal blood pressure, and should they be distended as the result of increased intranterine pressure, the tampon and binder will, if applied properly, render them capable of holding the pressure of the blood and so control the hemorrhage.

93. **New Method of Performing Operations on the Skull.**—The peculiarity of the instruments devised by Hudson is that they will cut as long as they need to, but will cease cutting, and cannot be further rotated, when the layer of bone in front of them becomes so thin as to give way before their advances. In other words, so long as there is resistance in the bottom of the opening they will cut; when this resistance ceases, they will not move further. Large drills, trephines and burrs have been made on this principle.

Journal of Nervous and Mental Disease, Lancaster, Pa.

February

- 98 Pure Word Deafness with Autopsy. A. M. Barrett, Ann Arbor, Mich.
- 99 *Reflexes in Hysteria. P. C. Knapp, Boston.
- 100 Periosteal Cyst Formation: Unusual Effect of Intracranial Pressure. E. W. Taylor, Boston.

99. Abstracted in THE JOURNAL, July 31, 1909, p. 403.

Colorado Medicine, Denver

January

- 101 Artificial Lymphocytosis as a Possible Aid in the Treatment of Tuberculosis. G. B. Webb, W. W. Williams and A. F. Basinger, Denver.
- 102 Psychotherapy in Postoperative Conditions. E. J. A. Rogers, Denver.
- 103 Chemical Corporeal Correlations as Applied to Practical Medicine. E. C. Hill, Denver.
- 104 *Removal of Skin from the Abdomen During Laparotomy as a Source of Material for Grafting. F. G. Connell, Oshkosh, Wis.

104. **Material for Grafting.**—A recent case in which an extensive granulating surface of the face and scalp was covered with Thiersch grafts, cut from a redundant piece of abdominal skin, that was discarded during the course of an operation for ventral hernia, subsequently rescued and kept in normal salt solution until it could be used, leads Connell to suggest that suitable skin for grafting purposes might easily be obtained during the course of the majority of laparotomies. A longitudinal strip of skin and superficial fascia, in length equal to the abdominal incision, and in width from one-half to one inch, depending on the amount of subcutaneous fat and the redundancy of the skin, might, he says, be removed from either edge of the wound and cause no interference with the abdominal union, nor of the convalescence or convenience of the donor. This strip of tissue from which the skin is to be cut may be removed at the outset of the operation and handed to an assistant who may do the grafting. Or the tissue may remain in place until the operation is completed, all but the suturing of the skin and superficial fascia, it may be kept in hot normal salt solution until the closure is completed, or better, the final suturing may be done by an assistant while the transplanting is carried out at once.

New Orleans Medical and Surgical Journal

February

- 105 Reciprocity with the Louisiana State Board of Medical Examiners. Its Present Status. F. A. Larue, New Orleans.
- 106 Pathologic Facts about Malaria. O. L. Pothier, New Orleans.
- 107 Hydrotherapy. T. S. Dabney, New Orleans.
- 108 Early History of Anesthesia. C. W. Allen, New Orleans.
- 109 Pellagra Contracted from Domestic Animals. J. B. Rushing, Benson, La.
- 110 Extirpation of Varicose Veins. E. D. Friedrichs, New Orleans.
- 111 Illofemoral Aneurism. Treated by Endoaneurismorrhaphy (Matas). H. B. Gessner, New Orleans.
- 112 Tuberculous Hip-Joint Disease. L. Sexton, New Orleans.
- 113 Indications for Exploratory Laparotomy. M. Souchon, New Orleans.
- 114 Epilepsy. P. E. Archinard, New Orleans.
- 115 Anterior Poliomyelitis (Infantile Paralysis). L. L. Cazenavette, New Orleans.
- 116 Modern Conceptions of Hysteria. R. M. Van Wart, New Orleans.
- 117 Surgical Parotitis in the New-Born Infant. J. Smyth, New Orleans.
- 118 Modern Treatment of Paralysis of Childhood. E. D. Fenner, New Orleans.

Journal of Medical Research, Boston

February

- 119 *The Normal and Pathologic Histology of the Thymus. A. M. Pappenheimer, New York.
- 120 Immunity Production in Rabbits by Inoculation of Increasing Numbers of Living Virulent Bovine Tubercle Bacilli. C. W. Lieb, Colorado Springs, Colo.
- 121 The Pathologic Changes which Develop in the Kidney as a Result of Occlusion, by Ligature, of One Branch of the Renal Artery. W. DeB. MacNider, Cleveland.
- 122 *The Relationship of Amoebocytes in Complement Fixation and in Bacteriolysis. J. C. Torrey, New York.

- 123 *The Occurrence of Lipase in Human Tissues and its Variation in Disease. M. C. Winternitz and C. R. Meloy, Baltimore.
124 *Antiperistalsis in its Relation to Tubercle Bacilli and Other Bacteria in the Alimentary Tract. A. E. Hess, New York.
125 Carcinoma of the Breast in a Male. G. McConnell, St. Louis.
126 Aciduric (Acidophilic) Bacteria. A. Kendall, Boston.
127 *The Clinical Diagnosis of General Paralysis of the Insane. E. F. McCampbell and G. A. Rowland, Columbus, Ohio.

119. **Thymus.**—Pappenheimer reaches the conclusion that the thymus is an epithelial organ containing two types of epithelial cells, one the reticular epithelium serving as a supporting structure, and the other the well-known small thymic cells, which are not lymphocytes. Hassall bodies are formed from the reticular cells. The thymus consequently bears no relation to lymph glands. It is in a state of evolution until puberty, when regressive changes take place, at first abruptly, later more gradually. It is, however, probably a functional organ throughout life. Status lymphaticus is not associated with any definite structural features in the thymus, except that normal involution is delayed in persons manifesting the lymphatic state.

122. **Antigonococcus Serum.**—Torrey states that an anti-gonococcus serum may contain substances on which the fixation of complement depends, and yet be devoid of antical antibody. This condition may be reversed. Hence it is necessary to conclude that bacteriolysis and fixation of complement do not depend on the same antibody.

123. **Lipase in Human Tissues and Disease.**—Winternitz and Meloy find that there is no decrease in the lipolytic activity in old age; that its activity in various tissues is very low at birth, but increases rapidly during the first few days of life. In the toxemia of pregnancy and diabetes mellitus the lipolytic activity was found to have declined in all the tissues examined. Chronic passive congestion with atrophy of the liver cells causes a fall in the lipolytic action of the liver. This action was also diminished in livers showing fatty changes and cloudy swellings, as well as in four cases of cirrhosis. In acute and chronic nephritis the lipolytic activity of the kidneys as a rule is decreased, but the decrease is not proportional to the involvement of the kidneys. In general tuberculosis with anemia, the kidney as well as the liver, lung and blood suffer loss in lipolytic action.

124. **Antiperistalsis in Relation to Dissemination of Tubercle Bacilli.**—Hess finds that when bacteria are injected into the rectum the antiperistaltic wave does not as a rule carry them below the ileocecal valve. The conclusion that bacteria so injected rapidly ascend along the intestinal wall into the stomach, esophagus and pharynx, then passing into the respiratory tract, is a mistake, the bacteria being disseminated not by the alimentary tract, but by the blood. Tubercle bacilli, as well as *Bacillus prodigiosus*, pass through the intestinal wall, entering the lymphatic system, and are then distributed by the blood. The reason that previous workers failed to find tubercle bacilli in the blood after rectal injection is because they did not employ sufficient quantities of blood for cultures and inoculations.

127. **The Diagnosis of General Paralysis of the Insane.**—The authors find that 97.8 per cent. of cases diagnosed as general paralysis give a positive Wassermann reaction with the blood and 89.1 per cent. of such cases give a positive reaction with the cerebrospinal fluid. The Noguchi globulin test was obtained with the cerebrospinal fluid in 95.6 per cent. of all cases, and the Ross-Jones globulin test in 93.4 per cent. In 95.6 per cent. of the cases there was found a lymphocytosis of the cerebrospinal fluid.

Northwest Medicine, Seattle

February

- 128 Theories of Anaphylaxis. E. E. Heg, Seattle.
129 The Sigmoid Colon. W. D. Kirkpatrick, Bellingham, Wash.
130 How Shall We Treat Late Carcinoma of the Uterine Cervix? J. W. Bean, Tacoma.
131 Meningitis Serosa. R. S. Stearns, Portland.
132 Is Operation Advisable in Fractures of the Skull? O. B. Wight, Portland, Ore.
133 Nystagmus in Relation to the Physiology and Pathology of the Internal Ear. R. L. Nourse, Boise, Ida.
134 Suppurative Otitis Media in Children. H. V. Würdemann, Seattle.
135 Rare Cases of Herniotomy. C. N. Suttner, Walla Walla, Wash.
136 Quarantine. W. Johnston, Spokane.

American Journal of Surgery, New York

February

- 137 General Rachianesthesia. T. Jonnesco, Budapest, Hungary.
138 Subdural Hemorrhage of Traumatic Origin. T. A. McGraw, Detroit.
139 Perforation in Typhoid. H. B. Delatour, Brooklyn.
140 Anesthesia for Intracranial Surgery. F. H. McMechan, Cincinnati.
141 *Technical Points that Furnish the Best Curative Functional and Cosmetic Results in Mastoid Operations for Extradural Lesions. W. S. Bryant, New York.
142 Venous Stasis as a Therapeutic Measure. A. Bonner, New York.
143 Early Diagnosis and Removal of the Cancerous Uterus. C. W. Strobell, Rutland.
144 *Automatic Device for Prolonged Intermittent Flushing. A. J. Bendick, New York City.

141. **Mastoid Operation.**—Strict attention to the following points has given Bryant the best cosmetic, functional and curative results in mastoid operations: (1) The employment of rigid aseptic technic; (2) the immediate closure of the external wound with a minimum of drainage; (3) in a simple mastoid operation, the non-interference with the tympanic contents; (4) the healing of the tympanum before the post-aural opening is finally allowed to close; (5) the daily use of Politzerization, beginning three or four days after the operation; (6) the performance of a radical operation only in cases which demand it; and the modification of the technic of a radical procedure so that all the living tympanic structures may be conserved; (7) the preservation of the Eustachian tube intact and patent throughout; (8) leaving the cochlea intact, except in cases where there are definite indications of an invasion of the cochlea by suppuration.

Texas State Journal of Medicine, Fort Worth

February

- 145 Menorrhagia Requiring Hysterectomy. W. Keiller, Galveston.
146 Two Cases of Extrauterine Pregnancy. J. E. Gilcreest, Gainesville.
147 Modern Forceps Delivery. G. V. Morton, Fort Worth.
148 *Unusual Depth of Uterine Cavity. J. G. Jones, Smithville, Tex.
149 *Peculiar Mental Phenomena. F. U. Painter, Pilot Point.
150 Importance of Early and Complete Operation in Infectious and Hemorrhagic Conditions of the Abdomen. J. M. Inge, Denton.

148. **Depth of Uterine Cavity.**—The vertical measurement of the uterine cavity in a case cited by Jones was found to be something over 14 inches; the distance from the os to the orifice of either Fallopian tube was from 16 to 17 inches; passing the end along the fundus from one cornua to the other showed a distance of 7 or 8 inches. After 50 days had elapsed since the woman's accouchement the dimensions of the uterine cavity were nearly as great as those of the gravid uterus at full term, as given by the leading authorities.

149. **Peculiar Mental Phenomena in Hemicrania.**—A male, aged 42, had suffered from boyhood with hemicrania. His attacks usually follow overindulgence at table during a period of constipation more obstinate than usual. The attacks prostrate him for several hours, during which time he suffers the most intense head pain and nausea, photophobia, lachrymation and feeling of numbness over the whole area of the distribution of the fifth nerve opposite the side affected by pain. He remains in this condition for a variable number of hours when the skin, hitherto cool and pale, will begin to glow with a pleasant warmth and become covered with perspiration, at which time he will void a large quantity of urine, fall asleep and awaken feeling well. This is his typical attack.

Occasionally he will have as premonitions of an attack, a dull frontal pain. By taking large doses of salines and missing a meal he will perhaps miss the pain and nausea, but have in their stead a peculiar mental condition precipitated by some act of his, or some word or phrase spoken by the one with whom he is conversing, which will bring before him a mental picture of another time and conversation, in which he seems to be both living and talking in the present. He will remain in this dual mental condition for hours, attending to his business, conversing intelligently on any subject introduced, and at the same time feeling that he is living and talking in the past, under circumstances similar to his present environment and conversation. This condition will terminate abruptly with a profuse perspiration or copious discharge of urine, the patient regaining his normal mental state as suddenly as he entered the abnormal.

The second patient, male, 39, has been for years employed as an accountant, having to do with long columns of figures and abstruse calculations. He usually has the typical attack of hemiparesis, head pain and nausea, ending in profuse perspiration, or the voiding of a large amount of urine. At other times he has typical attacks ushered in by chilly sensations and slight vertigo without cranial pain or nausea. During such attacks he continues at his desk, but in making his calculations as, for instance, adding a column of figures, he is conscious of the fact that he is adding two columns instead of one—the one before him on paper, the other in his mind, the fictitious column being always fives or multiples of fives. He finishes both columns at the same time, writing the answer to the real problem correctly and equally conscious of the correct solution of the imaginary one. Or, if multiplying will do two problems at the same time, the one real, visual, on paper, the other mental. The mental one always concerns itself with fives or multiples of five, and so on through any and all mathematical calculations. After a variable length of time he will feel pleasantly warm, will void a large amount of urine, when immediately the chimerical problems will vanish and he will at once regain his normal mental state.

Military Surgeon, Washington, D. C.

February

- 151 Practical Utility of Map Problems in Medico-Military Education. E. L. Munson, U. S. Army.
- 152 The Possible Relations Between the Army, Navy and Public Health and Marine-Hospital Service, Under the Limitations of Existing Law. G. B. Young, U. S. P. and M.-H. S.
- 153 *Duties of the Public Health and Marine-Hospital Service. C. P. Wertenbaker, U. S. P. H. and M.-H. S.
- 154 Mental and Nervous Diseases in the Russo-Japanese War. R. L. Richards, U. S. Army.
- 155 Presence of Acid-Alcohol-Resisting Bacilli in the Blood. G. B. Foster, U. S. Army.

153. Abstracted in THE JOURNAL, Nov. 27, 1909, p. 1847.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal, London

February 12

- 1 *Cancer of the Rectum. J. Swain.
- 2 Cancer of the Cervical Esophagus. H. M. Davies.
- 3 *Radical Operation for Cancer of the Pylorus. E. W. H. Groves.
- 4 *Foreign Bodies in the Duodenum. S. Hastings.
- 5 Existence of Living Creatures in the Stomach as a Cause of Chronic Dyspepsia. W. S. Fenwick.
- 6 Intussusception of the Transverse Colon in an Adult. L. Wilson.
- 7 Diverticula of the Gastrointestinal Tract of Congenital or of Obscure Origin. A. Keith.

1. **Cancer of the Rectum.**—Swain advocates excision of the tumor through the abdominal route because it allows of the performance of a more radical operation, therefore greater possibilities for effecting a permanent cure.

3. **Cancer of Pylorus.**—Groves maintains that there is a good prospect of cure in early cases of the disease; that exploratory operations should be performed for diagnostic purposes in all doubtful cases; that a more systematic attempt should be made to remove the whole of the lymphatic area connected with the stomach; that the limits of operability, both for palliative and radical operations, should be defined more rigidly. Bad results he ascribes to the fact that an unreasonable time is usually allowed to elapse before the patient is presented for surgical treatment. In the majority of cases the diagnosis is to be made from the cardinal symptoms of loss of weight, vomiting and pain. In all doubtful cases the patient should be submitted to exploratory operation, unless the body weight rises under medical treatment. Even exploratory operations often leave the diagnosis doubtful. In such circumstances, the patient should be seen at frequent intervals or else treated by excision.

Mortality after resection of cancer of the stomach, according to Groves, is about 50 per cent. This is caused by peritonitis, shock and lung complications. The immediate mortality can be greatly reduced by adopting the two-stage method. The mortality can be further much reduced by excluding cases in which the colon, pancreas, or posterior lymph glands are seriously involved. The adequate removal of the associated

lymph areas demands that the great omentum and the tissues in front of the pancreas should be taken away. Remote results of radical operations only give a percentage of 7.6 three year recoveries of those operated on. This low figure, Groves believes, may, in part, be due to the inadequate removal of lymphatic tissues.

4. **Foreign Bodies in Duodenum.**—A girl, aged 3 years, who had been very healthy previously, swallowed a short piece of pencil with a metal extremity, such as is usually attached to a dance program. The next day she began to suffer from sickness, diarrhea and colicky pain. This continued. On the third day after the accident the child appeared to be in no pain. The abdomen was not distended, and moved well with respiration. Slight tenderness was present to the right of the umbilicus. The diarrhea soon ceased. When the child was examined by x-rays on the day following, a well-marked shadow, evidently the metal end of the pencil, was seen about 1½ inches from the middle line, beneath the right costal margin. With the child lying on her back, and the x-ray tube beneath her, the dark area appeared to descend fully an inch on deep inspiration. Every day the child was examined with x-rays, but neither constipating food nor purges made any difference to the position of the shadow. Operation was decided on by Hastings.

An incision 3½ inches long was made above the umbilicus in the middle line. On introducing the hand into the abdomen the pencil was at once felt impacted across the gut just at the bend between the descending and transverse parts of the duodenum. It was easily disimpacted and pushed back into the stomach. An attempt was next made to pass a Brinning's foreign body forceps into the stomach, with which, aided by the hand in the laparotomy wound, it was hoped to seize the foreign body, and remove it by the esophagus. Unfortunately, having no esophagus tube, the attempt was abandoned. A small incision was made through the anterior wall of the stomach on to the foreign body held between the fingers. The pencil at once shot out, and a small wound was closed by a double row of stitches. Through-and-through sutures closed the abdominal incision. The wound healed in a satisfactory manner. The pencil was found to be 1¾ inches long and 3/16 of an inch in diameter. The point was not sharp.

Lancet, London

February 12

- 8 Early Diagnosis of Cancer of the Stomach. C. M. Montlin.
- 9 *Malignant Disease of the Appendix Treated with Emanations of Radium. T. L. Brunton and L. G. Glover.
- 10 Variability of the Lesions of Polioencephalomyelitis. K. Bremer.
- 11 Fatal Case of Acute Anterior Poliomyelitis. J. O. Symes.
- 12 Chronic Sphenoidal Sinus Disease. W. S. Syme.
- 13 Malignant and Non-Malignant Tumors of Bilateral Origin. W. R. Williams.
- 14 Spontaneous Rupture of an Ordinary Ovarian Cyst. R. Jones and W. M. Eccles.
- 15 The Menopause, Natural and Artificial. A. E. Giles.

9. **Malignant Disease of the Appendix.**—The case described by Brunton and Glover is of interest because, in the first place, the lesion was a primary growth in the appendix; in the second place, the patient survived 8 years from the commencement of his trouble; and in the third place, it was the first case to be treated by a solution of the emanations of radium. Early in February, 1901, the appendix was removed. It was found to have a considerable enlargement of the distal end, the proximal end attached to the cecum being healthy. The whole organ was removed, the tumor at the end being shelled out from the iliac fossa to which it was bound down by adhesions; and this bed from which it came was scraped with a sharp spoon. A gauze plug was inserted down to this spot, and the abdomen was closed. The patient made a good recovery. During the next two years he remained well, but occasionally suffered from pain in the right iliac fossa. This became more persistent in March, 1904. Throughout the summer of 1904 good health was maintained, but in October the tenderness again became more marked.

On the twelfth of that month commenced a severe illness, there being pain in the right iliac fossa and right flank; with rises of temperature at night, and a tumor easily palpable and situated in the right iliac fossa. While it was recognized that a recurrence of the old growth had shown itself, it was also

seen that there was some septic inflammation within or about the tumor. By this time the patient was severely ill, and the tumor was growing rapidly in size, the temperature being continually raised. The abdomen was opened. The growth was found to be hard, nodular and solid, and quite irremovable, and as the patient was very ill and could not stand a prolonged operation, the abdomen was simply closed and nothing further was done. The patient's condition becoming slowly worse, it was decided to try the effects of injections of cinna-mate of sodium, and these were given at intervals without any appreciable effect, from January 17 to February 10. The tumor was continuing to increase in size during all this time; and the temperature was hectic in character; further, the skin over the flank became edematous and red, and a mass formed on the right thigh just below Poupart's ligament, which mass was also nodular to the touch. Radium treatment was then begun. One cubic centimeter of water which had absorbed radium emanations was injected into the subcutaneous fat. The patient died eleven months later.

Clinical Journal, London

February 9

- 16 Subphrenic Abscess. W. H. White.
- 17 Abdominal Diagnosis. E. Ware.
- 18 Case of Myasthenia. F. W. Langridge.

Medical Press and Circular, London

February 9

- 19 New Cardinal Principle in the Treatment of Diseases; Its Application in Disorders of the Nose, Throat, Voice and Speech. R. H. S. Spicer.
- 20 The Cerebellum and Its Affections. J. S. R. Russell.
- 21 Hints and Suggestions in the Teaching of Midwifery and Gynecology. F. W. Kidd.

Journal of Tropical Medicine and Hygiene, London

February 1

- 22 Account of Some Helminths Occurring Among the South African Natives. G. A. Turner.

Dublin Journal of Medical Science

February

- 23 Medical Education: A Criticism and a Scheme. H. T. Bewley.
- 24 *Glycosuria and Graves' Disease. H. C. Drury.
- 25 Treatment of Gastric Ulcer. J. Craig.

24. **Glycosuria and Hypothyroidism.**—Drury reports the following case: A young girl, aged 18, had symptoms of diabetes. She was greatly emaciated. She had noticed herself getting thin for about two months, and latterly had become very weak, but began to suffer from thirst about the middle of August—that is, two and a half months before. She had also missed two menstrual periods. It was evident that she was also suffering from Graves' disease; there was only slight exophthalmos but well-marked retraction of the lids; von Graefe's sign was present in limited extent, being only seen when the visual axis passed below the horizontal line. There was decided bronzing of the eyelids. There was slight tremor of the hands, and the skin was unduly moist, though there was not profuse sweating. The thyroid was moderately enlarged; it pulsated, and a thrill could be felt in it. The heart's action was tumultuous and very rapid, the cardiac impulse being widely diffused; the apex beat violent, but no murmur could be detected. The pulse rate varied from 100 to 140. The areolæ of the breasts were deeply pigmented, but the breasts themselves were small and functionless.

She complained of the throbbing of her heart, and said it troubled her for a long time—several months—before she noticed the thirst or the increased quantity of urine. The amount of urine passed varied from 100 to 177 ounces in the 24 hours. Its specific gravity was 1.042, and at first it gave a slight diacetic acid reaction with perchlorid of iron, but the reaction for acetone itself, though looked for, was not found. The diacetic acid reaction disappeared in a couple of days. The carbohydrate food was considerably limited, but not altogether withdrawn, and the girl was given crude opium in the form of compound soap pill night and morning. There is no improvement; the girl has steadily lost weight, the specific gravity of the urine is always high, 1.040 to 1.050, and acetone was present in the urine on each occasion. The signs of Graves' disease also are more evident, though the heart's action is quieter.

Practitioner, London

February

- 26 *Diagnosis and Treatment of Tuberculosis by Tuberculin. W. C. Wilkinson.
- 27 *Suppuration in the Knee-Joint: Its Causes and Treatment. A. E. Barker.
- 28 Milk—Sweet and Sour. C. H. Cattle.
- 29 Painless Labor. S. Sheill.
- 30 Use of the Ultra-Microscope for Early Diagnosis of Syphilis. H. W. Bayly.
- 31 Otosclerosis. D. L. Sewell.
- 32 Recent Advances in Dermatology. J. M. H. MacLeod.
- 33 Acidosis in Relation to Anesthesia. F. H. Wallace and E. Gillespie.
- 34 Treatment of Fracture of Femur After Operation. H. Chapple.
- 35 Diagnosis of Colic from Inflammatory Conditions in the Peritoneal Cavity. R. M. Walker.
- 36 Operation for Parotid Fistula. R. D. Mothersole.
- 37 Treatment of Diabetes. H. E. Smith.

26. **Treatment of Tuberculosis.**—Wilkinson regards the diagnostic use of tuberculin as a safe and valuable procedure. In his experience, he has had no instance in which doses of tuberculin have been followed by any symptoms that would suggest that the tuberculin had set free masses of tubercle bacilli. Tuberculin in proper doses tends to prevent such an accident, as it prevents hemorrhage and tuberculous meningitis by favoring the fibrous organization of a tuberculous formation. Wilkinson also regards tuberculin as invaluable in the early stages of pulmonary tuberculosis when the symptoms are related to other organs—heart and blood vessels and blood, digestive organs, especially the stomach, and even the muscles, nerves, bones and joints—especially symptoms of the rheumatic type. The enormous improvement in the general health—gain in weight, and especially gain in energy—and the complete disappearance of the rheumatic pains must, he says, profoundly impress any one who has witnessed the remarkable change from invalidism to first-rate health.

27. **Suppuration of Knee-Joint.**—Barker's line of treatment in all cases of inflammation of the knee, seen early, is to attempt by the Bier's bandage to arrest the inflammation. If it is obvious that this is not succeeding, as indicated by the advance of the effusion, the tenderness, and the raised temperature, he aspirates and ascertains the nature of the micro-organism by smears and cultivation, keeping on the bandage for two hours morning and evening. If, in spite of this, the joint still shows signs of increasing mischief, he advises opening it, flushing it out with sterile normal saline solution, and bandaging as before. But in neglected cases aspiration should be done at once, and if the product shows the infection to be severe an incision should be made at once and the bandage applied.

By these means the last 6 or 7 patients treated by Barker have been led to steady recovery. In only one case, a very virulent infection, which had five days' start, the result was ankylosis. In another, also a bad infection, only seen three weeks after the onset, the result up to the present is good, the man walking about without pain, but with some limitation of flexion, which is improving. In all the rest recovery has been complete.

Journal of Laryngology, Rhinology and Otology, London

February

- 38 Latent Infections by Diphtheria Bacillus and Administrative Measures Required for Dealing with Contacts. R. M. Buchanan.
- 39 Administrative Measures Required for Dealing with Diphtheria Contacts. D. Forbes.
- 40 Examination of 240 Skulls with Reference to the Sphenoidal Sinus and the Sphenothmoidal Cell. W. S. Syme.

Archives Générales de Chirurgie, Paris

January, IV, No. 1, pp. 1-110

- 41 *Vascular Tumors and Aneurisms in the Bones. A. Le Dentu.
- 42 *Invasion of Wall of Chest by Cancer in Pleura or Lung. (Propagation à la paroi thoracique des cancers pleuro-pulmonaires.) E. Tédénat and J. Martin.
- 43 *Peritonitis from Rupture of a Pyosalpinx. Lamouroux.
- 44 Operation for Hallux Valgus. (Ostéotomies obliques conjuguées du 1er métatarsien et de la 1re phalange pour hallux valgus.) Maucclair.

41. **Vascular Tumors of the Bones.**—In one of Le Dentu's cases a pulsating sarcoma was found in the first metacarpal bone and in 6 others he found similar pulsating or vascular tumors in the femur, tibia or triceps. He has collected 9 cases in which a pulsating tumor in the bone seemed to be

independent of any malignant growth and 8 others in which even histologic examination failed to reveal such, but the preponderance of numbers of others in which malignant growths coexisted with the excessive development of the vessels or with a hematoma demonstrates, he thinks, the malignant nature of the process beyond question.

42. Cancer in the Chest Wall Originating in the Lung.—In the case described, a sarcoma in the pleura perforated the wall of the chest at two points and spread out in the subcutaneous tissue. The outer portion of this "shirt-stud growth" simulated a tuberculous abscess, as in 8 other cases on record. All proved fatal, and yet early operation may cure as in a case reported by Becker.

43. Peritonitis from Rupture of a Pyosalpinx.—Lamonroux reports a case in which the patient was saved by an early operation and has found 77 others on record, including 5 in Poncet's service. The first symptoms are insidious; first a little pain in the abdomen, then vomiting follows, the temperature rises and the pulse increases, the abdomen is soft but tender. The diagnosis is generally merely peritonitis from perforation. In 47 of the 78 cases prompt laparotomy saved 27 of the patients; the best results were always obtained when the ruptured tube was removed. The patients all died in the 31 cases in which no operation was attempted.

Lyon Médical, Lyons

January 9, XLIII, No. 2, pp. 57-96

45 Nervous Motor Disturbances in Pott's Disease. X. Delore and A. Challer.

January 16, No. 3, pp. 97-138

46 *Fixation Abscess in Treatment of Acute Bronchopulmonary Disease. A. Pic and A. Bonnamour.

47 *Ocular Complications of Diabetes. Grand and Clément.

46. Fixation Abscess in Treatment of Acute Bronchopulmonary Disease.—Pic injects 1 c.c. (16 minims) of turpentine under the skin of the abdomen or thigh in every case of severe pneumonia or bronchopneumonia, whether the special gravity is due to the debility, age or alcoholism of the patient or to the passage of the pneumococcus into the blood. The injection must be made early; diabetes, tuberculosis and anasarca are the only contraindications Pic mentions. If no suppuration follows, the prognosis is extremely grave. When suppuration commences, the general condition improves at once; the temperature declines the next day and polyuria follows by the second to the fifth day. There seems to be a salutary crisis like that of defervescence in pneumonia, and the patient feels better in nearly every way. Six recoveries followed the application of the fixation abscess in 10 very severe cases. In 78 cases on record in which this method of treatment was used 45 of the patients recovered, that is, 57 per cent. This speaks encouragingly for it, he says, as the measure is never applied except in the cases with especially grave outlook.

47. Ocular Complications of Diabetes.—Grand-Clément discusses the weakness of accommodation, iritis, cataract and amblyopia that may occur as complications of diabetes, as also hemorrhage in the retina which he regards as of specially grave import. The cataract engendered by the diabetes subsided under dietetic measures in his experience, as also the other complications except the hemorrhagic retinitis. In the 30 diabetic patients presenting patches of hemorrhage in the retina of one or both eyes, a large proportion of sugar was always present in the urine and of acetone in the blood. Although all the patients seemed comparatively robust, yet every one died in from 15 to 18 months.

Obstétrique, Paris

January, N. S., III, No. 1, pp. 1-103

48 *The *Spirochæta pallida*. (Le spirochète pale de Schaudinn.) A. Girault.

49 *The Changes in Uterine Fibromyomas during Pregnancy and the Puerperium. G. Piquand and J. Lemeland.

50 *Excessive Salivation during Pregnancy. (Salorrhée gravidique). A. Boissard.

48. The Spirochæta Pallida in the Fetal Liver.—Girault examined the liver in 200 aborted or macerated fetuses or new-born infants. He never found spirochetes in the liver of the fetus before the sixth month, not even when the mother had florid syphilis, and he thinks that the question

of abortion in syphilis deserves to be reconsidered. It is evident, on the other hand, that a macerated fetus is a syphilitic fetus in at least two-thirds of the cases. Spirochetes were found in the liver in the macerated fetuses even when the mother was apparently free from syphilis, possibly, he adds, of paternal origin. In some instances the mother had taken systematic mercurial treatment during her pregnancy and yet spirochetes were found in the liver of the fetus, suggesting that the courses in vogue are not vigorous enough. Another point suggested by the research reported is the necessity for mercurial treatment of the mother during a pregnancy even when her own infection is of many years' duration, and she seems entirely free from manifestations of the disease. Spirochetes long dormant in the women seem to find an especially favorable culture medium in the fetal liver. The findings in the placenta were almost invariably negative under all circumstances.

49. Changes in Uterine Fibromyomas During Pregnancy.—Piquand has found records of 82 cases of suppuration or gangrene of a fibromyoma following close on a pregnancy. Polyps are particularly liable to these changes on account of the interference with their circulation from the stretching and compression of their pedicle, while they are peculiarly exposed to infection. In 43 cases on record of interstitial fibromas with suppuration or gangrene, only 7 of the women survived.

50. Excessive Salivation During Pregnancy.—In the case reported by Boissard the patient, a woman, of 36, had had six normal pregnancies; at the second month of her seventh, excessive salivation developed, the amount of the saliva collected ranging from 5 to 12 ounces a day. She lost over 25 pounds in weight in less than three weeks although her appetite was good and she took sufficient food and there was no vomiting. Saline infusion and belladonna did not arrest the salivation but the patient ceased to lose weight when ovarian treatment was instituted, and she regained nearly 9 pounds in four days. She then felt better and left the clinic so the final outcome is not known.

Presse Médicale, Paris

February 2, XVIII, No. 10, pp. 81-88

51 *Autoserotherapy of Ascites. V. Audibert and F. Monges.

52 *Pneumococcus Jaundice. (L'ictère pneumococcique.) A. Lemierre and P. Abrami.

February 5, No. 11, pp. 89-96

53 *Prognosis of Diabetic Cataract. F. de Lapersonne.

54 *Coma from Acidosis due to Suppurative Inflammation of the Liver. (Coma par acidose et abcès du foie.) M. Labbé.

51. Autoserotherapy of Ascites.—Audibert and Monges believe that they are the first to apply this method of autoserotherapy in treatment of ascites. The technique is similar to that of Gilbert in tuberculous pleural processes. They describe a case of ascites of hepatic origin in which benefit was derived from reinjection of the patient's own ascitic fluid, commencing with 3 c.c. and never surpassing 10 c.c. The injections were made at intervals of about 6 days and 12 injections were made in all. There was no pain, no local reaction, nor any apparent influence on the temperature or on the elimination of chlorids and urea. The main effect was a copious and persisting polyuria which brought about notable improvement in the general condition as the ascites was drained away. They withdrew salt from the diet, and they emphasize the injurious action of ingested salt in ascites resulting from liver disease. They now apply this autoserotherapy in all cases of recurring ascites. The fluid is aspirated and then the tip of the needle is partly withdrawn and then diverted and the fluid reinjected into the subcutaneous tissue.

52. Pneumococcus Jaundice.—Lemierre was able to cultivate the pneumococcus from the blood in three cases of pneumonia complicated with jaundice. Autopsy revealed inflammation in the parenchyma of the liver, the work of the pneumococcus; the inflammation in the vessels and ducts was secondary. This liver complication seems to develop preferably in persons with preexisting liver lesions. He adds that it is possible that the pneumococcus may localize exclusively in the liver without involving the lungs.

53. Prognosis of Diabetic Cataract.—De Lapersonne discusses separately diabetic cataract in the young and the elderly and

senile cataract in diabetics. Before attempting to operate, the general condition should be improved to the greatest possible extent; increasing debility, tuberculosis, hemorrhage in the retina and neuroretinitis all contraindicate intervention. The diabetes modifies the tissues, rendering them more liable to infection and prolonging healing. In one case the cicatrix left from the operation ruptured five weeks after it had apparently healed. He has also witnessed the development of hypostatic pneumonia after the operation. Another serious complication which he has encountered a number of times is a postoperative psychosis. Accidents of this kind, he asserts, are peculiarly liable in diabetics who generally combine the baleful factors of age, autointoxication and atony of the intestines. In one of his cases the psychosis did not occur for some time after the cataract operation but then severe neurasthenia developed, accompanied by transient delirium; the patient refused to conform to the dietetic regulations and died in diabetic coma. At the same time, these serious complications of cataract operations are rare; in the majority of cases the results are excellent, but it is necessary to weigh the pros and cons, commence with iridectomy and redouble the precautions at the time and afterward.

54. **Coma from Acidosis.**—The glucosuria in the case described by Labbé was evidently due, he says, to inflammation of the liver following a gastrointestinal affection five years before, entailing subacute hepatitis and abscess formation. The abscesses found at autopsy were apparently responsible for the intermittent fever observed. When the breath smells of acetone but coma is not impending, he adds milk, potatoes, rice or green vegetables to the diet and gives 20 gm. (300 grains) of sodium bicarbonate. But if coma is impending he gives from 100 to 200 gm. (from 3 to 6 ounces) every day. The sodium bicarbonate may be dissolved in water and sipped; it is astonishing, he remarks, how tolerant the digestive tract is of these large doses. If the patient vomits it or is unable to swallow, he infuses about a quart of a 3 or 4 per cent. solution into a vein, while more of the bicarbonate is injected into the rectum and the patient is made to drink large amounts of milk. This intensive treatment should be continued so long as the urine gives an acid reaction.

Revue de Médecine, Paris

January, XXX, No. 1, pp. 1-210

- 55 *Hemophilia; Pathogenesis and Treatment. II. P. Nolf and A. Herry.
56 Radiotherapy in a Case of Exophthalmic Goiter. R. Lépine.
57 *Advantages of Alkaline Intravenous Injections to Ward off Diabetic Coma. Id.
58 *Pneumonia Attended with Splenization of the Lung. IV. Mosny and Malloizel.

55. **Hemophilia.**—Nolf and Herry report considerable research on the various elements of the serum to explain their interaction, especially in production of hemophilia.

57. **Intravenous Alkaline Injections to Ward Off Diabetic Coma.**—Lépine has succeeded in warding off diabetic coma in a number of acetonemic diabetic patients during the premonitory stage of the coma. More rapid breathing, with other symptoms, indicated the impending disaster; it was only a question of a few hours more or less. After acetonemic coma is installed, the alkaline injections have only a temporary, if any, effect, but given in time, Lépine declares that they ward it off. Several patients examined a number of months after the preventive intravenous injection of an isotonic solution of sodium bicarbonate were in satisfactory condition. In one case the glucosuria was modified and the acetonemia had nearly entirely subsided when examined eight months later.

58. **Pneumonia with Splenization of the Lung.**—This study of splenopneumonia concludes with detailed reports of 23 cases of tuberculous splenopneumonia to illustrate the variety of the syndrome in individual cases. The necessity for suspecting tuberculosis in every case of splenopneumonia is emphasized. The sputum should be examined early for tubercle bacilli, the apices auscultated every day, convalescence supervised with special care and watch kept over the patients for a long time afterward. Tuberculous splenopneumonia seems to be most common in the young and in women, especially after a pregnancy or overwork. In only 4 out of 11 such cases at the Broussais hospital was an inherited taint evident.

Semaine Médicale, Paris

February 2, XXX, No. 5, pp. 49-60

- 59 Meckel's Diverticulum in Development of Intestinal Stenosis. (Diverticule de Meckel et rétrécissements de l'intestin.) F. Lejars.

February 9, No. 6, pp. 61-72

- 60 *Epigastric Galloping Sound. (Le bruit de galop épigastrique et sa signification clinique.) M. Roch.

60. **Gallop Sound Heard in the Epigastrium and its Significance.**—Roch regards the gallop sound as evidence that the heart is making an effectual effort to restore the balance. When the myocardium gives up the struggle, the gallop sound is no longer heard. It should therefore, he asserts, not be considered a sign of an unfavorable prognosis. He reports a case in which the right heart alone was responsible for the gallop rhythm, as determined at autopsy. In another case with a gallop sound in the epigastrium, the patient had chronic nephritis and the left heart was responsible for the symptoms, but it was buried under a layer of emphysematous lung. The diagnosis at first was essential asthma with emphysema until the urine findings differentiated toxic dyspnea. The areas for the gallop sound from the right and the left heart are so close together that the slightest displacement of either confuses the focal findings. Another source of error is the extreme tendency of the neurotic to cardiac irregularity. Roch has been unable to find any signs directly pathognomonic for a right gallop sound, but it should be suspected if lung, stomach or liver disease can be excluded, distrusting it, however, if it proves transient, and strongly suspecting nephritis when it persists.

Beiträge zur Klinik der Tuberkulose, Würzburg

XV, No. 1, pp. 1-180. Last indexed Dec. 25, p. 2180

- 61 *Results with Combined Institutional and Tuberculin Treatment of Pulmonary Tuberculosis. (Die Leistungsfähigkeit der kombinierten Anstalts- und Tuberkulinbehandlung bei der Lungentuberkulose.) Bandelier.

61. **Combined Sanatorium and Tuberculin Treatment of Pulmonary Tuberculosis.**—Bandelier's report fills the entire number and gives the details of 500 cases, all in women, the tables filling 135 pages. He believes that the results attained far surpass those of any similar series yet published. Only 18 of the total number of patients were not benefited and these were all in the third stage of the disease, while 32.8 per cent. in this stage regained complete earning capacity. In 17.2 per cent. of the total number the patients were apparently entirely cured; 90.4 per cent. in the first stage and 80.7 per cent. in the second regained full earning capacity, and an additional percentage of 9.6 per cent. in the first stage, 19.2 per cent. in the second, and 53.4 per cent. in the third stage regained sufficient earning capacity for the legal standard. The results were thus positive in 100 per cent. of the 83 patients in the first stage of the disease; in 100 per cent. of the 286 patients in the second, and in 86.2 per cent. of the 113 patients in the third stage of the disease. There were complications of various kinds in many cases; 53 of the 83 in the first stage were more or less anemic; 10 had laryngitis; 32, fever for months. The vital capacity increased on an average 290 c.c., the excursions by 0.91 cm. The benefits of the combined treatment are shown more particularly, he says, in the 286 patients in the second stage, including 224 with anemia, 4 with severe gastrointestinal disturbances, 23 with neurasthenia, 9 with hysteria, 18 with extreme nervousness, 14 with goiter and 2 with exophthalmic goiter, 1 with chorea, 6 with albuminuria, 1 with lupus, laryngitis in 42, the tuberculous nature not certain, and 19 with tuberculous laryngitis, 13 with tuberculous ulcerative laryngitis (5 completely cured, 8 much improved), 56 with fever. The vital capacity increased by 360 c.c., the excursions by 1 cm. The complications are recorded in his tables which show further the findings on entering and leaving in regard to the lungs, sputum, weight, vital capacity, chest measurements, the number of days in the tuberculin course and the earning capacity on dismissal. As the organism gains strength from the sanatorium treatment, it becomes better able to respond to the stimulus from the tuberculin. The whole secret of the conflicting results obtained by different clinicians, he asserts, is in the different length of the tuberculin courses—those who have given short

courses have not obtained as favorable results as those able to prolong the course beyond the usual three months. In this period the tuberculin has only just begun to get in its work. And here the cooperation of the general practitioner to continue the course is the *sine qua non* for effectual results. The average length of Banderier's courses was five or six months. He gives the tuberculin according to the principle of reaching the maximal dose and injecting this maximal dose at longer and longer intervals, striving to maintain the "tuberculin immunity" as long as possible, thus stimulating and keeping up the production of antibodies. In his patients in the second and third stages the bacilli and sputum did not disappear until after large doses of tuberculin were being given. He emphasizes the influence of the tuberculin in arresting the symptoms resulting from absorption of the toxins generated by the tubercle bacilli: palpitations, headache, night sweats, loss of appetite and languor. In some of his cases vasomotor disturbances lasting for years, with rebellious sweats day and night, subsided entirely under the influence of the tuberculin.

Berliner klinische Wochenschrift

XLVII, No. 4, pp. 133-176

- 62 *Fatal Transmitted Vaccinia. (Ueber schwere Vaccineerkrankungen und ihre Prophylaxe.) A. Geronne.
63. Theories in Regard to Increased Blood Pressure in Nephritis. (Zur Marcuse'schen Theorie der nephritischen Blutdrucksteigerung.) H. Beitzke.
- 64 Recovery from Severe Diabetes in Woman of Twenty-nine. S. P. Swart.
- 65 Behavior of the Complement in the Seroreaction. (Verhalten des Komplements bei der Komplementbindungsreaktion.) L. Michaelis and P. Skwirsky.
- 66 *Differentiation of Pain from Pressure and on Release from Pressure in Appendicitis and Peritonitis. (Das peritoneale Druck- und Zugschmerzphänomen in seiner Bedeutung für die Prognose und Operationsindikation bei Appendicitis und Peritonitis.) M. Blumberg.
- 67 Deforming Arthritis after Typhoid. (Zur Kenntnis der Aetiologie der Arthritis deformans.) J. Rothschild.
- 68 *Postappendicitic Priapism. F. Rosenthal.
- 69 Emissions, Spermatorrhea and Impotency for which the Prostate is Responsible. M. Porosz.

62. Dangers of Inoculation of the Unvaccinated from Vaccination Pustules.—Geronne calls attention to the facts that the lymph from a vaccination pustule is much more virulent than ordinary vaccine, and that when inoculation occurs much larger amounts are inoculated than are used in vaccinating, also that the inoculation generally occurs on some patch of eczema or similar lesion so that the virus is absorbed more rapidly and over a larger area than in vaccination. In a case described, a healthy two-year-old child was accidentally inoculated with virus from the vaccinated arm of a brother. The vaccinia assumed a grave form, suggesting confluent variola and proving fatal in 16 days. Autopsy showed suppurative otitis media and septic sinus thrombosis. He refers to 140 cases, compiled by Blochmann, of similar inoculation of the unvaccinated, including 61 cases in which the eyes were involved in the process. In 20 cases, the inoculation occurred on a patch of eczema and the resulting vaccinia was extremely severe, with 6 fatalities. Eight other equally severe cases have been reported more recently. Geronne urges the necessity for protecting the vaccination pustule in such a way that contagion of others is impossible—he would like to have a protecting device made compulsory—and he also advises against attempting to vaccinate in any family in which there is a case of eczema. The family should also be warned that inoculated vaccinia is a much severer affection than the vaccination pustule.

66. Peritoneal Pain on Pressure and on Abrupt Release of Pressure.—Further experience has confirmed the importance of Blumberg's sign of peritonitis, first described in 1907. It is instructive in appendicitis, revealing an inflammatory reaction on the part of the peritoneum possibly before any other signs of the disease become manifest. The patient is asked if he feels pain when the hand is pressed down over the appendix; this is pain A. Then the hand is suddenly and completely lifted from contact with the abdominal wall, and the patient is asked if he feels pain as this is done; this is pain B. Each pain represents different conditions; the pressure pain reveals the lesion below. As the hand pressing down is suddenly raised, the elastic abdominal wall springs back into place, and this pulls and draws on the peritoneum, causing pain if the

peritoneum is inflamed but not in normal conditions. When this pain is marked, early in appendicitis, it is a signal of impending danger.

68. Post-Appendicitic Priapism.—In Rosenthal's case colon bacilli from an appendicitic abscess set up a thrombophlebitis causing priapism which gradually subsided with the abdominal lesions. Puncture of the right corpus cavernosum hastened the cure.

Deutsche medizinische Wochenschrift, Berlin

February 3, XXXVI, No. 5, pp. 201-248

- 70 Nomenclature of Conceptions of Disease. (Pathos und Nosos.) L. Aschoff.
- 71 Question of Infection of Man with Bovine Tubercle Bacilli. (Zur Frage der Tuberkuloseinfektion des Menschen durch Perlsuchtbazillen.) B. Möllers.
- 72 Tubercle Bacilli in Sputum in Pulmonary Disease. (Zur Frage der im Auswurf Lungenkranke vorkommenden Tuberkelbazillen.) Dieterlen.
- 73 *Treatment of Tuberculosis with Large Doses of Tuberculin. J. Neumann.
- 74 *Intravenous and Intramuscular Injection of Large Doses of Antitoxin in Treatment of Diphtheria. Berlin.
- 75 Obliterating Capillary Bronchitis after Diphtheria. C. Colombino.
- 76 *Dangers of General Anesthesia with Part of Circulation Shut Off. (Gefahren der Narkosen bei künstlich verkleinertem Kreislauf.) E. Gräfenberg.
- 77 *Importance of Spirochetes for Clinical Diagnosis of Syphilis and India Ink Preparations. (Bedeutung des Spirochäten-nachweises für die klinische Diagnose der Syphilis.) W. Scholtz.
- 78 Results with Barium Sulphate Modification of the Wassermann Test. (Ergebnisse der Wassermannschen Reaktion bei Vorbehandlung der Sera mit Baryumsulfat nach Wechselmann.) C. Lange.
- 79 Demolition of Colles' and Profeta's Laws by Seroreaction in Syphilis. F. Bering.

73. Treatment of Tuberculosis in Children with Large Doses of Tuberculin.—Neumann has been testing the tolerance of children for large doses of tuberculin, his experience showing that they can bear much higher doses than has hitherto been deemed possible. He regards the local reaction to the subcutaneous injection of tuberculin as the best test of the effect of the treatment. He does not increase the dose until the local reaction has subsided. These local reactions continue with the same dosage for quite a while after there is no further temperature reaction, or they may be pronounced when there is no temperature reaction. At first the infiltration is perceptible for a week or more, but as the reaction grows less the infiltration is more and more transient and disappears within a few hours. He waits before increasing the dose until the local reaction is much less. In a case described in detail, a boy of 4 with rachitis and pronounced cutaneous reaction who was much debilitated, never having walked or talked, improved amazingly under tuberculin, commencing with about 0.0001 gm. and reaching the dose of 0.5 gm. in about six months. The intervals were from 1 to 6 or more days. He has never witnessed such rapid improvement without the tuberculin in any case. The temperature curve, he says, during the tuberculin course is that of a "remittent subnormal fever." He warns, however, that one cannot be too cautious in tuberculin treatment when the focus is in the vicinity of the central nervous system, citing the experiences with the tuberculin test in cases of tuberculous meningitis. He has also noted more or less dyspnea in certain cases after the injections of tuberculin, which he ascribes to a reaction in tuberculous bronchial glands. In one case phlyctenular conjunctivitis developed; he does not know whether to ascribe it to the tuberculin or not.

74. Intravenous Injection of Antitoxin in Treatment of Diphtheria.—Berlin reports favorable experiences with 120 children with severe diphtheria; he did not hesitate to give up to 16,000 units by intravenous or intramuscular injection. There were no by-effects and no disturbances even from these large amounts of antitoxin, notwithstanding that it contained a certain proportion of carbolic acid as preservative.

76. The Dangers of General Anesthesia with Part of the Circulation Cut Off.—Gräfenberg has been applying Klapp's method of shutting off the circulation by an Esmarch bandage applied to the legs but found that 6 patients developed thrombosis among the 75 laparotomized. None of the patients was subject to varicose veins. The thrombosis in the leg in each case was transient and harmless, but it has convinced him

that this method has too many dangers and he has now abandoned it. He remarks that the thrombosis developed exclusively after laparotomies, nothing of the kind having been observed after 110 vaginal operations.

77. India Ink Microscopic Diagnosis of Syphilis.—Scholtz expatiates on the simplicity and reliability of the India-ink technic for showing up the pale spirochete. A small drop of the serum on the slide is mixed with a small drop of distilled water and a small drop of the mixture is transferred to another slide. Half this amount of India ink is then added and mixed and spread out over the slide with the edge of another; the material is then dry and ready to be examined in half a minute. The field looks like a photographic negative; the objects in the field are comparatively colorless against the dark background. The spirochetes show up in well-made India ink specimens as clearly as with the ultra-microscope.

Medizinische Klinik, Berlin

January 30, VI, No. 5, pp. 167-206 and Supplement

- 80 *Moral Infirmary in Children. (Moralischer Schwachsinn im Kindesalter.) W. Stoeltzner.
- 81 Determination of Tubercle Bacilli in the Sputum. (Methodik und Technik der neueren Verfahren zum Nachweis von Tuberkelbazillen im Sputum mit besonderer Berücksichtigung des Uhlenhuthschen Antiforminverfahrens.) Schulte.
- 82 *Value of Tuberculin in Treatment of Tuberculosis. W. v. Leube and others. Commenced in No. 1.
- 83 Vaseline for Softening Strip to Cut in Removing Plaster Casts. (Zur Technik der Abnahme der steifen Verbände.) M. Stransky.
- 84 Saponin Hemolytic Reaction in the Cerebrospinal Fluid in Organic Nervous Disease. (Eine biologische Reaktion im Liquor cerebrospinalis bei organischen Nervenkrankheiten.) A. Hauptmann.
- 85 Aphasia. K. Goldstein.

80. Moral Weakness in Children.—Stoeltzner discusses the children who seem to have a natural tendency to cruelty and malice and the advice that should be given the parents. He advises in the severer cases placing the child in a psychiatric institution for better study of the case, and a record kept that may be of use later if the child comes into collision with the criminal law, as is liable to be the case. He suggests the advantages of a colony for the incorrigible.

82. Tuberculin in Treatment of Pulmonary Tuberculosis.—In this symposium von Leube reports that decided clinical improvement was realized in 30 to 50 per cent. of 150 patients in the second and third stage of pulmonary tuberculosis injected twice a week with from 0.00001 gm. up to 0.1 gm. at intervals of three or four days, the course lasting about four or five months. Moritz also reports favorable experiences, and Müller states that he has witnessed remarkable improvement in a number of cases and some complete cures in the last eighteen years under tuberculin treatment. Not only tuberculosis of the lungs but also of the peritoneum, of the urogenital apparatus and of the eye are included in this list. He prefers the smallest doses and avoidance of any general reaction. Soltmann is not a friend of tuberculin treatment, and Heubner does not approve of it for pulmonary tuberculosis in young children; when the lungs are involved in children, the disease is no longer in an early stage. At the same time he has been much pleased with the results of tuberculin in incipient tuberculosis in young children when it is still confined to the glands. A cautious course of tuberculin treatment for two months has an unmistakable influence on the general condition as well as on the scrofulous symptoms. He has been unable, however, to obtain any reliable data as to the immunization from such a course in respect to tuberculous infection later. Hospital material is too shifting to permit this.

Monatsschrift für Geburtshilfe und Gynäkologie, Berlin

February, XXXI, No. 2, pp. 151-274

- 86 *Autoinfection of Rubber Gloves. (Händeküme, Selbstinfektion, Gummihandschuhprophylaxe.) F. Ahlfeld.
- 87 *Duration of Bed-Rest after Delivery not a Factor in Development of Retroversion. (Inwieweit wird die Entstehung der Retroversioflexio durch längere oder kürzere Bettruhe nach der Geburt beeinflusst?) F. Heilmann.
- 88 Congenital Defects in Skull Resulting from Amniotic Adhesions. (Kongenitale Defekte am Schädel infolge amniotischer Verwachsungen.) E. Kehrner.
- 89 Etiology of Associated Malformations of Female Urinary and Genital Apparatus. (Aetiologie der gleichzeitigen Missbildungen des weiblichen Harn- und Geschlechts-Apparates.) W. Weibel.

86. Autoinfection of Parturients.—Ahlfeld states that the placenta had to be removed by hand in 88 out of 8,000 child-births in his service, exclusive of cases of placenta prævia. Manual examination was also undertaken in 45 other cases. The uterus was thus entered in 133 cases during the third stage of labor, and yet in 46.6 per cent. of the cases the puerperium was afebrile. In the 7 fatal cases the mortality was the result of eclampsia or hemorrhage or the patient had presented symptoms of sepsis before delivery. Gloves are not used and yet the morbidity is less than that reported from clinics where gloves are systematically used. The morbidity is evidently the result, he declares, of importation of germs from the patient's own tissues—autoinfection—the germs being carried in by the bare or gloved hand.

87. Bed-Rest After Childbirth and Development of Retroversion.—Heilmann compares the findings in regard to development of retroversion later in Küstner's service at Breslau, grouping the cases according as the patients were allowed to get up in from 2 to 4 days after delivery, after the fifth day, or not until after the ninth day. The proportion of cases in which retroversion developed later was only from 0.45 to 0.8 per cent. in the 2,562 women allowed to get up from the second to the fourth day, while it ranged from 1.3 to 2.1 per cent. in the second group, and from 2 to 2.7 per cent. in the third group, both containing even a larger number of parturients. Each group includes all the labor cases in four-year periods.

Münchener medizinische Wochenschrift

February 1, LVII, No. 5, pp. 225-280

- 90 *Intestinal Sounds with Metallic Resonance as Sign of Obstruction. (Metallisch klingende Darmgeräusche und ihre Bedeutung für den Darmverschluss.) M. Wilms.
- 91 *Nerve Transplantation for Flaccid Paralysis. (Nervenüberpflanzung bei schlaffen Lähmungen.) A. Stoffel.
- 92 Transmission of Poliomyelitis to Monkeys. (Weitere Mitteilungen über experimentelle Affenpoliomyelitis.) P. H. Römer.
- 93 The Typhoid Bacillus in Development of Suppuration. (Der Typhusbacillus als Eitererreger.) O. Hess.
- 94 Importance of Bovine Tuberculosis for Development of Tuberculosis in Children. (Bedeutung der Rindertuberkulose für die Entstehung der Tuberkulose im Kindesalter.) M. Hohlfeld.
- 95 *The *Bacillus faecalis alcaligenes* Pathogenic for Man. A. Hamm.
- 96 Physical Bases for Thermopenetration. (Diathermie, Transthermie, Thermopenetration.) B. Walter.
- 97 *Tamponing in Treatment of Placenta Prævia. K. Heil.
- 98 Varying Bactericidal Properties of Human Blood. (Ueber Unterschiede in der Streptokokken gegenüber zur Geltung kommenden bakteriziden Wirksamkeit des menschlichen Blutes, insonderheit des Zitratblutes.) F. Loening.
- 99 *School Medical Inspectors. (Schulärzte.) Henkel.

90. Metallic Sounds in the Intestines as Early Sign of Obstruction.—Wilms calls attention to the sounds heard on auscultation as fluid collects above an obstruction and the peristaltic movements sway the fluid and the air in it rises to the surface of the fluid in bubbles, which burst as they reach the surface; drops from above also fall on the surface. The sounds made by the bursting bubbles and falling drops have a clear metallic ring and can be detected by auscultation very early in case of obstruction, much earlier than the gurgling sounds which are not heard until long stretches of the bowel are involved. These metallic sounds are of auto-origin and the thickness of the abdominal wall does not seem to interfere with their perception. They indicate that the intestine is distended with fluid and air from some obstruction, and they are thus, he asserts, pathognomonic of ileus; the sounds may be sometimes heard after a laparotomy but the conditions here will not prove misleading. In a year's experience with this sign he has found it reliable for differentiating mechanical obstruction and also for excluding ileus in the absence of the metallic sounds. In several cases the patients were sent to the hospital with the diagnosis of ileus, but the lack of metallic sounds spoke against this diagnosis, and the patients recovered without an operation. In others the operation confirmed the diagnosis, based mainly on the positive findings of the metallic sounds. The sign is thus important and decisive, and its appearance in the early phases of ileus is especially instructive.

91. Transplantation of Nerves in Treatment of Flaccid Paralysis.—Stoffel asserts that it is possible to separate in the nerve trunk the fibers which ramify off below into various branches. This is especially important in transplanting nerves

as only the fibers involved need be transplanted. He gives the details of four cases in which a plastic operation was done on the musculocutaneous and musculospiral nerves. The results were satisfactory and confirm the advantages of separating the fibers so that the intervention can be on the fibers directly involved. He reports several examples; the operation was done in the axilla and the deltoid muscle regained apparently its normal functioning and excitability.

95. *The Bacillus fecalis alcaligenes in Human Pathology.*—Hamm's patient was a primipara of 29 with fatal puerperal pyelonephritis and peritonitis with this bacillus in pure cultures in the urine and pus.

97. *Tamponing in Treatment of Placenta Prævia.*—Heil pleads for the advantages of tamponing as the quickest, easiest and most certain means of arresting hemorrhage in certain cases of placenta prævia if the obstetrician knows how to do it properly; otherwise it is a dangerous procedure, and he urges every one to practice it until proficient. He applied it in 8 out of 28 cases of placenta prævia and 5 of the women had an afebrile puerperium, while in the 3 cases with fever it is doubtful whether the tamponing was responsible. The metreurynter should always be given the preference, but when for any reason this is not advisable the tamponade is the only resource. He places the woman on her side and wipes out the vagina with cotton dipped in a disinfectant; if the tampon is to be carried into the cervix, he draws down the lip and introduces the strip of gauze with long forceps, packing the tampon firm in the cervix and then in the vagina, plugging it toward the last with strips of cotton. The posterior vagina must be packed with special firmness to prevent blood from oozing behind the tampon. It must not press too hard on the urethra. A third point is to pack the outer part of the vagina with cotton as gauze drains too much.

99. *Medical School Inspectors.*—Henkel concludes his dissertation on the task of the medical school inspector by emphasizing that the individual hygiene of the school child is what he has to bear in mind and watch over during the entire period of school life, keeping records in a style uniform for all the medical inspectors in the country, with a similar uniform method of reporting at the close of each school year.

Therapie der Gegenwart, Berlin

February, II, No. 2, pp. 49-96

- 100 *Treatment of Scarlet Fever. (Behandlung des Scharlachs.) A. Baginsky.
101 *Balneologic Measures in the Home. (Das Sauerstoffbad in der ärztlichen Hauspraxis.) J. Baedeker.
102 Development of Exophthalmic Goiter Four Years after Removal of a Goiter. (Zur Frage der operativen Behandlung des Morbus Basedowii.) J. Lowinsky.
103 Aphorisms on Treatment of the Heart. C. A. Ewald. Commenced in No. 1.
104 Intravenous Atoxyl-Iodid Treatment of Exophthalmic Goiter. F. Mendel.

100. *Treatment of Scarlet Fever.*—The first part of Baginsky's article was reviewed in these columns February 12, page 576. He here discusses the complications of the disease, and warns to be on the lookout for otitis media. Ice to the ear and region, and, possibly, instillation of a 1 or 2 per cent. carbolized glycerin frequently arrest the process if commenced at the first signs of inflammation, redness and protrusion of the tympanic membrane and sensitiveness. With signs of suppuration in the middle ear, especially when the temperature is inclined to be febrile, not a moment should be lost before puncturing the membrane, following with the usual antiseptic measures, carbolized glycerin, boric acid solutions, etc., and draining with iodoform gauze. If the process remains restricted to the ear it may subside without material injury, but if the mastoid becomes tender, general pyemic infection is liable to follow rapidly. The general practitioner must recognize the processes going on in the ear in time for successful interference, not allowing the chill to be the first warning that the patient is on the way to fatal pyemia. Even more important is the early recognition and treatment of complicating nephritis. In the last three years he has had 729 scarlet fever patients and 88 had nephritis when they entered the service; only 36 developed this complication in the hospital and there were no uremic symptoms or hydrops in any instance and no fatalities from the nephritis. He treats it by restricting the children to an exclusive milk diet, and giv-

ing a sweating bath daily or as needed. This prevents development of hydrops and its train of bronchitis, pleurisy, phlegmons, etc. Occasionally diuresis was promoted by an alkaline mineral water but no drugs were given unless digitalis was indicated for the heart. If the diuresis becomes excessive, he gives gruels instead of part of the milk. In case hydrops has already developed and there is much fever, it may be necessary to apply a cold pack and induce sweating in this way. This requires courage, but with a sip of champagne or injection of camphor wonderful results may be attained, even in apparently desperate cases. Impending anuria with severe hemorrhagic nephritis and myocarditic disturbances may require digitalis. Venesection may help to tide the patient past the danger phase in uremia, evidenced by vomiting, amblyopia, coma and convulsions. He adds in conclusion that children who have had scarlet fever should be kept under supervision for a long time; the indications here are the same as in chronic nephritis.

101. *The General Practitioner as Balneologist.*—Baedeker declares that a wide field for efficient treatment of neurasthenia, heart and other affections is opened by the introduction of balneologic measures into the home. He describes his method of prescribing "nascent oxygen baths," recording before the bath and again half an hour or an hour afterward the findings in regard to the pulse rate and force, the radial blood pressure, the nature of the heart sounds, the limits of the heart, and the depth and length of the inspirations and expirations. He says that it is practicable to make the first call on the patient and then go on to others in the vicinity, stopping in again on the way back and thus keeping the accurate record of each case. He prefers to have the baths taken while the patient feels strongest, between 10 and 12 in the morning. The patient should be able to give up half the day, as he has to recline an hour or so after each bath. A systematic course of baths can thus be taken at home without the necessity for an expensive trip to a watering-place. Tank oxygen cannot be advantageously used for baths; the gas should be generated in the water by chemical means to secure practical results.

Wiener klinische Wochenschrift, Vienna

February 3, XXIII, No. 5, pp. 153-190

- 105 *Whooping Expiration and Roentgen-Ray Findings with Tuberculous Process in Pulmonary Glands in Young Children. (Expiratorisches Keuchen als Symptom der Lungendrüsentuberkulose im ersten Lebensjahre.) B. Schick and E. Sluka.
106 *Clinical Importance of Chvostek's Sign in Children. (Bedeutung des Fazialisphänomens im Kindesalter.) B. Spork.
107 *Symptomatology of Cerebral Arteriosclerosis. M. Herz.
108 Connection between Seroreaction and Antisiphilic Treatment. (Zur Frage des Zusammenhanges zwischen Wassermannscher Reaktion und antiluetischer Behandlung.) G. Kiralyfi.
109 *Symptomatology and Treatment of Secondary Inflammation of Salivary Glands. (Speicheldrüsenentzündung.) M. U. C. G. Weinländer.

105. *Whooping Expiration as Early Symptom of Tuberculosis in Infants.*—Schick calls attention to the whooping nature of expiration in infants who develop signs of tuberculosis later. In 20 of the 36 children in whom he noted the sign, it first attracted attention when the infants were between 2 and 4 months old; the others were between 4 and 10 months. In 5 other cases the children were from 1 to 5 years old and in their cases the symptom was caused by pneumothorax or compression of the air passages from various causes. Seven of the 36 infants presenting this sign are still living and the fate of 7 is not known; the others have died. He regards this as a striking and valuable diagnostic symptom of a tuberculous process in the bronchial glands in early infancy. It excludes other affections which might suggest tuberculosis: croup, asthma and bronchitis in which the whooping sound occurs during inspiration as a rule.

106. *Chvostek's Sign in Children.*—Spork has tested a number of infants for this sign and found it rare during infancy. The isolated sudden spasm on tapping one side of the face is encountered more frequently between 5 and 14, the frequency increasing with the age. The children are mostly delicate and nervous, with other signs of nervousness, exaggerated knee-jerk and diminished or lacking corneal and throat reflexes. The connection of the isolated facial phenomenon with tetany

is unmistakable in many cases. Spenk examined 213 children for this sign, repeating the tests at intervals in 61 cases.

107. Symptoms of Arteriosclerosis in the Brain.—Herz discusses here the frequent brief loss of consciousness which is a sign of cerebral arteriosclerosis. He explains it as a momentary interruption of cerebration in consequence of a sudden arrest of the circulation in the smallest vessels inside the skull. He ascribes it to extrasystoles, the disturbing action of which the rigid arterial walls are not able to compensate for, as in health. When extrasystoles are accompanied by symptoms on the part of the brain this speaks unmistakably for cerebral arteriosclerosis. The extrasystole may be caused by reflex action originating in the gastrointestinal tract. The main feature of the attacks in question is the sudden stoppage of the brain functioning, either suddenly, without premonition, or connected with alarming sensations, but the attack is over in a few seconds. The sudden return of complete consciousness, the entire lack of remembrance of the interval of unconsciousness, are important criteria of these attacks. In ordinary syncope the patient has a more or less pronounced weakness to overcome. He relates a number of typical cases; in one a robust butcher strolling down the street started to put his cigar in his mouth and suddenly noticed that a man had seized his arm. He struck the man, believing that he was being attacked, until a third passer-by explained that he had seen the man seize the butcher as he began to sway and had thus prevented his falling prone on the pavement. Herz warns of the necessity for differentiating this condition from neurasthenia. In treatment, iodine and physical measures are indicated; the nitrites are entirely inefficient; theobromine is likely to be injurious. Regulation of the diet is of supreme importance.

109. Secondary Inflammation of the Salivary Glands.—Weinländer reports ten cases of this kind with a suppurative discharge from the parotid duct, all observed in Pichler's service at Klagenfurt. He thinks that gentle stroke massage, with moist heat, may promote the cure. The inflammation was secondary to pneumonia, paralysis, typhoid or erysipelas, and only four of the patients recovered.

Zeitschrift für Urologie, Berlin

January, IV, No. 1, pp. 1-80

- 110 The Bladder in Bilharzia Disease and relations to Urinary Calculus Formation. (Die Harnblase bei Bilharziakrankheit und ihre Beziehungen zur Urolithiasis.) W. Ebstein.
111 *Experimental Isolation of the Ureters. (Zur Frage der Isolierung der Ureteren.) T. L. Kobylinski.
112 *Pyelitis. Kapsammer.

111. Experimental Isolation of the Ureters.—Kobylinski reports the results of operations on 4 cats and 2 dogs undertaken for the purpose of determining the effect on the functioning of the urinary apparatus of exposing a longer or shorter stretch of the ureter, isolating it from the peritoneum and the retroperitoneal connective tissue. Neither macroscopically nor microscopically could any appreciable difference be detected between this ureter and its connected kidney thus treated and the intact mate. The wealth and multiplicity of the sources of its blood supply and of its innervation seem to protect it against serious injury from such manipulations. Injection of methylene blue into the aorta revealed an astonishing vascularization in the region.

112. Pyelitis.—Kapsammer remarks that an isolated pyelitis without participation of the adjoining kidney parenchyma in the process is recognizable only histologically. As a rule, the infection arrives by way of the blood. When the pyonephrosis is primary, the suppuration precedes the dilatation of the kidney hilus; the ureter is narrow and short, and there is no compensating hypertrophy of the other kidney. When the pyonephrosis is of secondary origin, the hilus becomes dilated before suppuration occurs; the ureter is dilated and long and the kidney shows compensating hypertrophy. The circumstance that with the chronic form there are seldom appreciable symptoms on the part of the hilus and that the secondary symptoms in the bladder overshadow all others, led to the false assumption that the trouble was inevitably due to ascending infection. Colics with bladder tenesmus are characteristic of acute obstruction of the ureter. Colic pains without the bladder tenesmus suggest acute distention of the

capsule. Catheterization of the ureter locates the trouble but its severity and extent can be learned only by functional tests, and accurate knowledge of the anatomic condition of the pathologic kidney is indispensable for successful local treatment by the ureter catheter. It is important to refrain from stretching the bladder and the kidney hilus, especially in the acute cases so that instillation is alone permissible. Flushing out with quantities of fluid is allowable only in the subacute and chronic cases. The local treatment may be effectually supplemented by a course of alkaline mineral waters. But they should not be ordered haphazard; in cases of alkaline pyelonephritis, renal tuberculosis, pyelitis from phosphate stones and hypertrophied prostate, the alkaline waters are liable to do direct harm.

Gazzetta degli Ospedali e delle Cliniche, Milan

January 30, XXXI, No. 13, pp. 129-144

- 113 Small Epidemic of Cerebrospinal Meningitis in Italy. S. Lopriore.
114 Idiopathic Edema in Child of Four. (Caso di edema essenziale del bambini.) G. Giarratana.

Policlinico, Rome

February 6, XVII, No. 6, pp. 163-194

- 115 Color Blindness. (Del Daltonismo.) A. Neuschuler.

Ugeskrift for Læger, Copenhagen

February 3, LXXII, No. 5, pp. 115-142

- 116 *Mongolian Idiocy in Children. (Dev infantile Mongolisme.) H. Scharling.

116. Mongoloid Idiocy.—Scharling discusses the differential diagnosis of infantile mongolism as distinguished from myxedema and cretinism, and describes a number of typical cases in his care at the Brejninge home for feeble-minded. The child is born with the characteristic signs of mongolism, while the characteristics of myxedema and cretinism develop after birth and continue a progressive course which is not the case in mongolism. In the latter, the aspect depends more on the skeleton than on the skin, while with the former it is the changes in the skin which are most striking. Thyroid treatment has no specific action in mongolism, although some of the secondary features may vanish under it.

Books Received

All books received are acknowledged in this column and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender. A selection will be made for review in the interests of our readers and as space permits.

DAS ALTERN SEINE URSACHEN UND SEINE BEHANDLUNG DURCH HYGIENISCHE UND THERAPEUTISCHE MASSNAHMEN. Ein Handbuch für eine rationelle Lebensweise. Von Dr. A. Lorand, Badearzt in Karlsbad. Paper. Second Edition. Price, 5 marks. Pp. 259. Leipzig: Verlag von Dr. Werner Klinkhardt, 1910.

THE BACTERIOLOGIST'S AID TO MEMORY (A HANDY REFERENCE SHEET FOR THE LABORATORY). By J. W. S. Seecombe, M.R.C.S., Captain, Royal Army Medical Corps. Paper. Price, 3 shillings 6 pence. London: John Bale, Sons, and Danielsson, Oxford House, 83 Great Titchfield St., Oxford St., W.

ANATOMY AND PHYSIOLOGY FOR NURSES. By LeRoy Lewis, M.D., Surgeon to and Lecturer on Anatomy and Physiology for Nurses at the Lewis Hospital, Bay City, Mich. Second Edition. Cloth. Price, \$1.75 net. Pp. 344, with 161 illustrations. Philadelphia: W. B. Saunders Co., 1910.

MODERN SURGERY (GENERAL AND OPERATIVE). By John C. Da Costa, M.D., Professor of Surgery and Clinical Surgery in Jefferson Medical College, Philadelphia. Sixth Edition. Cloth. Price, \$5.50 net. Pp. 1502, with 966 illustrations. Philadelphia: W. B. Saunders Co., 1910.

THE ELEMENTS OF THE SCIENCE OF NUTRITION. By Graham Lusk, Ph.D., Professor of Physiology at Cornell University Medical College, New York City. Second Edition. Cloth. Price, \$3 net. Pp. 402, with 13 illustrations. Philadelphia: W. B. Saunders Co., 1909.

THIRTY-FOURTH ANNUAL REPORT OF THE LADIES' UNION CHARITABLE SOCIETY (INCORPORATED). Conducting the Lawrence General Hospital and Children's Home, for the Year Ending Sept. 30, 1909. Organized Oct. 5, 1875. Lawrence, Mass.

ST. LUKE'S HOME AND HOSPITAL IN THE CITY OF UTICA. Report for the Year ending Oct. 1, 1909, with the names of Officers for Ensuing Year. Paper. Pp. 47, with illustrations.

NATIONAL ASSOCIATION FOR THE STUDY AND PREVENTION OF TUBERCULOSIS. Transactions of the Fifth Annual Meeting, Washington, D. C., May, 1909. Paper. Pp. 429.

WOMAN'S HOSPITAL IN THE STATE OF NEW YORK. 54th Annual Report for the Year 1909. Paper. Pp. 71, with illustrations.

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THE FUTURE OF MILK SUPPLIES OF LARGE CITIES FROM A SANITARY STANDPOINT*

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To the milk dealers themselves I have long been convinced we must look for a practical solution of our great problem—proper milk supplies for our large cities.

The milk dealer of to-day occupies a unique position in the commercial world. He traffics in a product which is one of our most important food-stuffs, bringing blessings to millions of people when properly produced, carefully handled and distributed, but which, when coming from unhealthy and insanitary sources and when carelessly handled, is capable of spreading disease and misery. His difficulties are increased by the fact that, although he scarcely has anything more than a superficial oversight or control over the production of his supplies, he is held to strict accountability for their purity and wholesomeness.

The dealer in large cities in the past was nothing more than a common carrier, purchasing his supply in the country wherever convenient and shipping it to the crowded centers and there distributing it without the knowledge or opportunity of anything but the most primitive control by tests.

So dependent is the public on milk and so easy is it to reduce its food value by manipulation, either by the addition of water or the removal of cream, or both, without ready detection by the consumer, that it was early recognized by the authorities that some system of regulation must be established. The first effort was the adoption of a standard of purity referring entirely to a consideration of the quantitative constitution; that is, the food value, based not on the average composition of pure milk, but on the poorest that can be produced under ordinary conditions.

As the population of cities increased and the adjacent farms became more valuable, the dairy farms were crowded out to greater and greater distances, creating new and difficult transportation problems. For purely business reasons it became necessary to improve the methods of collecting and shipping milk so that it would not spoil by souring before delivery to the consumer.

Before discussing the requirements of milk supplies of the future, let us briefly review conditions as they now exist, the changes which have been brought about during the last few years and the factors which caused them.

CONDITIONS IN NEW YORK

It has occurred to me that a recital of the New York City conditions, with which I am most familiar, would illustrate what is going on in other cities, with such variations as would be incident to differences in population and local conditions.

In the year 1902 the New York City Department of Health inaugurated a comprehensive investigation into the conditions surrounding the production, transportation and vending of the milk supply. The findings were about the same as is experienced in any large city. The market milk was, from the sanitary point of view, as a rule, in wretchedly bad condition, due to ignorance and lack of care in production, which was carried on practically without any supervision. Many creameries were found poorly constructed and still more poorly managed; milk was not properly iced during transportation, bottles and cans were only superficially cleansed, milk was often kept in unclean stables in the city, was dipped from cans in dusty streets, was kept in stores with insanitary surroundings and often adjoining bedrooms. In fact, milk was produced and handled under conditions which tended toward an unclean, unwholesome product.

The authorities at once set about to improve the supply in all directions pointed out, but it was not until several years later that it was possible to make the comprehensive country inspections at dairy farms that are now being so admirably carried out, resulting in such marked improvements.

The state authorities have done practically nothing during the last years to improve the sanitary conditions under which market milk is produced and transported. They have confined their activities mainly to the regulations of adulterations and the supervision of diseases among cattle.

While New York City has not the legal authority to make inspections outside of the city limits, the fact that its health department has in force a license system for milk dealers and that no milk can be sold without such license gives indirectly the necessary power. A city milk dealer may have his license revoked unless his patrons permit inspection and follow out orders for improvement as a result of such inspections. The plan is working out well, most farmers are gradually complying with instructions and the more intelligent of them are well satisfied with the benefits derived. Probably the most serious matter that has come up in this connection has been the fact that it has been usually not possible for the farmer to realize an extra compensation for the increased and improved plant and additional labor of production. We are in a transition stage; all reforms work some hardships.

The matter of an increase in the price that the farmer must receive for his milk when properly produced is one

* Read at the meeting of the International Milk Dealers' Association held in Milwaukee, Wis., Oct. 18, 1909.

that must soon be settled; it will become more and more urgent. I am not unmindful in this connection that some dealers are on their own initiative paying special prices, but this is as yet by no means the universal practice. One of the principal reasons for this is the general unwillingness on the part of the public to appreciate the value and to pay an additional price for a better milk supply, in which position they are unfortunately upheld by the daily press. I am confident that when the improvements are more universal and the conditions are thoroughly understood the public will be willing to pay a fair price for wholesome milk of good quality. Some progress has been made in this respect in the introduction of the certified, inspected and scientifically pasteurized grades of milk.

When those interested in reducing the very high death rate of infants in our city found what is probably true of every large city in the world, that the general milk supply, the market milk, was unfit for use for feeding babies, an agitation of reform was begun which is bearing good fruit. But we are yet in the stage of a mere beginning; the surface has been only slightly scratched.

As in all great movements of reform, there is no agreement as to the methods to be employed. Without at this time going into details with which you are all familiar, it may be said that there was a general agreement as to what the unsatisfactory condition of our milk supply was, and to what it was due, but there were wide differences of opinion as to the best remedial methods.

At the time of the investigation there were the following grades of milk on the New York market:

Certified milk (Milk Commission)—Sold in bottles at from 12 to 15 cents per quart, probably less than 1 per cent. of the supply. Bacteria standard of not over 30,000 per c.c.

Bottled milk—special milk and so-called baby milk; highest price 9 cents per bottle. No bacteria standard, usually 4 to 5 per cent. fat.

Bottled milk—ordinary market milk of good grade; from $3\frac{1}{2}$ to 4 per cent. fat; no bacteria standard; bacteria usually very high. Price, 8 cents.

Bottled milk—selling at 7 cents a quart; about $3\frac{1}{4}$ per cent. fat, with bacteria very high.

So-called loose milk, brought to the city in 40-quart cans and retailing from 4 to 7 cents a quart, ranging from 3 to 4 per cent. in fat, with bacteria in variable numbers, usually very high.

Modified milk and pasteurized milk for infant feeding could also be obtained at certain stations maintained by Mr. Nathan Straus.

One milk dealer supplied commercially pasteurized milk without designation or special claims.

Our general milk supply was unsatisfactory for the following reasons:

With the exception of the certified milk and modified milk, the supply was entirely unsuited for infant feeding on account of high bacteria count; that is, it was not clean; much of the supply arrived in the city at a temperature above 65 F. and during the summer months would readily sour. The insanitary conditions surrounding its production and the careless and frequent handling, with personal contact, endangered the supply with possible infection from scarlet fever, diphtheria and typhoid fever.

I think it is fair to say that had it not been for the insistence on better supplies for the babies the improvement of the general supply would have found little support and the solution of the problem would have been postponed for no one knows how long. Although epidemics of the above-mentioned diseases have each year been traced to infected milk supplies, great interest in

improvement was not aroused until the cause of the frightful infant death rate was brought home. The influence of the work of the Certified Milk Commission has been of first importance, although the total output of such milk is still an almost negligible quantity as compared with the total supply. It soon became evident that certified milk could never be the solution of the great problem of safe milk for the babies at large on account of the high price of production. Nor did it seem feasible to rely on its general use to safeguard the public against the spread of certain infectious diseases. On account of these considerations, and largely for purely commercial reasons, the milk dealers of our city began to apply the process of heating milk, producing what is known as commercially pasteurized milk, a continuous process by which milk is heated to a temperature usually from 140 to 160 F. for a few seconds.

I am one among those who at that time strongly urged pasteurized milk, and briefly for the following reasons: The dealer was being held strictly responsible for the product he sold. In the case of the larger ones, their business had grown to such proportions that anything like strict supervision of control of the production was out of the question. While some have exercised such control thoroughly for years, others have grown up without it, apparently with the sanction of the authorities, at any rate without interference on their part.

Milk supplies of large cities cannot be shut off while experiments are being made as to the best methods of improvement. I was aware that tuberculosis was very common among dairy herds, that it was recognized that there was some danger of infection from this source, that the practical elimination of this disease from the herds could not be accomplished in many years, and that practically nothing was being done in that direction by the authorities. The excellent system of inspection of the farms, while very valuable, could, in my opinion, not for a long time, if ever, be so thorough as to eliminate danger of transmission of typhoid fever, scarlet fever and diphtheria from milk. It seemed that the conditions warranted safeguarding by treatment where original purity was unattainable. At the same time, attention was called to the necessity of correcting the evils at the point of production.

Our city was now aroused over the milk question and a bitter controversy was waged between two factions as to the best means to secure safe milk; some maintaining that the best and only solution was the production of clean, raw milk, as typified by certified milk, and others claiming that the remedy must be a more immediate one than is possible by clean raw milk production; that is, that pasteurization must be resorted to. Much has been produced by very able writers on the subjects of clean, raw milk and pasteurized milk and I could probably add nothing now, but I will state briefly what I believe to be the principles involved and the stand which, in my opinion, the dealers should take both from the viewpoint of the public health and in their personal interests, which are in this case identical.

The duty of the milk dealer is clear to me. It is to supply the quality of milk which is approved by those disinterested physicians and sanitarians who have made a special study of the requirements of infants and invalids and who are familiar with public-health problems in their broadest application.

In the light of present knowledge on the subject, it would appear that a dealer should not be satisfied to offer the public any milk unless it be clean and safe,

either a clean high-grade market milk, scientifically pasteurized, or a clean, raw milk of low bacterial count from healthy animals.

THE IMPORTANT PROBLEM

It must have occurred to others, as it has so strikingly to me, that more rapid progress could be made if we realized that the babies' milk problem is the more important and should be regulated first and separate from that of the general supply. The requirements are so much more exacting for infant milk, and it having been so well established that this grade of milk is very materially more expensive to produce and commands a higher price than can ordinarily be demanded for milk for general use, that it seems wise to separate the two problems.

There is much to be said in favor of the establishment of infants' milk depots, where not only the best infant milk should be dispensed, but where much can be done to educate the mothers in the care of their little ones from various standpoints. My own opinion is that, while theoretically the best milk for these depots would be the certified type, the expense is so great that, in order to do the most good to the greatest numbers, it should not only be permissible, but good sense to use a good, clean, scientifically pasteurized milk.

For some time at least such infant milk depots will probably be established and maintained by charitable associations and possibly under municipal control. There is strong agitation for both forms in our city. I think it is very unfortunate that the feeling exists that our dealers are not able or willing to supply the grades of milk required for such depots. To my mind, such grades of milk should be supplied by all large dealers wherever they offer milk to the public. In other words, it is a function which the dealer should exercise as part of his regular business.

I fear that there is the temptation for the dealer to be unwilling to admit that his ordinary market milk is not a fit food for infants, when, as a matter of fact, there is not a city in the world whose regular milk supply is suitable for such purpose, and it seems very unlikely that it can ever be brought to that standard. In discussing the details of future milk supplies, I will revert to this and give my ideas of how the supplies should be graded. The high standard set by the Milk Commission, their severe restrictions as to type of buildings, the extreme cleanliness demanded in every step of production of milk from the washing of the udders of the cow to the sterilization of utensils, with the necessarily large initial outlay entailed and the increase in running expenses, while having a most marked beneficial effect on the whole dairy industry, is rather discouraging to the small producer of market milk; it all seems so impossible to him, considering the small value placed on his product. It must be made clear to him that not all milk need be produced under such conditions, and that a good, wholesome, clean milk can be made in simply constructed barns if kept clean and with care in every step of handling. Much good work in this direction can be done by the dealer, either independently, or when official supervision is at all exercised in connection therewith.

PURE MILK AND PASTEURIZED MILK

During the last few years the public has been pretty thoroughly advised on all matters pertaining to clean milk and pasteurized milk. Every one recognized the necessity of clean milk, but more and more are won

over to see the absolute necessity under the present conditions in large cities of pasteurization. All admit that the ideal milk is that from healthy animals produced under strictly cleanly conditions and properly transported and rendered in clean sealed packages; also that it is impossible to obtain such milk generally now, and that it will be for a long time to come.

It has been scientifically demonstrated that the heating of milk to a temperature of 145 to 150 F. for thirty minutes (pasteurization) will kill all the ordinary germs which may occur in milk and most of the other germs that are considered harmless but which cause deterioration and entail financial loss. As only a very slight deterioration, if any, is effected by such treatment (it is claimed by some that the milk is slightly less digestible) there is no good reason why pasteurization should not be generally applied and even required for all milk not otherwise known to be absolutely safe. I think the most serious objection to the general introduction of pasteurization is that it is possible for selfish dealers to treat otherwise unmarketable milk and make it salable. This can and should be overcome by strict regulations and the conscientious dealer will strive to improve his supply just as rigidly in the case of the milk which is to be pasteurized as that which is offered raw. The movement for clean milk must not be retarded by the introduction of pasteurization.

Under existing conditions no large dealer, to my mind, can afford to supply milk in large cities unless it is either of the certified type, guaranteed or inspected, or scientifically pasteurized. New conditions are forcing great changes in the character of conducting a large milk business. The dealer, to be successful, up to date and progressive, requires more and more scientific help; he needs the veterinarian to inspect his patrons' cattle, to assist in the elimination of diseased animals, both for the protection of the herds and in the interest of public health. The chemist and bacteriologist are needed to supervise the control over the supply, by constant tests of quality and bacteria tests for cleanliness. Old methods of hand washing of cans and bottles are being supplanted by modern machines, using hot water and cleansing powders, whose efficiency should be constantly controlled by scientific tests, supplies being examined, as the dealer can no longer afford to purchase at haphazard.

It has been interesting to me to see the growth of the application of this scientific work among the milk dealers. I have in mind one prominent member of your Association who, a few years ago, hardly knew that milk contained bacteria and who now daily scans the bacteriologic test sheets of his various supplies as keenly as does the stock broker his ticker tape. It is these men who are going far beyond the official requirements whose influence on the whole problem cannot be overestimated. These conditions make for concentration, a gradual absorption of the small and often incompetent men into larger concerns and will bring about what the press is pleased to term the "milk trusts."

It is an evolution that we see going on about us in every line of business. In the milk business my observation is that it is working out to the great benefit of the public. It is not conceivable that there can be ever any danger of a harmful combination among producers of milk. What, then, will be the requirements of our future milk supplies of large cities from a sanitary standpoint?

FUTURE MILK SUPPLIES

Milk production, transportation and distribution will be under strict control, federal, state and municipal.

Every farm producing milk for sale will operate under a permit. This will place the production of milk intended for use in condenseries, butter and cheese factories, under the same control as market milk, thus preserving the economic balance which under present conditions is uncontrolled and operates as a very unjust and disturbing factor in their milk business. Not only will there be the strictest requirement as to cleanliness in all operations, but producers will be taught methods by which the results can be obtained in the most economical manner. The great difficulties in procuring proper labor on the dairy farms will probably stimulate the use of improved milking machines. When farmers are taught how to produce the maximum amount of milk from herds and the best methods of feeding, many of the farms now either abandoned or only partly used will become flourishing dairy farms and our cities will not be required, as now, to reach out hundreds of miles and into other states for their supplies. All milk will be bought at the creameries on the butter-fat test, the only fair means to both parties of determining its value, thereby encouraging the production of the best grades.

Creameries will be of the most approved type as to construction and equipment and will be permitted to standardize milk, the only means the dealer has of selling milk on its merits. He will be permitted to sell every grade of milk from skim milk to cream, provided he truthfully labels the same and they are clean and safe. Only refrigerator cars will be used in the transportation of milk, which will be in sealed containers, preferably the single-service packages.

All dipping of milk will be forbidden; where milk is permitted to be drawn in stores, it must be from sealed containers from some form of spigot and delivered to the customer in single-service packages.

The grades of milk will be as follows:

Infants' Milk.—Distributed from infants' milk depots and by dealers. Certified milk, raw. Clean milk from tested cattle, pasteurized. Modified milk made from either of the above grades.

Family Milk.—Clean, raw milk from tuberculosis-free herds. Clean pasteurized milk from such herds. Clean skim milk, raw or unpasteurized. All cream, except that from certified or guaranteed milk, to be pasteurized and sold according to the amount of butter fat it contains. The present unregulated sale of cream without standards is an encouragement to adulteration by the addition of thickening agents, working great hardships to the honest dealers.

Milk from untested herds will be permitted to be sold when properly pasteurized, as well as milk from cows which have been tuberculin tested and have reacted, but which it has not been deemed necessary to destroy.

Dealers should not only prepare themselves for the changes outlined, which every student of the matter will agree are in the main inevitable, but they should in their own interest be foremost in bringing them about, placing the business on a sound scientific footing, when the periodic and to the trade very disturbing public agitations will be unnecessary. I look forward to your organization being foremost in this great advance movement.

A very necessary corollary to make these new conditions economically successful (and otherwise they can have no permanency) is that the public must be educated to

the appreciation of their value. It will inevitably result in higher prices paid to the farmer and a general advance in the cost of milk to the public, but it will also mean fewer deaths among babies, healthier and stronger children and practical elimination of danger of the spread of tuberculosis, typhoid fever and scarlet fever through milk, achievements all worthy of every one's best efforts.

39 West Thirty-eighth Street.

THE SPIROCHÆTA PALLIDA: ITS DIAGNOSTIC SIGNIFICANCE *

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Ever since, in 1905, the relationship of the *Spirochæta pallida* to syphilis was discovered by Schaudinn and Hoffmann, its presence in the various manifestations of this disease has been demonstrated with increasing frequency, certainty and ease, until to-day there are but few types of lesion which have failed to show these micro-organisms.

It is not my purpose, nor is it necessary, to bring forward once more the various grounds for belief in the *Spirochæta pallida* as the cause of syphilis. So much favor have these reasons found that one is rather in danger of overlooking the loopholes in the argument, and it is not perhaps untimely to remember such facts as Schereschewsky's¹ failures in inoculating his cultures and the doubts which in consequence occurred to his own mind as to the validity of the claims of the *Spirochæta pallida*. Nevertheless, in all the work that has been done, there is one fact which stands pre-eminent, namely, that with amazing frequency, more especially in the primary, secondary and early congenital lesions, and also to a limited degree in the later manifestations, do we find the *Spirochæta pallida*, while *per contra* no non-syphilitic lesion has served to furnish micro-organisms which cannot with care and skill be distinguished from these.

Relying on this fact, the importance of the presence of the *Spirochæta pallida*, as a diagnostic aid, becomes at once apparent, though as yet but little in the literature has appeared to emphasize this point of view, most writers dealing with the more purely bacteriologic or parasitologic aspect. To the practical syphilologist the practical value of the fact remains and it is more especially this aspect of the question that I would emphasize here.

The work outlined below was originally undertaken, however, not from any practical standpoint, but with the desire to confirm or question what seemed to me the more extravagant claims as to the presence of this organism; and it was only as time progressed that the practical value of routine examination became more apparent.

MATERIAL

The period covered, including all cases, represents two years or more; but as, unfortunately, my earlier records, with a very few exceptions, were lost, I have had to confine myself almost entirely to those cases coming under

* From the Pathological Laboratory of the Montreal General Hospital.

1. Schereschewsky, J.: Züchtung der *Spirochæta pallida*, Deutsch. med. Wchnschr., 1909, xxxv, 835, 1260.

observation during the six months prior to Sept. 30, 1909. The material has been gathered, in the main, from my own clinic (Montreal General Hospital) and that of my associate, Dr. W. L. Barlow, who, with Dr. F. S. Patch, is largely responsible for the results enumerated here. A number of cases were also examined from other outpatient clinics and from the hospital wards, and a few cases are added from private sources.

METHODS

The methods of examination have varied. In the beginning the older Giemsa stain was employed; later several modifications of this, one of which (fixation by osmic acid vapor and staining by gently warming Giemsa's newer one-solution stain) gave excellent smears in three minutes. In some cases of anal condyloma and of chancre we excised portions and stained by Levaditi (old method), and in congenital fetal and infantile autopsy material this method was also used. We have tested the India-ink method of Burri² for making unstained smears, but as to its efficiency in diagnosis I am not able to speak; certainly good smears are obtainable.

In all our later cases, however, we have made use of the dark-field illumination with most satisfactory results. It is easy, rapid and allows a large amount of material to be thoroughly examined and shows in general a larger number of organisms than do stained smears. We were careful originally to compare the results obtained by stain and dark stage, and, while in one instance the spirochetes were found by stain and not by dark stage, in a number of cases the reverse occurred.

The danger of confusing *Spirochæta pallida* with other spirochetes (for example, the *Spirochæta dentium* and the *Spirochæta pseudopallida*, so called) has been avoided by first thoroughly removing the superficial débris and obtaining the serum from the raw clean surface—even making an incision in the case of chancre. Under these circumstances the serum may contain red blood cells, but is free from surface contamination. Second, we have paid the usual attention to the length, breadth, number and angle of the spirals. In stained smears the staining qualities were also considered. In gland puncture contamination does not occur. In skin lesions we generally made use of a Bier cupping-glass, which delivers an abundance of clear serum.

The essential point is that one must obtain the material, not from the surface, but from the deeper parts of the lesion, and therefore from parts less likely to show contamination.

INCIDENCE OF SPIROCHÆTA PALLIDA IN VARIOUS LESIONS

In the course of this investigation we have examined some 197 lesions in 143 individuals. Of these 197 lesions, 167 were syphilitic and occurred in 114 cases of syphilis, while 30 were cases of various mouth, skin and genital lesions other than syphilitic. These embraced chaneroid, gonorrheal condyloma, herpes, psoriasis, chicken-pox, tubercular papilloma, aphthous stomatitis, Vincent's angina, normal tonsils, etc.; indeed, to this list should be added many more cases in which definite records were not kept. The statement that these cases were definite non-syphilitic cases is open to question only in the case of certain chaneroids which are phenomenally deceptive. All such cases have been observed for at least four months, however, and we feel justified in considering them true non-syphilitic lesions. These 30 cases all yielded negative results.

Of the 114 cases of syphilis examined, positive results were obtained from some lesion in 102, negative findings in 12. Of these 12, however, 6 were tertiary cases, 2 were old nearly healed chancres just disappearing under treatment, 1 was the case of a syphilitic fetus whose mother had been thoroughly treated previous to its birth, 1 was an early and single attempt in the case of a primary sore, 1 was a gland puncture, and 1 was a lesion doubtfully syphilitic though in a definite case of secondary syphilis.

Considering the findings per lesion rather than per individual, the results are not quite so good. (Here it is perhaps unnecessary to state that lesions of a similar type occurring in the same individual are enumerated as but a single lesion, e. g., a mucous patch of the tongue and another of the fauces—a single lesion; but a mucous patch in the mouth and a papule on the buttock are enumerated as two lesions.) One hundred and sixty-seven lesions yielded 140 positive results and 27 negative. Of the 27 negative findings, 6 occurred in chancres, 5 in gland puncture, where I confess our results have disappointed us. One was a doubtful lesion, though in a syphilitic; 2 occurred in old mucous patches, the patients being under treatment (single attempt); 6 occurred in skin lesions of the more squamous type; 6 occurred in tertiary cases and 1 in the congenital case of the fetus above referred to. These findings are also given in the accompanying table.

FINDINGS OF SPIROCHÆTA PALLIDA IN SYPHILITIC AND NON-SYPHILITIC CASES

	Lesion.	No. Cases.	Spirochæta Pallida.	
			Positive	Negative.
Primary.	{ Adenitis I.	8	3	5
	{ Chancre	33	27	6
Secondary	{ Moist papules and flat condylomata	13	13	0
	{ Condylomata	20	20	0
	{ Anal and vulvar,	38	35	3
	{ Mucous patches	25	25	0
	{ Tonsils	16	10	6
Tertiary.	{ Tertiary lesions, }	6	0	6
	{ Various			
Congenital.	{ Post-natal	4	4	0
	{ Fetus	4	3	1
Total		167	140	27
Non-syphilitic lesions		30	0	30
Total		197	140	57

PRIMARY SYPHILIS

Reference to the table shows that of 33 cases of primary sore, 27 yielded the *Spirochæta pallida*, and that of 8 cases of primary adenitis 3 only yielded *Spirochæta pallida*; in fact, some of these latter cases would have been better classed as secondary lesions, which gives a still smaller percentage. In view of the high percentage of positive findings in other lesions, this leaves much to be desired in gland puncture, but such is the fact in these few cases and as such I state it here without apology.

The question of accurate diagnosis—of confirmation—naturally arises in dealing with the chancre. What can we class as primary syphilis or chancre? Confirmation of any syphilitic lesion is possible only by one or other of the following means:

There may be coincident or subsequent manifestations of the disease.

Serum may yield a positive Wassermann-Brock reaction (or similar test).

Animal inoculation may be positive.

Treatment with mercury or potassium iodid may be rapidly effective.

2. Burri: Wien. klin. Wchnschr., July 1, 1909.

In the primary lesions we have made use of the Wassermann reaction and animal inoculation in a few instances, but in the main confirmation has depended on (1) the manifestation of definite secondary lesions; and (2) on the rapid and uniform healing under mercury without local treatment. Accepting these two standards, the results show: (1) sores confirmed as syphilitic 33, 27 positive, 6 negative; (2) sores confirmed as non-syphilitic (chancroid), 14, all negative, making a total of 47 lesions. (The cases of two lesions which gave no *Spirochæta pallida* and no secondary lesions, but which were treated by mercury with gradual improvement, are discarded.)

The fallacy here is the reliance placed on the disappearance of the lesions under mercury; in other words, the inclusion among our definite syphilitic cases of those cases which, once the *Spirochæta pallida* was found, we felt justified in diagnosing as syphilis and in placing under treatment, with the result that no secondary signs developed beyond perhaps a general lymphatic involvement. If these cases, 11 in number, are discarded, it is seen that of 22 definitely syphilitic chancres 16 yielded positive and 6 negative results.

The 6 failures, however, deserve a word *in extenso*. Two occurred early in the course of this investigation when our technic was not so perfect; 2 were in old healing chancres, the patients being already under mercury; 1 had been treated by moist dressings, and 1 occurred in a mixed infection.

With reference to the appearance of the lesions the following classification is not without interest:

1. Of 31 sores, all indurated and more or less typical of chancre, there were:

(a) Confirmed as primary syphilis by the appearance of secondaries, 17, 13 positive, 4 negative.

(b) Confirmed as primary syphilis by treatment, 10, 10 positive.

(c) Not confirmed as primary syphilis, though under observation from two to eight months, 6, none positive, 6 negative.

2. Of 15 sores not indurated and resembling chancroid, there were:

(a) Confirmed as primary syphilis by secondaries, 5, 3 positive, 2 negative.

(b) Confirmed as chancroid by course of disease, 10, none positive, 10 negative.

Certain facts here seem worthy of comment. Six lesions occurred, all of which were rather typical of primary syphilis, yet these cases never developed secondary manifestations, although they have been under observation at least six months (with one exception). In none of these 6 cases could the *Spirochæta pallida* be found. This fact emphasizes the difficulty of making a diagnosis from the appearance of the primary sore.

Again, of the sores which on clinical examination were diagnosed as chancroid, five developed secondary signs. Three of these had already been diagnosed as syphilis by the finding of the *Spirochæta pallida*. To this group should perhaps be added a number of cases in which, though a physician had previously diagnosed a soft sore, the patients came to the clinic with definite secondary lues. The fact that in many cases it is difficult to pronounce a given lesion primary syphilis or not is by no means new; I call attention to it in these cases that I may refer to it again later.

SECONDARY LESIONS

A word of explanation regarding the findings in secondary lesions is perhaps necessary. The diagnosis of secondary syphilis in these cases has been made on the

appearance of the lesion itself and on the presence or sequence of other lesions apart altogether from the *Spirochæta pallida* or the effect of treatment. In a few instances we have not observed other definite signs of syphilis. These cases are, however, few in number (6) and do not affect our results.

On the whole our results probably show too high a percentage of positive findings. Thus, for example, in the case of moist papules and small condylomas, by which I mean those papules and small flat lesions occurring about the buttocks, groin, skin of genitals, and warmer and moister surfaces of the body generally, I quote 100 per cent. positive findings. By this I do not mean that every papule yielded the *Spirochæta pallida*, but that, taking a number of papules, the *Spirochæta pallida* was found in some and in a few cases in all of the lesions examined. This applies in a lesser degree to mucous patches. Anal and vulvar condylomas, however, proved invariably positive, though sometimes a second examination was necessary. In the dryer skin lesions of the more squamous type, the number examined is too small for accurate conclusions, but here, too, a number of lesions in each individual were examined (five or six in some instances with the finding of but a single spirochete) before considering the examination negative. The tonsils, on the other hand, have always proved to be rich in spirochetes, so rich, indeed, that it occurred to us to examine the serum from these in cases of suspected syphilis in which there were no secondary signs beyond perhaps a slight enlargement and hyperemia of the tonsils.

Out of the 25 cases examined, 11 were of this type, and in all positive findings were obtained. The essential point is to obtain a clean tonsil by gentle curetting and then to take the serum, the freer from blood-cells the better. This is very easily done under cocaine, and, though the number of cases is not large, the results have been excellent in our hands. The criticism which naturally arises is that, in dealing with mouth and throat, contamination with other spirochetes is very probable; but with initial cleansing by rubbing with cotton and by curetting away the surface contamination and obtaining the clear serum (even with blood-cells) this danger is minimized. We have, further, checked our results in this respect by an examination of a number of normal tonsils, and at the risk of repetition I would add that unless the above precautions are taken and if smears suffering from surface contamination are used spirochetes which, for want of a better term, may be called "pseudo-pallida" are to be found. To the eye accustomed to the *S. pallida* these are shorter, thicker, with fewer and less sharp spirals, and in general more coarse and sluggish. Differentiation is possible by paying attention to these points and by the fact that these latter do not occur in the clear serum. When still further corroboration is desired, a stained smear will readily distinguish these from the delicate *S. pallida*.

TERTIARY LESIONS

Our results have been invariably negative and the few cases reported are included rather as a control than as being of scientific interest.

CONGENITAL SYPHILIS

Four fetuses were examined. In three of these, the organs, especially liver, spleen and adrenals, yielded many spirochetes when stained by Levaditi's (old) method. One, indeed, yielded those micro-organisms in enormous numbers, so that they were found in all the organs

except the skeletal muscles, testicle and cerebellum. They were free in the lumina of the blood-vessels and were also present in the placenta. The fourth case yielded no spirochetes even after careful and prolonged search of all organs. In this instance the mother, who had undoubted syphilis, had been thoroughly treated by mercury previous to delivery, and this apparently had banished the *Spirochæta pallida* from the fetus.

Of the post-natal cases, four were examined and spirochetes found in all; in one case both in mother and child, in another in two brothers two and three years of age.

APPLICATION TO DIAGNOSIS

In a word, our results have differed little, if at all, from what many observers have already published, notably in Europe. Accepting, then, this evidence of others and in the light of our own experience—in view, in short, of the very definite relation of the *Spirochæta pallida* to syphilis—we feel that the demonstration of the *Spirochæta pallida* is as important in syphilis as is that of the tubercle bacillus in tuberculosis.

We have always believed, in common with many syphilographers, that what has been termed “one of the great anachronisms of medicine” was, nevertheless, a necessity. There are primary sores which to the third-year student may have all the earmarks that John Hunter assigned to them (yet even here the more experienced may doubt); there are chancreoids of a similar classification; and there are sores of both types which no eye can pronounce definitely as one thing or the other. It is not surprising, then, that the bulk of the teaching has taught us to withhold treatment until we are sure, in spite of the fact that in so doing we are losing valuable time and permitting the disease to take a firmer hold on the patient. Medicine has truly been on the horns of a dilemma; but after hearing the story of the syphilophobe who remembers a sore treated by mercury disappearing in time, and who has never had other signs of lues, but who lives the remainder of his life as on a volcano—for mentally, at least, the fear of syphilis is worse than the actuality—after hearing such a tale one can perceive the truth which such masters as Fournier³ have taught, namely, that we must be sure of our facts. When the same authority confesses that he, in his younger days, felt able to diagnose syphilis from the primary lesion, but that gradually he has been compelled to give up his belief and now only in typical cases would venture a diagnosis; and when, in addition to all this, he has made it clear, as no other, how important an early recourse to treatment is; to what extent secondary manifestations are altered, ameliorated, alleviated—when one remembers all this, the usefulness of any method promising confirmation and early diagnosis needs no further apology.

That even apart from the primary lesion there are many instances in every clinic in which such confirmation of diagnosis other than that supplied by treatment is desirable, if not necessary, will be admitted by all. Cases of a doubtful mucous patch, a single condyloma, a questionable rash, a slightly ulcerated tonsil, among others, occur to us. Unfortunately the finding of the *Spirochæta pallida* in tertiary lesions is from a practical standpoint impossible, while in still later stages, as in arterial disease (Wright) it is only of scientific interest. As it is in these stages, however, that the Wassermann-Bruck reaction is most promising, it is here that we can best dispense with the fact, diagnostically at least.

In congenital syphilis it is not possible for us to say whether in instances of abortion, still-birth and early death, cases occur which show so little pathologic change that a diagnosis at autopsy is impossible. Ballantyne⁴ asserts this positively. In such cases the vast number of spirochetes which we, in common with all the world, have found in the organs of these cases suggests a means of diagnosis which we have not had sufficient opportunity to test. All our cases showed other signs of syphilis.

If such is the opportunity, not to say the need, for more accurate diagnosis in primary, secondary and congenital lues, surely the *Spirochæta pallida* is the means. The uniformity of my results, rather than their number, forces this conclusion on us. Let me apply the test to our own cases. Going over our records I find that in 48 out of 110 cases of syphilis the diagnosis, at first, practically hung on the *Spirochæta pallida*. Not that suspicions were not aroused by the lesion or lesions, but that there was not sufficient ground to enable one to make a hard and fast diagnosis and subject the patient to treatment without awaiting further signs.

Naturally this was most marked in the case of primary syphilis in 20 cases of which a diagnosis was possible on this finding alone. Some 6 cases of moist papules with positive findings enabled us to come to a diagnosis; in 9 cases of hyperemic or patchy tonsils, without other signs, positive results confirmed what could otherwise have only been suspicious. Positive findings in 6 mucous patches of small size, or late in the disease, were the means of reaching a conclusion, as was also the case in 3 skin papules.

In three children of 1 month to 3 years of age who developed congenital lues, the diagnosis at first depended entirely on the presence of the *Spirochæta pallida*.

I may say that the presence of *Spirochæta pallida* was the chief factor in forming a diagnosis of syphilis in 46 individuals and from the following lesions:

	No. Cases
1. Chancre	20
2. Moist papules, etc.....	6
Tonsil	9
Mucous patch	6
Other skin lesions	3
Congenital lesions	3
	47

To summarize briefly, a study of these cases has led to the following conclusions:

In the primary and many secondary lesions of syphilis the presence of the *Spirochæta pallida* can be so easily detected that, in view of the definite relationship of *Spirochæta pallida* to syphilis and of the importance of accurate diagnosis, this method of diagnosis should receive more general application.

It should be possible to find the *Spirochæta pallida* in approximately 100 per cent. of chancres, excluding those which are nearly healed or have been actively treated, and some cases of mixed infection. In view of this fact, treatment should not be begun before diagnosis is confirmed by finding the spirochete.

Mucous patches, tonsillar patches, condylomas and moist papules give approximately 100 per cent. of positive findings. Positive findings, therefore, have a distinct diagnostic value, though this is not so important as in the case of the primary lesion.

Dryer skin lesions, gland puncture and the examination of stained sections of tissue, give results often of diagnostic value, but negative findings are of little weight.

3. Fournier: Traitement de Syphilis, Edition 2.

4. Ballantyne: Antenatal Pathology, Edinburgh, 1902.

Serum from the tonsils, even when these show no definite lesion, has yielded a high percentage of positive results and has been a useful method of diagnosis in a small number of cases. This method deserves a further trial.

Absence of the *Spirochata pallida* in congenital lues after treatment of the mother is a fact significant of the beneficial effect of mercury in congenital disease. This fact, already observed, seems sufficiently important to repeat here.

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DRUG THERAPY AND THE PROPAGANDA FOR REFORM IN PRESCRIBING

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Physicians are employed for the cure of disease. The average patient cares little for the pathology of his ailment, but he is impatient to get well. During the past quarter of a century medical science has made great progress. Pathology and etiology are much better understood. Bacteriology has opened the door to admit biotherapy in all its variations. At the same time, though the number of drugs used has greatly increased, drug therapy has retrograded. The country boy, with a pole cut in the woods, a common line and the simplest of hooks, carrying his bait in an old tin can, will often catch more fish than the city angler, equipped with hip boots, a spliced bamboo rod, silver-plated reel, silk line and costly spoons and flies. In a like manner it sometimes happens that a physician may be very successful in practice, even though he is relatively ignorant in the fields of bacteriology, blood analysis and other refinements of diagnosis; while his neighbor who is an expert pathologist makes an almost utter failure. Why is it? The first man studies therapy, and the second devotes his attention to the disease.

Is it not criminal for the physician who is entrusted with the lives of his patients to use drugs and mixtures whose composition and action he does not know? Students have been told to be careful in the diagnosis, and when the diagnosis has been accurately made any one can treat the case. Is that true? If it is, no wonder that patients treat themselves. Therapeutic nihilism is the outgrowth of inexact methods in the use of drugs. Christian science is the legitimate child of therapeutic and religious nihilism.

When a boy, I once attempted to convince my father that a certain new tool was necessary for work to be done. The reply was: "What you need is not more tools, but brains to enable you to use the tools you have." What we as physicians need to-day is not new drugs, nor old drugs in new forms. We need to know more about a few drugs, and to use them in more exact methods.

COLLEGE TEACHING OF THERAPY

Too little attention is given to drug therapy in the instruction of our colleges and by practitioners generally. A graduate from one of the leading eastern schools remarked as he left a pharmacologic society meeting: "We never got anything like that in college." and another said: "Though I took two special courses in prescription work in addition to the regular curriculum, I have learned more of drug therapy in three months' study of propaganda than I ever learned in school or

practice before." *Per contra*, a lady from the Pacific coast took two prescriptions with her on a trip. Having occasion to use the remedies, she handed them to a pharmacist. She was informed that it would require a couple of days to get the drugs. Why? Were they not ordinary remedies? She was informed that each prescription called for compounds of the "ethical" proprietary style. What did they contain? Only the manufacturer knew exactly. She asked a few more questions, and then withdrew the prescriptions, ordered for herself an old standby, and remarked that she did not care to patronize a physician who did not know enough to write a genuine prescription. That was where the physician lost financially for his therapeutic laziness—in an attempt to make the patient fit the medicine, instead of arranging the drugs according to the patient's peculiarities. How would the doctor look if he bought his clothes on the same plan?

UNIFORMITY OF STRENGTH

Accuracy in drug therapeutics must depend on exactness of dosage. This is self-evident as an abstract statement, but its application is often obscure. First, there must be uniformity of strength, a uniformity which must exist from year to year and in all parts of the country. Neither must it depend on a monopoly of manufacture. For this reason we have the Pharmacopeia and the National Formulary. These works are not perfect at any time; nor is it possible to make them absolutely so, for there is constant development in the subject. For this reason the books are revised once in ten years. If any preparation in either book is not as good as it should be, there is only one proper method for its correction, and that is by such a public discussion as will demonstrate a better formula, and then in the next revision have the better formula substituted. Thus one large firm recently sent to a few pharmacists in the retail trade material with which these pharmacists might make certain experiments, with a view to a change in one of the official preparations in the coming revision. Both these books are legal standards in the United States by the act of Congress. Many individual states have taken similar action, and all should do so. It would be of very great benefit, especially since travel is so general, if we might have some international pharmacopeia. At least there might be an international agreement as to many drugs.

CHANGING STANDARD FORMULAS

In the past individual firms have sought to build up their trade by making certain secret changes in standard formulae, and asserting, but not proving, the superiority of their products. The result has been pharmaceutical chaos, loading the pharmacists' shelves with practical duplicates and interfering with efforts to keep the stock fresh. The first work of drug propaganda was, therefore, to re-establish the legal standard. Real progress must be general. It cannot be limited for the benefit of a few. It is only the manufacturing houses and their supporters who desire to overthrow standardization of medicinal agents.

A prominent, and supposedly reputable, manufacturing house put on the market a solution of sodium phosphate which they claimed contained a gram of the salt in each cubic centimeter of the solution. I wrote asking what advantage there was in the use of potassium nitrate instead of the sodium nitrate as required in the Pharmacopeia. The reply was that they no longer used the potassium salt as formerly. (They changed their for-

mula secretly, without any publication of the fact.) They claimed that their preparation was a pure solution of sodium phosphate, but when their attention was called to the fact that sodium phosphate is not soluble in that proportion they declined to explain their assertion. At one time phenolphthalein was supposed to be physiologically inert. Now we know it as an active laxative. It is dishonest, and it tends toward therapeutic uncertainty, when a manufacturer uses secretly any chemical in his preparation. It is the duty of the physician to know the exact composition of every remedy, and the house which does not fully recognize that duty, but regards its formulas as private, deserves loss of confidence and patronage.

The products of a certain German house have long been regarded as standards of purity. It is a surprise to many in this country to learn that the American house of that name appends the name to many drugs bought in the open market, and not made by the German house. Recent United States laws have uncovered this seeming fraud, for now a large proportion of the packages sent out by the firm bear the word "Distributors" in very small type at the bottom of the label; and a report in *THE JOURNAL* of the American Medical Association, Oct. 23, 1909, of examinations made by the Council on Pharmacy says of one of the products of this firm: "The product is evidently not what it is labeled." Of another they say: "This salt appears to be even more contaminated with foreign substances than is the preceding one." The propaganda demands honest drugs. Manifestly drug therapy will be uncertain so long as physicians cannot depend on the genuineness of their remedies.

There are many elements of uncertainty in drug therapy which are too little recognized. I do not refer to such as depend on uncertainty in diagnosis—such, for instance, as prescribing pepsin for indigestion, when the patient needs a diastase, or *vice versa*. Nor do I refer to such an error as prescribing pepsin in an alkaline solution, which will render the pepsin inert.

PRESCRIBING MIXTURES

Mixtures always obscure the action of individual drugs, and ready-made preparations are especially harmful on that account. It is to be hoped that in the coming revision of the Pharmacopeia all such mixtures will be excluded. They are simply temporary bridges over which we may continue to travel until we become competent to write prescriptions to fit the individual cases. The liquor antisepticus and the liquor antisepticus alkalinus, for example, are not intended to be the same as proprietary goods, as has sometimes been asserted.

Even extemporaneous mixtures may not have the composition, and hence the action, expected. Such may be the case without fault on the part of the pharmacist. A solution containing free citric acid causes a decomposition of sodium salicylate, freeing salicylic acid, which floats to the top, and is likely to be left in the bottle. A similar result occurs with the following:

R. gm.
Acidi tartarici 1 | or gr.xv
Ft. pulv. No. 1.

R. gm.
Sodii bicarbonatis 75 or gr. xiiss
Sodii salicylatis 50 gr. viii

M. et ft. pulv. No. 1.

Sig.: Dissolve each separately and drink after mixing.

In each of these cases the physician who supposes that he is getting the effect of sodium salicylate is really get-

ting that of salicylic acid, if, indeed, this acid does not remain in the glass. Acetanilid added to an effervescent mixture is likely to remain in the glass, and so the quantity administered is little evidence of the quantity actually taken. This fact may explain the relative infrequency of dangerous results following the use of bromo seltzer.

Differences in the alcoholic strength of solutions are productive of uncertainty. This accounts for the precipitation from the following:

R. c.c.
Tincturæ opii 4 | or flʒi
Tincturæ viburni opuli compositæ 60 | ad. flʒiii

M. et Sig.: Take a teaspoonful in hot water every two hours.

If the druggist filters the product a portion of the ingredient is removed. If it is not filtered, the last dose may contain an excess.

Here is another actual prescription:

R. c.c.
Fluidextracti gentiani 4 | or flʒi
Spiriti ætheris nitrosi 30 | ad. flʒiii

M. et Sig.: Take, etc.

The gentian is immediately precipitated.

DETERIORATION OF DRUGS

The age of a preparation is another element of variation in therapeutic action. Even the simplest and most stable inorganic preparations change with time, and vegetables remedies alter rapidly. This is another objection to the practice now so prevalent among some unprogressive druggists, of buying mixtures ready made from some large manufacturing house, and on the part of some doctors who encourage the custom. All drugs should be as freshly prepared as possible, and they should be ordinarily kept in stock in their simplest forms. This is also a strong reason against physicians dispensing. They cannot afford to spend the time compounding, and so they buy the ready-mixed goods and keep them on their shelves until their action is decidedly uncertain. I venture to guess that the combined active strength of all the drugs in the offices of American physicians to-day is not over a quarter of what it should be. I know that very many are inert.

There is another element of uncertainty in the work of dispensing physicians. Because they are not much in the drug trade they are not so likely to detect drug errors as equally energetic pharmacists. A New York house doing a large physician's specialty business sells a digestive tablet, which many physicians have been dispensing to promote digestion. Analysis shows that it consists chiefly of charcoal and sodium bicarbonate, and when tested it was found to possess no digestive action.

More attention must be paid to the variation caused by the size of dose in the action of a drug. Calomel, for example, when given in one large dose, produces a cathartic effect with little constitutional disturbance. Half a gram divided into eight powders, and given at regular intervals of an hour, produces a cathartic action plus some extra intestinal irritation and plus a general constitutional influence. Given in doses of half a centigram two or three times a day, we have a general glandular stimulation, without special intestinal disturbance. Unsatisfactory drug therapy frequently results from overlooking such a variation in drug action.

Many firms sell different grades of drugs to the retailer. Manifestly the action of the best grade would exceed that of a similar quantity of the poorer grade,

but in the desire to save a small per cent. of cost a large per cent. of the action may be lost.

OBJECT OF PROPAGANDA

Ignorance, backed by laziness and prejudice, guards the portals to the general drug propaganda and is responsible for the apathy which prevents so many physicians and pharmacists from entering this movement. Prejudice is the child of ignorance, cradled and cared for by those visiting nurses supported by designing manufacturing concerns, and the nurses are amply provided with narcotic soothing syrup to lull to sleep any troublesome infant ambition which might develop into rational pharmaceutical or therapeutic effort. The object of the propaganda for reform in prescribing is to render drug therapy more exact and scientific and thus restore it to its former honorable position. The propaganda is not designed to injure any honest person or business nor in the least to countenance or make ethical any form of substitution. Rightly understood, it is an incentive to pharmaceutical progress and in no way does it rob anyone of the fruits of special pharmacal study, for study can hardly be called pharmacal, whose sole aim is to gain commercial advantage by overthrowing recognized standards.

1243 Chicago Avenue.

AN EPIDEMIC OF THIRTY-FIVE CASES OF PARATYPHOID FEVER

OCCURRING AT WEYER'S CAVE, VA. *

H. F. HOSKINS, M.D.

WEYER'S CAVE, VA.

Such writers as Osler, Anders, Tyson and others barely touch the subject of paratyphoid fever. The German pathologists describe two varieties of this fever, one of which simulates true typhoid, being shorter and milder in its course, while the other resembles ptomain poisoning. Their reports are made up of isolated cases gathered from the literature and not from a real epidemic. The Germans assert that meat, particularly beef, is the habitat of the paratyphoid germ of the B class, and that the fever can be produced by the toxin generated by the germ of paratyphoid B in ingested beef. These cases simulate ptomain poisoning at first, the remaining clinical course of the disease being practically without fever. There are such prodromal symptoms as bronchitis, nosebleed, headache, malaise and abdominal tenderness. There is at first a high temperature, which subsides on the administration of calomel, after which the temperature curve is very little above normal, though other symptoms, such as tympanites, gurgling in the right iliac fossa, rose spots, enlarged spleen, abdominal soreness, and increased pulse-rate are all present. This variety lasts about seven to eleven days; while the variety characterized by the higher temperature and other symptoms simulating true typhoid usually lasts eleven to fourteen days; in several cases twenty-one days elapsed before the normal mark was reached. This latter type of fever has been described to me by Dr. J. S. Sellers, who reports that such fevers, though not in epidemic form, have been prevalent in the Valley of Virginia for the last six or eight years. Dr. Sellers described the disease so typically that on seeing

the first case I was able to make a diagnosis of fever akin to typhoid, but not true typhoid.

CLINICAL REPORT

Mode of Conveyance.—This epidemic, which occurred during the spring and summer of 1909, and which consisted of 35 cases, originated in a small house in the village of Weyer's Cave. There were eight in this family, three adults and five children. The entire family used water from an old cistern which had recently been cleaned and repaired. There were three cases in this house, the first patient being taken sick on March 26, 1909, and the second four days later, while the third case developed nine days from the beginning of the first. One other patient who became ill later during the epidemic drank water from this cistern. Nine days after this he was taken sick very promptly and developed a typical case of paratyphoid fever, as shown by blood examination, which was positive. Other modes of conveyance, as food, fomites, fingers, flies and excreta from patients suffering from and just recovering from an attack are similar to the sources of infection in typhoid fever. Flies evidently play an important rôle in spreading the disease, as they were very numerous during this epidemic and the cases were scattered over a radius of three miles under such conditions as to render it unlikely that the infection was gained in any other way than by flies. It is not probable that beef or other meat was responsible for the outbreak, because the general beef-supply came from one market, and as many cases occurred in families not supplied by this market as in those that were supplied by it. Each family had its own individual water-supply. Therefore, the water was apparently not responsible for the outbreak.

Clinical History.—The incubation period varied from one to two weeks from the introduction of the bacterium or toxins into the system, though in over half of the 35 cases the time was from nine to eleven days. In others the incubation period was longer. During the period of incubation the patient seemed to enjoy his normal health until the beginning of the prodromal symptoms, which were characterized by languor, headache, in several cases nose-bleeding, and neuromuscular pains in the limbs and back. These prodromal symptoms began with a general uneasiness in the abdomen and generally with constipation, though in five cases there was a profuse diarrhea. The above symptoms lasted only a short time before the patient consulted a physician.

General Symptomatology.—The prodromal symptoms mentioned increased in severity, and to them were added bronchitis in over one-half of the cases, headache of a peculiar constant character, chilliness, especially of the feet and legs, while the patient complained of being very hot everywhere else; the hot-water bag very frequently had to be placed to the feet and kept there for hours before relief was obtained. Abdominal pains appeared, usually over the lower abdomen, though in four cases they were gastric in position and so intense as to require morphin for relief. The temperature curve gradually increased from 100 to 101-104, and in six cases reached 105 degrees. The morning remissions were more marked than in typhoid. The pulse was rapid, 120 to 155. Delirium was rare, though it was present in three cases. One marked peculiarity of the disease was its prevalence among children, only six cases being observed in adults. The symptoms were more intense in grown people than in children, the temperature running higher and remaining so for a longer time. Neuromuscular pains were complained of in about three-

* Read at a meeting of the Medical Society of Virginia, at Roanoke, Va., Oct. 6, 1909

fourths of the cases. These pains gradually became less marked as the disease progressed and disappeared about the fourth day. Constipation was the rule, though diarrhea was sometimes present, and in several cases was profuse. The stools were of a peculiar character, being at first normal, later of yellow color tinted with green, and still later watery with the three colors combined. The urine was acid, scanty and highly colored in the beginning with occasional reaction to Heller's test for albumin. Later it cleared up and the quantity increased to about normal. Rose spots were prone to appear; in two-thirds of the cases they were present, and in several cases crop after crop appeared over the abdomen, back and chest, varying in number from a few spots to hundreds. Tympanites, though not particularly marked, was present in about four-fifths of the cases. Enlarged spleen could be palpated in 17 of the cases. Nausea occurred in the majority of the cases, though vomiting was present in but 6; these cases were affected more on the ptomain order. The tongue presented a peculiar variety of changes; during the prodromal stage it presented a distinct tremor, and was only partially coated, and here and there strawberry-like granules showed through the coating. After the third day the tongue became heavily coated in the center while the edges were red and covered with granules mentioned. The coating was very white and remained for five or six days after the fever had abated. The odor was almost identical with that of typhoid fever, yet it disappeared much sooner. The mouth was not dry and hard as in typhoid fever, and the tongue did not crack or bleed; no sordes formed on the teeth, though the patient complained of a horrible taste throughout the disease. Anorexia was marked. Only two patients desired food during the fever period. Hemorrhage was rare, as in only one case was there blood present in the stool more than once. This patient recovered and suffered no inconvenience from the loss of blood. In only two cases was there a distinct dirotism observed in the pulse, while the pulse-rate was rapid, especially in children, often reaching 135 to 160 per minute. Of the six adult patients, only one had a pulse-rate beyond 112. A peculiar symptom complained of by about one-fourth of the patients was day-dreaming. With eyes open and no delirium, these patients were the victims of the most horrible illusions. Nervous symptoms were few, and in only one case was there a neuritis following the disease; it cleared up in one month and the function of the leg was restored. Emaciation varied; in several cases it was marked, while weakness was complained of by all who had the disease. Bronchitis accompanying the disease was the rule.

Special Symptoms.—The temperature was of a peculiar character in the ptomain variety. There was an initial rise, which was much higher than in the second variety, but this represented the extent of the fever, as the temperature reached practically the normal mark after the administration of calomel. This was true only in the variety characterized by intense nausea and vomiting, while the temperature curve characteristic in this epidemic was more distinctly typhoidal. Generally the highest temperature was reached on the third or fourth day of the disease and remained high for three or four days when it abated by lysis. The morning remissions were very great, as in seven instances patients whose afternoon rise was 104 would show morning temperature from 99.5 to 100. While this was the greatest difference, all the cases showed a difference from 2½ to 3 degrees between morning and evening temperatures. In 27 cases the temperature fell by lysis. In the remain-

ing cases, some of which were ptomain in variety, it fell by crisis.

Circulation: The heart sounds were distinct, though weaker than normal, while at the same time the rhythm was increased in children from normal (85) to 135 and in six cases to 155 per minute. Dirotism was rare in the disease, being observed in only two cases. In adults the pulse-rate was found to remain normal in four cases, while in one case it ran to 112 per minute. Three cases of adults showed normal pulse, while temperature was 102.5 and remained so throughout the disease. Nose-bleeding was frequent. Anemia followed in every case.

Respiratory Symptoms: Bronchitis of a persistent character which remained for several days after the temperature had reached the normal mark was the only respiratory symptom which deserves mention. This occurred in twenty-three cases.

Neuromuscular pains were very distressing in about three-fourths of the cases, while in the remaining cases no pains other than an occasional headache were present. This disappeared about the fourth day of the fever. In two cases cramps in the calves of the leg were bitterly complained of.

Eye Symptoms: The eye presented in every case a wide dilatation of the pupil which reacted very slowly to light. The pupils remained dilated for several days after temperature was normal.

Symptoms of Digestive Tract: The coated tongue with its peculiar changes as described under "General Symptomatology," constant gurgling in the right iliac fossa, tympanites marked in but few cases, yet present in four-fifths of them, were the chief digestive symptoms. Gastric pains of a boring, excruciating character, requiring morphin to relieve, were present in four cases. Nausea and vomiting in the initial stages were observed in six cases. There was a peculiar doughy feel to the palpating hand on the abdomen which, with other symptoms, should enable one familiar with it to make a tentative diagnosis. This was felt all over the abdomen. The spleen was moderately enlarged, though not so distinct as in malaria or typhoid. Constipation was present in about five-sixths of the cases, while diarrhea occurred in about one-sixth of them. Stools have been described previously.

Skin Symptoms: The skin was dry during the prodromal period and up to the height of the fever. When this was reached, however, the skin became moist and the patient complained of profuse sweating. Rose spots appeared after the fourth day and were seen in successive crops. These spots appeared in two-thirds of the cases. The cheeks were flushed while the fever was at its height, and the facies very similar to that seen in typhoid.

Recrudescences were rare, and in our cases only one occurred. The temperature rose to 104 after having been normal for four days. Calomel was administered and the temperature very promptly subsided.

Complications and Sequelæ.—Neuritis, nephritis and cardiac diseases are not as liable to occur as in typhoid under proper treatment, because the duration of the disease is not so great and the poisons generated by paratyphoid B are not as virulent as those generated by the typhoid bacillus. Constipation may be placed as a complication, as about one-fourth of all the cases have suffered to some extent from this trouble since convalescence was established. There has been in our cases no insanity or other mental symptoms worthy of note. In only one case were there signs of hemorrhage; this was not severe, however, and the ice-bag apparently relieved

the condition. There were but few symptoms that would lead to the belief that there was any ulceration of the lower section of the small intestines. Undoubtedly, there was an inflammation in the lymphatic structure of the small intestines, yet the symptoms were so mild and the duration of the disease was so short that it is most probable that ulceration and hemorrhage did not occur. The soreness and tenderness on pressure gave every reason for the belief that there was an inflammation, but the post-mortem facts were lacking. The exact pathology of the condition is unknown at present.

Diagnosis.—The diagnosis of this condition is made on the symptoms and tests, which are as follows: First, the onset is more abrupt than any other continuous fever yet described, the initial headache is more severe and of longer duration, the temperature usually reaches 103 in the first two days, while the pulse is more rapid especially in children than in any other condition described with the same temperature. It is a disease of childhood, though adults are sometimes affected. The tongue presents the characteristic changes spoken of in the section on "General Symptomatology." During an epidemic the diagnosis is not often missed. Wide dilatation of the pupil from the onset, constipation rather than diarrhea, and, last and most important, the serum reaction with paratyphoid B, which gives a typical agglutination, are the chief diagnostic points.

Prognosis.—The prognosis is decidedly good under general typhoidal treatment. No patient died during this epidemic.

Treatment.—The treatment may be divided into prophylactic, medicinal and nursing.

Prophylactic measures consist in isolation of the patient in a well-ventilated room, sterilizing all utensils used by the patients and disinfection of the excreta. The bed-clothing and other clothing should be well boiled before being used again and the room fumigated.

Diet should be as near liquid as the patient can subsist on. In every case in which solids were used the disease lasted longer and the patient suffered from gastralgia and general abdominal discomfort. Milk diet is best, though soft-boiled eggs, predigested beef and other peptonized preparations were all used. Water should be used *ad libitum*.

Medicines have but little effect on the course of the disease. In the beginning of the disease the administration of calomel in from two- to four-grain doses, followed by castor oil in children, seems to aid in producing a mild course of the disease. Such intestinal antiseptics as thymol, eucalyptol and zinc sulphocarbolate, were used, but as to their efficacy I am uncertain. The mental effect produced was probably beneficial. Hydrotherapy, applied as in the treatment of typhoid fever, was used in every case where the temperature reached 102.5. Mouth toilet is important, and for this a saturated solution of boric acid was used every two or three hours. Good nursing is by far the most important part of the treatment, both as to the cure of the patient and the prevention of the spread of the infection.

BACTERIOLOGIC REPORT

The bacteriologic work was done by Dr. Allen W. Freeman, assistant commissioner of health of Virginia, Richmond, Va., and Dr. Harry T. Marshall, professor of bacteriology, University of Virginia, Charlottesville, Va., and I am much indebted to them for the painstaking work which they did on these cases. Their report follows:

A few agglutination tests were made with the serum of patients and a culture of *Bacillus typhosus*. The bacteria did

not agglutinate typically. In dilutions up to 1:50 a few small, loose clumps formed within two hours, but the main mass of bacteria remained free and motile. In a few specimens, which were allowed to stand over night, large, tight clumps and motile Pfäundler's threads developed.

A comparative test was next set, one serum being used against several different bacteria at the same time. The hanging-drop method was employed, a fresh, eighteen to twenty-four-hour living agar culture being used, suspended in normal salt solution. The result of this test is shown in Table 1.

TABLE 1.—COMPARATIVE TEST OF SERUM FROM CASE 4 AGAINST FOUR DIFFERENT BACTERIA *

Dilution of Serum.	Paratyphoid A.	Paratyphoid B.	Typhoid.	Paracolon.
1:10	0	+++	0	0
1:50	0	+++	0	0
1:100	0	+++	Slight	Trace
Control	0	0	0	0

* The reading gives the end reaction after two hours.

In this experiment agglutination of paratyphoid B began promptly, and at the end of two hours was positive in a dilution of 1 to 100.

A series of serums was next tested simultaneously against typhoid and paratyphoid B. The first seven serums were tested by the hanging-drop method, the remainder by the macroscopic method, a dilution of 1 to 30 being used, and the rapidity and completeness of the agglutination reaction being noted. From Tables 1 and 2 it is seen that 17 cases tested, all except 2, Cases 25 and 26, reacted positively with paratyphoid B. The serum from Case 26 was obtained at an early stage of the disease. Out of 8 cases tested quantitatively, 6 were definitely positive with paratyphoid in a dilution of 1 to 100. In several cases, marked "trace," "suggestive," or "slight," the patients' serum produced small clumps in the typhoid culture, but left many free and active organisms. It is best to regard those results in which the reaction is doubtful as negative. Case 26 may be discarded. This leaves 16 cases of which 15 reacted positively with the paratyphoid B bacillus, while none of them gave a clear, positive reaction with the typhoid bacillus.

TABLE 2.—COMPARATIVE TEST OF A SERIES OF SERUMS *

No. Case.	Dilution of Serum.	Agglutination with <i>B. typhosus</i> .	Agglutination with <i>B. paratyphosus</i> .	Time Min.
6	1:10	0	+++	40
	1:50	0	++	40
	1:100	0	+	60
7	1:10	0	++	60
	1:50	0	+	60
	1:100	0	Trace	60
11	1:10	0	+	60
	1:50	0	++	60
	1:100	0	+	60
16	1:10	0	+	60
	1:50	0	++	60
	1:100	0	++	60
12	1:50	Trace	+	60
	1:100	Suggestive	+	60
20	1:50	Slight	++	60
	1:100	Trace	+	60
26	1:50	Slightly	Suggestive	60
	1:100	Slightly	Suggestive	60
1	1:30	0?	++++	90
3	1:30	0?	++++	90
9	1:30	0	+++	90
13	1:30	Trace	+++	90
15	1:30	Trace	+++	90
	1:30	0	++	90
25	1:30	0	Slight	90
22	1:30	0	++	90
27	1:30	0	+++	90

* Serum taken during first few days of the disease.

As the patients came from different parts of the village of Weyer's Cave, were of different ages and occupations, and were attacked at different times, it seems reasonable to infer that the entire series of cases was caused by the same strain of bacterium.

In attempting to obtain a clue to indicate the presence of some carrier in this epidemic, agglutination tests were made with the blood of 38 individuals, mostly healthy members of households in which cases of fever had developed. Of these 38, 5 (4 adults and 1 adolescent) gave positive reaction with the paratyphoid B.; the other 33 reactions were negative.

A month after the agglutination tests were made at Weyer's Cave, but while cases were still continuing to appear at that

point, a mild fever, resembling the disease at Weyer's Cave, broke out in a household about six miles away, attacking five out of six of the family. Through the kindness of Dr. Whitmore, the serum from these patients was examined, and from another patient, living about ten miles from Weyer's Cave, suffering with a severe, typical case of typhoid fever. Serums from the latter patient and two of the members of the above-mentioned family reacted with the typhoid bacillus positively, and gave no agglutination with the paratyphoid B. The other members of the first mentioned household, in whom the disease was of recent development, gave no agglutination with either culture. This indicates that in the vicinity of Weyer's Cave true typhoid was also occurring during last summer.

Several attempts were made to recover the paratyphoid B bacillus from the stools of patients, chiefly by the use of Endo's medium, but without result.

Blood cultures were made from three patients. The first patient had had the fever for over a week, the others for only a few days. About 10 c.c. of blood were divided among several agar and Endo-agar plates, and a part was put in broth and dextrose. The blood from the last case was mixed with sterile ox-bile, incubated, and attempts were made to cultivate the bacillus from the mixture. All of the blood cultures remained sterile.

After the failure to recover the offending organism by workers in the laboratory located in the town of Weyer's Cave, efforts were made to isolate it by Mr. J. A. Waddill, acting bacteriologist of the Virginia State Department of Health, working in the branch laboratory in Staunton. Notwithstanding the fact that five or six cases, apparently favorable as to time, were carefully examined, using Endo's media, no organism resembling typhoid or paratyphoid could be isolated. It is important that at this time studies were also being made of the typhoid fever situation in Staunton, twelve miles from Weyer's Cave. The typhoid bacillus was discovered without difficulty from the Staunton cases, using the same technic and same media as those used in the cases at Weyer's Cave.

CONCLUSIONS

We believe that there prevailed at Weyer's Cave, Va., during the summer of 1909, an epidemic of a disease which was probably paratyphoid fever. We believe further that the epidemiologic studies failed to give any reasonable explanation as to the means of transmission of the disease.

We believe that this condition was peculiar to the epidemic in question, as further studies in the same neighborhood disclosed the prevalence of a disease which was clinically and bacteriologically true typhoid fever.

ABSENCE OF IRITIS AND CHOROIDITIS AMONG SYPHILITICS WHO HAVE BECOME TABETIC

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In the past ten years I have examined the eyes of sixty-one patients where the diagnosis of tabes had been or was subsequently made. In many of these cases, although a previous history of syphilis was strongly suspected, the most careful scrutiny failed to elicit such infection. In examining the eyes of tabetics, bearing in mind the extreme difficulty of obtaining a syphilitic history, I have always searched for the corroborative evidences of a previous syphilitic infection, such as traces of choroiditis, old iritis or chorio-retinitis.

With increasing numbers of tabetics examined, it has been a constant source of wonder to me that, even though syphilis had been a part of the antecedent history of the vast majority of them, I have never been able in any of these cases to find traces of syphilis in the eyes.

Moreover, looking at the matter from another standpoint, I have record of 79 cases of syphilitic iritis and 42 cases of syphilitic choroiditis which occurred after the acquisition of the syphilis in periods varying from six weeks to sixty years in one case, that of a man 83 years old, blind from a disseminated choroiditis. It is true that the majority of these cases soon passed from my observation; many of them, however, I have seen at intervals during the past ten years.

In not a single instance where a syphilitic suffered from iritis or choroiditis have I known the individual afterward to become afflicted with tabes or paresis.

On account of the limited number of cases which have come under my observation, I considered this fact to be a coincidence peculiar to my own practice. It was only, after searching the literature, therefore, and finding that the same coincidence had been noted by Wernicke¹ in regard to tabes and by Wintersteiner² in regard to paresis, that I began to attribute some significance to the observation. Wernicke, after noting the fact that he had never seen a tabetic who presented signs of an old iritis or choroiditis, sets down the following dictum: "Syphilitics who have suffered from specific iritis or choroiditis do not acquire tabes." This seems to be a very broad assertion, and he in no wise corroborates it by any facts or figures, and yet my own experience, such as it is, bears out this statement.

Wintersteiner, in examining the eyes of 1,000 patients who were suffering from parietic dementia, most of whom were known to be syphilitic, and all of whom, according to his judgment, were syphilitic, found that, although the optic nerve was involved in 28.5 per cent. of the cases, choroidal changes were present in only 3.86 per cent. of the cases and iritic changes in only 1.76 per cent.; i. e., uveal changes in 5.62 per cent. of the cases, counting both iritis and choroiditis as coming under the head of uveal changes. Roughly speaking, in this series of cases the optic nerve was involved five times as often as the uvea. How remarkable this finding is can best be shown by quoting the following statistics taken at random from the literature:

In 114 cases of syphilitic eye diseases Drewes³ found the uvea involved 73 times, the optic nerve 4 times; Alexander⁴ in 1,385 cases found the uvea involved 331 times, the optic nerve 107 times; Galezowski⁵ in 128 cases found the uvea involved 52 times, the optic nerve 31 times; Eveille⁶ in 301 cases found the uvea involved 143 times, the optic nerve 58 times; Schubert⁷ in 231 cases found uvea involved 156 times, the optic nerve 8 times; Badal⁸ in 793 cases found uvea involved 383 times, the optic nerve 139 times; Talbot⁹ in 434 cases found the uvea involved 262 times; optic nerve 60 times; Boeck¹⁰ in 139 cases found the uvea involved 126 times, optic nerve 5 times; Stammwitz¹¹ in 197 cases found uvea involved 40 times, optic nerve 14 times.

1. Wernicke: *Tabes und Syphilis*. Centralbl. f. Augenhe., March, 1908.

2. Wintersteiner: *Augenspiegel-Untersuchung bei 1,000 Gelstestkranken*, Wien. klin. Wchnschr., 1907, No. 47.

3. Drewes: *Beitrag zur Statistik der syphilitischen Augenkranken*, Diss., Berlin, 1881.

4. Alexander: *Syphilis und Augen*, Wiesbaden, J. F. Bergmann, 1893.

5. Galezowski: *Du décollement de la rétine syphilitique et de son traitement*, Rec. Ophth., 1885, 447.

6. Eveille: *Recherches statistiques sur la syphilis oculaire*, Thèse de Bordeaux, 1881.

7. Schubert: *Ueber syphilitische Augenkrankheiten nach Beobachtungen aus der Augen-Klinik*, Prof. Cohn in Breslau, Berlin, 1881.

8. Badal: *Recherches sur manifestations oculaire de la syphilis*, Arch. d'ophth., 1886, pp. 104-114, 301, 308.

9. Talbot: *Recherches sur la syphilis de l'œil*, Thèse de Paris, 1894.

10. Boeck: *Undersogelser angaa syphilis fort saetelse af* *Recherches sur la Syphilis appuyées de tableaux de statistique*, Christiania, 1875. Quoted in Graefe-Saemisch Handbuch der gesamten Augenheilkunde, Lieferung, No. 80.

11. Stammwitz: *Beitrag zur Statistik der syphilitischen Augenkrankungen*, Diss., Leipzig, 1904.

The total shows that in 3,622 cases of eye disease due to syphilis the uvea was involved 1,566 times, the optic nerve 887 times. Where Wintersteiner in paretics, practically all of whom were syphilitic, found the optic nerve involved about five times as often as the uvea, the findings of other observers of syphilitic eye diseases show the uvea involved almost twice as often as the nerve. The difference here is too great to be merely a matter of accident. Judging from the figures, it would seem that where paresis is present the likelihood of uveal complications as compared to nerve involvement is much reduced. Why should this be?

Wintersteiner advances the hypothesis that in some cases the ectodermic structures are attacked with predilection by the syphilitic poison; in such cases the cerebro-spinal system suffers most damage. In other instances the mesodermic structures bear the brunt of the attack, while the ectoderm escapes; in such cases iris and choroid among other mesodermic structures are involved, while the nerve tissue escapes.

In commenting on Wintersteiner's article, von Wagner remarks that he has long noted as a strange coincidence how lightly most paretics have had secondaries and that there seems a certain antagonism between secondaries and paresis. Severe secondaries, little likelihood of paresis, and, *vice versa*, light secondaries, greater danger of paresis. To me Wintersteiner's explanation hardly seems a rational one.

Syphilis is pre-eminently a disease of the blood-vessels. Every syphilitic lesion is due primarily to pathologic changes beginning in the blood vessels. We can hardly concede a theory to be rational which advances the hypothesis of a syphilitic poison virulent enough to cause destructive changes in the blood vessels supplying epiblastic structures, but always sparing those same blood vessels when they supply mesoblastic tissues. Perhaps an explanation better fitting all the facts of the case is one based on Ehrlich's theory of the antibodies. If we think of tabes and paresis as due, not to direct syphilitic insult, but rather to the destructive action of antibodies on cord and brain, and if we consider that where antibodies are present in large numbers, the likelihood of tabes and paresis is much increased, then I think the antagonism between tabes and iritis becomes less mysterious. Where secondaries are severe, antibodies are largely absent. Iritis is essentially a secondary of syphilis; in conditions where we have iritis, antibodies being absent, the danger of tabes is small.

On the other hand, where secondary symptoms of syphilis are kept in check, not by efficient antisiphilitic treatment, but by abundance of antibodies, we have no iritis, but we have imminent danger of tabes. It is, I think, a recognized fact that tabes, and still more paresis, is more common among syphilitics who have had but little effective treatment, and still have not suffered severely from secondaries. Why should this be? In the light of the above explanation, it becomes, I think, clear. Their symptoms were kept in check, not by efficient treatment, but by large numbers of antibodies which afterward acted destructively on brain and cord. This, I believe, also explains why there is such a great difference of opinion among different observers as to what percentage of tabetics have had syphilis.

A large proportion of tabetics absolutely and in good faith deny syphilis. The lesion has perhaps been a mere erosion somewhere, perhaps a so-called soft chancre, perhaps a urethral chancre. They do not know that they have had syphilis. They have never had antispecific treatment, their secondaries have been held in check by

antibodies, and these patients are the ones that later develop tabes or paresis; we get no uveal but rather optic nerve changes. In a nutshell, absence of effective treatment, plus absence of secondaries, spell large quantities of antibodies which enable the uveal tract to escape, but at imminent danger to brain and cord.

Can we draw any practical conclusion from this absence of iritis in syphilitics who become tabetic? I think the number of cases thus far observed is entirely too small to say that a syphilitic who suffers from iritis or choroiditis will escape tabes, and still if this fact is corroborated by further observations it seems to me of practical importance in prognosis.

Many syphilitics, especially the more intelligent ones who are familiar with the fact that tabes and paresis are parasymphilitic diseases, are often possessed of a haunting fear of the future. If it were possible to assure a syphilitic who suffers from iritis (and I have done this in many cases) with a fair degree of positiveness that he will escape tabes and paresis, it would often be a source of great comfort to him. It would also aid the physician in a practical understanding of the case and its possible future outcome.

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POMPEIAN SURGICAL INSTRUMENTS*

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*Multa renascentur, quae iam eecidere, cadentque
Quae nunc sunt in honore.—Horace.*

The poet Horace, who lived shortly before the destruction of Pompeii, has said: "Many things shall be revived which already have perished, and many things shall perish which are now held in honor."

I find this quotation an appropriate motto for an essay on the history of ancient surgical instruments.

In presenting this paper I think it proper to offer an apology for introducing a subject which deviates somewhat from the established rule of a purely medical topic. My theme is rather in the nature of a historical retrospect, a study of the condition of medical science as it presented itself at a time when a tragic fate enwrapped Pompeii in the somber mantle of ashes and cinders for a period of about 1,900 years before the searching hand of a new generation began to remove the horrid and mysterious veil. What it revealed and continues to disclose is both ghastly and inspiring, both pitiful and amazing. On one hand all the horrors attending a sudden wholesale destruction of life, innumerable skeletons of human and animal bodies graphically indicating by the various positions in which they were found their last moments and struggle of life; on the other hand, treasures of incalculable value with regard to ancient art, science and customs.

When toward the second half of the eighteenth century the first excavations were begun the muse of Schiller broke forth in exclamatory strain:

"What wonder here? Of thee, O earth, a fount
Have we invoked; and from thy somber womb
What yieldest thou? Is life in the abyss?
And dwells a new race there till now concealed
Beneath the lava? Doth the past return?
O Greeks, O Romans, come; behold, again
Rises the old Pompeii and reappears
The long-lost town of Dorian Hercules."

An ancient city—buried and entombed for a period of over 1,800 years and again exhumed and uncovered to

* Read before the Milwaukee Medical Society, May 11, 1909.

the wondering gazes of new generations, totally distinct in their character, views, habits and religion from the inhabitants of that doomed community—this is Pompeii, which fell asleep, remained so while ages passed and has awakened in a new world.

There is no other ancient city with which we have so intimate acquaintance.¹ Even the physical aspect of its people, their customs, their household utensils, the mysteries of their worship, everything connected with their daily life, is being presented to us. In vain do we look for such a wealth of traces in ancient cities of a far greater historical importance, as Babylon, Thebes, Jerusalem and even Rome.

Queen among seacoast towns at a time when Rome had reached her highest point of civilization, Pompeii became a favorite resort for the Roman aristocracy, men of wisdom, rank and wealth indulging in pursuit of pleasure and habits of indolence, a light-hearted people, living for the games of the day and the banquet of the morrow.

And as the wandering observer follows in awe-struck thought through the desolate cobblestone-paved streets of the city, peering into its deserted mansions, their walls fresh as if painted yesterday—not a hue faded on the rich mosaics of the floors—in its forum the half-finished columns as left by the workman's hand—in its garden the sacrificial tripod—in its halls the chest of treasure, the furniture and priceless works of sculpture—in its cubicle the perfumes and the rouge of faded beauty—it is within the scope of imagination to conceive the abandoned abodes and public meeting-places enlivened by a joyous, light-hearted people following every varying fancy of pastime and passion.

The chief interest, however, of the medical practitioner and student of medical history will center in the House of the Physician—*casa del chirurgo*—so called from a find of a number of surgical instruments in the year 1770 and 1771, which are now to be found in that palace of antique treasures, the National Museum of Naples.

Whatever vestige of ancient medical science has been brought to light from the ruins of Pompeii is undoubtedly of Greek origin; for, in spite of the subjection of the Greeks to the political power of the Romans, this unique people preserved its old creative activity and power, vanquished its political conquerors in the sphere of intellect and ruled the Romans in the field of science. Children were expected to learn to speak Greek; Greek teachers were invited to Rome, and the foremost Roman writers of the golden age of Latin literature prided themselves on their familiarity with Greek culture as openly as most of Europe did on its familiarity with French in the eighteenth century.

In philosophy, oratory and historical writing the Romans followed the Greeks, as is manifest from Cicero, Seneca and others.

Whatever great works in sculpture and painting the Romans possessed were the creations of Greeian artists; the same holds true of works on mathematics, mechanics, botany, etc. It is, therefore, easily understood that the Greeian doctrines of medical science completely supplanted and checked the development of the scanty germs of Roman medicine proper.² It being an established and generally admitted fact that our present educational system is based for the greater part on the foundation which the ancients have laid, the importance of the knowledge of this basis of our intellectual life is self-evident and the subject claims the earnest consideration of those interested in art, philosophy and natural sciences.

The literature on this subject I have found to be rather limited, the more extensive works on Pompeii giving but a superficial and incomplete mention of the various instruments found.³

Dr. Senn,⁴ in an article on this subject, describes a limited number of the instruments under consideration. The bulk of my information I derived from a masterly, exhaustive treatise by John Milne.⁵

The finds of ancient Roman instruments during the past centuries in Europe have been numerous, but thoroughly scattered, and the instruments herein described form but a small part of a considerable collection unfortunately too much dispersed. A centralized collection would be ideally adapted to furnish the adequate means of thorough comparative scientific research. As it is, there is scarcely a museum with any number of antique bronzes which does not number among its contents a few surgical instruments, and it is surprising that no attempt has been previously made to systematize and reconstruct the surgical armamentarium of the ancients, instead of merely to issue a series of reports indicating the uses of instruments described.

The most important collections are to be found in the following museums: in England, the British, the Guildhall, the Shrewsbury and Chester museums, many of the specimens in which have been discovered in ancient Roman cities and camps in England; in France, the equipment of Emperor Severus at Saint-Germain-en-Laye, the Louvre, Cluny and Orfila museums, and those in the cities of Montauban, Rouen and Amiens; the instruments found by M. Toulouse in Paris, known as those from the grave of "the surgeon of Paris," are also noteworthy. Museums in Namur, Brussels and Charleroi in Belgium, others in Austria and Athens, the Thorwaldsen Museum of Copenhagen and many museums in Basel, Bern, Schaffhausen and Zurich in Switzerland, contain collections of Greek and Roman instruments very similar in design and intention to the ones under consideration from the museum of Naples.

After these preliminary remarks, which I deem essential for a better understanding of the subject, I proceed to attempt a description of the various instruments reproduced in the accompanying illustrations, which are exact facsimiles of the originals in the National Museum of Naples. These instruments, with the exception of a few additional parts of silver, were made of bronze, a fortunate circumstance for the historian and searcher of antiques, as the metal, on account of its ability to endure oxidation, has withstood the lapse of time. Copper, being much more easily obtained from ore than iron, was first to be used, the Egyptians employing it 6,000 years ago. Hippocrates says: "Use bronze only for instruments, for it seems labored ornamentation to use vessels of it." It is erroneous to assume that the ancients did not make many of their instruments of iron and steel, but the bronze has outlived the iron. The Homeric poems picture a civilization in a state of transition from a bronze to an iron period, and weapons, such as sword, axe and spear, are frequently described as made of iron. Certain instruments, as the cautery, are always spoken of as made of iron, as the name implies.

The destructibility of iron will easily explain the fact that cauteries, which must have existed in enormous numbers, are among the rarest surgical instruments found. It is not generally known that steel entered into

3. Overbeck, J.: Pompeii.

4. Senn, Nicholas: Pompeian Surgery and Surgical Instruments, Philadelphia Med. News, December, 1895.

5. Milne, John Stewart: Surgical Instruments in Greek and Roman times, 1907.

1. Guhl and Koner: Das Leben der Griechen und Römer, 1872.

2. Baas: History of Medicine, 1889.

the manufacture of metal implements of the ancient Greeks and Romans, although the steel was made in a primitive manner, which is, however, still in vogue in India and China, where a fine quality of steel is procured. As the terms "iron" and "steel" are synonymous in Latin and Greek, modern writers have been inclined to mistake them for another.

Other metals were occasionally used, as tin for uterine sounds and probes for rectal work, lead for sounds and tubes for intrauterine and rectal treatment, gold for probes for applying salves to the eyes and separating adhesions of the eye to the lid, for opening pustules of smallpox, for burning the roots of hairs in trichiasis, for binding the teeth together with gold wire in fractures of the jaw. Silver was used in forceps, probes, grooved directors, uterine syringes and catheters.

Judging from the great number of probes and sounds unearthed in many parts of Europe, once under the dominion of the great Roman Empire, we are justified in our conclusion that the *tactus eruditus* was well developed among the medical profession of remote antiquity. Three groups of probes and sounds are presented in the Naples collection as follows: The double simple probe (specillum), a plain rod of metal rounded off at either end, tapering at either end to a blunt point (Plate I, Fig. 1). A variation of this probe is the specillum with two olivary ends (Plate I, Fig. 2) frequently mentioned by Galen and Paul of Ægina, who, in speaking of fistula, says: "We must first examine them with a sound if they be straight or with a very flexible 'double olive,' such as those made of tin or the smallest of those made of bronze, if they be crooked." He also refers to its use as a cautery to destroy the roots of the ciliary hairs after epilation. The second group embraces a class of probes similar to the ones just described, one end of which, however, having the shape of a typical spoon, a variety not specially mentioned by any classical writer. It has the same oval nucleus at one end as the simple probe, but the other end widens into the form of a spoon either round or oval shape (Plate I, Figs. 3 and 4), which probably served the purpose of curettes and to mix and apply medicaments. It seems from the large number of similar instruments being found that they were used for lay as well as for medical purposes. Many of them are toilet articles. An interesting discovery of two typical specimens in the grave of a lady artist was made in Vendée in 1847, where, among a number of color-pots and alabaster mortars for mixing colors, was a étui similar to the typical cylindrical instrument case of the ancient surgeon, in which were two spoon probes similar to the ones under consideration. Their great resemblance to the Volkman curette is self-evident.

On close inspection it will be noticed that the shaft of No. 3 is prettily ornamented with longitudinal and spiral fluting. Some have been found with a silver band inlaid in a spiral around the shaft or even entirely gold plating. A third instrument of this class, a ligula type of specillum (Plate I, Fig. 5), is strictly speaking not a surgical instrument, as it seems to have been used by the laity and no doubt also by physicians for making applications to affected parts or extracting from tubes and box ointments, balsams and powders which entered so profusely into the mysteries of the Roman lady's toilet. Related to the foregoing instrument is a spoon about 5½ inches in length, having a bowl nearly one inch in diameter (Plate I, Fig. 6). The instrument shown in Plate I, Figures 7 and 8, were found together. The handles of both are bronze; the scoop and spatula parts are of silver. Vulpes describes these as a lancet for drawing

blood and a spoon for collecting and examining the same. These, like those previously mentioned, however, were used for mixing and spreading medicaments; as it is impossible to regard an instrument of silver as a cutting instrument.

The third group comprises the spatula probe (Latin, *spathomele*; German, *Spatelsonde*; Plate I, Figs. 9, 10, 11, 12, 13, 14). Almost every writer mentions the *spathomele*. It consists of a long shaft, 6 to 7 inches in length, with an olivary point at one end and a spatula at the other. It was a pharmaceutical rather than a strictly surgical instrument. The olive end was used for stirring medicaments, the spatula for spreading them on the affected parts or on lint. With it ointments were applied and again scraped off. The very large numbers in which they are found would indicate that their use was not confined to medical men, as they seemed to have been used by painters to prepare and mix their colors. Although the olive end of the *spathomele* was too large to admit of its use as a probe for small lesions, it is evident that in exploring large cavities it must have been a valuable instrument. Priscianus alludes to plugging the nares with it, and Leonidas mentions it as a tongue depressor, while Soranus refers to it as a cautery. All of the specimens have the characteristic oar-blade shape, though the outlines vary greatly. In some (Figs. 9, 10 and 11) the blade widens out at the end, so that the tip is broad and rounded; in others the blade slopes to a rounded point or is even pointed (Figs. 12, 13 and 14). The ends of the blade are usually thick and blunt, although some thin and sharp ones have been found, almost suitable for cutting. It is of interest to note in the *spathomele* (Fig. 12) an eyelet at the proximal end, indicating perhaps the attachment of a handle. This arrangement is followed out in a number of ancient instruments, especially of scalpels (of which unfortunately I was unable to obtain a specimen), in which the knife and handle were not forged in one piece, but united by something very like our aseptic joint. Hippocrates insists on the importance of keeping everything in surgery absolutely clean.

Among the various kinds of forceps the simplest forms consist of a strip of metal bent on itself with the jaws turned inward (Plate I, Fig. 15) and the more elaborate and stronger one (Fig. 16). These seem to have been the typical forceps for epilation, a cosmetic custom which has come down to us from prehistoric times and seems to have been prevalent among all primitive races. In the bronze age the hair was fixed with a broad-jawed forceps and cut off close to the skin by means of a knife or "razor," although no doubt ordinary epilation for superfluous hair was practiced, also as a purely surgical operation for trichiasis consequent on the granular ophthalmia which was so common among the Romans. Several of this type were found in the grave of the oculist Gaius Severus at Rheims. A variation of the above epilation forceps is a large powerful instrument, 7 inches in length (Plate I, Fig. 17), which no doubt has been used as a dissecting or tumor vulsellum, the end of the blades being toothed. It was used whenever it was desired to make traction in any subject, and is mentioned by various writers in excisions of the clitoris, of malignant excrescences, of epulis, of hemorrhoids, etc.

A specimen of forceps which corresponds somewhat to our modern fixation forceps is shown in Plate I, Figure 18, in which the jaws turn to one side at an obtuse angle in a fairly sharp point, concave internally and convex externally. A sliding ring, quadrangular in shape, fixes the jaws after they have been applied. This angled type

of forceps may be the one referred to by Paul in his description of the plastic operation on the eyelid for trichiasis, when he directs to raise the redundant skin of the lid with the fixation forcep and cut it off with a scalpel.

The instrument shown in Plate I, Figure 19, resembles a forceps, the unfinished condition of the tips of the handles indicating that they had been inserted into the handles of wood; it seems better suited to grasp some substance inside the bow than between the jaws, and is assumed by Dr. Milne to have been used to extract calculi from the bladder.

An excellent specimen of a sequestrum forceps was found in the House of the Physician. It is 8 inches in length and formed of two crossed branches on a pivot (Plate I, Fig. 20). The handles are square; the jaws are curved and have across the inside of them parallel grooves which oppose each other accurately. It is classed in the catalogue as an instrument for crushing calculus of the bladder. This is, however, not a manipulation

described by the ancients. The only case in which splitting of calculi is referred to is described in Celsus, and then a chisel is said to have been used. Again, this forceps, known as the Pompeian forceps, has been looked on as a tooth-extractor. Although its shape is not otherwise unsuitable for this purpose, its jaws are not particularly adapted for seizing a tooth, as they are not hollowed inside. Whatever the shape of the Græco-Roman forceps was, it seems to have been a handy instrument for many different manipulations. The graceful form of the instrument with its artistically fluted handle is another example of the happy faculty of the ancients of combining the beautiful with the useful. Hooks, blunt and sharp, are frequently mentioned in both Greek and Latin literature and served the same purposes as those for which we use them, the blunt for dissecting and raising blood-vessels like the modern aneurism needle, the sharp for seizing and raising small pieces of tissue for excision and for freeing and retracting the edges of wounds (Plate I, Figs. 21 and 22).

In the Naples Museum alone there are upward of forty examples of hooks. Scissors (Plate I, Fig. 23) made of steel or bronze are common objects in museums, and their use is referred to by various old writers. Oribasius and Celsus refer to cutting the hair as a therapeutic measure. A few references are made to the use of the shears for cutting tissues, as by Celsus in abdominal injury with protrusion of the omentum, for the radical cure of hernia and the removal of warty excrescences.

The instruments shown in (Plate I, Fig. 24) in the catalogue is termed a flammete or fleam for veterinary purposes. As the offices of surgeon and veterinarian were often fulfilled by the same individual in Roman times, it is probable that such an instrument was used by the physicians for the operation of phlebotomy.

Although venesection is one of the most frequently mentioned operations and the phlebotome so mentioned, there is absolutely no description of this instrument. Galen has three treatises on the subject, and Hippocrates frequently mentions it. The phlebotome was used for all sorts of operations, opening of abscesses, puncture of cavities, fine dissecting work, fistula lacrimalis, removal of warts, phimosis, dissection of sebaceous cysts, etc.

The following description of Paul of Ægina (A. D. 625) corresponds to one of the two bone levers in the Naples Museum made of bronze (Plate I, Fig. 25): "It is an instrument of steel, about seven to eight fingers' breadth in length, of moderate thickness that it may not bend during the operation, with its extremity sharp, broad and somewhat curved." It is 6 inches in length, both ends curved, while one is flattened and the other pointed. A similar instrument was used by Paré for levering up depressed bones; and from what Galen says it may have been used for levering out teeth. That the ancients were intimately acquainted with the surgical

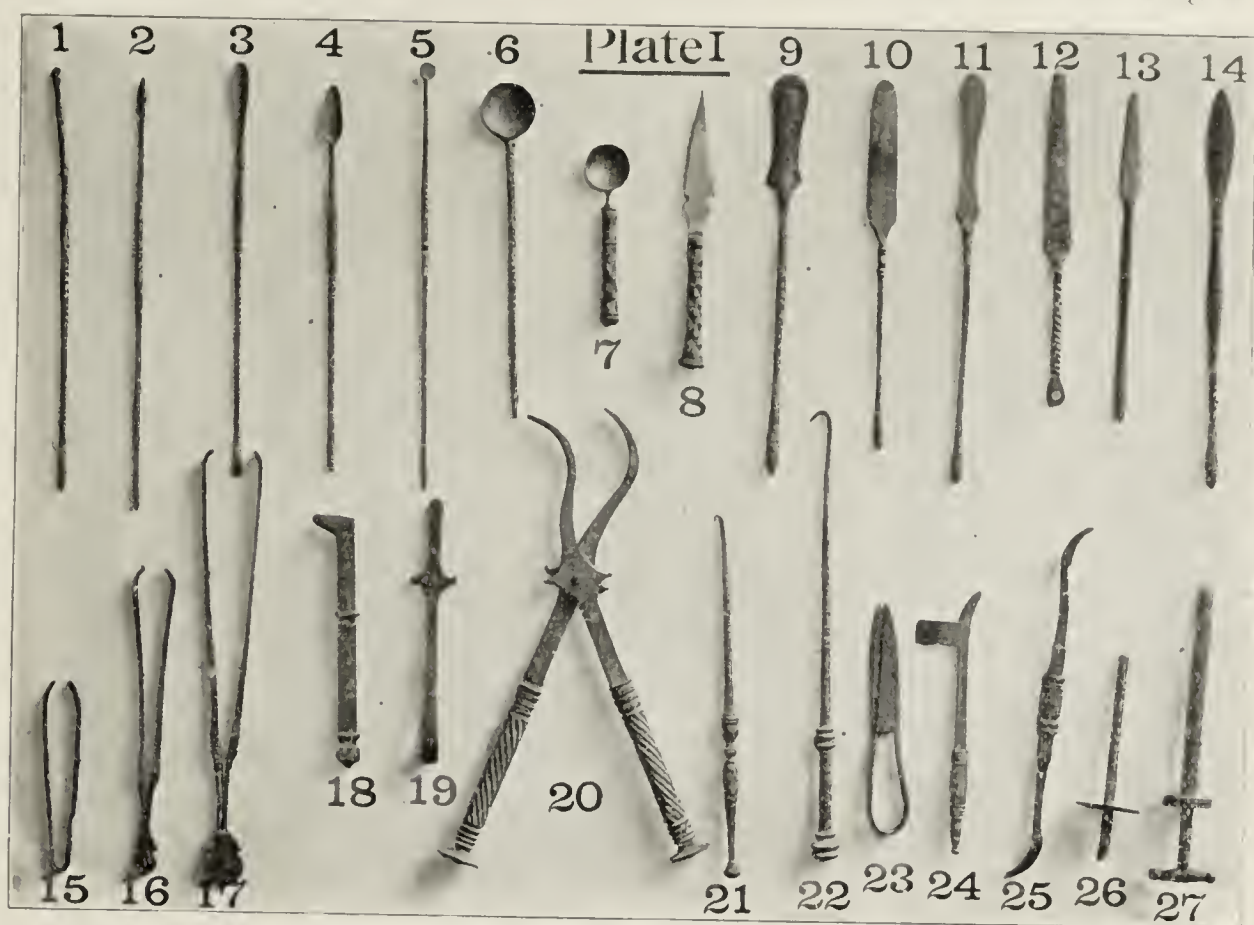


Plate I.—Pompeian surgical instruments. Figs. 1 to 7, probes and spoons; 8, lancet; 9 to 14, spatula probes, sometimes used as canter; 15 to 20, various forms of forceps; 21 and 22, blunt and sharp hooks; 23, scissors; 24, veterinary fleam or phlebotome; 25, bone elevator; 26 and 27, cannulas.

treatment of empyema and ascites is shown by two instruments of the collection (Plate I, Figs. 26 and 27), both representing cannulas very similar to the ones in use at the present day. The plain, small one consists of a bronze tube, $3\frac{1}{2}$ inches in length, beveled off on one end. This instrument answers the description of Celsus. The more elaborate form of the cannula for ascites is seen in the other specimen, a tube $3\frac{3}{4}$ inches in length, one end rounded off and closed except for a small hole near its tip, the proximal end carrying a circular plate, $\frac{7}{8}$ inch in length, which carries on its end a small handle attached in a T fashion. To all appearances the cannula was to be inserted after an incision was made by a scalpel, to be closed after the abstraction of a certain amount of fluid. Hippocrates says:

After opening let pus out once a day. After the tenth day when everything has been evacuated, flush with wine and tepid oil. At night let out what you have put in and when the pus becomes thin and watery insert a hollow thin tube.

Related to the foregoing cannular instruments is a tube of bronze, $5\frac{3}{4}$ inches in length, $\frac{3}{8}$ of an inch wide at one end and gradually narrowing to $\frac{1}{8}$ of an inch. It was often made of lead or tin; it is referred to by Hippocrates over and over again. It was used to prevent contractions and adhesions after operations on the nose, rectum, vagina, etc. Hippocrates mentions its use after dilatation of the cervix uteri. The small opening half an inch from the end probably was for the purpose of drawing or applying medicaments (Plate II, Fig. 3).

The instrument illustrating the well-known subject of actual cautery, which was employed to an almost incredible extent in ancient times and on which surgeons expended much ingenuity of device, is a tile-shaped cautery (Plate II, Fig. 1) of bronze (although iron was also employed) and was used as a counter-irritant, as a hemostatic, as a bloodless knife, as a means of destroying growths and tumors, etc. Other forms of cautery mentioned are the cautery knife, a trident olivary cautery for operations on the eye and nose, a gamma-shaped,

Of the two vaginal specula of this collection the first discovered was found in the House of the Physician (Plate II, Fig. 4). The blades are at right angles to the instrument and when closed form a tube the size of the thumb; on turning the screw a cross-bar forces the two upper blades outward till sufficient dilatation is obtained for operative purposes. The diameter of the tube, at its maximum of expansion, is about $3\frac{1}{2}$ inches, the speculum being 9 inches long. Lately a speculum similar to the foregoing has been found in the ruins. The third speculum in the Naples collection, discovered in 1882, is similar to the foregoing, but has a quadri-valve priapiscus (Plate II, Fig. 5). Its length is about 12 inches; on turning the screw the lower blades are drawn downward, at the same time separating slightly, while the other blades diverge also. It may be noted that the screw in the three-bladed instrument is a left-handed one, while the four-bladed one is a right-handed. This instrument is in a high state of preservation; its construction is uniform and well proportioned, and as a

curious fact that it may be observed that in its various dimensions it observes constantly the metric measurement. The earliest mention of the rectal speculum is to be found in the treatise on fistula by Hippocrates—"laying the patient on his back and examining the ulcerated part of the bowel by means of the rectal speculum"; also its use in the treatment of hemorrhoids is mentioned by him.

The two-bladed instrument was used to dilate the vagina as well as the rectum, and received its name, "small dilator," in contradistinction to the other vaginal speculum, which was worked by a screw and was called the *speculum magnum*. According to Galen, the anal dilator was called *catopler* and the female dilator the *diopter* (Plate II, Fig. 6). Included in the obstetrical instruments are two traction hooks, 12 inches in length and

$\frac{1}{4}$ inch in diameter, the form of their handle ends indicating a former existence of a bone or ivory handle. They resemble very much the blunt hook of the English obstetrician, William Smellie (1680), and its well-known modification, the decapitation hook of C. Braun, of Vienna (Plate II, Figs. 7 and 8).

The spike-shaped, dagger-like instrument (Plate II, Fig. 9), nearly 9 inches in length, the distal end resembling a large flat needle and the handle ending in a solid, heavy hemisphere, apparently answers the following description by Tertullian:

There is also a bronze stylet with which a secret death is inflicted; they call it the feticide from its use in infanticide, as being fatal to a living infant. Hippocrates had this instrument, Aesclepiades and Erasistratus and of the ancients, also Herophilus the anatomist, and Soranus, a man of gentler character, who, being assured that a living thing had been conceived, mercifully judged that an unfortunate infant of this sort should be destroyed before birth to save it from being mangled alive.

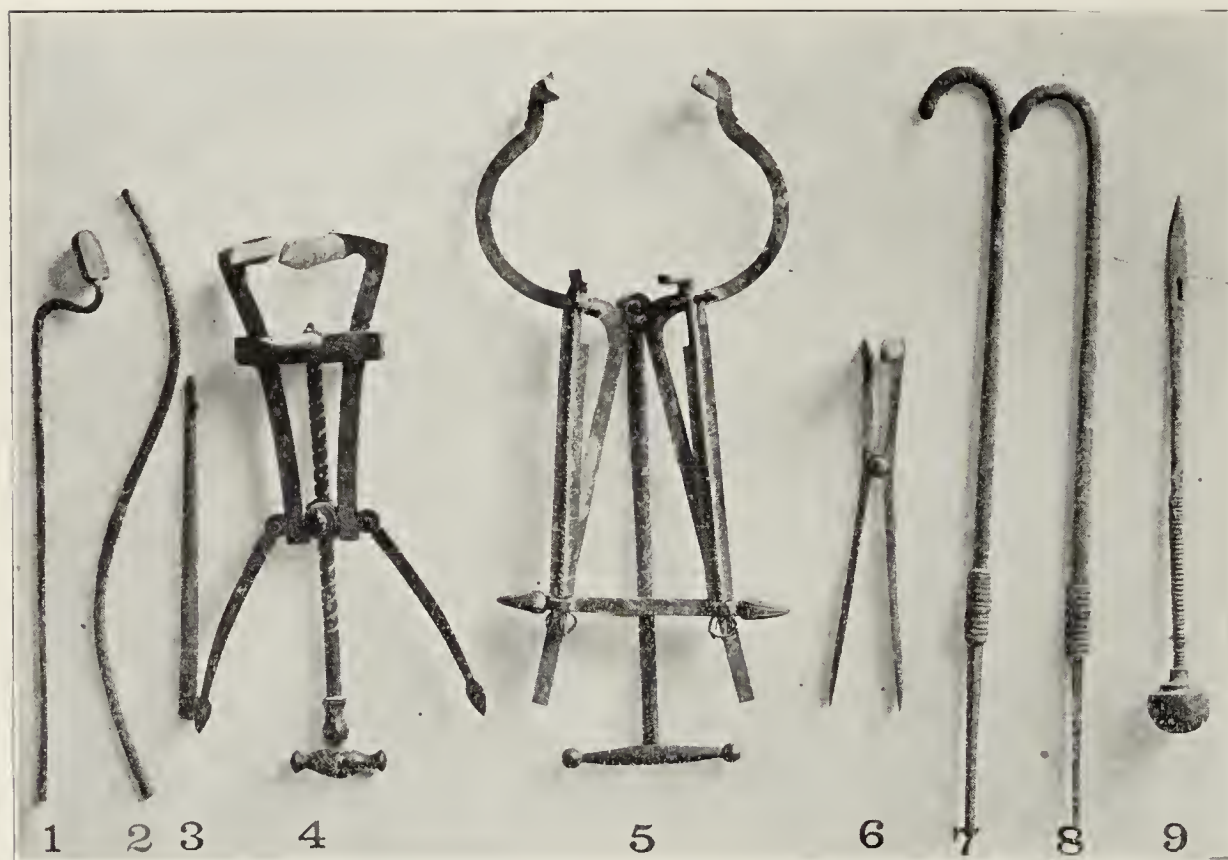


Plate 2.—Pompeian surgical instruments. Fig. 1, cautery; 2, male catheter; 3, drainage tube, also used for other purposes; 4 and 5, specula; 6, dilator; 7 and 8, obstetric traction hooks; 9, feticide, or possibly a seton-needle.

an oval-shaped, a lunated, a nail-shaped, a button-shaped, wedge-shaped and needle-shaped cautery. Hippocrates also mentions a cautery guarded by a tube for operations of hemorrhoids and polypi of the nose. The catheter was in common use in ancient times and is frequently alluded to. This collection includes a male catheter, 10 inches in length (Plate II, Fig. 2), with two gentle curves closely resembling the instrument reintroduced by Petit in the eighteenth century and corresponding in size to No. 2 American.

It seems to have been the only perfect specimen found, other finds at a Roman military hospital in Baden being but fragmentary. Also a female catheter (Plate II, Fig. 3) is mentioned in the catalogue, which, however, so closely corresponds with a previous description of a dilator (Plate II, Fig. 3) that I am in doubt as to the correct classification, especially as Dr. Milne mentions a female catheter about 4 inches in length (which is, however, not represented in this group) in the Pompeian collection.

I doubt whether this description applies correctly to this particular instrument, as it will not explain the large eyelet, which would indicate its use as a seton-needle.

A meditative glance over the instruments of this collection and similar ones gives the impression that surgery at the time of the destruction of Pompeii was confined, to a great degree, to minor surgery, and that the art of surgery in respect to more important operations, as indicated by the description of operations and instruments, compared with modern achievements, was coarse and undeveloped. Truly we find that at this period Cesarean section, extirpation of the uterus, laparotomy, lithotomy, excision of the kidneys, herniotomy, and plastic operations were performed, but that the limited knowledge of anatomy and physiology was a hindrance to successful major operations.

To antisepsis and anesthesia are due a complete revolution of earlier methods and complete reversal of mortality statistics; to these discoveries the human race owes more of the prolongation of life and relief of suffering than can be estimated or terminated in words.

Little by little during the past ages the building-stones were added to the foundation laid by the ancients in the construction of our present monumental edifice of modern surgery, in spite of innumerable hindrances incited by ignorance and malice, until now at the beginning of the twentieth century "the seeing portion of healing art," as Chamisso terms it, is approaching an exact science to which every other branch of science has been made tributary.

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TREATMENT OF DIFFUSE SUPPURATIVE PERITONITIS

WITH SPECIAL REFERENCE TO ENTEROCLYSIS AND DRAINAGE THROUGH THE CECUM *

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Since the dawn of the era when the abdominal cavity began to be invaded, the fear of peritonitis has been the dominant factor retarding the advancement in this field of surgery.

After the discovery of the germ theory of infection the fear was of the liability of infection from without, but after the perfection of methods calculated to avoid infection from without the surgical mind was dominated by a dread of infection from pathologic material found within the cavity, and in late years the sole purpose has been to formulate a rational pathology and treatment that would enable us to cope successfully with this condition. These efforts have been so abundantly rewarded that to-day we are usually able to suspect or to diagnose diffuse suppurative peritonitis in its earliest stages and to enter on its treatment with an assurance that a vast majority of the patients may be saved.

In infection of the peritoneum there are complications that we now dread more and deal with less successfully than suppurative peritonitis, viz., pylephlebitis involving the iliocecal and portal veins, with multiple thrombotic infection of the liver and spleen and retroperitoneal infections, conditions occasionally met in appendicitis

and in perforating or suppurating conditions of the abdominal viscera or tissues.

The treatment of diffuse suppurative peritonitis may be formulated under four heads as follows:

1. Releasing from the peritoneal cavity infectious material held under pressure.

2. Repair or correction with the greatest speed and the least intra-abdominal manipulation possible the lesion responsible for the infection.

3. Drainage of the peritoneal cavity, an important feature of which is maintaining the patient in Fowler's position.

4. Dilution and elimination of toxins and anticipating shock by the introduction of large quantities of physiologic salt solution into the circulation, best accomplished by some form of enteroclysis.

It is an old axiom that when pus is found it should be removed. We have learned, however, that pus in itself is not a dangerous element; that it is only when held under pressure that absorption occurs sufficiently to cause serious symptoms, and that even when absorption does occur the symptoms produced are due to entrance into the circulation of micro-organisms and their toxins floating in the fluid or encompassed by the leucocytes in their phagocytic action.

Pus, in fact, is an element of safety, indicating an attempt on the part of Nature to protect the body from invasion of organisms and their products dangerous to life. Therefore, when we encounter pus in the abdominal cavity we are not filled with consternation, as operators were under such conditions in former days.

This knowledge, together with that obtained by animal experimentation in regard to the absorption of bacteria in the peritoneal cavity, lays the foundation for a rational procedure in dealing with pus in the free abdominal cavity and for reducing intra-abdominal manipulations to the minimum. Handling the intestines in an effort to free the abdominal cavity from pus distributes bacteria in the direction of the diaphragm where absorption is most likely to occur.

Pus held under pressure should be released by incision, but the surgeon should not be guilty of the crime of mopping and irrigation. No effort need be made to get rid of the pus; Nature will take care of it if proper drainage is established.

We cannot be reminded too often of the experiments of Buxton¹ and other investigators regarding the absorption of bacteria by the peritoneum.

In these experiments on animals, typhoid and colon bacilli were introduced into the peritoneal cavity. Within five minutes they were found in the blood in great numbers, also in lesser numbers in the liver and spleen. A great number were found in the lymph-nodes of the anterior mediastinum, which they reached from the diaphragm, where absorption occurs most rapidly. It was demonstrated that there was practically no absorption by any other part of the peritoneum besides the diaphragm and omentum; the parietal, visceral and mesenteric peritoneum did not seem to possess this power to any considerable degree.

It was also observed that death did not result from the absorption of bacteria or cocci themselves, but from the toxins within these organisms (endotoxins) liberated by the destruction of micro-organisms in the blood. In streptococcal infection death does not occur so soon as with typhoid or colon bacilli infection, because the cocci are destroyed less rapidly; consequently more time must

* Read before the Tri-State Medical Society (Illinois, Iowa and Missouri), Quincy, Ill., Sept. 14-15, 1909.

1. Buxton, B. H.: Jour. Med. Research, 1906, xv, 3; 1907, xvi, 17.

elapse—at least twenty-four hours—for their extensive multiplication and reinfection of the blood.

If absorption of micro-organisms occurs almost wholly by the peritoneum of the diaphragm, it is evident that mopping and irrigation will spread infection toward the diaphragm and lessen the chances of the patient's recovery. For the same reason, if the patient is put in the Fowler position, his chances for recovery are increased.

Drainage of the peritoneal cavity is accomplished by placing a rubber tube in the costal gutter below the kidney and one or two good-sized drains into the pelvis. The patient is then placed in the Fowler position and maintained in this position for three or four days, or until the symptoms of sepsis disappear.

We cannot overestimate the importance of keeping the patient in Fowler's position, and yet its accomplishment is attained with some difficulty. A number of kinds of apparatus have been devised for the purpose of procuring drainage, including the arm-crutches of Eisendrath, McGuire's device for elevating the head of the bed and my double inclined plane apparatus (Fig. 1). These are all useful and may be employed successfully, but one cannot always have such appliances at hand. A simple appliance always at hand is a necessity. For ordinary cases a bed-sheet may be used, folded diagonally and re-enforced in the middle by placing over it, like a saddle, a thick pad, which is placed against the buttocks and posterior surfaces of the thighs, and the ends of the sheets tied to the bed-posts near the mattress (Fig. 2).

In a paper² read before the Illinois State Medical Society, May 19, 1909, I spoke of some of the difficulties attending the administration of physiologic salt solution by proctoclysis as recommended by Dr. Murphy, and of the possibility of giving this solution directly into the colon through the appendix or through an incision in the cecum.

In a case of acute perforating gastric ulcer of forty hours' standing,³ Lennander, of Upsala, who operated successfully, besides doing a temporary gastrotomy, placed a drainage-tube through an incision into the cecum and retained it there five weeks. This operation



Fig. 1.—Double inclined plane shoulder-and-leg rest for maintaining patient in Fowler's position.

("typhostomy"), Lennander says, helps to prevent paresis of the intestines and affords an efficient means of supplying nutrition.

This procedure of Lennander, together with the previous suggestion of Weir, that the appendix could be used in like manner for irrigating the colon in cases of amebic dysentery and mucous colitis, suggested to my

mind the feasibility of employing the same method for enteroclysis in diffuse suppurative peritonitis.

I have employed this method in two cases.⁴ One was a case of acute perforating gastric ulcer, in which I operated at the Rockford City Hospital, May 21, 1909, twenty-four hours after the perforation occurred. The other was a case of acute perforating gangrenous appendicitis, in which I operated at the same hospital, May 22, 1909, two days after perforation. Both cases were complicated with diffuse suppurative peritonitis. In the first case the patient made a good recovery. In the appendix case the patient died five weeks after operation from multiple abscess of the liver due to pylephlebi-



Fig. 2.—Patient held in Fowler's position by twisted sheet. By using comforts and pillows the shoulder-rest may be dispensed with. C, catheter held in cecum by sutures; I. P., glass irrigating point; T, thermometer. Temperature of solution 100 to 110 F.

tis involving the ileocecal and portal veins. There was no attempt in either case on the part of the peritoneum to limit the spread of infection. In the case of perforated stomach the pelvis and lower abdomen were filled with pus and gastric contents.

In the appendix case, pus was free in the abdomen, and, besides a gangrenous and perforated appendix, the tissues of the lower cecum showed a reduced vitality. Yet the peritonitis in both cases disappeared very rapidly under this treatment. Normal bowel movements began within nineteen to twenty-four hours after the operation, and the amount of salt solution introduced into the colon had to be reduced on account of frequency of bowel evacuations.

An important feature in this method of enteroclysis is the employment of the catheter in the cecum as a means of draining and irrigating the alimentary canal. A pint to a pint and a half of salt solution was slowly introduced into the colon every two hours. But each time the solution was introduced the hemostatic forceps that clamped the catheter during the intervals was released and free liquid fecal evacuations were secured through the catheter into the pus basin. By this procedure much gas and bacteria-laden feces were withdrawn from the intestine.⁵ It is of especial importance to continue this procedure until free bowel evacuations are secured through the rectum.

In both of my cases the appendix was amputated, the catheter introduced into the colon through the appendix stump and secured by a linen purse-string suture at its base. But the same results may be secured by making a

2. Allaben, J. E.: Surgical Treatment of Perforating Gastric and Duodenal Ulcer with report of a Case of Perforating Gastric Ulcer; Recovery. Ill. Med. Jour., August, 1909.

3. Lennander, K. G.: Temporäre Gastrotomie bei Magen- oder Duodenal-Geschwüren, besonders bei perforierten Geschwüren mit gleichzeitiger Retention, Deutsch. Ztschr. f. Chir., 1908, x, 297.

4. Three days after my paper was read, an article was published by Dr. Charles A. L. Reed, of Cincinnati (THE JOURNAL A. M. A., May 22, 1909, p. 1659), entitled Cecostomy and Continuous Coloclysis in General Peritonitis and Other Conditions. Dr. Reed recommends that cecostomy rather than appendicostomy should be adopted as the operation of choice.

5. If preferred, the hemostatic forceps may be discarded and the colon drained through the catheter into a pus basin or into a receptacle beneath the bed.

small incision in the anterior wall of the cecum and introducing the catheter through this artificial opening. The cecum is secured in its position by two catgut sutures which pass through the parietal peritoneum and through the serous and muscular coats of the intestine (Fig. 3).

OBJECTIONS TO THE OPERATION

Three possible objections to this procedure suggest themselves:

1. Leakage of physiologic salt solution and feces into the peritoneal cavity.
2. Complications from a fixed condition of the cecum.
3. Persistent fecal fistula.

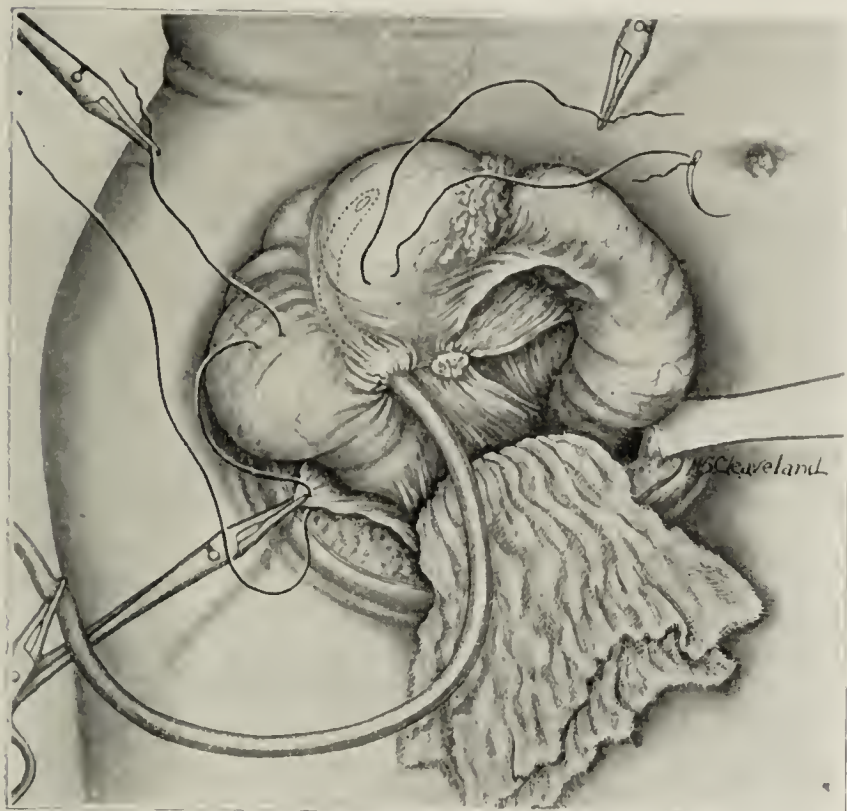


Fig. 3.—Catheter inserted into cecum through stump of appendix and secured by purse-string suture. On one side is shown stay suture passing through parietal peritoneum and serous coat of cecum ready to tie after the intestine has been replaced within the abdomen. The appearance of wound after operation, and method of giving salt solution, are shown in Figure 2.

As an extra precaution against leakage a fine catgut suture is passed through the serous and muscular coat of the cecum or appendix stump and through the wall of the catheter, so that the catheter cannot be displaced during movements of the cecum.

The relation of the cecum to other viscera is such and naturally so limited in its movements that intestinal obstruction or other complications could hardly occur as a result of being fixed by suturing.

The fear of persistent fecal fistula has a more rational foundation.

In my fatal case a fistula, through which considerable quantities of fecal matter discharged, persisted until death, the illness covering a period of five weeks. In this case, however, the vitality of the cecum was much impaired by the local and constitutional infection, which caused necrosis of the tissue, held in the grasp of the purse-string suture causing it to slough away, leaving an unusually large opening. Where the stump of the appendix can be utilized, the danger of fistula, I believe, is less than where an incision is made into the cecum. It is likely that with greater experience a technic will result rendering persistent fistula improbable. Many cases of diffuse suppurative peritonitis are so desperate that the possibilities of a secondary operation for the relief of fistula is of minor importance.

ADVANTAGES OF THE OPERATION

1. Large quantities of hot normal salt solution may be rapidly introduced into the circulation, immediately after operation, overcoming shock, quenching thirst and eliminating toxins.
2. The solution is brought immediately into contact with that portion of the alimentary canal most favorable for absorption.
3. Intestinal paresis from gas retention is avoided and early normal evacuation of the bowels secured.
4. Early relief of toxemia is secured by drainage through the catheter of bacteria-laden feces.
5. The unpleasant and uncertain features of proctoclysis are eliminated, and predigested foods may be administered in definite quantities.

CENTRAL FLAP IN EXPOSURE OF BRAIN

EXPERIMENTAL STUDY ON MONKEYS *

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The history of craniotomy, the oldest known operative procedure, extends back into the dim stone ages, as shown by the mute but conclusive evidence of operative interference in collected prehistoric skulls to be seen in several bureaus of ethnology.

The older writers, including Hippocrates, refer to the great antiquity of the operation, but of course, they never dreamed that it could be traced back with the earliest relics of man. The ancients used the operation for letting out evil spirits, bad humours, in order to relieve violent, uncontrollable headaches, etc.

The technic of the operation and indications for its use are given by many of the medical authors of medieval times, and of those of the Renaissance. Others than medical writers also refer to the operation.

Balsae¹ in his work on Katherine de Medici interestingly describes the famous Ambroisé Paré at his midnight lamp, experimenting in trepanning a newly dug up skull preparatory to an intended mastoid operation on King Francis II. Katherine, however, wishing her son's death, objected to having his skull pierced as if it were a piece of board.



Figs. 1, 2 and 3.—1. Temporal flap. 2. Occipital flap. 3. Frontal flap.

Except for the modifications of the instruments used, from the stone flint to the modern trephine, the operation itself remained the same for ages until Wagner, to whom not enough credit can be given, preceded by Wolf's animal experimentations in introducing the bone flap, with one bold stroke revolutionized cranial surgical technic, making possible the phenomenal work of Krause, Hartley, Cushing and others.

The object of this research by us was to ascertain whether extensive central flaps for wide exposure of brain could be made. Very large flaps were cut, including almost the entire vault of the skull.

Three types of flaps were used: a frontal, a temporal, and an occipital (Figs. 1, 2 and 3).

* From the Hull Physiological Laboratory, University of Chicago

African monkeys of the species *Rhesus* were used.

EXPERIMENT 1.—July 15, 1909. Female *Rhesus*.

Anesthesia.—Ether.

Operation.—After the most careful preparation a temporal flap incision was made as in Figure 1 down to the bone, which was opened by trephine and Gigli-saw and broken on the side of the flap. There was no injury to the longitudinal sinus. Flap replaced. Very little ether was needed. Extremities tied and dressing applied.

Postoperative History.—Second day after operation the other monkeys, reaching through from the next cage, tore off the dressing, pulling out a few stitches on the anterior limb of the incision. Wound otherwise perfect. No edema. Later, in healing, the wound separated where the stitches were torn out, and as it refused to granulate over it was sutured and healed with primary union. Except for some slight sluggishness the first few days after the operation, the monkey appeared as well as usual. December 15, the animal was used for other experimental work and died two days later.

Post-mortem.—Prof. A. J. Karlson, who performed the autopsy, found that the flap had united firmly. There were no sequestræ, and no dural adhesions.



Fig. 4.—Photograph showing wide extent of flap.

EXPERIMENT 2.—July 24, 1909. Male *Rhesus*.

Anesthesia.—Ether.

Operation.—In this case we used the frontal flap (Fig. 3). Technic as in the previous case. No injury to sinuses. Very little anesthesia needed.

Postoperative History.—Wound healed with primary union. Animal shows no untoward symptoms from the operation.

EXPERIMENT 3.—August 16, 1909. Female *Rhesus*.

Anesthesia.—Ether.

Operation.—Occipital flap; no injury to sinuses. Very little anesthesia used.

Postoperative History.—Wound healed with primary union. Died five weeks after operation from pulmonary and intestinal tuberculosis.

Post-mortem.—Bone flap was healing nicely; no sequestræ and no dural adhesions.

The experiments are few but sufficient to demonstrate that large cranial flaps may be made successfully in monkeys and probably also in man.

These animals are very easily kept under anesthesia, and take very little ether.

In buying monkeys let the seller guarantee the health of the animal, as many have pulmonary tuberculosis.

GUTTA-PERCHA TISSUE IN SURGERY

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Having observed that the men in general practice with whom I come in contact are for the most part unfamiliar with the use of gutta-percha tissue in surgery, I felt that it might be worth while to call attention to this agent.

This unfamiliarity is explained by the fact that practically nothing is said about gutta-percha tissue in textbooks of surgery, and that past and current medical literature presents the same dearth of information on the subject.

In order that the experience of others might be included in this presentation, inquiries as to its uses were sent to a number of men prominent in surgical

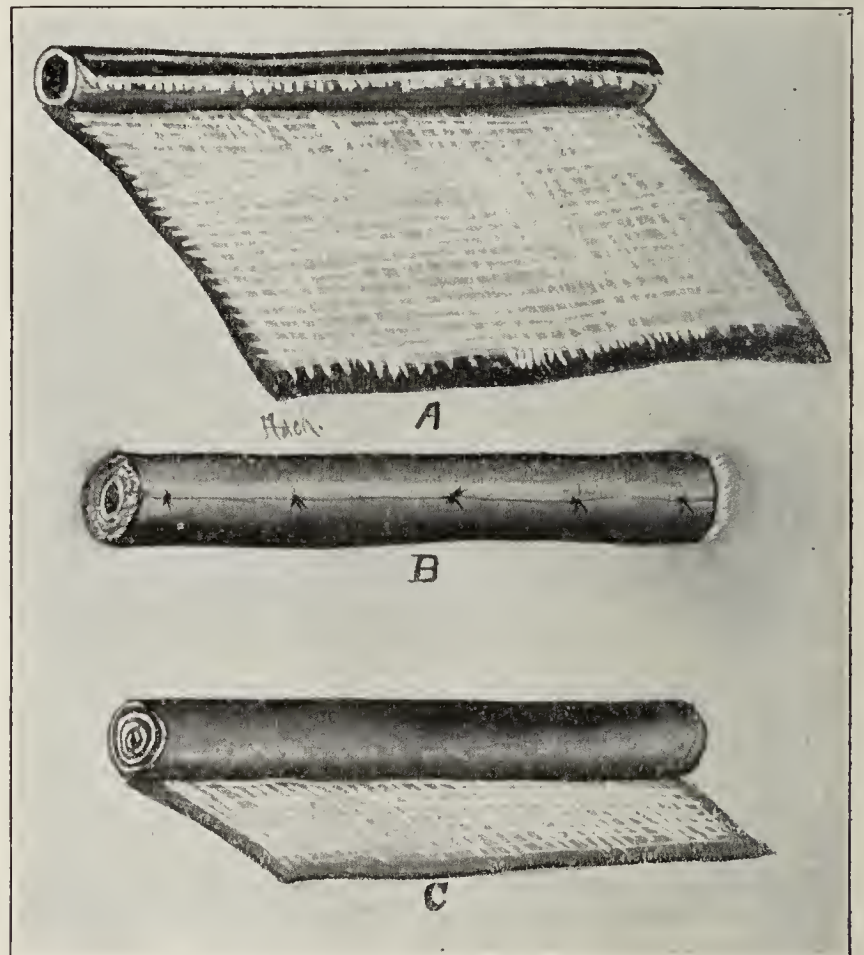


Fig. 1.—A, method of wrapping rubber tube with gutta-percha tissue and gauze; B, same completed for gall-bladder drain, showing interrupted catgut sutures; C, simple laminated drain gutta-percha tissue and gauze.

work, in the United States, Canada and England. Forty-nine replied. Of this number, twenty-six make use of it in various ways and find it satisfactory. One considers it inferior to oiled silk because of its impervious quality. One believes it insanitary because it cannot be boiled. Four employ it only for cigarette drains. Sixteen, or one-third of those replying, state that they have had no experience with it and can give no information concerning its uses.

In the few instances in which mention is made of gutta-percha, it is spoken of as rubber tissue, which is misleading to many, as gutta-percha and rubber are substances of different nature and possess entirely different qualities.

Gutta-percha is unique, in that it is available for more uses than any other one material required by the surgeon for the repair and preservation of body tissue. If the direction of the fibers be followed, gutta-percha tissue will tear in a straight line without the use of scissors.

To wash gutta-percha tissue, hot water must not be used.

It is a well-established principle in surgery that repair of tissue is fostered by protective agents, in proportion as such agents are free from chemical or traumatic influences. Of the several articles available for drainage and protection of adjacent structures, gutta-percha

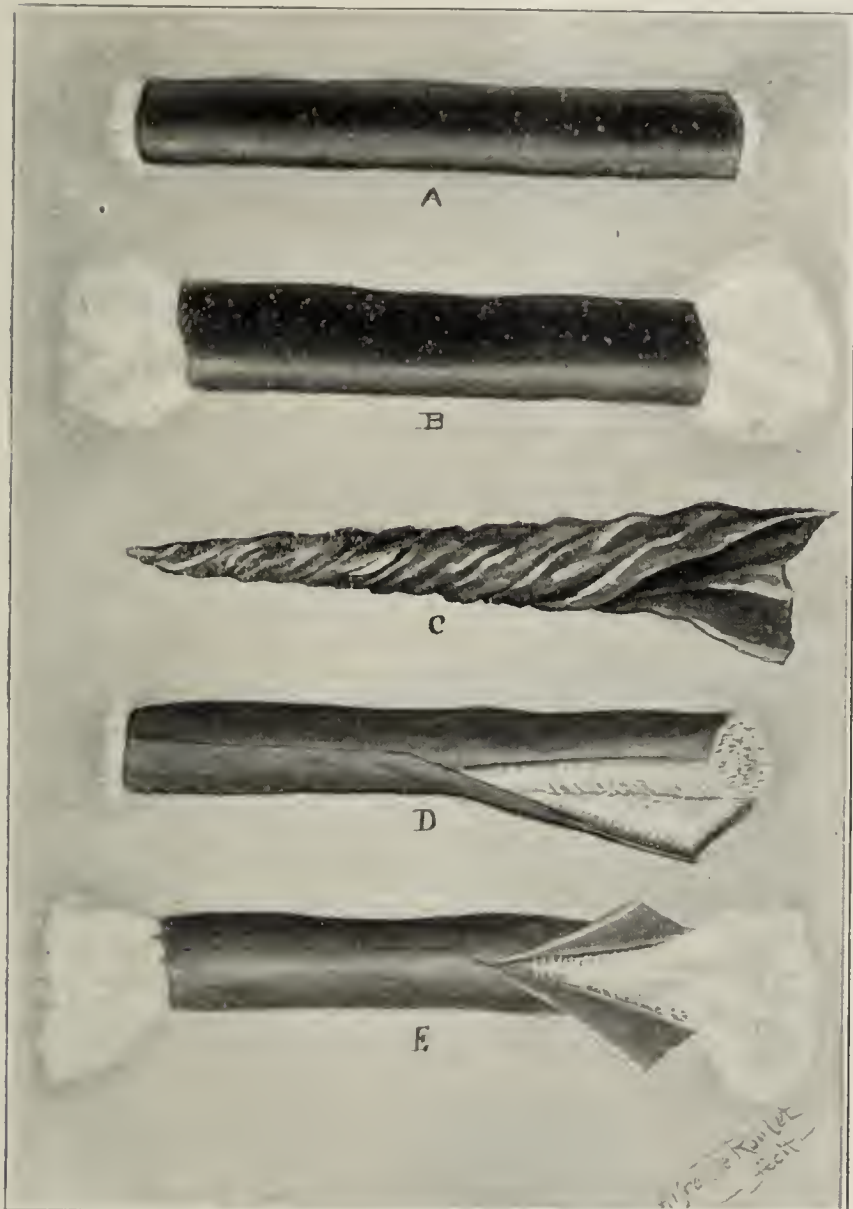


Fig. 2.—A, simple cigarette drain; B, simple cigarette drain, gauze projecting, used for tampon and drain; C, gutta-percha tissue spiral drain; D, simple cigarette partly opened, showing structure of A; E, partly opened showing structure of B.

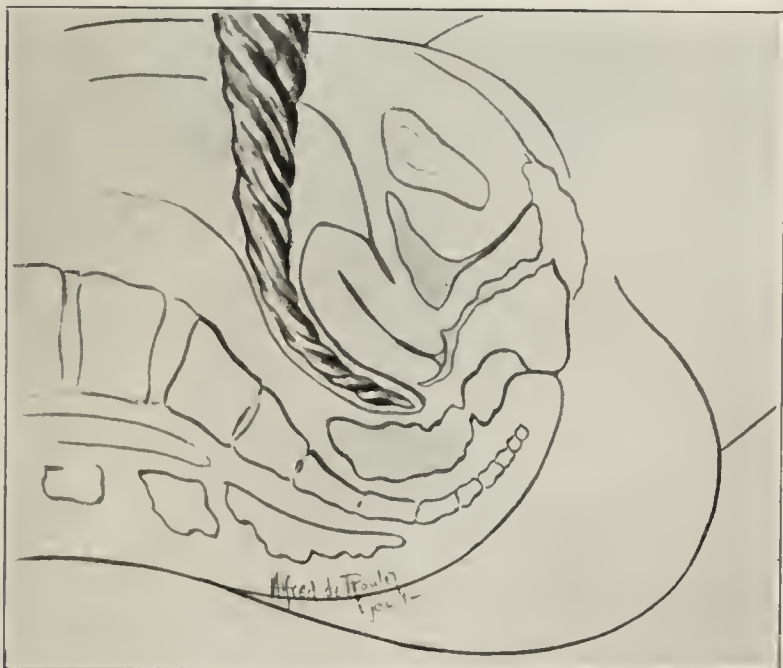


Fig. 3.—Gutta-percha tissue spiral as drain in pouch of Douglas.

tissue, because of its possession of these properties, is a valuable aid in surgical work. The non-irritating qualities of gutta-percha tissue attracted my attention, and induced me to use it in divers ways, that after a wide

experience, have convinced me of its utility in many fields, of its value to the surgeon and the assurance of desired results.

Gutta-percha is a vegetable product, derived from the inner bark and leaves of a tree that was formerly supposed to be limited in its distribution to a territory extending from 92 to 119 degrees east longitude, and from 6 north to 6 south latitude. In 1903 the United States government commissioned Dr. L. Sherman Pennoyer, Jr., to make some investigations regarding

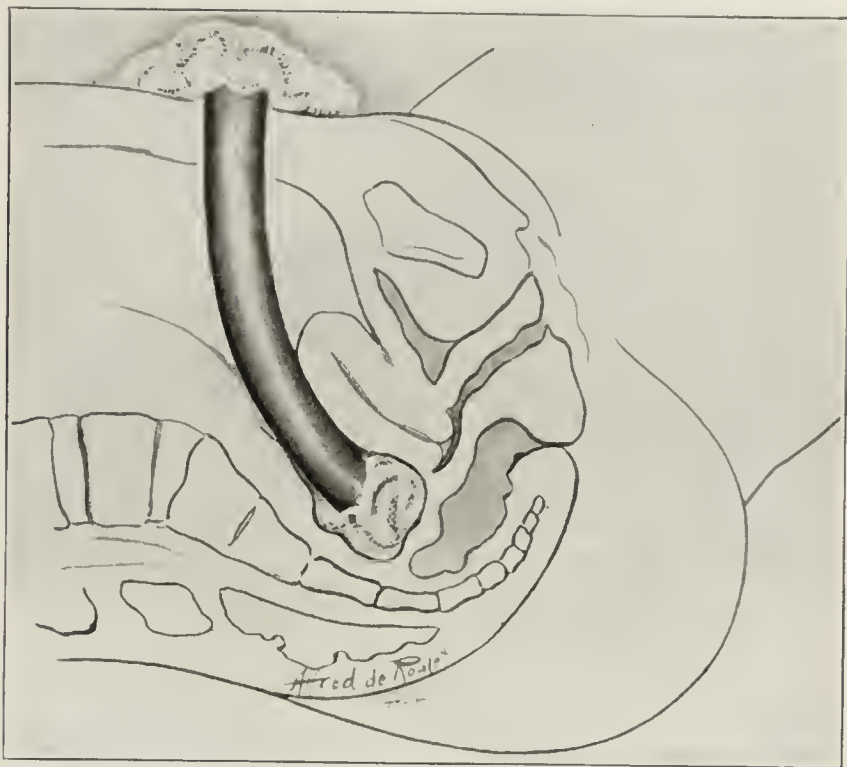


Fig. 4.—Cigarette drain made with gauze extension, in pouch of Douglas.



Fig. 5.—M, Mikulicz drain; G, gauze strips; GP, gutta-percha tissue spirals.

gutta-percha. Dr. Pennoyer learned that gutta-percha was found also in the Philippines, Celebes, Java and the northern half of the Malay Peninsula.

A great deal of confusion and financial loss has occurred in commerce because of the mistake of considering gutta-percha and rubber identical substances. While there are points of similarity between them, the difference is such that they are not available for the same uses. Of the points of difference it may be noted that

the one is elastic, the other plastic; that rubber can be vulcanized, but gutta percha is refractory to such treatment.

Gutta-percha was first brought to Europe in 1656 by John Tradescant, traveler, scientist and naturalist, who was head gardener to Charles I. Tradescant called it "mazer wood" and, although it attracted some attention

In 1832 there was stationed at Singapore, as English resident physician, Dr. William Montgomery, an observing man, who noticed that the natives used gutta-percha for whips and handles of tools. Discovering that immersion in hot water rendered it susceptible to being molded into different shapes which were retained on cooling, he



Fig. 6.—Plan of moist or dry occlusive dressing; ends open, showing arrangement.



Fig. 8.—Gutta-percha tissue strips used for protecting Thiersch grafts, one strip turned back to show graft.



Fig. 9.—Perforated gutta-percha tissue for protection of surface, after removal of Thiersch grafts for burns and denuded surfaces.

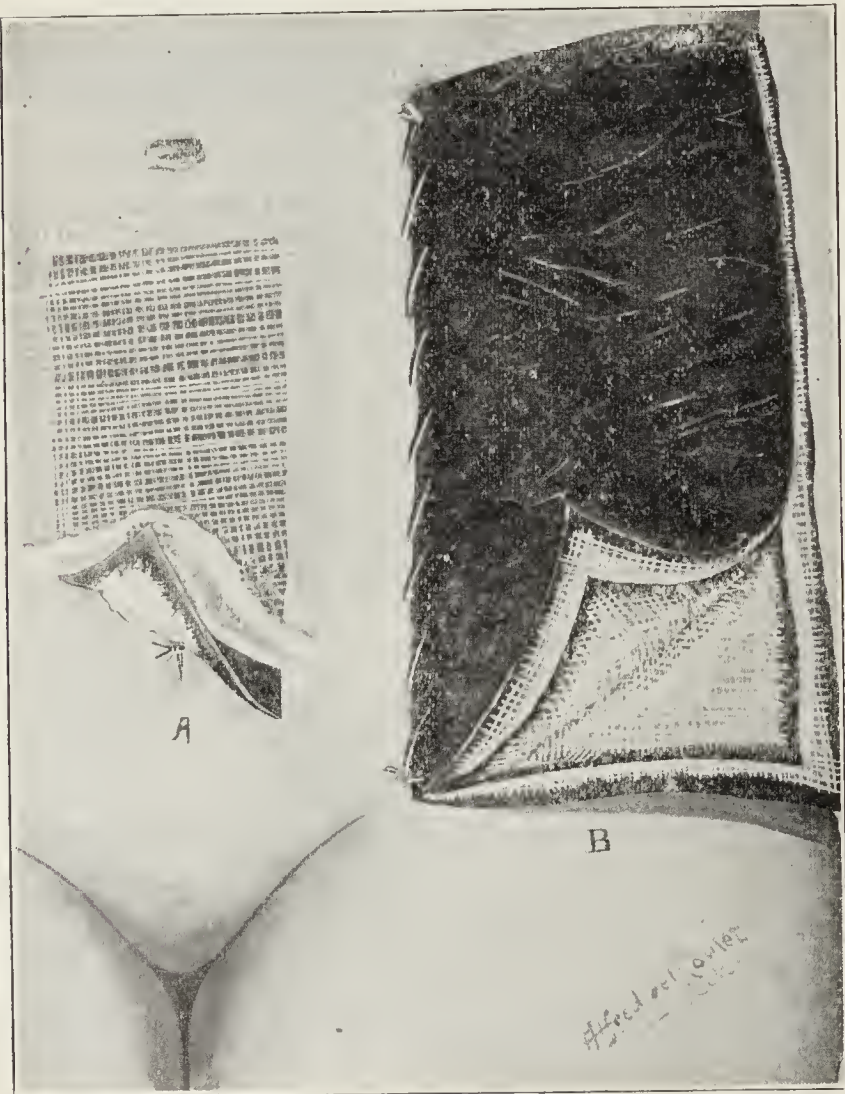


Fig. 7.—A, cotton, gutta-percha tissue and gauze, sealed with collodion, to protect abdominal incision; B, pad for isolating infected wound.



Fig. 10.—Gutta-percha tissue used for pattern in plastic surgery.

as a curiosity, it was not considered an article of practical value.

Almost two hundred years elapsed before gutta-percha was again brought to the notice of western civilization, when it was given a prominence that was not sustained by subsequent experience.

conceived the idea of making surgical appliances that might take the place of those made of caoutchouc, which tended to become soft and useless in the warm climate of Singapore. In 1843 Dr. Montgomery reported the results of his experiments with gutta-percha to the Medi-

cal Board of Calcutta, sending three bongies which he had made by rolling the warm gutta-percha on the table with his hands.

That Dr. Montgomery was a prudent man is evidenced by a portion of his letter to the Calcutta board, in which he says: "I have not been able to get the flowers or fruit of the tree producing this gutta; the situation from whence the specimens I have obtained were produced is about six miles from the town of Singapore, at a place much infested by tigers, and to which it is necessary to proceed on foot. So it would be a venture of some risk to proceed to the spot on foot." With seemingly no idea of being humorous, the doctor continues that he has offered a reward which he hopes will tempt some one to face the tigers. A similar report was sent to London, and Montgomery was awarded a gold medal by the Royal Society of Arts for his contribution to science.

The tree attains a height of one hundred feet, and from the point of view of the natives was of not much value until it had reached an age of thirty years. Their method of collecting the gutta-percha was an extremely extravagant one and threatened the extinction of the species. The native method was to fell the tree, quickly cut away the branches, and make a series of lateral excavations in the uppermost surface of the fallen trunk, into which seeped the milky exudate, which, when it had hardened, was scraped out and carried to the market. Both the English and Dutch governments enacted laws that aimed to stop so wasteful a method, but it was not possible to exercise much control over the native population, so that as a result of their primitive methods some of the varieties became almost extinct.

A method of incising the bark of the standing tree was finally devised, which proved successful, and did not injure the tree. Later it was found that the leaves were profitably productive when properly treated. It remained for the United States Commission, under the supervision of Dr. Pennoyer, however, to devise a method of recovering the gutta-percha by means of hot gasoline, which has proven a success.

At the time of Dr. Montgomery's introduction of gutta-percha, efforts were being made to find something that would be of sufficient protection to submarine cables to render them practicable for prolonged use. In 1847 Werner von Siemens, a German, experimented with gutta-percha and found it to be the much-sought-for substance, water and the high pressure of the deep sea improving its insulating and lasting qualities.

In 1846 Alexander Cabriol took out several patents on articles made of gutta-percha for surgical uses. In 1849 a committee composed of Chevalier, Poiseuille and Robert presented a report on gutta-percha surgical instruments to the Academy of Medicine, Paris. Here we find the first mention of gutta-percha tissue, which was termed "laminated sheets," in which Cabriol had ingeniously incorporated various metallic powders. The committee called attention to the resistance offered by gutta-percha to chemical agents, and the fact of its not being affected by prolonged contact with irritant or putrescent liquids of the human body, such as urine, fecal matter, vaginal discharges, etc.

In 1856 Dr. A. Manoury,¹ surgeon to the Chartres Hospital, published an article explaining the use of plates of gutta-percha, 1 mm. thick, incorporated with iron filings, which he used for covering old ulcers, dis-

charging wounds and sores of the sacral regions in heavy fevers.

In 1872 Dr. A. Cousin² reports a new method of making occlusive dressings. "A surface of the skin being required to recover, I cut a piece of gutta-percha leaf, of a size double or treble this surface; the edge of this is wetted for 1 or 2 cm. with chloroform and is applied immediately to the skin; adherence is made with great energy at all the points touched by chloroform, and with such perfection that the least irregularities on the skin are molded with remarkable fidelity in the thickness of the impermeable stuff. The gutta-percha is reduced by lamination into leaves as thin as waxed silk."

Gutta-percha was used extensively for splints, and many papers describing its uses were written by European and American surgeons. One of the most interesting papers I found was read by Carey of Dayton, Ohio, before the Montgomery County Medical Society in 1851. As a splint material it was superseded by plaster of Paris and other appliances, and with this change its mention in medical writings almost entirely disappeared.

Gutta-percha tissue possesses certain advantages over oiled silk, in that it is free from odor, is more pliable and is not disintegrated by body temperature and moisture. The point made by one surgeon, that in case of a suppurating wound it confines the purulent exudate too closely to the dressing, is untenable, as saturation of a dressing terminates its usefulness and indicates a change. This means more work for the caretaker, but likewise means better surgery. Replying to the statement that it is insanitary because it cannot be boiled, it will be shown that gutta-percha tissue can be simply and readily sterilized.

One of the most common uses to which gutta-percha tissue lends itself is in the application of both the dry and moist occlusive dressing.

When it was understood that a poultice possessed no drawing powers other than capillary attraction, there remained no excuse for its employment, if a substitute could be found that would combine its heat-and-moisture-retaining qualities. Because of its impermeability to water and its poor heat-conducting property, this tissue, placed over hot moist gauze, makes complete the clean and simple substitute for the troublesome poultice.

The dry occlusive dressing, consisting of gutta-percha tissue applied over either dry cotton or gauze, possesses to a slighter degree the same properties as the moist occlusive dressing.

In dealing with an arthritis or a cellulitis, which is free from pus, hot or cold moist gauze is applied and covered with gutta-percha tissue. Over this one or more layers of cotton, and, for keeping in place, a soft or hard roller. This constitutes a moist occlusive dressing, which also is an admirable application for a suppurating wound. The pus is confined to the gauze beneath the gutta-percha tissue: the outer dressings and bandages are kept dry and clean; infectious material is not distributed broadcast over the bedding and patient's body and gown.

With this dressing we obtain the benefit of heat and enough moisture to keep the parts pliable and encourage the blood-vessels and lymph-vessels to perform their function of carrying phagocytes to, and the dead cells and bacteria away from, the injured tissues.

1. Manoury, A.: *Bull. Gen. de therap.*, 1856, xxx, 29-32.

2. Cousin, A.: *Bull. gén de therap.*, 1872, xxvii.

In dressing a digit, the dressing with its gutta-percha covering is best secured by wrapping about it either the surgeon's tape, which is not loosened by water, or adhesive plaster, which must be kept dry.

In plastic operations, when transferring large grafts, gutta-percha tissue makes an excellent pattern. It is sterile, retains its shape and is sufficiently pliable to adapt itself to the surface where the incision is to be made.

For the protection of the incision of an operation for hernia, which is liable to be soiled by urine, the line of incision is first covered by a very thin layer of cotton, the fibers of which have been teased apart to reduce its thickness. A sheet of gutta-percha is now applied, and over this is placed a strip of gauze which should extend half an inch to an inch beyond the borders of the gutta-percha covering. The dressing is then sealed with collodion. In male patients the distal end of the gauze is divided, the divided ends carried around the penis and sealed with collodion to the scrotum.

For skin grafts, the gutta-percha tissue is cut into narrow strips and applied directly to the newly grafted surface. The strips are made of sufficient length to extend a short distance over the healthy skin, which is first given a coating of sterile zinc salve. No medication is applied to the grafts. The grafted surface is then covered with dry gauze or with gauze wrung out of a normal salt solution at a temperature of 100 degrees F. The gauze dressing is removed daily and any exudate which appears between the strips of gutta-percha is carefully wiped away with camel hair brushes dipped in sterile normal salt solution. The denuded surface on the thigh, from which the grafts were obtained, is coated with sterile zinc salve and covered with a perforated sheet of gutta-percha tissue, over which dry gauze is applied.

The perforations of the gutta-percha may be made by folding the sheet in the manner of an accordion pleat and cutting out small sections with a scissors. Or the integrity of the sheet may be better preserved by making the perforations with an ordinary harness-maker's punch.

When it is desired to isolate an infected area, it can readily and effectually be done by making a pad of alternate layers of gutta-percha tissue and gauze which is placed over the infected area and stitched to the surrounding healthy skin.

This plan is applicable in case of fecal fistula, where an anastomosis for its cure is to be performed. The line of the new incision is protected in the manner described for hernia.

Because of the trauma inflicted by rubber tubing, which of necessity remains for a protracted period in a wound, it would seem advisable to substitute gutta-percha. This substitute is made by folding one or more sheets of gutta-percha tissue, which is made into a spiral by twisting. This form of drain is easily made to follow even a sinuous tract, and can be removed and a fresh one inserted without distress to the patient, and without in any way injuring the budding cells.

For draining the gall-bladder, the ordinary rubber tube, without being perforated, is wrapped, by placing a single layer of gauze over a sheet of gutta-percha, and taking three or four turns about the tube. This covering should not extend quite to the end of the portion of the tube that is placed within the gall-bladder, as there might be a possibility of its slipping and thus obstructing the lumen of the tube. The Mikulicz drain may be modified and its value enhanced by introducing with the

packing a number of cigarette drains. Its pressure qualities are thereby better preserved and its drainage qualities augmented.

In other cases the gutta-percha tissue spiral may with advantage be introduced into the sack of the Mikulicz drain. Where there has been a denudation requiring the use of the tampon the cigarette drain with the gauze extending beyond the gutta-percha covering may be used with advantage. These modifications of the Mikulicz drain facilitates its removal, adds to the comfort and hastens the recovery of the patient.

As a covering for burns, ulcers or granulating surfaces, perforated gutta-percha tissue protects the abraded surface and permits the escape of any exudate that may be present.

That gutta-percha tissue may with perfect safety be left permanently within the body was demonstrated by Abbe, who, in 1903, reported the successful use of gutta-percha tissue in an operation for the removal of the Gasserian ganglion, which he had performed fifteen years previously. Abbe has used it on the surface of the brain, between the dura and skull and between the skull and scalp. In all of these positions he found that it retained its shape and gave rise to no untoward symptoms.

In cases in which the moist blood-clot of Schede is employed I substitute gutta-percha tissue for the oiled silk recommended by him.

The above is far from being a complete list of the uses of gutta-percha tissue. It finds a place in any surgical procedure in which drainage is required.

In 1899, after reading an article by Richardson,³ describing the sterilization of rubber gloves with formaldehyd gas, it occurred to me that gutta-percha tissue could be sterilized in the same manner. The experiments were carried out in the laboratory of the German Hospital. Those experiments showed that gutta-percha tissue could be sterilized in two hours with the fumes of formaldehyd.

Dr. S. Strouse, assistant pathologist to the Michael Reese Hospital, under the supervision of Dr. J. W. Jobling, has kindly carried out, at that institution, the following experiments with gutta-percha tissue, which was taken from an original package bought in the open market.

Small pieces, about 1 cm., were cut under aseptic conditions from various parts of the tissue and suspended in sterile broth at 37.5 C. for twenty-four hours. Only one piece showed no growth. One gave a pure culture of *Micrococcus pyogenes aureus* and others gave a culture of a long spore-bearing bacillus.

Pieces of the same size were next suspended in antiseptic solutions as follows:

1. Bichlorid of mercury.....	1 to 1000	
2. Bichlorid of mercury	1 to 2000	
3. Phenol	1 to 20	—(5 %)
4. Phenol	1 to 40	—(2.5 %)
5. Liquor cresolis compositus.....	1 to 50	—(2 %)
6. Liquor cresolis compositus	1 to 100	—(1 %)
7. Alcohol	95 %	
8. Alcohol	47 %	

They were allowed to stand in closed sterile dishes at room temperature for twenty-four hours, then removed with sterile forceps, washed thoroughly in sterile distilled water and transferred to tubes of bouillon, in which they were incubated at 37.5 C. for twenty-four hours. Tubes 3 (phenol 5 per cent.) and 7 (alcohol 95 per cent.) showed growths of an organism similar to the

3. Richardson: New York Med. Jour., June 24, 1899.

one found in the original gutta-percha package. The other tubes were sterile. Pieces were also taken from other parts of the gutta-percha package and suspended in a broth culture of *Micrococcus pyogenes aureus* for forty-eight hours and then allowed to remain for twenty-four hours at room temperature in the antiseptic solution as given above.

After washing in sterile water the pieces were transferred to bouillon and incubated for twenty-four hours at 37.5 C. In this experiment, which was repeated with very small pieces (3 by 2 mm.), no growth resulted in any case.

The same experiments were then undertaken with an actively growing pure culture of *B. subtilis* in bouillon. The effects of the disinfectant after twenty-four hours showed striking contrasts. Both solutions of bichlorid of mercury effectually killed the organism; but in no other case were the other solutions efficacious.

Phenol, 2.5 per cent., allowed more growth than 5 per cent. liquor cresolis compositus, 1 per cent. allowed more growth than 2 per cent. alcohol, 95 per cent. allowed more growth than 47 per cent. The experiment was repeated, allowing the gutta-percha soaked in the bacterial growth to remain in the antiseptics forty hours, but the results were the same as for twenty-four hours.

The physical properties of gutta-percha roughly tested by inspection and behavior on manipulation seemed unchanged by any of the solutions employed.

CONCLUSIONS

1. The sample of gutta-percha tissue tested cannot be considered sterile.

2. Immersion of gutta-percha tissue in bichlorid of mercury 1 to 1000 or 1 to 2000 for twenty-four hours effectually sterilizes it and does not seem to otherwise affect the tissue.

I wish to thank my assistant, Dr. Emmet Keating, for helping me to prepare this paper.

100 State Street.

VACCINATION AND ITS RELATION TO ANIMAL EXPERIMENTATION *

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VACCINATION

In writing on the increase of our knowledge of vaccination and smallpox in its relation to animal experimentation and research, it will be desirable to preface the same by a discussion of the efficacy of vaccination as a prophylactic measure against smallpox.

In order to appreciate the importance of Jenner's discovery of vaccination, it is necessary to comprehend how extensive and fatal was smallpox in the prevaccination period.

It has been estimated that the population of London in 1685 was 530,000; in 1750 it was approximately 653,900; in 1801 it was determined by census to be 746,233.

The mortality from smallpox in London for an average of ten years, from 1681 to 1690, was over 3 per thousand of population (3,000 per 1,000,000); in the

seventeenth and eighteenth centuries it frequently rose to 4.5 or more per thousand.

In the 54 years from 1647 to 1700, there was an average mortality from smallpox in London of 1,079 per year. The average yearly deaths by smallpox in the eighteenth century were 1,958. As it has been computed that about one in five died, it would appear that there were on an average over 5,000 cases of smallpox annually in the English capital in the seventeenth century, and almost 10,000 cases a year in the eighteenth century.

As will be readily comprehended, smallpox was a great scourge before the days of vaccination; but a small percentage of people escaped its ravages. It is asserted by contemporaneous writers that in the eighteenth century from 85 to 95 per cent. of the inhabitants of European countries suffered at one time or another from the smallpox.

Indeed, smallpox was as prevalent in the eighteenth century as measles is at the present time. Haygarth gives an account of an epidemic of smallpox in Chester, England, in 1744, at which time, out of a population of 14,713, 1,202 persons took the disease and 202 died. At the termination of the epidemic there were but 1,060 persons, or 7 per cent. of the population who had never had smallpox.

In 1722 smallpox devastated the small English town of Ware, whose population numbered 2,515 souls; of this number, there were only 914 persons susceptible to smallpox, inasmuch as 1,601 had already passed through an attack of the disease. During the epidemic referred to, 612 persons were attacked, leaving but 302 individuals in the entire town who had never had smallpox. Eighty-five per cent. of the population, therefore, were smallpox survivors.

With these official figures in mind, we may be better able to appreciate the general estimate of the extent of smallpox given by writers of the day. In 1802 Admiral Berkeley, in a speech before the House of Commons, said:

It is proved that in this United Kingdom alone 45,000 persons die annually of the smallpox; but throughout the world what is it? Not a second is struck by the hand of Time but a victim is sacrificed upon the altar of that most horrible of all disorders, the smallpox.

King Frederick William III. of Prussia, in a dispatch, dated Oct. 31, 1803, stated that 40,000 people succumbed annually to smallpox in his kingdom.

The French physician, De la Condamine,¹ stated that "every tenth death was due to smallpox, and that one-fourth of mankind was either killed by it or crippled or disfigured for life."

Juncker, professor of medicine in Halle in 1796-98, gathered statistics² indicating that 65,220 persons died of smallpox in the German-speaking countries in 1796.

Sarcone³ estimated the number of persons in Italy who suffered from smallpox as nine-tenths of the population. He states that in Rome in 1754 smallpox destroyed more than 6,000 lives.

Smallpox was introduced into the western hemisphere by the Spaniards about fifteen years after the discovery of America; in Mexico within a short period 3,500,000 persons are said to have died of the disease.⁴

* This article is here considerably abbreviated. The complete article is one of a series of pamphlets issued by the Council on Defense of Medical Research of the American Medical Association for circulation among the public. Twelve of these pamphlets are now ready, taking up the relations to animal experimentation to ethies, diagnosis, cancer, vaccination, the live stock industry, tuberculosis, typhoid, dysentery, rabies, surgery, internal secretions, protozoan tropical diseases, etc.

1. De la Condamine: Mémoire sur l'inoculation de la petite vérole, 1754.

2. Kübler: Geschichte der Pocken und der Impfung, 1901, p. 99.

3. Sarcone: Childpox, etc., translated from the Italian into German by Lentin, Goettingen, 1782.

4. Chapman: Eruptive Fevers, etc., 1844, quoting Robertson's History of the Discovery of America.

It is alleged that in Mexico smallpox has exterminated whole tribes of Indians, sparing no one to tell the story of the annihilation.

Robertson refers to smallpox among the South American Indians as follows:⁵

In consequence of this [various calamities], together with the introduction of the smallpox, a malady unknown in America, and extremely fatal to the natives, the number of the people both in New Spain and Peru was so much reduced that in a few years the accounts of their ancient population appeared almost incredible.

Catlin⁶ states that, of 12,000,000 American Indians, 6,000,000 fell victims to smallpox.

Washington Irving's "Astoria" makes mention of terrible epidemics of smallpox among the Indians in which "almost entire tribes were destroyed."

Lloyd, who translated Prince Maximilian's "Travels in the Interior of North America," states in the preface, in reference to a smallpox epidemic among the Indians in 1837:

The Big-Bellied Indians and the Ricarecs, lately amounting to 4,000 souls, were reduced to less than the half. The Assiniboin, 9,000 in number . . . are, in the literal sense of the expression, nearly exterminated.⁷

According to records published by the government of Denmark, a devastating epidemic of smallpox appeared in Iceland in 1707 which destroyed 18,000 out of the 50,000 inhabitants; 36 per cent. of the total population perished. It is stated on good authority that in the Danish colony of Greenland, in 1734, 6,000 to 7,000 persons perished from smallpox, representing nearly two-thirds of the population. The disease was introduced by a Danish ship.

The natives of New England likewise suffered great losses by smallpox. Robertson writes:

At the same time, about 1631, the smallpox, a distemper fatal to the people of the New World, swept such multitudes of the natives that some whole tribes disappeared.

In 1752 Boston had a severe epidemic of this dread disease. The population of Boston at that time was 15,684; of this number, 5,998 had previously had smallpox. During the epidemic 5,545 persons contracted the disease in the usual manner, and 2,124 took it by inoculation. Eighteen hundred and forty-three people escaped from the town to avoid the danger of infection.⁸ There were, therefore, left in the city but 174 people who had never had smallpox. The population at the end of the epidemic practically consisted of persons who had survived an attack of this fear-inspiring malady.

CHANGE IN THE AGE INCIDENCE OF SMALLPOX

Smallpox was essentially a disease of children in former times: to such an extent was this true that the disease was called *Kindspocken* (childpox, or *Kindsblattern*). Owing to the pronounced contagiousness of the disease and the almost universal susceptibility to it, smallpox was largely contracted during child life, as measles is at the present time. But comparatively few adults contract measles at the present day because they are protected by a previous attack in infancy or childhood. The same conditions obtained with relation to smallpox in the days before vaccination. The adult

population represented mostly the survivors from smallpox in childhood. It was estimated that only about 5 per cent. of persons were naturally insusceptible to the disease. Vaccination has totally changed the age period of smallpox. It is now excessively rare for a successfully vaccinated child under five years of age to die of the smallpox; it is even uncommon for a successfully vaccinated child under ten years of age to die of the disease, as was adequately proved in the testimony presented before the British Royal Commission on Vaccination.

DECLINE OF SMALLPOX AFTER THE INTRODUCTION OF VACCINATION

In most of the countries of western Europe there was noted about the beginning of the nineteenth century a sudden and pronounced decrease in the morbidity and mortality of smallpox. Inasmuch as this was coincident with the diffusion of the practice of vaccination, there is strong reason to regard Jenner's epoch-making discovery as the causative influence. The careful records of smallpox mortality which were kept in various countries, particularly in Sweden and England, make it possible to prove by documentary evidence that a marvelous decrease in the deaths from smallpox occurred within a short period after the introduction of vaccination. In the twenty-eight years before vaccination in Sweden there died each year from smallpox out of each 1,000,000 of population 2,050 persons; during the forty years following vaccination, out of each 1,000,000 of population the smallpox deaths annually averaged 158.

During the seven years preceding the introduction of vaccination in Prague, smallpox caused one-twelfth of the total number of deaths; during the twenty years following the introduction of vaccination, smallpox caused but one four-hundred-and-fifty-seventh of the total number of deaths.

ARGUMENT OF OPPONENTS OF VACCINATION

The opponents of vaccination—and they have been with us since the days of Jenner—admit the decline in smallpox referred to, but deny that the decrease was the result of vaccination. They declare it was due rather to the discontinuance of inoculation. This argument was carefully considered by the British Royal Commission on Vaccination.

Unfortunately for the contention of the opponents of vaccination, the increase in the prevalence of and mortality from smallpox during the eighteenth century was not coincident in point of time with the introduction and extent of employment of inoculation.

Inoculation was introduced into England in 1721, but comparatively few persons were inoculated before 1725. As is admitted by the two dissenting members of the Royal Commission on Vaccination, inoculation had no effect on the mortality from smallpox in the first quarter of the century (see page 354, Report of Dissentients, Sydenham Publication). Computation discloses the fact that from 1700 to 1725 the average yearly mortality from smallpox in London was 1,752. During the last quarter of the century, 1775 to 1800, when inoculation was much in vogue, the average yearly mortality was 1,817, an entirely insignificant increase. Indeed, relative to the population the smallpox deaths were actually less during the latter period.

It has been, furthermore, alleged by the opponents of vaccination that the decline in the prevalence of smallpox at or about the beginning of the nineteenth century was the result of improvement in sanitary conditions.

5. Robertson, William: History of the Discovery and Settlement of America, 1829, p. 348.

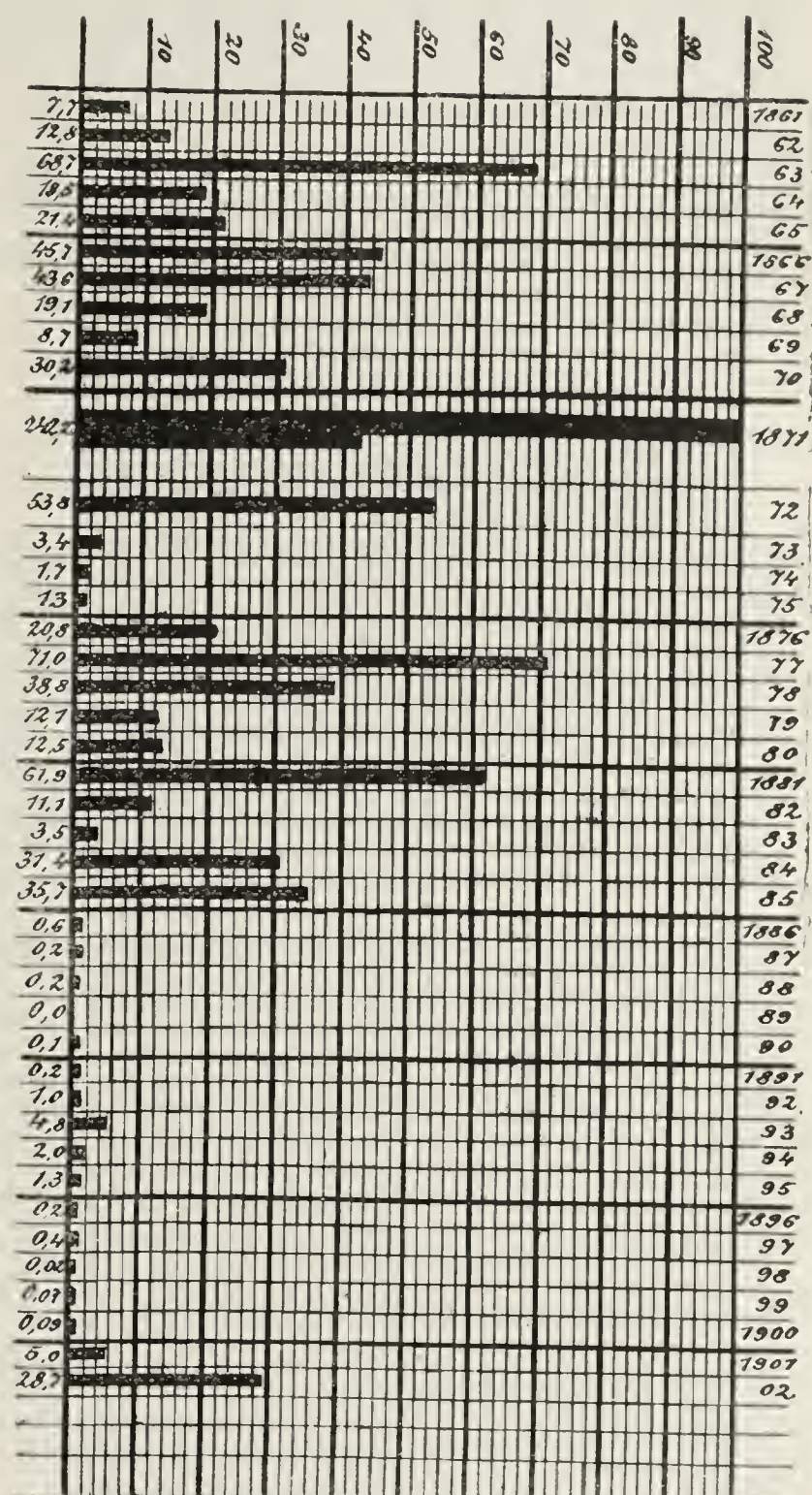
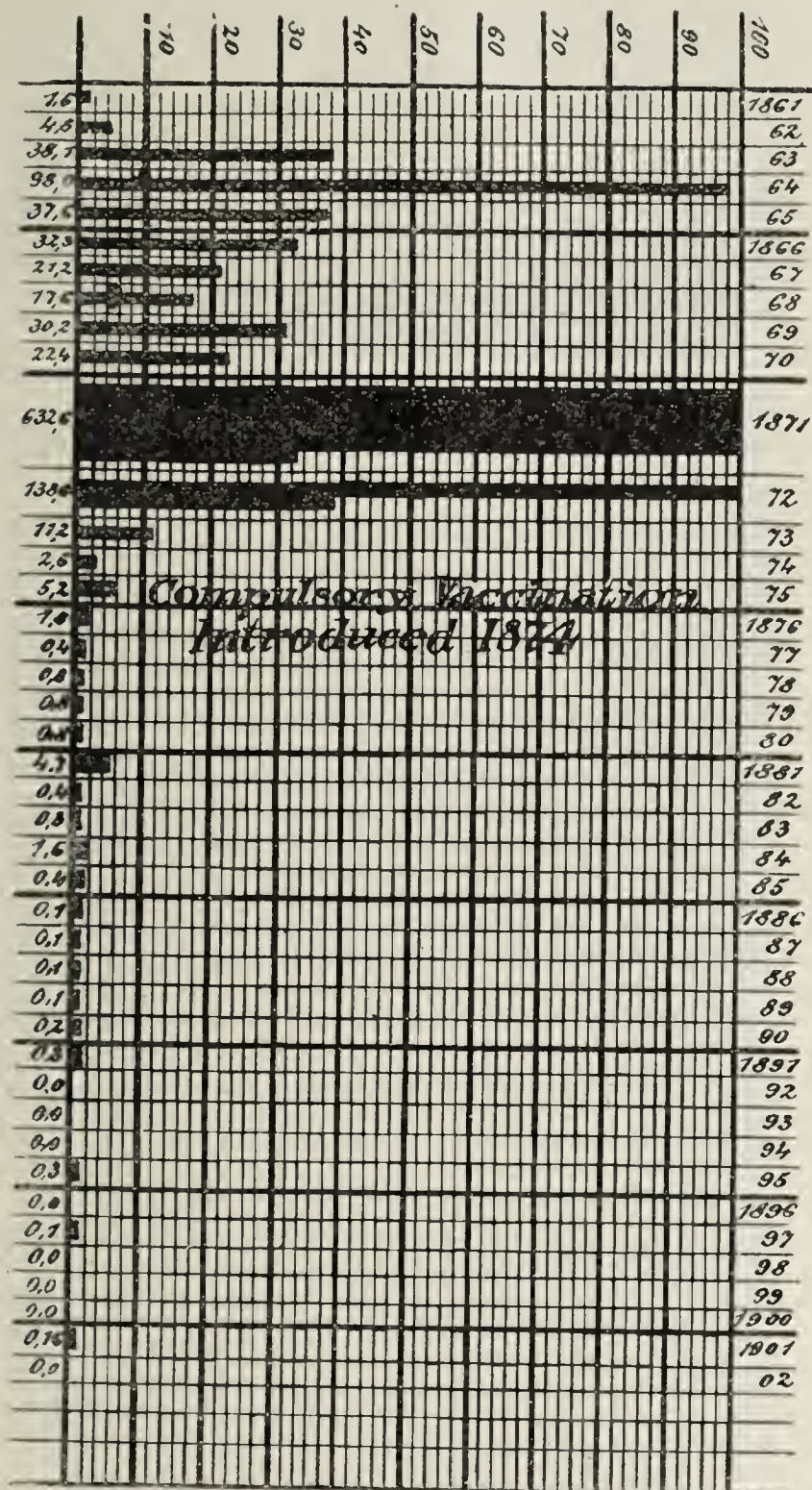
6. Catlin: Letters and Notes on the Manners, Customs and Conditions of the North American Indians, London, 1841.

7. Extracts from a paper prepared by Sir. John Simon in 1857, and presented by him before the Royal Commission on Vaccination in 1889, Appendix No. 1, p. 63.

8. Gentlemen's Magazine, 1753.

It may be conceded that such improvements as better drainage and sewerage, freer ventilation, purer water-supply, lessened crowding in dwellings, and the like, would, by improving the average individual health, tend to lessen the fatality of all infectious diseases, not excluding smallpox. But such influences are totally inadequate to explain the striking and progressive decline in the prevalence of and mortality from smallpox that followed the introduction of vaccination.

According to the Registrar-General's Report, during the same period in England that smallpox mortality has declined 72 per cent., the mortality from measles has fallen only 9 per cent. Furthermore, the death-rate from whooping-cough has declined but a little more than 1 per cent., and the diminution in the mortality of scarlet fever has become apparent only within comparatively recent years. Again the improvement in sanitation and mode of living has only caused a reduction of



BERLIN.—SMALLPOX MORTALITY PER 100,000 OF POPULATION.

LONDON.—SMALLPOX MORTALITY PER 100,000 OF POPULATION.

CHARTS 1 AND 2 (BERLIN AND LONDON).—Comparison of mortality from smallpox per 100,000 of population. Since 1874, Germany has a well-enforced compulsory vaccination and revaccination law, while England has merely compulsory vaccination in infancy not generally enforced.

(This chart and the others in this article are part of a series published by the German Government in 1904.)

If sanitary improvements were responsible for the lessened mortality from smallpox, why did they not similarly influence the mortality from measles, scarlet fever, and whooping-cough, which are favored by the same conditions that aid the dissemination of smallpox? Smallpox and measles resemble each other in the sense that the spread of both diseases is not dependent on any special sanitary defect. Unlike typhoid fever and cholera, their occurrence is influenced by personal infection rather than by any definite vices of sanitation.

the general death-rate of the country (England) of 9 per cent.

ISOLATION PROPOSED AS A SUBSTITUTE FOR VACCINATION

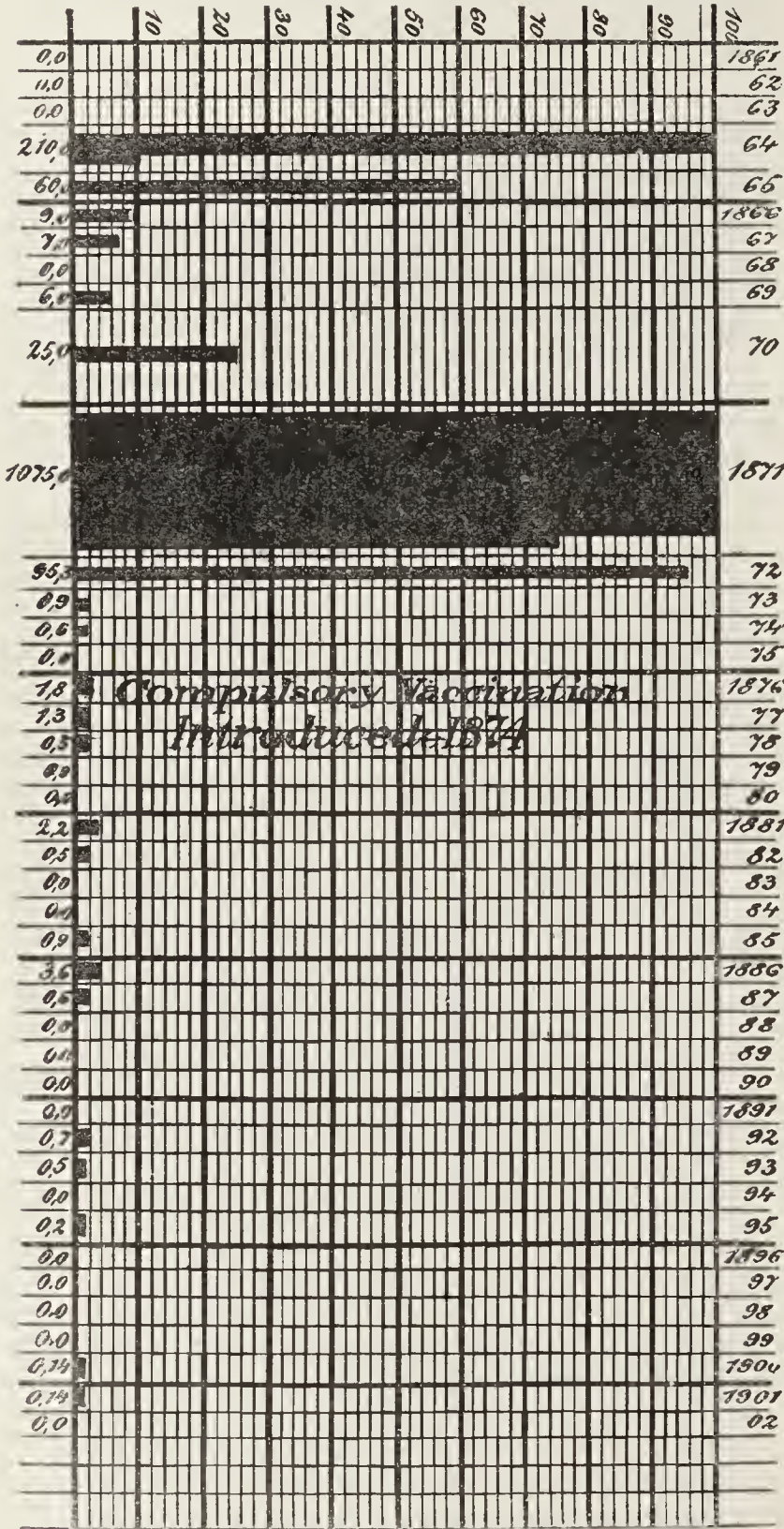
The isolation of smallpox patients and general sanitary measures are urged by the antivaccinationists as substitutes for vaccination. The isolation of patients suffering from transmissible diseases of any kind is recognized by all sanitarians as a most important procedure. But to disregard vaccination and rely on isola-

tion to combat an extensive epidemic of smallpox would be an act of folly which would not be long tolerated by any intelligent community.

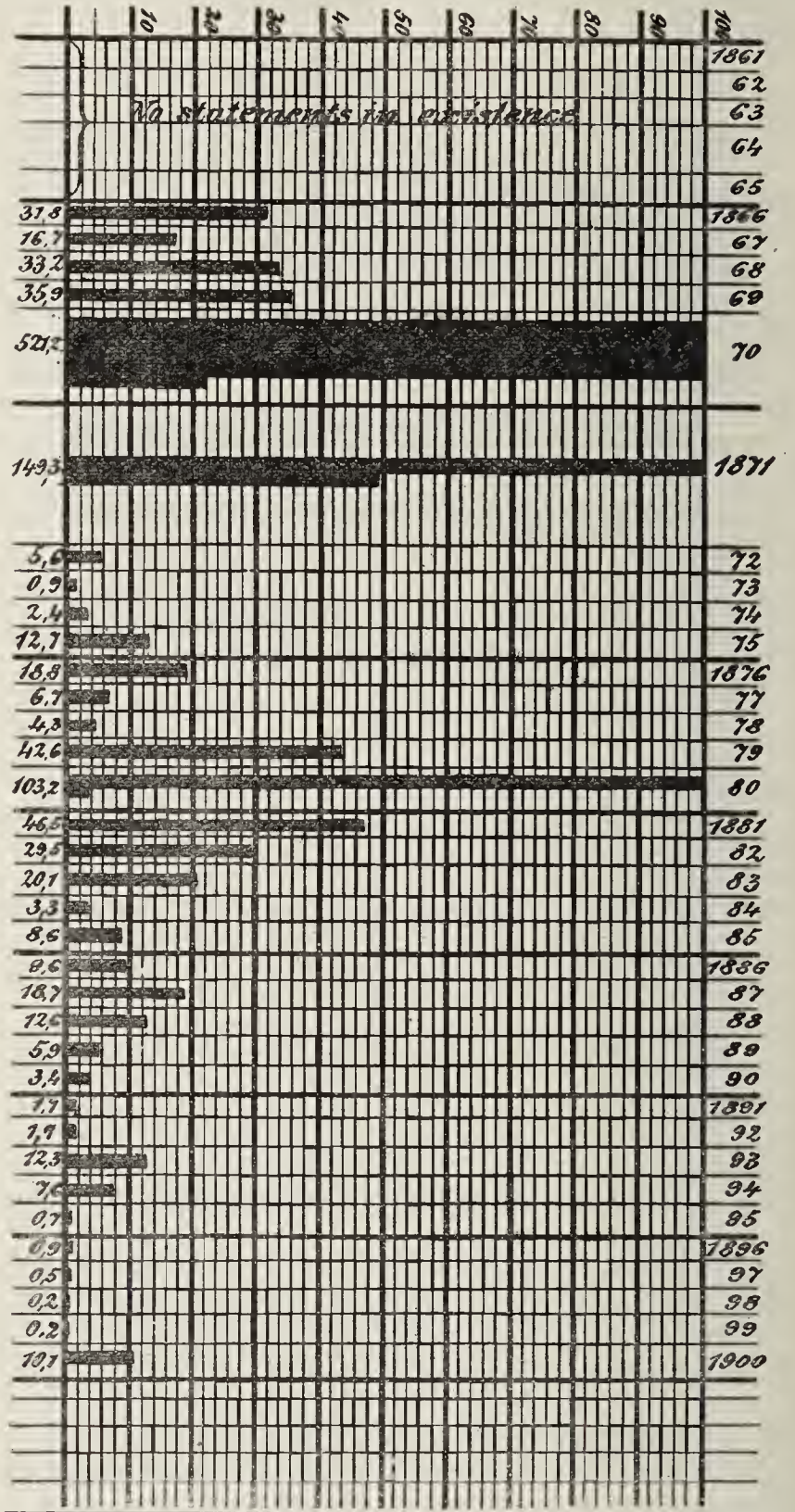
Anyone with practical knowledge of smallpox knows that smallpox is often not recognized until many persons have been exposed to infection. Mild cases of smallpox commonly escape detection while the patient is abroad in the community. Moreover, it is impossible to

SMALLPOX IN THE VACCINATED AND UNVACCINATED

It is not claimed at the present day that a single vaccination will invariably protect against smallpox for life. In the endeavor of the opponents of vaccination to prove that vaccination does not protect against smallpox, statistics are frequently cited to show that a large number of vaccinated persons contract the disease. This is



HAMBURG.—SMALLPOX MORTALITY PER 100,000 OF POPULATION.



PARIS.—SMALLPOX MORTALITY PER 100,000 OF POPULATION.

CHARTS 3 AND 4 (HAMBURG AND PARIS)—Comparison of mortality from smallpox per 100,000 of population. In Hamburg no compulsory vaccination before 1874; since then compulsory vaccination and revaccination. In Paris no compulsory vaccination.

diagnose smallpox before the eruption appears; during the several days preceding the outbreak of the eruption those persons in contact with the patient may receive the infection of the disease.

In regard to isolation, the Royal Commission on Vaccination says: "We can see nothing to warrant the conclusion that in this country vaccination might be safely abandoned and replaced by a system of isolation." The commission, of course, favored isolation as an auxiliary to vaccination.

an argument on which the antivaccinationists are prone to lay great stress. The argument, however, is specious and merely demonstrates that a single vaccination does not, as a rule, confer life-long protection against smallpox. If provision is not made for the renewal of protection by revaccination at a later period, the subjects are only in a measure secured against smallpox. England and other countries have had for many years a compulsory vaccination law, but it has had reference only to vaccination in infancy. It has resulted in an

enormous saving of child life, but it has failed to provide for the protection of adults after the vaccinal immunity has died out.

Germany is the only one of the great countries of the world that has had experience for a sufficient period of time with a compulsory vaccination and revaccination law properly enforced, and Germany has been for thirty-five years free of epidemics of smallpox, although the contiguous countries have suffered from epidemics of this disease.

THE CLAIMS FOR VACCINATION

It is easy to comprehend why a single vaccination may not be relied on for perpetual protection against smallpox. Smallpox itself is, in rare instances, followed by another attack later in life. Now if one attack of smallpox does not invariably protect against a second, how could we expect vaccination, which in reality represents a benign, non-contagious and attenuated smallpox, to accomplish this desired end?

1. *A successful vaccination protects the subject against smallpox for a period of time not mathematically determinable for the individual, but which averages seven to ten years.*

2. *The protection may be renewed by a second vaccination when the vaccinal immunity is exhausted. The revaccination restores the protection which lapse of time has diminished or abrogated.*

3. *Persons successfully vaccinated on two occasions are usually immune against smallpox for life.* There are exceptional instances, however, of unusually susceptible individuals in whom a third or fourth vaccination is required. These exceptions are comparable with those rare cases in which a person is susceptible to a second or third attack of smallpox.

4. *Persons vaccinated in infancy, who at some later period of life contract smallpox, have in the aggregate less severe and less frequently fatal attacks than unvaccinated persons.* The degree of favorable modification of the smallpox is in inverse proportion to the period of time elapsing between vaccination and the attack of smallpox. The statistics as to the mortality of smallpox in the vaccinated and the unvaccinated are later set forth.

5. *The beneficent effects of vaccination are most pronounced in those in whom the vaccine affection has run its most typical and perfect course, and who bear the best quality of vaccinal scars as attestation of the same.* The mere production of a "sore arm" does not necessarily imply that the individual has been successfully vaccinated.

THE RESULTS OF VACCINATION IN GERMANY

Since the law of 1874 went into effect in Germany there have been no epidemics of smallpox in that country. The smallpox is frequently introduced by foreigners, particularly on the frontier, but the disease can find no foothold. In 1899 there occurred in the German empire; among 54,000,000 people, only 28 deaths from smallpox; these occurred in twenty-one different districts, the largest number in any one district being three. Not a death from smallpox occurred in a large town.

In 1897 there were but five deaths from smallpox in the entire German empire (54,000,000 population).

Furthermore, for a period of thirteen years, in a population comprising two-fifths of the total inhabitants of Germany, there were only five instances of death from smallpox in successfully revaccinated persons.

Germany has taught the world how to utilize Jenner's great discovery so as to exterminate epidemics of smallpox.

The German Vaccination Committee of 1884, referring to the influence of the compulsory vaccination law, said:

The remarkable and persistent decline in Prussia since 1875 can be due only to the vaccination law of 1874, because all other conditions remain the same in the two other countries (i. e., Austria and Germany). The only difference is that in Prussia the revaccination of all school-children at the age of 12 years was made compulsory in 1874.

(To be continued)

DIPHTHERIA BACILLUS-CARRIERS IN THE PUBLIC SCHOOLS

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AND W. S. BLANCHARD, M.D.

Director, Assistant Director and Bacteriologists, respectively, of the
Bacteriological Laboratory of the Boston Board of Health

BOSTON

With the discovery of the bacillus of diphtheria by Klebs and Loeffler in 1883-4 came the hope that by the means of careful laboratory tests and strict quarantine regulations this disease might soon be banished from the civilized world. This hope has, as yet, however, to no great extent been realized. True, the disease has to a marked degree been freed from its terrors through the use of antitoxin, the discovery of which was first announced by Behring and Kitasato in 1890, but its incidence as a whole has not decreased; it still waxes and wanes outside of our control, still fills our hospital wards with little sufferers, and still presents one of the most serious of public health problems.

The reason for this condition of affairs is found in the study of two conditions; the first of which deals with the patient as to his relative immunity to the disease, and the second with the organism itself as to its degree of virulence.

A virulent organism plus a susceptible individual gives a type of disease readily recognizable. These are the cases to which the physicians are called and which very properly are surrounded with every safeguard to prevent infection of others.

We may also have a virulent organism plus an immune person; this combination, producing little or no distress in the person so infected, seems for that very reason of more danger to those with whom he comes in contact.

It is fair to suppose such a person might readily be the means of causing cases in widely separated parts of a city, considering the chances of infection in places of public congregation, street-car travel, etc.

The presence of virulent diphtheria bacilli in the throats and noses of such persons is one of the most probable reasons of our inability to stamp out the disease.

A non-virulent organism, whether carried by an immune or non-immune person, cannot be conceived to be the immediate cause of the disease diphtheria, although perhaps by long infection or through transmission from one person to another such an organism might acquire virulence and become a source of danger.

To conquer diphtheria, then, we must not only isolate those who have the disease, but—a much harder problem—those immune persons who are disseminating virulent

organisms, and perhaps even those with non-virulent organisms the virulence of which may become enhanced.

It has been proved¹ that about 1 per cent. of all well persons are carriers of typical diphtheria bacilli of the morphologic types ordinarily considered positive for diagnosis (i. e., Wesbrook's A, C and D).

It is, of course, impossible for us to consider isolating so large a number of people, even if our bacteriologic methods admitted the possibility of detecting them. It is probable that a large percentage of such carriers have non-virulent organisms, and our efforts should, if possible, be directed toward discovering carriers of virulent bacilli as more apt to be spreaders of the disease.

The persons most probable to be such carriers are such as have recently been in contact with those suffering from the disease, and it is a wise precaution to take cultures from such contacts as a safeguard to the public.

It has for many years been the policy of the Boston Board of Health, whenever there was an outbreak of diphtheria in a school or institution, to advise the taking of cultures from the noses and throats of all exposed persons, in order that not only those showing symptoms, but also those well persons (insusceptible or but slightly susceptible to the disease) who were bacillus-carriers might be removed from school, or in an institution isolated, if possible, from others.

This procedure has invariably been attended with marked success in clearing up such outbreaks. It has also been noticeable in several instances in institutions when the persons in charge have not taken such precautions, although urged to do so, that the eradication of diphtheria by the isolation of clinical cases only has been a well-nigh impossible task.

This experience is not confined to Boston alone; the value of such examinations is well known in public health circles, and Boston is but one among many places where they have been successfully applied. An entirely new procedure, however, was brought to the attention of the Boston Health Department when, acting on the suggestion of Dr. Richard C. Cabot, the school board suggested, under the advice of its committee of physicians, the taking of cultures at the beginning of the school year from all the pupils in the Brighton District, and the keeping from school of those found to be bacillus-carriers, as a possible means of eradicating the disease from the schools of the district.

Here it was suggested to take cultures not from persons exposed to the disease diphtheria, but from a large aggregation of supposedly normal individuals.

The estimated number of pupils in the Brighton District was about 4,500, and the laboratory promised to do the work in four days, together with the regular laboratory routine of about 100 daily examinations for diphtheria, tuberculosis, typhoid, and various miscellaneous tests. This, of course, meant long hours and close application, but for many reasons it seemed best to make these special examinations as quickly as possible. Since it had been well proved that not all carriers are obtained by a single round of cultures, it was also arranged to repeat the tests the following week.

The work had to be planned to the most minute details in order that it might be handled by the regular laboratory force. The Brighton District was divided into four sections, according to the location of the schools, and cultures were taken from the pupils in one section each day, the work being done by the regular school

physicians of the district: Drs. Marion, Rowen, Rice, McKeen and McCauley, assisted by the following volunteers: Drs. Downing, Good, Kelly, Reed, Wood, Fitzgerald, Buckley, Dow, Myers, Riley, Lord and Connor.

The school board furnished, from the school nurses, assistants to do the necessary clerical work. Their work consisted of writing on a card for each culture the name and address of the pupil, the name of the school, doctor and teacher; also a number, the same number and name being written on a label on the culture tube itself.

At the laboratory, about half the necessary amount of media and swab sticks for the whole work were prepared in advance, and the day before cultures were to be taken in any section the proper number of swabs, serum tubes, throat sticks and cards were sent to the various schools.

The work in the laboratory was so arranged that, of the four doing diagnostic work, two worked continually at the preparation of smears and the other two at the microscopic examinations. The day's work started at 8 a. m. with the routine work of the laboratory, which merged as quickly as possible on to the special examinations.

It was understood that the cultures for the next day's work would reach us by 3 p. m. in order that they might be properly arranged and numbered before incubation. It was found necessary, however, for the first day or two

TABLE 1.—DAILY RESULTS OF EXAMINATIONS

Date.	Positive.	Doubtful, in which re-inoculation or reincubation showed positive or negative.	No culture or no growth.	Contaminated or broken tubes.	Absent.	Refused.	Negative.
9/13	15	+	4	4	0	1	1,262
9/14	12	3	3	2	0	1	1,114
9/15	13	2	4	0	0	2	1,012
9/16	8	0	1	0	0	0	689
9/20	12	3	3	0	5	1	1,257
9/21	5	4	3	0	0	6	1,100
9/22	8	0	3	0	0	4	1,020
9/23	6	0	1	0	5	1	664
	79	14	24	6	10	16	8,118

to work evenings at this. Later, when we were more used to the details of this extra work, we were able to finish each day by 6 p. m. The smears were made up on long glass slides 9 by 2 inches, 25 smears to a slide, and all positive or suspicious smears as well as those containing D₂ forms were passed on by both of those making the microscopic examinations. Positive results were reported only on those cultures showing the A, C or D types of organisms (Wesbrook). These slides have been saved as of possible interest in research investigation.

The cards were then marked and the reports made out. Cultures were examined by number only, being numbered consecutively from 1 to 600, 1,000, 1,200, or whatever the day's work might be, a duplicate number being on the serum tube and card. Without some such system it would have been impossible to handle the work. After the microscopic work was finished came the task of arranging the cultures for the next day by these consecutive numbers. The serum tubes were arranged in racks of 50 each, and for the most part this was readily done, taking two persons about three hours, because, as requested, the tubes and cards from any one room already had corresponding numbers; where, however, our request that this be done was disregarded we had the added labor of arranging all the tubes and cards alphabetically before we could number them.

1. Committee of the Mass. Assn. of Boards of Health: Report on Diphtheria Bacilli in Well Persons, Jour. Mass. Assn. Boards of Health, July, 1902, p. 74.

Sixteen refused to allow cultures to be taken, and there were without question many more absentees than shown by the table.

On the first day we examined 1,287 cultures: the second, 1,131; the third, 1,029; the fourth, 699—a total for the first round of 4,146; and of these, 55, or 1.33 per cent., were positive.

The children who gave positive cultures for the most part were removed from school.

Our second round the following week gave us 1,275 cultures the first day, 1,113 the second, 1,029 the third, and 670 the fourth—a total of 4,087, of which 38, or 0.93 per cent., were positive.

Since these two rounds, cultures taken from 298 pupils, absentees, new pupils, etc., have given us 9 positives, making a total out of 8,531 of 102, or 1.19 per cent. Three of these cases, positive on the second round, were duplicates of those on the first, leaving us just 99 cases, or 1.16 per cent.

The microscopic examination of so many smears in so short a time is very trying work, and the amount done in two weeks is no criterion by which to judge as to what could be regularly accomplished in routine procedure. It would be physically impossible to carry on so large a number of such exacting examinations for a long period, and it was accomplished this time only by long hours and intense application.

Three hundred and seventy-two secondary cultures have been received on the positive cases, of which 147 were positive.

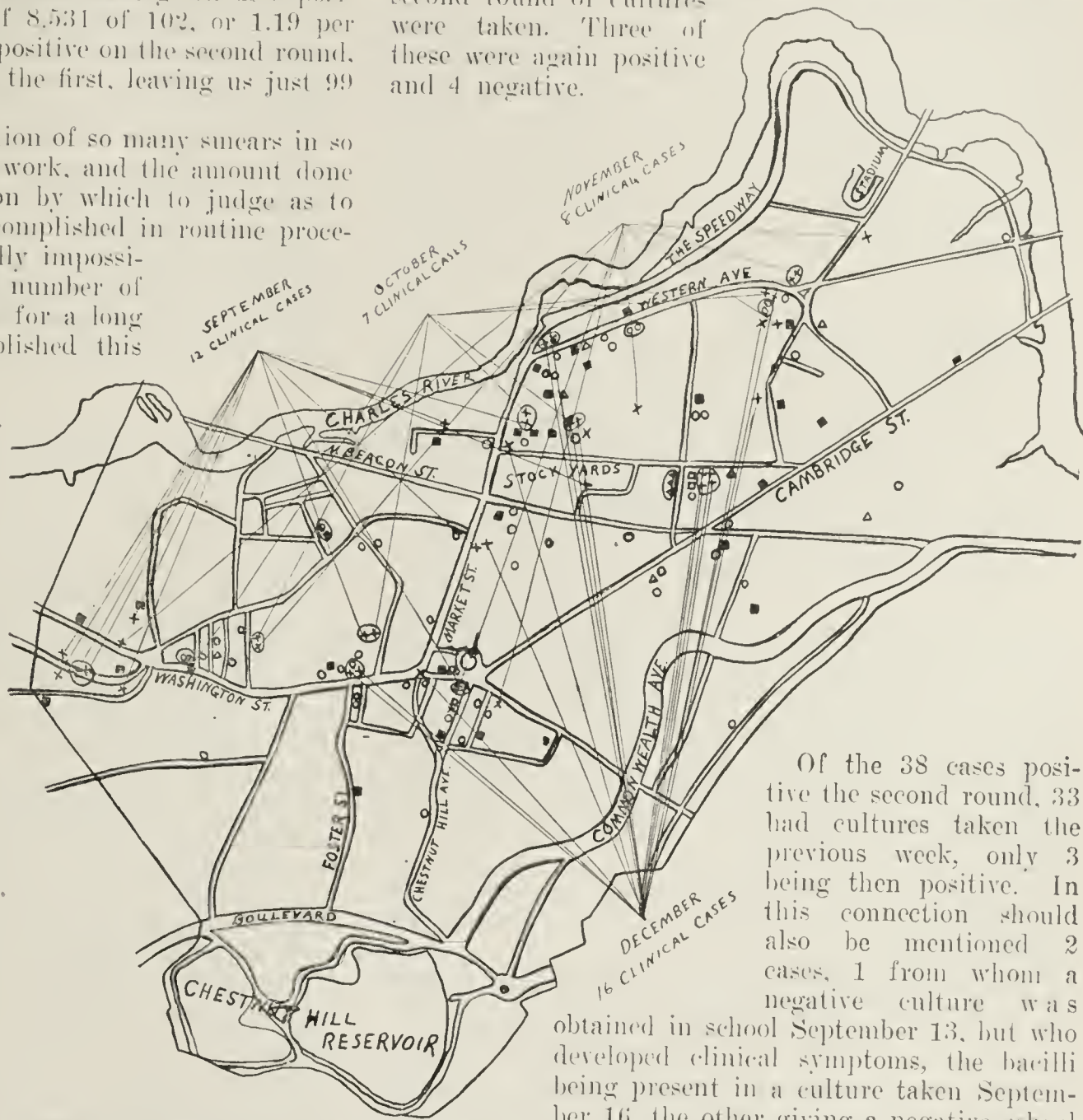
The work began Monday, Sept. 13, 1909, and by the close of the second week we had already released on two negative cultures 29 of the children who had previously given positive cultures. The third week 32 more were freed, the fourth week 6, the fifth 5, the sixth 2, the seventh 3, the eighth 1, the ninth 5, the tenth 3, the eleventh 3. Of the remaining ten, 5 have had a single negative, two with persistently positive cultures have been allowed to re-enter school on negative virulent tests. One has left school. One was allowed to re-enter school in September through an error, after having received but a single negative. A culture taken two months later was positive, but, as the child had already been in school two months with no untoward results, she was allowed to continue. In one case the parents refused to allow the cultures to be taken and the child was admitted to school under threat of legal process.

It is probable that in many of these cases the children might have been released sooner if cultures had been taken more frequently. Fifty had but a single positive, 20 had but two, 8 had but three, 10 had four, 5 had five,

1 had seven, 1 eight, 1 ten, 1 eleven, 1 thirteen and 1 with twenty-six never had a negative. This last case is reported by the school physicians as a case of chronic ozena.

It was our intention to isolate the organisms from many of the cultures and test their virulence, but this was, of course, impossible during the progress of the examinations. Streak-outs were made, however, from all positives and the tubes saved, but the organisms were found most difficult to isolate. We succeeded in obtaining but eight pure cultures, and virulence tests on all these were almost or entirely negative.

Of the 55 children giving positive cultures during the first week's work, 7 were present in school when the second round of cultures were taken. Three of these were again positive and 4 negative.



Map of Brighton district, showing location of diphtheria bacillus-carriers and clinical cases: each small circle indicates a carrier, first week, September 13-17; each solid black square, a carrier, second week, September 20-23; each triangle, a carrier, later among absentees, etc.; each cross, a clinical case; each large circle indicates cases in same house.

Of the 38 cases positive the second round, 33 had cultures taken the previous week, only 3 being then positive. In this connection should also be mentioned 2 cases, 1 from whom a negative culture was obtained in school September 13, but who developed clinical symptoms, the bacilli being present in a culture taken September 16, the other giving a negative school culture September 16 and having symptoms and a positive culture the 20th.

It seems proper to infer from these findings that as a rule these carrier cases are but transient in character. The results seem too consistent to be accounted for by possible errors in culture taking or from overgrowth by other organisms.

We face, then, not a problem of detecting and isolating certain definite bacillus-carriers and making an end of the matter; we have rather to consider a constantly changing condition with but few fairly permanent carriers and a larger number of transients constantly shifting from one group of persons to another. Nor is there reason to believe otherwise concerning the adult population who, while not so susceptible to the

disease, are just as liable to be carriers of the organisms. Even were it possible to control diphtheria by constant cultures from a whole population with isolation of carriers, how useless to attempt such control by taking cultures from school children only and allowing the other five-sixths of the population to go free!

The conditions are far different from those obtaining in an institution where all are under strict surveillance and where some such scheme might logically and properly be carried out.

These carrier cases in Brighton, as shown by the map, are widely scattered throughout the district, with but occasional grouping in neighborhoods, and sometimes two cases in one family or house.

In our examination of cultures from day to day, the percentage of positives in any given number remained about the same, indicating that the carriers were evenly distributed, and that in any given section of the district they approximated 1 per cent.

The Board of Health has no legal authority to keep these well children from school, and the procedure adopted in this case was to send a letter to the parents or guardians, as follows:

Boston, Sept. 17, 1909.

To the Parent or Guardian of

The Board of Health hereby notifies you that the child above named has been found to be a carrier of diphtheria bacilli, and is on this account a source of danger to others. This child should not return to school or mingle with others until two negative cultures have been obtained by the school physician, who will call on you.

Medical advice for the removal of these bacilli from the child's nose and throat and the early return of the child to school should be secured at once.

By direction of the Board of Health. SECRETARY.

While the children were for the most part kept from school in accordance with this request, it was impossible to prevent their association with the school children outside of school hours, the Board of Health having no authority to quarantine these carriers. It is unfortunate in this connection that among the results of the work we must include the loss sustained by these children in being deprived of so much of the school year and the abandonment of school by one.

These carrier cases have been closely watched, and not one had been ill, nor has any case of diphtheria been traced to them.

The clinical cases of diphtheria still persist in about the usual number and without any apparent connection with the carriers found, as shown in the following table:

TABLE 2.—CASES OF DIPHTHERIA IN WARD 25 BY MONTHS, 1904-1909

	1904	1905	1906	1907	1908	1909
January	19	3	6	11	18	7
February	4	3	8	6	20	3
March	1	1	7	2	6	4
April	13	8	6	15	5	5
May	1	4	9	3	29	2
June	2	1	5	2	16	7
July	4	0	14	6	6	4
August	8	9	15	0	5	6
September ...	2	2	6	0	16	12
October	4	7	23	10	14	7
November ...	2	9	28	2	25	8
December ...	6	5	18	11	10	16
Totals	66	52	145	65	170	81

It should, of course, be taken into account that there have been but few clinical cases of diphtheria in Brighton during the entire year.

We draw the following conclusions:

1. At least 1 per cent. of all healthy school children are carriers of morphologically typical diphtheria bacilli (Wesbrook's A, C and D types).

2. Such bacilli are communicable from one person to another and the condition is usually a transient one.

3. The organisms are ordinarily of little or no virulence.

4. While it is possible that by passing through a susceptible individual their virulence might be raised to cause the disease, this is not a frequent occurrence.

5. The disease diphtheria is kept alive in a community rather by virulent organisms in immune persons than by these non-virulent bacilli.

6. Where virulent diphtheria bacilli are present, as shown by outbreaks of the disease, cultural tests of all contacts and isolation of those showing positive cultures is a duty owed to the community.

7. Where the disease does not exist, isolation of carriers of probable non-virulent bacilli is of no proved benefit, and is a costly and laborious procedure entailing much unnecessary hardship on innocent and probably harmless parties.

8. The attempt to control diphtheria in a city by a round of cultures from all school children at the beginning of the school year does not seem encouraging from this series of tests.

9. The proposition to stamp diphtheria out of a city by cultural tests of all the inhabitants and isolation of all carriers is impossible from any practical standpoint.

30 Huntington Avenue.

SPECIFIC TREATMENT IN PULMONARY TUBERCULOSIS *

KARL VON RUCK, M.D., AND SILVIO VON RUCK, M.D.
ASHEVILLE, N. C.

Keeping in mind the fact that most of you are engaged in the active practice of our profession and that you, therefore, come in constant contact with tuberculous patients, who do not so much care how and why they acquired their disease or fail to improve and recover, as they want to be treated and cured of it, we have believed it proper to select for our subject a practical and important side of the therapeutics of tuberculosis, a part of plithisiotherapy which has been for almost twenty years the subject of much controversy and research, and which forms the most recent and by no means the least important one of our resources in treating tuberculosis. We refer to specific medication, and understand by that term the treatment of tuberculosis by means derived from the specific virus responsible for the disease or from its products.

Most of you will remember the excitement which was caused in November, 1890, through the announcement by Koch¹ of his tuberculin which he had cause to believe a truly etiologic remedy for tuberculosis, and you will no less recall the acute disappointment which followed promptly on the short period of what a French author has called the tuberculin delirium, when failures and ill effects under the methods of application then prevailing, at first isolated, soon became frequent enough. By these the remedy was discredited and the hopes from it were doomed to disappointment.

However great the failure, however keen the disappointment at the non-success of tuberculin was at that time, we now know that the remedy itself was not responsible as much as was the method of its application and the practically indiscriminate selection of cases; and

* Read by invitation before the Chicago Medical Society, Nov. 3, 1909.

1. Koch, Robert: Deutsch. med. Wchnschr., 1890, xvi, 1029.

neither tuberculin nor its originator, Koch, deserved the virulent attacks which were hurled against them from many quarters. It would be a tempting task to trace the history of the discovery and development of specific means for the treatment of tuberculosis, but lack of time forces us to proceed with our subject.

We believed from the beginning that the failures of tuberculin and their causes could be overcome in time, and we recall with satisfaction, in the light of recent successes, that we never lost faith in the possibilities opened up by Koch's discovery, and our conviction never was shaken that the good effects which were observed would eventually be proved to be due to immunization rather than to a necrosing action of the remedy.

Tuberculin and later other products of the tubercle bacillus have been employed in the treatment of our patients in the Winyah Sanitarium ever since December, 1890, and the good results therefrom, as compared with previous ones, have improved as better preparations became available in the course of time.

It was not easy to proceed along this path and to persist in the clinical application of a discredited method, in the face of the almost universal condemnation to which it had been subjected to such a degree that but few that continued to use it dared to say a word in its favor, and we stood practically alone in this country for a number of years in open advocacy and support of the treatment.

Fortunately our persistent efforts met such emphatic clinical success that we were stimulated to renew and continue them, and we have never wavered in our firm belief that in this, as in other questions, truth must eventually prevail. In the course of the last ten and still more of the last five years the prejudice against specific remedies in the treatment of tuberculosis has gradually become less intense, and all opposition from experimental clinicians has now not only ceased, but has even been transformed into their active support.

Prior to 1901 when Koch² showed an increase in the agglutinating power of the serum of patients treated with emulsion of tubercle bacilli, the proof of the value of specific treatment was entirely clinical. At this time Koch reported on 74 patients who had been treated with his emulsion and whose serum prior to treatment had shown an agglutinating power in degrees which never exceeded a ratio of 1 to 10. After treatment an increase was observed, so that in 42 of the cases the agglutinating power was from 1:25 to 1:50; in 19 cases from 1:75 to 1:100, and in 9 cases it exceeded this amount. Koch inferred that the formation and increase of specific agglutinins was combined with that of other protective substances from the fact that the patients were correspondingly improved. We confirmed the findings of Koch the following year and obtained even much higher degrees by treatment with the watery extract of tubercle bacilli which had been used in our institution since 1897.

The further development of studies of immunity in tuberculosis has led to the demonstration of other specific immune bodies; that of specific amboceptor has become possible by the adaptation of Wassermann's method by Bordet and Gengou,³ that of the opsonic index by the method of Sir Almroth E. Wright,⁴ and their methods have afforded us valuable means of further confirming the results of our clinical observations.

As is well known, all immune substances are formed to a greater or less degree in infectious diseases. In a favorable course of the acute forms they appear more promptly and abundantly, which explains the equally prompt recovery. In chronic infections like tuberculosis the spontaneous formation of antibodies is far less intense in degree, which may be explained by the biologic and morphologic differences of the tubercle bacillus and by its pathogenic action, on the one hand, and, on the other, by the fact that the pathologic process induced is at first local in character, the foci being then small, becoming caseous and more or less encapsulated; further, by the non-vascularity of the tubercle and by the early obstruction of vascular channels in its periphery, all of which factors prevent in part the passing of toxins into the circulation.

Thus specific agglutinins are absent, or present in only small amounts in the beginning of the disease; they are always present and usually in greater amounts when the disease has become more evident, but still not far enough advanced to have seriously impaired the general nutrition. Such a relation has been shown by various observers and became quite apparent in our own studies. That the unaided development of such antibodies rarely reaches a degree sufficient for an actual and lasting recovery is attested by the more or less rapid progress of the disease and by the frequency of relapses after improvement or apparent cure.

In 567 cases of pulmonary tuberculosis treated in the Winyah Sanitarium we have records, on admission and discharge, of the agglutinating power of the patients' serum. The agglutinating power on admission is shown in Table 1.

The agglutinating power of these on discharge is shown in Table 2.

We have not found any considerable number of cases reported in literature which were treated without specific remedies and in which the demonstration of antibodies in the serum has been recorded on admission, during or on the completion of the treatment. In our report⁵ from the Winyah Sanitarium for 1907 we cited the results obtained by Ravenel and Landis⁶ in the prognostically favorable material of the White Haven Sanatorium in 18 early-stage cases in which specific methods had not been employed; after treatment for from four months to one year they obtained no other values than we do on the admission of our cases, i. e., agglutination in dilutions not exceeding 1:30. They nevertheless incline to consider a low power of agglutination as of unfavorable prognostic significance.⁷

5. Von Ruck, Karl, and von Ruck, Silvio: A Clinical Study of Two Hundred and Ninety-three Cases of Pulmonary Tuberculosis, Asheville, N. C., 1907.

6. Ravenel and Landis: Med. News, 1905, lxxxvii, 1070; Tr. Nat. Assn. for the Study of Tuberc., 1905, p. 140.

7. The general conclusion of these and other authors that a low agglutination was unfavorable prognostically was insofar modified last year by Landis (Jour. Med. Research, New Series, 1908, xiii, 19) that in some cases, in spite of a persistently low rate of agglutination, good clinical results have been obtained. He assumes that in such patients with a low degree of immunity their particular tubercle bacilli are of low virulence. Aside from our reference to Ravenel and Landis we have, in the same place, referred to evidence to be found in literature in support of our position that an increase in agglutinating power of the serum proceeds *pari passu* with the improvement of the patient's condition and is therefore prognostically favorable. We wish, however, to state that the adverse conclusions recently expressed by Kinghorn and Twiehell (Am. Jour. Med. Sc., 1909, cxxxvii, 404) do not appear to us to be well founded in the light of the immense amount of evidence in agreement with our point of view. As an apparently paradoxical result of successful treatment it may occur that the power of agglutination is slight or absent on discharge. Rumpf (Schroeder and Blumenfeld: Handbuch der Therapie der chronischen Lungenschwindsucht, Lelapsie, 1901, p. 504) takes this to mean that in such cases the formation of antibodies is no longer needed, since none or but few toxins are absorbed, the disease being either arrested or cured.

2. Koch, Robert: Deutsch. med. Wchnschr., 1901, xxvii, 829.

3. Bordet and Gengou: Ann. de l'Inst. Pasteur, 1901, No. 5; Cf. Gengou: Berl. klin. Wchnschr., 1908, xlili, 1531, and elsewhere.

4. Wright, Sir A. E.: Lancet, London, 1901, i, 609, and elsewhere. See Note 9 for full literature.

TABLE 1.—AGGLUTINATION ON ADMISSION IN 567 CASES

		Cases.
Negative in		30
Positive in dilutions of	1:5	89
	1:10	144
	1:15	49
	1:20	105
	1:25	115
	1:30	18
	1:40	5
	1:50	12

Concerning the nature of the agglutinins we can so far only say that they are albuminous substances, and we must refer to R. Paltauf in Kolle and Wassermann's "Handbuch" for a review of the opinions expressed by different authors. The antagonistic action of agglutinins on bacteria is called "bacteriotropic" by Wright,⁹ meaning that the agglutinins tend to enter into a chemical relation with the specific bacteria, whereby their viability is impaired.

Some years ago we attempted to demonstrate practically the action of agglutinating substances on living virulent tubercle bacilli by using serum from patients with varying agglutinating power for culturing tubercle bacilli. One cubic centimeter of human serum was used for each test, the blood being obtained from the fingertips and received in small sterilized test-tubes. After the serum had separated and had remained sterile in the incubator for twenty-four hours, a small flake of a

four, seventy-five, ninety and one hundred and eight days, respectively. All pigs showed progressive tuberculosis.

In this experiment the tubercle bacilli were evidently not destroyed, but their growth appeared to be delayed or inhibited. If this was due to the presence of agglutinins or other antibodies, the results unmistakably indicate a favorable and desirable action, *in vitro* as *in vivo*, which, in the latter case, is, of course, conditional on the persistence of the agglutinating power in the patient's serum for a long period of time.

Whether this condition is actually fulfilled or not in the living blood, we have tried to determine by examination of persons who had been discharged after specific treatment for varying periods of time. Our results in 41 cases examined within the last year, the patients having been discharged from two to ten years previously were as shown in Table 3.

TABLE 3.—AGGLUTINATION IN 41 CASES AFTER DISCHARGE

Time Since Discharge.	No. Cases.	Agglutination		
		Less Than 1:100	Over 1:100 Below 1:200	Over 1:200
Two to three years.....	15	1	10	4
Three to five years.....	15	4	11	.
Five to ten years.....	11	7	4	.

Specific amboceptor was also determined in 7 of these cases and was present in dilutions of 1:60 in 1 case dis-

TABLE 2.—AGGLUTINATION ON DISCHARGE IN 567 CASES *

Agglutination.	Grown Worse.		—Stationary—		—Improved—		Much Improved.		Apparently Cured.		Total.
	No.	%	No.	%	No.	%	No.	%	No.	%	
Lost or diminished	23	100	..	.....	..	.....	..	.....	..	.....	23
Oved 1:50; not exceeding 1:100...	13	9.77	15	11.27	50	37.59	40	30.07	15	11.27	133
Over 1:100; not exceeding 1:200..	..	....	9	4.66	25	12.95	79	40.93	80	41.45	193
Over 1:200; not exceeding 1:300..	..	....	1	0.57	2	1.15	23	13.30	147	84.90	173
Over 1:300 .....	..	....	..	.....	..	.....	3	6.66	42	93.33	45

* The agglutinating power has been diminished or lost entirely in 23 cases. All of the patients grew worse or died. In 133 cases showing agglutinations in dilutions up to 1:100, 13 patients or 9.77 per cent. had grown worse or died; the condition of 15, or 11.27 per cent. was stationary; that of 50, or 37.59 per cent. had improved; that of 40, or 30.07 per cent. had been much improved or the disease arrested, while 15, or 11.27 per cent. were apparently cured. In 193 cases showing agglutination in dilutions over 1:100 and not exceeding 1:200, not patients had grown worse; 9, or 4.66 per cent. were stationary; 25, or 12.95 per cent. were improved; 79, or 40.93 per cent. were much improved or their disease was arrested; 80, or 41.45 per cent. were discharged apparently cured. In 173 cases showing agglutination in dilutions of over 1:200 and not exceeding 1:300, none had grown worse; 1, or 0.57 per cent. was stationary; 2, or 1.15 per cent. were improved; 23, or 13.3 per cent. were much improved or their disease was arrested; 147, or 84 per cent. were discharged apparently cured. In 45 cases showing agglutination in dilutions of over 1:300, 3 patients, or 6.66 per cent. were much improved or their disease was arrested; and 42, of 93.33 per cent. were discharged apparently cured.

serum culture of virulent human tubercle bacilli was floated on the surface and the tube replaced in the incubator.

Of the serums employed, those from normal persons tested for comparison gave no agglutination of tubercle bacilli; those from untreated patients agglutinated in dilutions of 1:10, 1:20 and 1:25. Visible growth developed on the inoculated serums which had agglutinated not at all or in dilutions of 1:10 on the tenth day; on serum agglutinating at 1:20 on the fourteenth, and on serum agglutinating at 1:25 on the fifteenth day.

With serums of treated patients which agglutinated at 1:100, 1:200, 1:300 and 1:400, a normal serum, without agglutinating power was compared likewise. On this, growth developed on the twelfth day. On the 1:200 serum, growth occurred on the thirty-fourth day; none had as yet occurred on the others. On that day all serums were inoculated intraperitoneally into guinea-pigs. All developed tuberculosis, and the difference in the duration of life was as follows: guinea-pigs inoculated with normal serum. with growth, lived forty-eight and fifty days; guinea-pigs inoculated with serum agglutinating at 1:10, 1:20 and 1:25 lived sixty, forty-two and seventy days; guinea-pigs inoculated with serum agglutinating at 1:100, 1:200, 1:300 and 1:400 lived sixty-

charged five years ago; 1:40 in 2 cases discharged three and ten years ago, respectively; 1:20 in 1 case; 1:10 in 1 case; 1:4 in 1 case, discharged three years ago. A similar result was noted in the opsonic index. The blood alkalinity was determined in 12 of the cases, being normal in 3, and above normal, i. e., from 1.1 to 1.3 in the other 9.

The active immunization by means of tubercle bacilli or their proteins is thus shown to promote the formation of agglutinins and of other immune bodies in various degrees, and in the permanency of our results shown in 602 cases tabulated in our report for 1907 we believe to be justified in assuming a relation of the immunity induced or increased by specific treatment, there being no reason to doubt that an examination of the serums of others discharged and permanently recovered would show similar results to those here reported.

Soon after the first publication of the respective methods for demonstration of specific amboceptor and the opsonic index they were applied by us for the purpose of confirming the belief that with the increase of agglutinins these would likewise show an increase. Owing to the large amount of time required, the number of cases studied was limited to individuals and small series; the result, however, left no doubt in our mind as to the correctness of our assumption. More recently, with increased facilities for this work, we have studied the subject in a larger number of cases, in many of which

8. Paltauf, R.: In Kolle and Wassermann, Handbuch der pathologischen Mikroorganismen Jena, 1904, iv, 1, 645.
9. Wright, Sir A. E.: Studies on Immunisation, London, 1909, p. 36. Here is full literature on opsonic studies.

we made daily observations, and we are now able to report on 71 cases, in which the amboceptor and opsonic index were determined on admission, during treatment and on discharge. We have likewise studied the serums of 30 adults free from tuberculosis and in good health otherwise, and, for other purposes, the serums of 20 new-born children, 13 of non-tuberculous parentage and 7 in whom one of the parents had a history of tuberculosis. The results of these studies are given in Table 4. They show that specific immune bodies were never found in the serums of normal adults and of babies whose parents were free from tuberculous taint; that specific amboceptor is, as a rule, present in tuberculous subjects, and that under treatment it was increased on an average by 150 per cent., that at the same time the opsonic index increased, showing a gain of an average of 27 per cent.¹⁰

TABLE 4.—COMPARATIVE STUDIES OF IMMUNE SUBSTANCES IN SERUMS

I. NORMAL SERUM IN 43 CASES

30 adults agglut. 0... amboceptor 0 opsonic index, average 0.98
13 new-born agglut. 0 amboceptor 0 opsonic index, average 0.9

II. SERUMS FROM NEW-BORN BABIES WITH HISTORY OF PARENTAL TUBERCULOSIS IN 12 CASES

A. IMMUNE SUBSTANCES IN THE SERUMS OF FIVE NEW-BORN BABIES WHOSE MOTHERS (4 CASES), OR FATHER (1 CASE) HAD BEEN TREATED WITH SPECIFIC REMEDIES

Baby.	Mother's Serum. Agglutination.	Baby's Serum. Agglutination.	Amboceptor.
1. H.	1:250	1:100	Not determined
2. T.	1:200	1:80	1:50 (?)
3. B.	1:250	1:225	Trace
4. St.	1:200	1:100	1:2
5. G.	(Not tuberc.)	1:5	1:10
Father	1:225	.....	.....

B. IMMUNE SUBSTANCES IN THE SERUMS OF SEVEN NEW-BORN BABIES WHOSE MOTHERS WERE SUSPECT OR TUBERCULOUS, BUT HAD NOT BEEN TREATED WITH SPECIFIC REMEDIES

Baby.	Agglutination.	Amboceptor.	Opsonic Index.	Precipitins.
1. B.	1:20	1.4	1:500
2. M.	1:4	...	0.85	1:400
3. P.	1:5	1:10	1.2	1:400
4. T.	1:2	...	0.94	1:200
5. W.	0.89	1:400
6. Wr.	1:10	1:4	0.8	1:400
7. McC.*	1:2	...	1.1	1:400

* Specimen did not reach us until a week after it had been taken.

III. SERUMS FROM TUBERCULOUS PATIENTS, 71 CASES

A. AMBOCEPTOR

Admission Cases.	Discharge Cases.
15 Amboceptor absent	5
24 Amboceptor 1:1 to 1:5	15
28 Amboceptor 1:10 to 1:20	20
4 Amboceptor 1:25 and over	22
Average 1:8	Average 1:20
	Average increase 150 per cent.

B. OPSONIC INDEX

Admission Cases.	Discharge Cases.
26 Opsonic Index 0.6-0.9	8
28 Opsonic Index 1. (normal)	3
15 Opsonic Index 1.1 to 1.2	19
1 Opsonic Index 1.3 to 1.4	28
1 Opsonic Index 1.5 or over	13
Average 0.99	Average 1:26
	Average increase 27 per cent.

While the methods for the estimation of agglutinins and precipitins are comparatively simple, those for amboceptor and opsonins are more complicated and require a considerable amount of preliminary study and practice as well as much time and laboratory equipment, so that they can hardly become available in general practice.

The amboceptor reading and the opsonic index vary greatly from time to time, even in favorably progressing

cases, while the agglutinins show a much more uniform behavior. When the various readings are charted in such cases, the agglutinins show an almost uninterrupted upward direction, while the amboceptor and opsonic index show rises and falls which correspond to Wright's positive and negative phases. Wright explains the irregularities in the opsonic curves in untreated cases by the occurrence of auto-intoxication on exertion, excitement, and from other causes, and the explanation seems plausible. However that may be, we can confirm Wright in that the curve of the opsonic index can be depressed by the injection of bacillary products, and if the dose is too large or is given before the end of a negative phase the depression will be greater than it would be otherwise. The same is true for amboceptor, and, in fact, the two curves run practically parallel.

The curve for the specific precipitins varies likewise, but in an inverse manner to that of amboceptor and opsonic index. The precipitins increase as a whole under immunization, but in contrast to amboceptor and the opsonic index they rise sharply after an injection, and they also vary in untreated cases. To obtain the highest indices for amboceptor and the opsonic curves the readings must be made when the precipitins are lowest.

Complications and other conditions which lower the agglutinins likewise depress the amboceptor and opsonic curves; on their removal or disappearance the latter are found to reach their former height more rapidly than do the agglutinins.

From our observations we believe that we are justified in concluding that when we determine the amboceptor we likewise determine the opsonic index, and that in this sense the terms "amboceptor" and "opsonins" mean the same thing. Inasmuch as normal serum shows no specific amboceptor for tubercle bacilli, but reactivates white blood cells so that phagocytosis takes place we cannot see that the phenomenon is directly specific; but rather conclude that by the union of the specific amboceptor and complement, and their action on the specific bacilli, the latter undergo bacteriolytic changes under which phagocytosis can take place more readily. Our time is too short for us to enter into the subject more fully, and, while we are in accord with Wright that the bacilli are prepared by substances in the serum in a manner that they are more readily taken up by phagocytizing cells, we prefer the theory that this "preparing" occurs in the manner stated above through the specific immune substances generated under active immunization and the normally present complement, and that the then observed increased phagocytosis is one of the results. Simultaneous observation of both the amboceptor and opsonic index are not necessary, but it is our purpose to continue them with the view of determining which of the two methods is most reliable and most practicable.

We now desire to call attention to the condition of blood alkalinity on admission and discharge in 367 cases of which we have complete records. Comparing these, the rate and uniformity of increase is remarkable, reaching points far exceeding the normal. Their relation to the results obtained is similar to that shown for agglutinins, amboceptor and opsonins, and it appears as though prognostic deductions can be made from its degree on admission. In its determination we have followed Dare's¹¹ spectroscopic method, the normal 1.0 of which, according to him, is equal to 266 mg. sodium hydroxid for 100 c.c. of blood.† In our studies we

11. Dare, A.: Bull. Johns Hopkins Hosp., 1903, xlv, 175.

† Following Löwy's method of titration, we find Dare's "normal 1.0" to correspond to 320 mg.

10. It should be mentioned that in a number of these cases it so happened that the blood specimens obtained on discharge showed a negative or declining phase, with a high precipitin curve, and in such instances the records for amboceptor and opsonic index are less than would have been found, had the blood specimens been taken at the acme of a positive phase.

have also examined the alkalinity of 30 persons in good health and free from tuberculosis, and they showed an average of 1.03 with a minimum of 0.99 and a maximum of 1.1 per cent. In our previously cited report we briefly considered this subject and reported on 100 cases. The 367 cases studied since then, in which the alkalinity was determined both on admission, during treatment, and on discharge, give further support to our opinion that the increase shown is important. Without referring to more of the voluminous literature, we may recall that Roser¹² already in 1881 called attention to the importance of the high content in sodium chlorid of the blood serum for bactericidal immunity, and that London¹³ showed that a diminution in the blood alkalinity, by the continued administration of hydrochloric acid causes a diminution of the bactericidal action of blood serum. von Behring¹⁴ saw the cause for the immunity of rats to anthrax in the high alkalinity of their blood serum, and found that the serum of rats treated during life with substances which diminish the alkalinity permits a luxuriant growth of anthrax bacilli. Pane,¹⁵ also Zagari and Innocente,¹⁶ confirmed the relation of the blood alkalinity to the natural resistance of

and they were supported by Christmas.²⁵ Further experiments were published and are described by Friedberger,²⁶ who concludes that if the alkali content of the blood stands in any relation to its bactericidal power the influence of the reaction can be only secondary and can play only a subordinate rôle in artificial or acquired specific immunity against bacteria. Friedberger adds that the attempt to account for the destruction of germs by chemical conditions of the body fluids has long been given up.

However this may be, we nevertheless believe that the alkalinity of the blood is an important factor in resistance, it being a well-known fact that especially in infectious diseases it increases during convalescence and diminishes when the disease takes an adverse course. Our results in the 100 cases tabulated in 1907 and in the 367 cases examined since then show that an increase in the blood alkalinity occurs with successful immunization, and that, like the increase in agglutinins, the degree of alkalinity stands in a certain relation to favorable results obtained. The curve of alkalinity we find to rise practically in a parallel ratio with that of the agglutinins. We do not, of course, claim that this is in any way spe-

TABLE 5.—BLOOD ALKALINITY ON ADMISSION AND DISCHARGE, IN 367 CASES OF PULMONARY TUBERCULOSIS

Alkalinity.	—Apparently Cured—		—Much Improved—		—Improved—		—Stationary—		—Worse—	
	Admission.	Discharge.	Admission.	Discharge.	Admission.	Discharge.	Admission.	Discharge.	Admission.	Discharge.
.7 to .8	4	..	5	..	5	1	1	1	11	12
.85 to .95	66	1	40	7	31	6	15	11	6	10
1.	85	9	35	22	20	16	3	5	5	..
1.05 to 1.10	11	28	5	28	3	22	..	1	..	..
1.15 to 1.20	6	65	3	27	3	6	..	1	..	..
1.25 to 1.30	2	62	2	5	..	11	..	..	..	..
1.40 to 1.50 and over	..	9	..	1	..	..	..	..	..	..
	174	174	90	90	62	62	19	19	22	22
Average	.97	1.20	.95	1.10	.94	1.08	.91	.95	.86	.80
Gain	..	+ .23	..	+ .15	..	+ .14	..	+ .04	..	— .06

TABLE 6.—BLOOD ALKALINITY IN ITS RELATION TO CLINICAL RESULTS IN 367 CASES OF PULMONARY TUBERCULOSIS

Alkalinity.	Cases.	Apparently Cured.		Much Improved.		—Improved—		—Stationary—		—Worse—	
		No.	%	No.	%	No.	%	No.	%	No.	%
.7 to .8	14	..	..	..	..	1	7.14	1	7.14	12	85.7
.85 to .95	35	1	2.85	7	20.0	6	17.1	11	31.40	10	28.5
1.	52	9	17.3	22	42.3	16	30.7	5	9.6	..	..
1.05 to 1.10	79	28	35.4	28	35.4	22	27.8	1	1.27	..	..
1.15 to 1.20	99	65	65.6	27	27.1	6	6.05	1	1.01	..	..
1.25 to 1.30	78	62	79.4	5	64.0	11	14.1	..	..	..	..
1.40 and over	10	9	90.0	1	10.0	..	..	..	..	..	..

animals. Studies concerning the relation of immunity and blood alkalinity were then made by von Fodor,¹⁷ who found that an artificial increase of the alkalinity increased the resistance of the organism; he was supported by Calabrese,¹⁸ Poehl¹⁹ and Loewitt;²⁰ but Chor,²¹ also von Behring,²² denied the correctness of his conclusions. The latter,²³ as well as Gamaleia,²⁴ attributed the bactericidal power of serum to its carbon dioxid content,

cific either in regard to resistance or to immunity; it is perhaps rather a phenomenon of general resistance, as has been pointed out by Kolle.²⁷

In Tables 5 and 6 we give the alkalinity as found on admission and discharge in 367 cases, and its increase under specific treatment is shown to vary according to the results obtained.

In these 367 cases the results were obtained under the influence of watery extract of tubercle bacilli. If we compare their immunity and resistance as shown by agglutinins and by alkalinity, as we have found them in 13 cases treated elsewhere with old tuberculin, in 5 cases treated with *Bouillon filtré* (Denys), and in 2 cases treated with Koch's *Bacillen emulsion*, we find that in these twenty patients the blood alkalinity and agglutinins after discharge were much less, the highest degree being shown in the two cases treated with Koch's emulsion.

On discharge the alkalinity was below normal in 7 cases, average agglutinins 1:48.

12. Roser, K.: Beiträge zur Biologie niederer Organismen, Marburg, 1881; Cf. von Lingelsheim: Ztschr. f. Hyg., 1901, xxxvii, 131.
13. London: Compt. rend. Acad. d. sc., exxii, 1278; Cf. Hahn; in Kolle und Wassermann Handbuch der pathogenen Mikroorganismen, iv, 1, 266.
14. Behring, E.: Centralbl. f. klin. Med., 1888, ix, 681; Ztschr. f. Hyg., etc., 1889, vi, 117.
15. Pane: Riv. clin. e. terap., 1892, No. 12; Cf. Friedberger, note 26.
16. Zagari and Innocente: Giorn. internaz. d. sc. med., 1892, p. 891; Cf. Friedberger, note 26.
17. Von Fodor: Centralbl. f. Bakteriöl., 1891, vii, 7; 1894, xvi, 783; 1895, xvii, 225.
18. Calabrese: Giorn. internaz. d. sc. med., 1895, Nos. 5 and 22; Cf. Friedberger, note 26.
19. Poehl, A.: Deutsch. med. Wchnschr., 1895, xxi, 88.
20. Loewitt, M.: Beitr. z. path. Anat. u. z. allg. Path. (Ziegler's), 1897, xxii, 172.
21. Chor: Ann. de l'Inst. Pasteur, 1891, p. 337; Cf. Friedberger, note 26.
22. Behring, E.: Ztschr. f. Hyg., 1890, ix, 395.
23. Behring, E.: Ztschr. f. Hyg., 1889, vi, 107.
24. Gamaleia: Ann. de l'Inst. Pasteur, 1888, ii, 517; Cf. Friedberger, note 26.

25. Christmas: Ann. de l'Inst. Pasteur, 1891, v, 487; Cf. Friedberger, I. e.
26. Friedberger, E.: In Kolle and Wassermann, Handbuch der pathogenen Mikroorganismen, iv, 1, 491, 560.
27. Kolle, William: In Kolle and Wassermann, Handbuch der pathogenen Mikroorganismen, iv, 1, 408, 411.

On discharge the alkalinity was normal in 6 cases, average agglutinins 1:56.

On discharge the alkalinity was above normal in 7 cases, being 1.07 on an average, and reaching 1.2 in only one instance, average agglutinins 1:108.

Finally we refer to our examinations of serums in 23 cases having apparently recovered without specific treatment in the sense that there were no marked symptoms, and who had either been discharged elsewhere as apparently recovered or had lost their symptoms under favorable climatic conditions without special professional care.

In these, the blood alkalinity and the agglutinins had not increased over what we have ordinarily found on admission. It was below normal in 4 cases, and the agglutinins gave an average of 1:10. The blood alkalinity was normal in 6 cases, average agglutinins 1:15.

The blood alkalinity was above normal in 13 cases, ranging from 1.05 to 1.15, with an average of 1.07, average agglutinins 1:108.

That tuberculosis actually existed in these patients was otherwise evident, and the conjunctival tuberculin test which was applied in 9 instances gave positive results in all of them.

Our studies concerning the causes underlying the striking increase in the blood alkalinity in patients treated with specific remedies and especially with remedies derived from the body substance of the bacilli have not yet given any definite results. The correspondence with the increase of agglutinins is, however, suggested. J. H. Kellogg,²⁸ among other authors, brings it into relation to diet and uses his findings as an argument against forced feeding with an excess of proteins, claiming that the blood, overcharged with protein-waste, causes a deficient oxidation and diminishes the alkalinity and consequently the vital resistance. We do not believe that diet is a deciding factor in our cases, because it was the same in practically all of them. It was, as a rule, mixed; nearly all patients gained in weight, and we are not aware that there is anything special in our dietary to account for the increase in alkalinity. Outside patients who did not board in the institution showed the same relative increase in alkalinity under specific treatment. While in normal serums the variation of the blood alkalinity appears to stand in relation to the color index, we do not find this to be the rule in tuberculosis. It is true that in some anemic patients the alkalinity and also the blood count and the hemoglobin content are low, there are others, and they are more numerous, in whom this is not the case. For instance, we show the alkalinity normal with a low red cell count of 3,200,000, and hemoglobin 0.60 per cent., while in another case it is likewise normal, with a blood-count of 4,800,000 and hemoglobin 0.90 per cent.; or, again, we obtain an increase in alkalinity of 25 points, from 0.85 to 1.1, when the blood-count remained constant at 4,800,000 and the hemoglobin at 0.82 per cent.

The idea has suggested itself to us that the increase in blood alkalinity under specific treatment depends on the increase of alkaline albumins which would best account for the regularity and constance of the increase.† A. Loewy²⁹ concluded from his studies that the alkalies of the blood are only partly mineral and are in part derived from organic sources, i. e., albumins. von Fodor and

Rigler³⁰ believe that the alkalinity is derived from organic substances and that their formation is stimulated by the injection of specific remedies through a vital reaction in the body or by the leucocytes. They, however, leave the question unanswered whether or not these alkaline substances are identical with those which protect the organism against infection. That the mechanism of immunization is chemical and not physical in nature was pointed out in 1890 by Koch³¹ at the Tenth International Medical Congress in Berlin and has since been confirmed by the work of Ehrlich.³²

Returning now to the practical side of specific treatment in tuberculosis, we believe that the evidence from literature as well as that afforded by our own investigations is sufficient to establish our position that after active immunization the protective substances as well as the blood alkalinity are increased, and that *pari passu* with this increase there occurs a corresponding improvement in the condition of the patient and in the tuberculous process, and that this evidence is sufficient to relieve our assertion from the possible reproach of a post hoc conclusion, the clinical improvement having been shown to stand in relation to the immunization.

If you admit our position as correct, you must also admit that the treatment of pulmonary tuberculosis by general hygienic-dietetic methods, however valuable it undoubtedly and admittedly is, is not capable of more than improving the general condition, thereby increasing the general resistance. It is not able to induce specific resistance, though it aids its development and maintenance in so far as it induces a better state of cell nutrition. To secure this, careful attention to hygienic-dietetic methods is thus of the greatest importance.

Concerning the choice of preparations for immunization, our aim should be to induce active bactericidal, rather than antitoxic or passive immunity, it being essential that the organism elaborate its own protective substances and maintain this function for the longest period of time possible. For this purpose the bacillus itself or its soluble products are necessary, and the preparations available may be divided into two classes:

1. The tuberculins are products derived from the liquor culture media on which tubercle bacilli have been grown, but into which the bacillary bodies do not enter. The tuberculins act chiefly as stimulants on the periphery of tubercle and often cause local inflammations which are dangerous. They may, indeed, produce a degree of immunity by the presence of specific proteins derived from the bodies of tubercle bacilli, especially if the preparation be made from very old cultures, in which more or less of the bodies of the tubercle bacilli have become disintegrated. The immunity produced by the tuberculins is, therefore, comparatively slight at best, and is often not sufficient to arrest the growth and multiplication of the tubercle bacilli.

2. Preparations derived from the tubercle bacilli bodies themselves, represented by Koch's *Bacillen emulsion* and by the watery extract of tubercle bacilli.

In our choice between the emulsions of Koch and others and the watery extract of tubercle bacilli our preference for the latter has been governed by the compared clinical results, which, to say the least, are equally favorable under the use of the watery extract. Furthermore, emulsions have the disadvantage that the immunizing substances must first be liberated and extracted

28. Kellogg, J. H.: Med. Rec., 1909, lxxv, 253.

† The alkalinity of the blood-serum shows likewise an increase. Our titrations show for a series of healthy persons an equivalent of 400 mg. sodium hydroxid; for non-treated tuberculous patients from 210 to 400 mg. and for cases treated with watery extract of tubercle bacilli from 460 to 570 mg.

29. Loewy, A.: Centralbl. f. d. med. Wissensch., 1894, xxxii, 785.

30. Von Fodor and Rigler: Centralbl. f. Bakteriol., 1897, xxi, 186.

31. Koch, Robert: Verhandl. d. X. Internat. Med. Cong., Berlin, August, 1890, i, 35.

32. Ehrlich, P.: Ges. Abhandl. z. Immunitätsforsch., Berlin, 1901, pp. 515, 537.

by the organism after their introduction, that the effects after repeated doses are liable to become cumulative, and that an exact dosage is difficult or impossible. The tubercle bacilli contained in such emulsions, moreover, contain other substances than those supposed to be required for immunization (fats, waxes) which have been shown to be detrimental in the experimental studies of others.

The question of the selection of cases suitable for immunization we have considered³³ fully in the Report of the Winyah Sanitarium for 1909. Here we can only say that the state of existing nutrition is all important, and that in cases in which this is seriously impaired or progressively declining there is little or no response in the formation of immune substances. Thus we would have to exclude exhausted and cachectic patients and those whose general condition is on a decline on account of higher degrees of fever and of complications, and we would have to defer specific treatment until the decline in nutrition has been checked and an improvement has become manifest. In cases with advanced lesions we must further consider their prognostic import in the light that whatever the degree of immunity present or prospective may be it cannot remove caseous foci, prevent or stop softening and disintegration of necrotic tissue, or remove complications due to other causes, such as inflammation and suppuration induced by other pathogenic bacteria. What we may reasonably expect is that the new formation of tubercle will be checked, that more recent tubercles will undergo resolution and disappear, that older foci not yet softened will become more readily encapsulated, and that in favorable cases the results in these respects will become permanent.

For the results which we have obtained we must likewise refer to our clinical reports. A tabulation which appeared in the one for 1909 (p. 11) shows as follows:

Of 1,503 cases treated with the watery extract of tubercle bacilli there were on discharge

Apparently recovered	834 or 55.5 per cent.
Improved	508 or 33.8 per cent.
Stationary or progressive.....	161 or 10.7 per cent.

In the report for 1907 we likewise reported the experiences with the watery extract of tubercle bacilli of over 100 independent observers, most of them in general practice, and without the advantage of climatic influences or of being specially trained in the treatment of tuberculosis, and the summary in their results in 2,183 cases gives us the following percentages:

Apparently recovered	1098 or 50.3 per cent.
Improved	639 or 29.4 per cent.
Stationary or progressive.....	446 or 20.3 per cent.

It may be of interest to remember that most of the clinical results which we have reported since 1891, and the cases treated by others, have been obtained without laboratory control. The success shown was, therefore, entirely due to conservative methods in the matter of dosage and frequency of administration and in proper attention to the individual needs in each case.

While, then, the general practitioner can also successfully immunize his consumptive patients without determining the agglutinating power, amboceptor, or the opsonic index of his patients' blood serums, we nevertheless suggest a simple method by which he can control and regulate the doses, namely, the determination of the precipitin curve. Our charts show that the highest point of this curve corresponds to the lowest point of the amboceptor and opsonic index, and when the latter is

reached a further dose may properly be given. The method for determining the precipitins is not only very simple, but it has the advantage that degrees vary in very much wider limits than do the opsonins, going up to 1:2000 or more, so that small variations can be determined which could hardly be appreciated in the opsonic index.³⁴

We are at the end of this communication, and we hope that we have proved the advantage, nay, the necessity, of active immunization in addition to general methods in the treatment of tuberculosis, if we desire to give our patients the fullest benefit of treatment and the best chances for recovery. With this addition, even the general practitioner will see no longer a reason for the pessimistic opinions expressed by some tuberculosis specialists concerning the results attainable, even under what they consider the most favorable conditions. Investigation will probably show that they treat their patients entirely by general methods in which, as we have pointed out, relapses are almost unavoidable.

We ourselves, on the contrary, see rather cause for enthusiasm and a stimulus for renewed efforts than for lamenting the fate that made us specialists in the disease.

THE DYSPEPTIC TYPE OF CHRONIC APPENDICITIS

(PYLORIC SPASM) WITH DIFFERENTIAL DIAGNOSIS

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GENERAL CONSIDERATIONS

Cases of chronic appendicitis in which the stomach symptoms predominate have been a stumbling block in the past to both clinician and surgeon, and to-day the symptomatology of the condition is far from being definitely settled. In the early days many of these cases were operated on by surgeons in general for ulcer of the stomach, and while no lesion was found in the stomach, a needless gastroenterostomy was performed for the so-called medical ulcer, which operation brought the patient trouble rather than relief. In our earlier experience we frequently were at fault. These patients were made worse by the first operation, and had bile regurgitation added to their former distress necessitating a second operation for their relief.

It has long been noted that chronic dyspepsias have been cured in patients who for years have been treated for chronic stomach disorders, in whom an acute appendicitis necessitated operation. This attack at the time was thought to have been a separate trouble. Indeed the profession has been slow in grasping the point that the stomach picture was due to chronic appendicitis.

In the last few years the French have written extensively on dyspeptic appendicitis, and in this country the

33. Von Ruck, Karl, and von Ruck, Silvio: A Clinical Study of Three Hundred and Thirty-seven Cases of Pulmonary Tuberculosis, Asheville, N. C., 1909.

34. To those who are not familiar with the method we give the following guide: Prepare a 1:100 per cent. solution of Koch's tuberculin or use No. 1 solution (white label) of the watery extract of tubercle bacilli, placing 1 c.c. in small test-tubes. Add not exceeding an equal amount of the different dilutions of serum, using distilled water 1 to 100, 1 to 200, 1 to 400, etc., and place the tubes in the incubator for a few hours, or allow to stand in a warm room for from twelve to twenty-four hours. The readings then can be observed by the formation of the precipitates.

earlier writings gave chronic dyspepsia and intestinal intoxications as etiological factors of appendicitis. Murphy, Ochsner, Richardson, Deaver, Eggleston and many others in their later writings have recognized the part played by the appendix and gall bladder in causing chronic digestive disturbances, and have made many valuable contributions to the subject.

In our effort to work out a symptomatology of this condition we have reviewed carefully the histories of some two hundred patients, and compared them with the histories of ulcer of the stomach and duodenum and gall bladder disease. Of these two hundred patients one hundred and fifteen have been operated on a year or longer, and each patient has been written to and the exact condition of health ascertained.

DIFFERENTIAL DIAGNOSIS

Chronic indigestion is most typically exemplified in chronic peptic ulcer, gall-bladder pathology, appendicitis and cancer of the stomach, but we should hold clearly in mind the indigestion of pancreatitis, tuberculous (especially pulmonary), tuberculous lesions of the ileocecal region, Bright's disease and pernicious anemia. This latter class of sufferers often present themselves solely because of digestive disturbances, and not infrequently it calls for painstaking care to reach a correct diagnosis.

I. ULCER

Chronic ulcer of the stomach and duodenum has a definite, clear-cut and regular symptomatology, and we shall discuss this as the purest type of "indigestion." First, let us note that the histories of those who come to operation cover years of complaint, and that for much of the time the periods of attack and periods of freedom from symptoms alternate. Early in the history of this complaint the appetite remains good, nutrition does not fail, and food brings immediate relief from all symptoms; the pain, distress, gas, sour eructations, nausea or vomiting returning one to four hours after meals. The heartier the meal the more marked and prolonged the relief. During the period of attack this precise relief of symptoms by food or drink and regular return one to four hours later is peculiarly characteristic, and this prevails until complications have arisen that seriously interfere with the gastric function. Another stage of the trouble may be considered to begin after many periods of attack. The peculiar type remains unchanged. The attacks are more severe and prolonged, appetite may fail or food is not taken because of pain, distress, gas, vomiting, sour eructations and burning stomach. Food and drink relieve, but the time of relief is shortened and the later pain increased. Vomiting may replace eructations, and gives relief, as does irrigation of the stomach. Nutrition decreases not so often because of lessened appetite or of prescribed diet as because of fear of later distressing symptoms. Relief for a time comes from food or drinks, vomiting, irrigation and alkalies, but the distress returns again when the acid, acrid condition of the stomach contents returns. It is not the chronicity or the periodicity that is peculiar, nor the degree or location of the pain, nor the vomiting, gas, sour eructations or sour burning stomach; these are common to all types of chronic dyspeptic trouble—gall-stones, appendicitis, cancer, etc.; the characteristic point is the time the pain appears, with its accompanying symptoms of vomiting, gas and sour eructations; its regularity after meals or after other means that quiet, and the equally ready control of symptoms by food, vomiting,

irrigation, etc. This characteristic regularity day after day, meal after meal during the period of attack is hardly equaled in any other lesion or functional disorder. Later, when complications have appeared, the symptoms change. Food may not ease, but rather increase the distress, which is often more or less continuous. There are no periods of real relief, vomiting is perhaps less frequent, is more copious and gives only partial relief; appetite and nutrition fail.

II. GALL-BLADDER DISEASES

Gall-bladder disease has its peculiar type of digestive disturbances. We distinguish four stages based on the degree of severity of symptoms developed in the history.

1. Those patients with mild disturbance, usually gastric, and often lightly considered by the patients and even more lightly by the physicians. These are light attacks of distress, gas, upward pressure, coming often soon after food, or at irregular times, often of sudden onset and short duration, eased by belching, slight vomiting or regurgitation, or slipping away almost unnoticed and without treatment, though various measures may get credit for their relief. These sudden, irregular, mild dyspeptic attacks are quite as typical of gall-bladder disturbance as are the severe, typical attacks which, as a rule, supplant the mild.

2. There is another class of patients with more or less prolonged, dull (mild or severe) pain in the epigastric area, right hypochondrium or whole liver area. This pain may be increased by food, exertion or motion; deep respiration gives pain, and when located posteriorly the trouble may be called pleurisy. These patients pass through prolonged, steady attacks, their distress may alternate with ease, and comparatively good or excellent health may be enjoyed for a time. During an attack dyspeptic symptoms are prone to be present, and but for the irregularity, as compared with ulcer, one might oftenest consider gastric lesions.

3. In the third class is to be found the great number in whom the correct diagnosis is made, and in this class surgery finds its greatest activity. Here we have the so-called typical gall-stone attack—sudden, severe epigastric pain, radiating to the right costal arch (at times to left), through to the back or scapular region, spasm of the diaphragm, upward pressure, gas, nausea, vomiting, and after a longer or shorter terrific attack comes sudden cessation and, until complications occur, almost immediate return to health. Sudden onset, and sudden cessation without apparent cause or without treatment, are quite peculiar to gall-stone disease when no complications are present. These attacks come irregularly, night or day, and oftenest bear no relation to food, though often called acute indigestion, gastralgia, neuralgic stomach and other equally incorrect names.

4. The fourth condition is that of chronic gall-bladder trouble—adhesions, duct obstruction, perforation, contractions and duct infections—with pancreatitis. Often in this class chronic gastric disturbances predominate, and the picture is so closely related to chronic ulcer with complications that a differential diagnosis cannot be clearly made if only present symptoms are considered. A correct diagnosis depends on the development of the early history. However, the chief end is obtained when the necessity for surgery is realized, and the patient is sent for relief with a diagnosis of a surgical abdominal trouble.

III. CHRONIC APPENDICITIS

In reviewing our histories of chronic appendicitis in which stomach symptoms predominate, we find that there is a neurotic element running through many of the cases. Whether this is an inherited taint or due to the chronic disability we do not know. Sex plays no important part. The average age is less than in either chronic ulcer or gall-bladder sufferers. In the former it is 45, in the latter 40, and in chronic appendicitis 34 years.

CHARACTER OF ATTACKS

We note in general that the symptoms are irregular when compared with chronic peptic ulcer; prolonged when compared with gall-bladder trouble; the exceptions being, ulcer with complications, gall stones with duct obstruction and infection. If the attacks of chronic appendicitis be short they lack the regularity of ulcer, are usually more severe, unless perforative ulcer be considered. When studied with gall-stones there may be less distinction, but the characteristic radiation of the pain of gall-stones is wanting, and the clear-cut gall-stone attack is poorly simulated. The whole syndrome is blamed to food intake directly more often than in ulcer, and still more frequently than in gall-bladder disturbances.

Exertion is a factor often laid at the door of appendiceal attacks; rarely is this true in peptic ulcers and gall-stones. Then, too, absolute disability, so that the bed is sought, is common during an appendiceal course, and is rare in ulcers, except bad hemorrhages, perforations and other late complications, when nutrition suffers greatly. In gall-stones the bed is seldom taken to except at the crisis, or in common-duct obstruction, infection or severe pancreatitis, and even then as a rule we find our patients about. We note the chronicity and the periodicity in all, but chronic appendicitis lacks the regular relief to all symptoms on taking food, and the regular return of pain in one to four hours. In chronic appendicitis the food instead of bringing ease produces early if not immediate discomfort; one meal giving one effect, the next meal quite another. Rarely do meals give ease in appendicitis, except in some hyper-acid conditions, and in this relief there is no regularity meal by meal or day by day, as in ulcer. When we turn to gall-stones, there are the short, clear-cut attacks with sudden onset and sudden relief, mild or severe, with the severer cases giving typical radiation, and, when relief comes, perfect health instead of a few or many days of general disability.

PAIN

Pain in chronic appendicitis is the great prevailing symptom, and is often manifested by a queer distress. It does not seem so often to reach the severity it does in gall-stones, but is more prolonged; neither does it so often reach the constancy and intensity during the whole attack as it does in decided cases of chronic ulcer. However, it is not the kind, the degree, the location or the radiation, nor is the time of the pain so great a factor as it is in ulcer. The time of the pain is irregular. During an attack pain oftenest appears soon after, or is caused directly by, food, save in those rather rare instances of highly acid condition, or when, from fear of food light diet has heightened the appetite, at which time food gives short respite. Often there is present rather continuous pain or rather a continuous distress which is epigastric, or so indefinitely abdominal that the patient describes it as epigastric, when really it is abdominal. There is not the clear-cut repetition and definite pain of ulcer, nor the clear-cut definite gall-bladder attacks; neither is there so often the definite location of the pain. Nausea, distress, flatulence and a feeling of distention covers the sensations of far more patients with chronic appendicitis than of chronic peptic ulcer or gall-bladder disease. The degree and the kind of pain are not specific, but have a bearing. Severe pain points to acute appendicitis, which we are not considering here.

LOCATION

Location of pain has a bearing, though we may have only epigastric pain complained of in any or all three conditions. In gastric ulcer the pain is purely epigastric, except in perforation, great dilatation and prolapse conditions. In gall-stones it is epigastric, with radiation to right and to back, or a sore and tender feeling in any part of the liver area. In chronic appendicitis it may be epigastric only, but often indefinitely epigastric and abdominal, in low gall-bladder or high appendix area. Then the radiation is usually *nil* in ulcer, to right costal arch and back in gall-bladder, indefinitely or plainly abdominal in chronic appendicitis.

With attacks of dyspepsia with epigastric pain, with radiation to or about the umbilicus or lower abdomen, hold first and clearly to appendiceal disturbance, keeping in mind peptic ulcer and gall-bladder trouble with possible complications. A tender area is often found at McBurney's point when not at all complained of subjectively.

CONTROL OF SYMPTOMS

When we come to control of symptoms, we find a clear-cut difference. Food, drink, alkalies and irrigation bring more or less complete and immediate relief in uncomplicated peptic ulcer, the symptoms returning regularly within a few hours at most.

In chronic appendicitis anything taken into the stomach usually disturbs, and only rarely brings relief, and if some ease is felt it is not regular and complete. Vomiting may bring relief in chronic appendicitis, but rarely so completely as in ulcer, and vomiting is much less constant in chronic appendicitis, and hence is less a factor.

In the usual run of uncomplicated gall-stone diseases food does not give much evidence of being a direct cause of the painful attacks.

EARLY HISTORY

Before leaving the subject of pain we would call attention to attacks in childhood or early youth of diarrhea or "stomach ache," more commonly termed "belly ache," as these attacks are usually abdominal. The attacks, the histories of which are often clearly recited, are typical appendicitis, and are the logical forerunners of the later dyspeptic attack. Then, too, recall the history of years of indefinite dyspeptic symptoms, followed by a typical appendiceal attack, with operation and the cure of the dyspepsia. Let us not forget that in any abdominal attack with prominent gastric symptoms, where a history of pain about the umbilicus or lower abdomen is definite, we should hold first and clearly to appendiceal trouble, not forgetting gall-stones, ulcer, pelvic tumors (ectopic pregnancy) and perhaps general constitutional disease—Bright's disease, tuberculosis, etc.

VOMITING

Vomiting in ulcer is usually regular (except in complications), one to four hours after meals when all symptoms are at their height. It is sour, acrid, bitter-burning liquid, perhaps with some food. Ease follows the vomiting, and the vomiting is allayed by food taken, as are all other distressing symptoms. In gall-bladder cases the vomiting is only at the crisis, and is a bitter, acrid mucus, unless by chance the spasm follows closely the ingestion of food. In chronic appendicitis vomiting is not so prominent a symptom as in ulcer and does afford a marked degree of relief. It is irregular during the attack, but when it does appear it closely follows

food, and consists of food rather than sour liquid, though both may be present. Nausea rather than vomiting is a characteristic.

GAS

In chronic appendicitis discomfort from gas makes up more the general complaint than it does in ulcer. There is abdominal distention of gas scarcely located by the patient. Gas is belched, but not so much as in ulcer, and there is not the intense feeling of gas distention as is experienced at the height of a gall-bladder attack. The amount of sour eructations is not so great as in ulcer. In chronic appendicitis the patient is conscious of a feeling of slipping of gas in the bowels, and its passage gives a peculiar sense of relief, as at times do bowel movements. In this rather quiet and general way gas aids in the diagnosis.

BOWELS

Constipation is one of the early symptoms of appendicitis, and may be the only one for a considerable period. It is usually marked, though spells of diarrhea occur and usher in an attack. Free movements give considerable ease. Mucus is present though not distinctive.

APPETITE

In chronic appendicitis the appetite often fails, or it is so variable that this helps in distinguishing appendicitis from ulcer. At other times food is refused because of immediate distress, and when both factors are in action nutrition suffers. In ulcer the appetite rarely fails, except late, and if food is refused it is because of the pain, distress and vomiting that follows one to four hours later. Nutrition therefore usually suffers along the whole course of chronic appendicitis as a result of the diminished appetite or lessened intake of food, because of the immediate distress which follows. If nutrition suffers in early ulcer it is because of vomiting or due to diet to avoid late distressing symptoms. Nutrition rarely fails in gall-stones until pancreatitis or complications supervene.

TEST MEAL

The test meal is of value in the diagnosis because it is so negative. In a paper¹ on "The Value of the Test Meal in Gastric Diagnosis" we called attention to this fact. There are no food remnants in the meal, hence no obstruction, and this is evidence of value. The stomach is usually normal in size and position and the acids oftenest within the normal limits, though in some cases they may be high. No organic acids, no bacteria or blood, as a rule, are present.

TREATMENT

Treatment in chronic appendicitis will scarcely bear discussion. In ulcer of the stomach we do have medical cases in greater number than surgical cases. In gall-bladder diseases we may be pardoned for advising some sufferers to take the Carlsbad cure or other methods of treatment that may influence the oncoming of the later stage, but chronic appendicitis can only justly fall to surgery, and any other advice when the diagnosis is made must be considered faulty and perhaps dangerous. However, we cannot meet all cases clearly with only gastric symptoms present—pain, vomiting, gas, etc. If no history is recalled of pain radiating to right costal arch or back, or if no general liver pain can be elicited, with no history of sudden, short, mild or severe epigastric attacks, with abrupt cessation and perfect health immediately following, we cannot say gall-stones. If with these

same symptoms of pain, gas and vomiting, and with the same epigastric location we can get no early history of periods of attack with regular symptoms one to four hours after food, with clear cessation of symptoms following food, drinks, etc., but only symptoms of chronic complicated ulcer, then we cannot decide. So also with the same signs if we can get no history of childhood or youthful attacks of diarrhea or "belly ache," no radiation of pain to the umbilicus or lower abdomen, no tenderness at McBurney's point, or other local manifestations, but only chronic gastric symptoms, then we cannot diagnose undoubted appendicitis. What we can say is, "You have a serious trouble, perhaps in the upper abdomen, and surgery affords the great chance of relief," and it should be accepted. If at operation the surgeon finds the upper abdomen normal, let him next look to the great likely point, the appendix. This holds out many promises of relief.

SUMMARY OF CASES

Of the patients 58 were females, 57 males. The average age was 34 years and the average duration $1\frac{1}{2}$ years.

All patients have regained normal weight; many are above previously normal weight; none has lost weight.

Condition.	Number Cases.	Per Cent.
Cured; no symptoms.....	89	77.4
Very much improved.....	7	6
Improved; some occasional return of symptoms.	13	11.3
No improvement	6	5.2
Total	115	

Condition of the appendix found at operation, classified pathologically:

	No. Cases.
Chronic appendicitis with fecaliths.....	58
Chronic adherent appendices.....	20
Chronic appendicitis	14
Chronic obliterating appendices.....	8
Chronic appendicitis, cystic tip.....	6
Subacute appendicitis	6
Carcinoma of appendix.....	1
Tuberculosis of appendix.....	1
Acute appendicitis	1
Total	115

STRANGULATED HERNIA IN AN INFANT OF FOUR MONTHS

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ARLINGTON, S. D.

I report the following case of strangulated hernia in an infant 4 months old. Such cases are not common in patients under 2 years of age:

History.—Infant J. V., male, white, aged 4 months, the only living child of Dutch parents. The last statement partially explains why my orders were not always carried out, as the mother could not understand English. Two years before this child was born the mother was delivered of a full term child by embryotomy. The present child was delivered by me, August 15, 1909, by version and extraction: the mother having been in labor five days before I was called and the head having made no advance. The child was perfectly developed, weighing seven pounds at birth. The mother had plenty of breast milk for two weeks and then began feeding the baby on the bottle without notifying me, the food used being three parts milk and one part water. The bottle was given whenever the child cried. From that date the child became constipated, had colic, and cried a great deal.

I did not see the baby again until Nov. 4, 1909, when I was called to see another member of the family, at which time I prescribed for the baby a weak milk mixture, with resulting

1. New York Med. Jour., Sept. 4, 1909.

improvement in the intestinal condition. My instructions were followed for only a short time and soon the child was suffering with colic again.

Dec. 9, 1909, I was called and found a bubonocoele as large as a hickory nut on the left side and a smaller one on the right side, both of which had appeared the week before. These were easily reduced and held in place by a pad and figure-of-eight bandage. December 25 I was called and informed the hernias had been all right until the morning of December 24, at which time the parents had not been able to reduce the left one and the child had been in great pain ever since. I was unable to reduce the hernia so I took the patient to the hospital at Volga, S. D., and operated immediately, thirty hours after the strangulation took place.

Operation.—An incision was made directly over the tumor. Within the sac was a loop of intestine, some omentum, and free fluid. The intestine was badly inflamed and adherent to the internal ring, but as there was no sign of gangrene I returned it to the abdominal cavity and did a Bassini operation.

Result.—The child made an uneventful recovery, returning home in two weeks. During its stay in the hospital the constipation was entirely overcome by a milk mixture suited to a child of three months; its weight increased and the signs of malnutrition present were fast disappearing.

ETHER: AN ANTIDOTE OF COCAIN AND STOVAIN POISONING

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GRAND FORKS, N. D.

Directly after the introduction of cocaine to the medical and dental professions, a number of accidents were reported, many of them fatal. The novelty of the drug and its effects were fascinating, and the want of experience and knowledge of its dangers, unrealized as they were by the majority of physicians, made it an extremely dangerous agent in other than the most careful hands. In common with most practitioners, I had my share of cases of cocaine poisoning, though fortunately none proved fatal. By far the greater number of deaths occurred in the hands of dentists. The use of the drug was an almost daily occurrence in their practice, and they seemed especially prone to disregard its dangers.

About fifteen years ago I had as a next-door neighbor a dentist with a very large extraction practice, and it became a not uncommon occurrence for me to be called in hurriedly to help revive some patient. To my knowledge, he had at least fifteen cases of cocaine poisoning. Some were mild cases; many were profound and extreme. The symptoms were rapid and shallow respiration, feeble or absent pulse, with unconsciousness; in some cases the patients were difficult to revive. Nearly all exhibited extreme mental anxiety and restlessness.

In the first few cases I was called on to treat, strychnin and morphin in combination were used with marked benefit. But, as cases kept multiplying, I found the action of these drugs too slow, and I decided that there must be something to counteract the poison more rapidly when life was in extreme danger. It was necessary to find a remedy that could be administered at any time and be instantaneous in its action. I soon found ether to be the required drug. This was administered as ordinarily given to produce surgical narcosis. Ether stimulates the vasomotor system, is a tonic to the heart muscles, stimulates the action of the respiratory centers and of the brain and of the pneumogastric nerve, and increases the pulmonary circulation in the first stages. While cocaine inhibits the action of the heart, especially on the right side, it has also a marked inhibitory action

on the respiratory centers of the brain. Death may occur from feeble respiratory movements of the so-called Cheyne-Stokes type, or asphyxia.

To me ether has proved extremely valuable. It has saved what seemed hopeless cases. It stimulates the heart and the respiratory system almost instantly. The pulse becomes fuller at once and of normal tension. The marked mental excitement is allayed as the patient goes under the influence of the ether, and the effect of the poison rapidly disappears. The individual regains consciousness as soon as the effect of the small amount of ether has disappeared.

To get the best results, the anesthetic is administered only to the degree of mild surgical narcosis, or, at times, even less than this. A mask should be employed and the ether given by the drop method. This is all-important. Given by the old method, the ether would only add to the danger of asphyxia by excluding air from the venous blood engorged lungs.

It occurred to me that this suggestion might be of help to others as it has been to me. Just at present there is much interest in the work of Jonnesco and his use of stovain. Many physicians will undoubtedly be led to try stovain, or cocaine, or some other synthetical preparation whose action is similar. While in Paris some years ago it was my privilege to witness Tuffier perform a number of operations under spinal anesthesia with cocaine, all done in the brilliant style of this acknowledged master of surgical technique. In the last operation I saw in his clinic the patient did not bear the drug well, but began to show some very dangerous symptoms, and, in spite of the usual remedies, was soon *in extremis*. At my suggestion a few drops of ether were administered and all dangerous symptoms disappeared immediately.

POLAR LIGATION IN EXOPHTHALMIC GOITER

STAMM AND JACOBSON'S OPERATION

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INDIANAPOLIS

Patient.—Mrs. H. of Oaklandon, Ind., was examined by me for the first time, Oct. 26, 1909. She was 36 years old, tall and of excellent physical development. The family and personal history were negative so far as any factors bearing on the status *præsens* were concerned, except, of course, the record of the illness here described, which had for two years run the course of a relatively typical case of exophthalmic goiter. Tachycardia had been from the beginning a prominent symptom.

Examination.—The pulse-rate at the time of the first examination ranged from 140 to 180, depending on such factors as rest, exertion, mental excitation and menstruation. The pulse cannot be said to have been regular, though perhaps not so markedly arrhythmical as in some cases of the most extreme type. The visible area of cardiac pulsation was distinctly increased and capillary pulse and throbbing pulsation of the large arteries were easily seen. The heart sounds were accentuated and heard at some distance. Exophthalmos was pronounced. Graefe's sign was present; the upper lid did not follow the eyeball. The palpebral aperture was plainly wider than is normal. Moebius' sign relating to the lack of convergence of the two eyes was positive. The thyroid gland was symmetrically enlarged to about six times its normal dimensions. Fine tremor of the spread fingers was likewise present. In addition to these symptoms there were present exhausting neurasthenia with insomnia, loss of flesh and muscular weakness. Glycosuria and albuminuria were absent.

Treatment.—Previous to this examination there had been no other treatment than the use of simple tonics. Neither pro-

tracted rest nor the ice-bag over the heart had been tried. Serum had not been used, nor had thyroidectin been employed. I believed that surgery at present offered the best chance for permanent relief in such cases. Thyroidectomy had proved efficient in my hands in two previous cases of exophthalmic goiter, but appreciating the dangers of a radical operation—dangers obvious to those who have extirpated the thyroid in exophthalmic goiter—I made in this case a polar ligation, a procedure recently presented by Dr. Martin Stamm of Free-mont, Ohio, and performed by him and Dr. J. H. Jacobson of Toledo in a total of 11 cases, prior to October, 1909, with very satisfactory results. The operation, briefly, consists in ligating *en masse* without the capsule the two upper horns or poles of the thyroid.

Dr. J. H. Jacobson, in a personal communication, briefly describes the technic as follows:

After carefully palpating and determining the position of the upper pole of right lobe, a transverse incision is made directly over it. The incision is one to one and one-half inches long and extends through the skin, superficial fascia, platysma, down to deep fascia, when the inner border of the sternomastoid muscle can be seen. The inner border of the sternomastoid is then loosened, raised and retracted, exposing the fibers of the sternothyroid muscle, which run in the opposite direction to those of the sternomastoid. These fibers are separated for about one inch; the deep fascia covering the thyroid will then be exposed. This fascia is next divided, and the capsule of the gland brought into view. The muscles are well retracted by blunt hooks. A ligature carrier or a large curved pedicle or aneurism needle is used to pass the ligature. The material used for ligation has been mostly linen or silk. Theoretically it seems that heavy black linen, on account of its slowness of absorption, is best.

In passing the ligature around the upper pole on the right side, the blunt needle is passed from within out, while upon the left it is passed from without in, after first freeing and raising the pole somewhat by blunt dissection.

Theoretically at least, it seems that the ligatures should be placed extracapsularly for the reason that the lymphatic vessels of the gland parenchyma empty into the lymphatics contained within the capsule, and that the extracapsular ligature will more effectually stop the gland excretion.

Some little resistance may be encountered in passing the blunt needle about the pole; this, however, is quickly overcome. When the blunt point of the needle has been passed, the ligature is grasped and the instrument withdrawn. By cutting the loop, we have two ligatures surrounding the gland pole. These are carefully separated and tied, leaving a space between them of from one-fourth to one-half inch.

Immediately after ligation the gland tissue in the vicinity of the ligature becomes blanched.

The closure of the wound consists in the approximation of the muscles by one or two interrupted catgut sutures, followed by approximation of superficial fascia and skin.

It is believed by Stamm and Jacobson that the toxic principle in exophthalmic goiter escapes from the gland principally through the lymphatics and it will be seen that the polar ligation contemplates embracing in the grasp of the ligature not only the branches of the superior thyroid vein and artery, but the lymphatics as well.

In my case the polar ligation has been followed by steady improvement. The pulse-rate ranges now between 80 and 100 (January, 1910). The tremor is decidedly lessened and Stellwag's sign is no longer demonstrable. As might be expected, the thyroid gland is decreased in size.

It is too early to pass judgment on this procedure; it would be difficult to tell of how much value was the rest in bed. Jacobson and Stamm have carefully eliminated to their satisfaction such sources of errors in their own cases.

It will be at once apparent that the procedure is essentially different from simple extracapsular ligation of the vessels. In active acute exophthalmic goiter the dangers of thyroidectomy are serious, even if the gland be removed by the Crile method to avoid psychic shock.

331 North Delaware Street.

TRACHOMA

CULTIVATION OF A NEW BACILLUS *

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Director Government Serum Laboratory

PHRAPATOOM, SIAM

Since many have failed to cultivate the cause of trachoma, it seemed best to try special media. I had been doing some cultivation of the Koch-Weeks bacillus on 5 per cent. peptone, alkaline agar, and decided to try that same composition for the cause of trachoma, but, having in mind the fact that the gonococcus grows only in the presence of fresh blood or some exudate of the body, I added a sterile drop of blood from the ear of the patient from whom we tried to get the culture. This drop was smeared on the surface of the agar with a sterile platinum needle. At least one tube containing no attempt at culture was set aside in each case as a control of the securing of the blood in a sterile condition.

No.	Case From.	Smear.	Stain.	Culture.
1.	Drs. Shattuck and Christiansen.	Negative	Giemsa, King, Dil. Carbol-fuch.	<i>B. trachus</i>
2.	Drs. Shattuck and Christiansen.	Negative	Giemsa, King, Dil. Carbol-fuch.	Negative.
3.	Dr. Stafford	Negative	Giemsa, King, Dil. Carbol-fuch.	<i>Aspergillus flavus</i>
4.	Author	Negative	Giemsa King, Dil. Carbol-fuch.	Negative

As is seen, two of the four cases examined were negative culturally, and a third gave a very common mold, which I would not think for an instant was the cause of the disease when so many had tried to cultivate it and failed.

The other case gave a culture of *B. trachus*, *nov. spec.*, 1909.

I do not claim for this that it is the cause of the disease, on account of lack of evidence, but will publish the characteristics in the hope that some one else may be assisted in carrying on the work.

B. trachus is a small polymorphous organism about 1 micron long and generally about one-third as broad as long. No spores or granules were made out. It is non-motile. It stains poorly with methylene blue, but well with dilute carbol-fuchsin, Wright-Romanowsky modifications and also with Giemsa. It grows slowly on 5 per cent. peptone alkaline agar, blood-smeared, in small white colonies which become visible to the naked eye on the second day, and reach their maximum size (about 1 mm.) in five or six days. The organism will not grow on acid media; it remains alive on proper media for more than a month, and on 5 per cent. peptone alkaline agar for at least ten days without the presence of fresh blood; and on addition of fresh blood at that time (no longer time was tried), it required no longer for the colonies to become visible than if they had been put on proper media at the start. Clear blood-serum and clear exudates were not tried, with the agar base. The organism does not grow on ordinary alkaline agar.

* Work done in the laboratory of the Bureau of Science, Manila.

No positive results were obtained by animal inoculation. The conjunctiva of guinea-pig, rabbit and monkey (*Macacus philippinensis*) were used and no reaction was seen, though the animals were under observation for more than a month. The higher apes were not to be had for experimentation, and I did not think human experimentation justifiable; hence was not able to prove pathogenicity.

The fact that I was not able to secure the organism in all cases is somewhat against its being the cause of the lesions, but it grows with difficulty and it may be that my technic will be improved on. Stained in the cell (I was not able to stain it so), *B. trachus* might well have the appearance of the "trachoma bodies" described by various authors, several of whom are cited by Brown Pusey in his article on the subject in *THE JOURNAL*, July 3, 1909, liii, 28.

OBSERVATIONS DRAWN FROM ONE HUNDRED CASES TREATED BY VACCINE THERAPY

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It is my purpose in this paper to classify the cases which have been treated, first as to their type and, second, as to their amenability to therapeutic immunization, giving detailed description only of cases of special interest.

The technical terminology used in vaccine therapy, being very involved and confusing to readers not familiar with the literature of the subject, will be avoided; instead my effort shall be to convey my statements in relatively simple terms.

Since no radical changes have been made in the technic of late, it will suffice to say that I have largely followed the methods devised by Wright, omitting the estimation of the opsonic index as a routine.

The employment of vaccine therapy has been received with as large a degree of enthusiasm as was given to the x-ray in its early development, and has been accorded practically a like all-healing influence in all forms of infections. With the idea of testing the efficiency of the method, I have accepted all classes of infection and have satisfied myself as to its limitation in the present state of our knowledge.

It is the consensus of opinion among workers in bacterial therapy that autogenous vaccines produce the best results; therefore these were used whenever possible, but when time or conditions did not permit their preparation stock vaccines were used.

The estimation of the opsonic index, I am convinced, is at the present time the best means of controlling the dose of the vaccine employed, but since it is so rarely necessary, and consumes so much time, I have omitted it as a routine, employing it only in cases in which my clinical rules were not a sufficient guide.

CLINICAL RULES FOR DOSES

No hard and fast rule for dosage can be made, inasmuch as different strains of the same organism have different degrees of virulence and the patients as many different degrees of susceptibility. Generally speaking, the more acute the infection the smaller the dose. Chronic cases, on the other hand, sometimes require enormous doses to bring about the desired effect.

In a case of pustular acne with a staphylococcus as the causative organism, for example, it has been my cus-

tom after preparing the vaccine, to inoculate the patient with an initial dose of 200,000,000 staphylococci, instructing him to return at the end of seven days. If at this time his pustules are fewer in number, more superficial or smaller, he is instructed to return three days later. If at this time he tells me that his face is not as clear as it was on the ninth day, he is reinoculated and instructed thereafter to return every eighth day, assuming that at this time his immunity had reached its height and by reinoculation will be held there. The initial dose is used until improvement lags, when it is doubled.

In cases of mixed infection, as for an example, an empyema, with a staphylococcus and a pneumococcus as the causative organisms, I first make a smear from the pus of the discharging sinus, stain it, and estimate the numerical proportion of the two organisms present, and hold to this ratio in inoculating the patient with the corresponding vaccines. Occasionally this method will not suffice and the estimation of the opsonic index must be resorted to.

I have found that rapid results can be produced by large doses at the first inoculation, but that the succeeding ones are not nearly so satisfactory. The best results were obtained by beginning with a minimum dose capable of producing results and increasing as directed above.

In nine children, varying in age from 3 months to 2 years, whom I have treated for general furunculosis, 50,000,000 staphylococci made a satisfactory initial dose, and in six cases 200,000,000 were given without untoward results before inoculations were discontinued.

Too much stress cannot be laid on the subject of doses. I am convinced that many failures are due to incorrect dosage and improper spacing of inoculations.

I have divided my cases into four classes, as to their type, duration, severity, and amenability to therapeutic immunization.

Class A.—Subacute infections, with pyemia as a type.

Class B.—Chronic infections, with pustular acne or an otitis media as a type.

Class C.—Acute localized infections, with erysipelas or acute cystitis as a type.

Class D.—Acute general infection, with septicemia as a type.

Of these four classes the most amenable to bacterial therapy are Classes A and B, or the subacute and chronic infections, next the acute localized infections, and lastly, if at all, the acute general infection.

As stated in the opening paragraph, further to explain what vaccine therapy may be expected to accomplish, it will be necessary to discuss a typical case of each class taken from the tabulated report appended to this article.

CLASS A: SUBACUTE INFECTIONS

Patient.—Mrs. B., aged 29, married, admitted to St. Alexis Hospital, gave a history of eight weeks' illness following an abortion committed on herself by inserting a piece of slippery elm into the uterus. At the time she performed the abortion she had an infected finger on the right hand which she used in performing the operation. Three days after the discharge of the fetus she had a chill, a physician was called and advised a curettage, which was done, but nothing of importance was found in the uterus. From this time up to her admission to the hospital her temperature varied from 101 to 103; pulse 120. There was steady loss of weight and occasional diarrhea, loss of appetite, slight seropurulent uterine discharge and some tenderness over the lower part of the abdomen. After her admission to the hospital a smear from the uterine discharge showed a *Staphylococcus aureus*.

Treatment and Course of Disease.—An autogenous vaccine was prepared and the patient inoculated with 200,000,000

staphylococci. On the following morning large wheals resembling urticaria appeared all over the body, and the temperature reached 104, pulse 150. The following day the temperature dropped to 100, pulse 90, and the wheals began to disappear. Three days later the temperature reached normal and her pulse to 90, and the patient expressed herself as feeling well. On the eighth day, with the temperature still normal, pulse 80, another inoculation of 200,000,000 staphylococci was given. Steady improvement followed for three weeks when the temperature again rose to 100 and pulse 120. On examination a pelvic abscess was found and opened per vaginam, after which the temperature again came to normal. From now on the patient's recovery was uneventful and after four weeks was discharged from the hospital recovered, having in all received four inoculations.

In this class of cases, owing to the facts that the areas of infection are walled off by fibrin, which for the want of a better term, may be called a pyogenic membrane, and that the organisms causing the infection are usually of comparatively low virulence, the antibodies of the blood are either so slowly, or slightly, stimulated that the immunizing machinery of the body becomes accustomed to their presence, or is not sufficiently irritated at any

from six months to a lifetime. During all this time the immunizing machinery of the blood had been so often and so gradually stimulated by autoinoculation that it had accustomed itself to the presence of the causative organism in the body. When this condition and no mechanical interference to the circulation is present good results are produced, but the number of inoculations required may be three or four times as great as in similar cases in Class A.

2. Some infections of years' standing, as, for example, an old abdominal sinus, are so thickly walled off by fibrin that little blood can reach the part, on account of the mechanical interference present. One can readily understand how ineffective a vaccine of itself would be in this condition. If, however, a 0.5 to 1 per cent. sodium citrate solution can be injected into the sinus two or three times a day so that by the power of osmosis serum is brought to the part, good results can be obtained. I have an interesting case in a thoracic empyema illustrating this point.

Patient.—Mr. S., aged 25, gave a history of an attack of lobar pneumonia followed by a pyothorax, in the fall of 1907.

TABULATED REPORT ON RESULTS OF 100 CASES TREATED BY VACCINE THERAPY

Kind of Infection.	Duration of Infection.	Number of Cases.	Organisms Producing Infections.	Average Number of Inoculations.	Number Cured.	Number Improved.	Number Not Improved.	Average Interval Between Inoculations, Days.	Deaths.	Cause of Death.
Pustular acne.....	6 months to 3 years...	19	Staphylococcus albus and aureus acne bacillus..	15	7	10	2	8		
Pustular eczema.....	3 months to 8 years...	3	Staphylococcus albus.....	12	3	—	—	9		
Tinea syco-is.....	1 week to 3 weeks...	4	Staphylococcus albus.....	4	4	—	—	—		
Furunculosis.....	4 days to 10 weeks...	14	Staphylococcus aureus and albus.....	6	14	—	—	—		
Carbuncle.....	7 days to 3 weeks...	3	Staphylococcus aureus.....	5	3	—	—	8		
Gonorrheal arthritis	2 weeks to 14 weeks...	14	Gonococcus.....	9	9	1	4	10		
Pyemia.....	2 weeks to 8 weeks...	5	Staphylococcus albus and aureus.....	5	4	—	—	7	1	Cerebral embolism.
Posterior urethritis..	2 months to 4 years...	6	Gonococcus, staphylococcus, short bacillus.....	12	0	0	6	8		
Cystitis.....	5 days to 3 months...	4	Colon, bacillus, gonococcus.....	6	3	—	1	7		
Otitis media.....	2 weeks to 30 years...	3	Staphylococcus albus and short bacillus.....	7	2	—	1	7		
Thoracic sinus.....	6 months to 3 years...	3	Pneumococcus, bacillus pyocyaneus, staphylococcus albus.	15	1	1	1	8		
Bronchiectasis.....	1 month to 17 years...	3	Pneumococcus, staphylococcus, streptococcus and unidentified organisms.	20	1	—	2	7	1	Cerebellar abscess.
Abdominal sinus.....	2 months to 3 years...	4	Colon bacillus, staphylococcus albus.....	10	1	2	1	8		
Erysipelas.....	1 to 14 days.....	9	Streptococcus.....	2	8	—	—	4	1	
Septicemia.....	2 to 4 days.....	7	Streptococcus.....	5	3	—	—	3	4	Septicemia.

one time to produce a sudden attack which would result in a spontaneous cure as occurs in the crisis of pneumonia.

If now in these cases a little additional stimulus can be given to the immunizing property of the blood, a crisis will result. This is precisely what a vaccine accomplishes. The organism producing the infection, after being cultivated and carried through the necessary steps of the laboratory technic, is then introduced into and set free in the patient's blood, thereby contributing the necessary stimulus.

Under this classification I have treated otitis media of two or three weeks' standing, subacute cystitis, palmar abscesses, furunculosis, carbuncles, and infections following injury.

Cases under this class were chosen as most suitable to bacterial therapy because the results were uniformly good and permanent.

CLASS B: CHRONIC INFECTIONS

The results in this class of cases were satisfactory, although not as uniformly good, as striking or as rapidly produced, as those of Class A, and this for at least two reasons:

1. In the patients presenting themselves for treatment under this classification, the infection had existed

A resection of a part of two ribs was done and drainage established; after the third week the discharge lessened to about 4 drams a day. This condition persisted with slight improvement and six months ago the patient was referred to me for therapeutic immunization.

Treatment and Course of Disease.—An autogenous vaccine of a pneumococcus and staphylococcus was prepared and four inoculations of 200,000,000 staphylococci and 300,000,000 pneumococci were given at seven-day intervals, but with no improvement. From this time on the sinus was irrigated twice daily with a 1 per cent. sodium citrate solution with almost immediate improvement, and after nine inoculations the discharge completely disappeared and has never reappeared.

Inasmuch as so little is yet understood about the mechanism of immunization, many unexplainable things occur in the practice of this form of therapy.

One is occasionally surprised to find a chronic condition, as in the following case, respond rapidly to bacterial therapy, when no other measure of treatment is used and where little benefit is expected.

Patient.—Mrs. W., aged 30, was referred to me for therapeutic immunization for otitis media. Her ear had discharged almost continuously since she was six months old. Three years ago she submitted to a radical mastoid operation. Her recovery was prompt and the discharge stopped for six weeks—the longest absence of discharge in her lifetime. At the end of the seventh week the discharge began anew, and after two

years' subsequent treatment by an otologist she was referred to me for vaccine treatment.

Treatment and Course of Disease.—A smear from the discharge showed a staphylococcus and a short unidentified bacillus. A vaccine of the corresponding organisms was made and the patient inoculated with 200,000,000 staphylococci and 300,000,000 of the unidentified bacilli. After four inoculations the discharge stopped completely. After the fifth inoculation it started again, and after the seventh inoculation it disappeared. Three more inoculations were given without its return. Four months have passed since the last inoculation and the discharge has remained absent.

The cases treated under this classification were pustular acne, tinea sycosis (barber's itch), pustular eczema, gonorrheal arthritis, cystitis, furunculosis, abdominal and thoracic sinuses.

How long do the patients remain well after inoculations are stopped?

Before answering this question, it might be well to mention that practically all patients with chronic infections presenting themselves for therapeutic immunization have been suffering from six months to a lifetime, and from time to time have been under the care of several physicians, so if they are only benefited a great deal has been accomplished. This, however, is not the usual result. At least 40 per cent. of the patients are permanently cured, 50 per cent. improved, a total of from 75 to 90 per cent. markedly benefited, 5 per cent. slightly benefited, and the remaining 5 per cent. not helped at all.

CLASS C: OR ACUTE LOCALIZED INFECTIONS

At the suggestion of vaccine therapy in this type of infection two questions immediately present themselves to the mind:

1. Have the number and virulence of the organisms producing the infection been so great as to produce a marked negative phase or temporarily to paralyze the immunizing machinery of the blood by over-stimulation? This phenomenon, we know, can take place, as illustrated in chronic infections by the marked negative phase lasting five or six days which can be produced by large doses of vaccine, and which results in a temporary aggravation of the condition present.

2. Have the number and virulence of the causative organs been great enough to stimulate the antibodies of the blood to the height of their action? The estimation of the opsonic index is the surest means of answering these questions. No clinical rules can be made with any degree of accuracy, although I might say that vaccines were not effective in acute, rapidly spreading infections.

Should the opsonic index be markedly low, showing an over-stimulated condition of the immunizing machinery of the blood, a vaccine could be expected to do little less than harm. Should it be relatively high, vaccines in small doses repeated every other day are capable of doing good.

In three instances in a series of 9 cases of erysipelas treated, the crisis was produced within three days from the onset of the disease. One patient died of acute dilatation of the heart, and the remaining five ran the usual course of the disease.

Since such a large percentage of erysipelas patients recover rapidly of their own accord, I think that vaccines, instead of being used as a routine in the treatment, should be reserved for those cases running an unusually long course or those accompanied by abscesses, which are occasionally seen.

Palmar abscesses, or other acute localized infections in other parts of the body, respond best to therapeutic

inoculations five or six days after drainage has been established. At this time they may be classed as sub-acute infection, which, as has been said previously, are most amenable to this form of therapy.

CLASS D: ACUTE GENERAL INFECTIONS

Here we have an infection with a causative organism, usually the staphylococcus or streptococcus, alive and free in the blood stream. What value can be gained by inoculating the patient with a few million more dead ones, when he already has an overabundance of the best stimulus which can be hoped for?

If we are willing to accept the theory advanced in explaining the results in cases under Classes A and B, we cannot consistently believe that vaccines would do septicemia any good. To satisfy myself as to the limitation of the method, however, and since no other means of treatment are of much value, I have accepted 7 cases for this form of treatment. Three of the patients recovered. Since the mechanism of immunization is as yet not understood, I have no right to say that vaccine did not play a part in their recovery, but I feel that they would have recovered just as rapidly without its use. Too much credit should not be given to its use in the cases of recovery until its reach in this infection has been determined by a sufficient number of cases. The therapeutic measures previously relied on in the cases now so satisfactorily treated by vaccine therapy are as good to-day as they ever were and their abandonment would be an extravagance.

Cases of pustular acne or eczema which receive required constitutional and local treatment in addition to therapeutic inoculations respond more rapidly than if vaccines were used alone; likewise cases of gonorrheal arthritis should receive hyperemic treatment of the affected part in some form. Abscesses and sinuses should be given the best advantages of drainage, etc.

With this combination we have a means of successfully treating a large number of infections previously beyond the reach of other therapeutic measures.

254 Lennox Building.

COCXYGODYNIA

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Coccygodynia—pain in the coccyx—is an annoying, painful and fairly frequent affection, occurring usually in women and caused almost invariably by a fall in which the patient lands in a sitting posture and injures the coccyx. The injury as a rule is a fracture. It is followed by pain at the seat of the injury, worse on sitting, on rising from sitting and on defecation. The pain may be severe and is wont to be accompanied by various neuroses.

The diagnosis is made by pressure on the coccyx with the examining finger, or with the finger in the vagina or rectum and the thumb on the coccyx. This pressure elicits pain. The coccyx may or may not be movable; it may be in its proper relation with the sacrum, or it may be bent forward at an angle.

The ordinary treatment by a rubber cushion to sit on, or even by a resection, is highly unsatisfactory. For years I have treated these cases by a method that is almost uniformly successful, but appears to be not generally known. I do not think it is original, but I have used it for so long that I forget where it was obtained.

It consists of massage of the coccyx by means of the forefinger in the vagina and the thumb on the outside, holding the bone between them. The bone is moved backward and forward, and the soft parts are moved about on the bone. The manipulation is begun very lightly and gradually increased in force as the patient becomes less sensitive. Usually two or three treatments at intervals of two or three days will suffice for a cure. The improvement is almost instantaneous.

201 West Fifty-fifth Street.

ENTOTIC TINNITUS, PERCEIVABLE OBJECTIVELY, IN PREGNANCY

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In January, 1907, Dr. R. A. Lancaster of this city requested me to see Mrs. T., aged 30, who was complaining of a noise in her left ear which was so persistent and annoying that sleep was greatly interfered with and decided nervous symptoms had appeared.

The woman was eight months pregnant and the noise had begun about a month before my visit to her. Examination showed nothing abnormal in either the conducting or the perceptive mechanism. Any one within six inches of the patient's left ear could easily hear a fine chirping sound synchronous with each systole of the heart, and disappearing with pressure on the external carotid. An auscultation tube greatly magnified the objective sound, which was very much like the chirp of a sparrow. No aneurismal bruit could be discovered about the head, and urinary analysis and ophthalmoscopic examination failed to reveal any pathologic lesions. The woman was rather large and well built, and had experienced no trouble in her pregnancy until the tinnitus appeared. No syphilitic history could be elicited, and iodids and bromids failed to give any relief. Immediately after the uterus emptied itself the tinnitus disappeared and there has been no recurrence.

As there are so few cases of this kind reported, this one seems worthy of record.

1409 Gervais Street.

THE MORO REACTION DISCREDITED AS A PRACTICAL TEST FOR TUBERCULOSIS

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At intervals during the past eighteen months I have been resorting to the Moro test as an aid to diagnosis in suspected tuberculous cases. I have not kept a record of the number of applications made during that period, but would roughly estimate them as about forty. With the exception of perhaps five, there has been a more or less positive reaction in each case. I have permitted these reactions to influence me in making my diagnoses. In a number of instances I could hardly credit the evidence, there being almost no clinical indications to correspond, the test having been used more with the thought of resorting to every possible aid than from any definite suspicion of tuberculosis.

Gradually I became skeptical as to the test having clinical value. Recently I applied half of a tube in a case in which there was some obscurity and yet nothing to warrant a strong suspicion of tuberculosis. The remainder of the same tube I applied to myself as a control. In forty-eight hours the patient and I were both showing marked reaction, having extensive areas presenting areolæ with papules, many of these tipped with vesicles. As to myself, I am of a ruggedly healthy type, having been at top weight without considerable variation

for four years, and present no clinical evidence of any illness whatever warranting even a consideration of tuberculosis.

About this time I learned that a number of the internes and nurses at the Indianapolis City Hospital had applied the Moro to themselves and that all of them presented a more or less typical papulovesicular rash with reddened base. In conversation with other physicians I found several who could not believe tuberculosis as prevalent as indicated by this reaction. Looking about for a fair clinical test, I asked for volunteers from one of our student sections in the Indiana University School of Medicine. Seven responded, including two internes in the Indianapolis City Hospital.

In five of this group the reaction was positive and marked. In two it was slight, the rash being more scattered, smaller and with less associated redness. In one only did the skin remain clear. Now I submit that the above statements give good ground for skepticism.

Now, the crux of the situation lies in this: that all over the country men are permitting themselves to make diagnoses on this insufficient and shadowy evidence.

If an individual has no clinical evidence of pneumonia and goes about his work the picture of health and well-being, he is not to be considered as a pneumonic because the pneumococcus is discovered in some of the pharyngeal secretions, or because he possibly might yield some remote and hair-splitting serum reaction. To carry the analogy still farther, it may be asked what the deduction is if the hypothetical serum reaction is the sole evidence, and the pneumococcus has not even been determined. The absurdity becomes more apparent; and yet this is exactly what we have been doing when we place diagnostic dependence on the Moro tuberculin reaction.

Suppose, for the sake of illustration, an individual admittedly free from any immediate syphilitic taint; further, let his immediate progenitors be granted to have been equally free from syphilis. Somewhere back in the line, however, perhaps three or four generations, there was a syphilitic. Now apply a precipitation or some similar test only a little more delicate than those we are already using and we get a positive reaction. Is our individual to be labelled as a syphilitic?

There is ever the dividing line between the theoretical and the practical. Theoretically this individual is tainted. He has responded to a delicate but accurate test, and in that sense he is a syphilitic. In that sense every member of the human family would be a syphilitic. But practically, clinically, judged by that much-abused standard of common sense, the individual is not a syphilitic and will never be the worse because of that remote taint.

The laws of heredity govern these questions. Nature tends to eliminate during the progress of generations all taints and contaminations, and the proof of it lies in the fact of the existence of the race in its present ruggedness and fitness.

Clinically this hypothetical individual is not syphilitic, and it were better if such a taint were never thought of, discussed or considered as carrying weight.

To return to the consideration of the Moro reaction, of what clinical value as a diagnostic aid can a test be that marks the overwhelming majority of the human family as tuberculous? Let it be granted, for the sake of the argument, that it and kindred tests have a laboratory value, a true scientific basis, and so are worthy of thought and further study. This and kindred studies promise much and should be pursued. Much will in the end come out of present indefiniteness and uncertainty

that may be valuable; but to-day in the hands of the practitioner of medicine I deny that the Moro test for tuberculosis has any dependable clinical value whatsoever. The false value placed on it, however, is leading to the ever-threatening and apparently inevitable abuse; physicians turn to it as a short cut to diagnosis. The old classical clinical study is in danger of being discarded. Consideration of subjective and objective symptoms, variations in weight and temperature—these mainstays are in no little danger of being discarded for this laboratory method that saves trouble and is offered to the profession with such “cock-sure” assurance of diagnostic infallibility. I feel that it is one of the hurtful measures that has been foisted on the medical profession and that I would not be doing my duty did I not protest against it. Let others try it as I have done on a series of healthy individuals, instead of supinely accepting and depending on its misleading evidence. In my opinion, the reaction will then find its proper place—in the research laboratory. It will certainly play no part in the practical diagnosis of tuberculosis.

Willoughby Building.

PROENCEPHALIC FETUS

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Recently I delivered a woman, seven months pregnant, of a five months' male fetus in which the brain protruded from the mouth. The brain was normal and connected with the spinal cord through a small slit between the palate bones. The cranium was empty, except for the dura mater and tentorium cerebelli. There was a large amount of liquor amnii. The falx cerebri was attached strongly to the gums of the upper jaw. The fetus was somewhat macerated, the cranial bones being loose. In all other respects the fetus was normal.

The mother stated that she felt the child's movements first about four and one-half months and for two weeks after; then they suddenly ceased.

The woman had had two children, one of whom died at birth after instrumental delivery; it was normally formed. The other child is alive and well.

There is no specific history; both parents are well and healthy; the father is 35 and the mother 29.

Therapeutics

LACTIC-ACID-PRODUCING BACILLI IN INTESTINAL INDIGESTION

The several methods of administering lactic-acid bacilli were described in THE JOURNAL last week. The value of this treatment in intestinal conditions will now be discussed.

Dr. J. Madison Taylor, of Philadelphia, in *Dietetics* (Philadelphia), January, 1909, records some clinical observations which he made twenty-six years ago during his neurologic services at the Howard Hospital. He describes the patients as “a large number of poor old bodies, mostly ‘retired’ servant girls, subsisting during their declining years on their little savings, and wretchedly enough, too. They complained uniformly of ‘nervousness,’ compounded of monotony, loneliness, evaporated hopes and shreds of divers bodily ailments. Their diet, of necessity, was scanty, consisting chiefly of ‘bread

and tea.’ Actuated chiefly by considerations of dietetic economy, I urged them to buy buttermilk, which in those days was readily procurable at a cost of 5 cents a quart. (Now commercial ‘buttermilk’ is usually skim milk acidulated by a ‘starter.’) The satisfactory and uniform improvements following the use of this cheap food were matters of astonishment to myself and my assistants, no matter what other and profoundly scientific ‘treatment’ was instituted also.” These patients so treated gained strength and vigor, improved mentally, their digestion improved, they slept well, and even the blood condition was improved. “These results were at that time attributed to the ready digestibility and sustaining powers of the milk proteids and to vaguely understood dietetic and laxative effects.”

These observations of Taylor, although strictly empirical, nevertheless possess no inconsiderable significance. Later bacteriologic studies throw a clearer light on the direct cause of the usefulness of buttermilk.

A more recent experience is that which Charles Hunter Dunn, of Boston, related in the *Archives of Pediatrics*, April, 1907. Dunn adopts the classification of the gastroenteric diseases of infancy and childhood, followed in the department of pediatrics of the Harvard Medical School, viz.: infectious diarrhea, in which the parasite infects and lives on the tissues of the body, and intestinal indigestion of the fermentation type, also spoken of as fermental diarrhea, in which the pathologic process is caused by a saprophyte living on the intestinal contents. Clinically, “the former is characterized by persistent fever and the early appearance of the signs of ileocolitis, i. e., mucus and blood in the discharges. The latter is characterized by the absence or brief duration of fever and by the signs of excessive fermentation in the discharges, that is, a green color and foul odor, with signs of ileocolitis only after prolonged illness, if at all.”

Dunn refers to the paper of Tissier, published in the *Annales de l'Institut Pasteur*, xix, No. 5, in which the latter expresses the belief, based on careful studies of the intestinal flora in health and disease, that “in health the *Bacillus bifidus* is the predominating organism of the dejecta in overwhelming predominance,” and that in disease this *Bacillus bifidus* disappears and a number of abnormal forms appear. Of these, the *Bacillus perfringens* is regarded by Tissier as the cause of that class of cases designated as fermental diarrhea. In the treatment of these cases Tissier uses pure cultures of the lactic-acid bacillus, “and under this treatment he notes a rapid transformation of the stools, subsidence of the symptoms and gain in weight.”

Dunn selected buttermilk as a convenient vehicle for administering lactic-acid bacilli, first because it seemed probable that by thus combining medicine and food a larger number of the organisms could be introduced than by using small doses of bouillon cultures in addition to the food, and, second, because it seemed desirable to use a constant food in all cases, one which should be digestible and one which should not be likely to cause trouble on account of a possible intolerance for proteid or fat by the patient.

The buttermilk was prepared by first pasteurizing the milk and then inoculating it with a pure culture of lactic-acid bacilli, ripening it until the growth of the organism had produced the proper acidity and precipitation of the casein. The particular strain of the lactic-acid bacilli used was isolated by the bacteriologist associated in the work, who selected it on account of the delicate aroma it produces.

It has been the practice of many physicians who have used buttermilk in the treatment of gastrointestinal disease to pasteurize it, but by doing this they have carefully avoided deriving any benefit from the living lactic-acid bacilli, and it has been found clinically that patients who do well on such pasteurized buttermilk also do well on properly modified milk.

The unpasteurized buttermilk was used by Dunn in 35 cases which had resisted the usual treatment for fermental diarrhea, consisting of the administration of castor oil or calomel, then allowing no food except boiled water for twenty-four hours, and then a weak form of modified milk.

Of the 35 cases, 5 were of the irritative type, and the treatment failed; 2 cases were infections, but probably of dysenteric origin, characterized by persistent fever and bloody-mucous stools. In these also the treatment failed. Of the remaining 28 cases, 23 were successful, 3 were partly successful, and in 2 the treatment failed.

In order to eliminate the possibility that the favorable results were due to the buttermilk and not to the living lactic-acid bacilli, to 14 of the resistant cases pasteurized buttermilk was given long enough to demonstrate a failure to improve, after which the pasteurization was omitted, and in every case immediate improvement followed.

Dunn concludes that the use of living lactic-acid bacilli is a harmless method of treatment, and that it may do good in cases of intestinal fermentation. It is an additional resource in a very difficult class of cases. It certainly has a logical scientific foundation, and may in time take a high place in the scale of efficiency.

THE POSTPONEMENT OF SENILITY BY LACTIC ACID BACILLI

The intestinal canal contains a variety of bacteria which cause putrefaction and fermentation of the residue of the various articles of food contained therein. From the changes in the proteids there result, first, the normal products of proteolytic digestion and, second, if abnormal changes occur, there are formed indol, skatol, gas and many other toxic substances, the nature of which have not been definitely determined. When the carbohydrates undergo abnormal fermentation a greater volume of gas is usually produced than in proteid disintegration, and it is accompanied by the formation of butyric and other irritant acids.

Intestinal putrefaction gives rise to different symptoms in different classes of individuals. In infants and young children it is usually accompanied by gastrointestinal disturbances, such as vomiting and diarrhea, and, if these conditions persist, by malnutrition and a retardation of growth. In adults acute intestinal auto-intoxication generally gives rise to the group of symptoms commonly designated as biliousness, while the chronic form may cause anemia, neurasthenia, neuritis, cutaneous diseases, kidney irritation, arteriosclerosis and various other conditions, as has been pointed out by Dr. George M. MacKee, of New York, in several recent publications (*New York Jour. of Med.*, September, 1908; *Dietetic and Hygienic Gazette*, June, 1908).

Intestinal putrefaction of the proteolytic type is indicated by the presence of indican in the urine; when it is of saccharolytic type, by ethereal sulphates.

The absorption into the blood and the circulation through the body of the various products of putrefaction and abnormal fermentation give rise to increased growth of the interstitial connective tissue of glands, a morbid change commonly known as sclerosis, and to degenera-

tion of the characteristic cells of the different glands and tissues of the body. The chronic interstitial sclerotic changes and parenchymatous degenerations are generally recognized as characteristics and accompaniments of senility or old age. Metchnikoff, of Paris, has elaborated and popularized this idea, and has urged that the coming on of senility may be postponed by preventing the putrefaction and fermentation in the intestine, and that this may be accomplished by the constant use of milk soured by and containing live lactic-acid bacilli. He contends that other injurious bacterial changes in the alimentary canal can be avoided by encouraging the growth therein of the harmless lactic-acid bacilli, which will prevent the development of the injurious bacteria. As presumptive truth of the inherent probability of this proposition he cites the long life of the Bulgarians who make sour milk a large part of their dietary.

The Bulgarian fermented sour milk, known as *yahourth*, has been studied with reference to the bacteria contained in it, one of which, called the *bacillus of Massol*, produces much larger amounts of lactic acid than the other so-called lactic-acid bacilli. It is proposed by cultivating this in milk, which has been sterilized, to produce a sour milk containing a pure strain of active lactic-acid bacilli, and which will at the same time be free from any injurious bacteria. It is believed that the constant use of this as an article of food will prevent the growth in the alimentary canal of the bacteria which cause putrefaction and abnormal fermentations, and that consequently there will result no toxic substances to be absorbed. Thus the tissues and organs of the body will be relieved of the destructive irritations caused by the absorption of these toxic products of bacterial growth, and as a result of this the changes incident to old age will be long postponed.

While, as has been pointed out, the multiplication of the bacteria of putrefaction and of abnormal fermentation in the intestines is accompanied, in most cases, in children, by diarrhea, in adults, on the other hand, constipation is a common result. Gaillard, writing in the *Journal de Médecine de Paris*, Aug. 8, 1908, noted in the *Medical Record*, Oct. 3, 1908, expresses the belief that constipation is closely associated with auto-intoxication, particularly that resulting from the decomposition of albuminoids. The action of the bacteria which act on vegetable compounds, and which produce antiseptic compounds in the form of organic acids, such as lactic and acetic acids, is antagonistic to this auto-intoxication.

Gaillard begins the treatment "by placing the patient on a diet that includes vegetable gruels made with milk, potatoes, eggs and small quantities of meat. He thus encourages the proliferation of the amylolytic microbes, which are useful, at the expense of the proteolytic organisms, which are harmful. The patient is also given a bouillon culture of lactic-acid bacteria, which by its action produces antiseptics. As soon as the digestion has been regulated in this way defecation occurs with regularity without other treatment." He reports several patients treated in this manner with favorable result.

Diagnostic Importance of Loss of Corneal Reflex.—In the *Neurologisches Centralblatt*, 1910, xvi, 66, A. Saenger relates a number of instances of various intracranial lesions causing the loss of the corneal reflex. This is liable to occur not only with processes in the brain, especially with tumors in the posterior spinal fossa, causing compression, in which case the loss of the reflex is on the same side, but also with processes that do not compress adjacent organs; in this case the loss of the reflex is contralateral.

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SATURDAY, MARCH 19, 1910

A DEPARTMENT OF HEALTH

The introduction into the Senate by Mr. Owen of a bill proposing the establishment of a Department of Health, which we printed three weeks ago¹ and the correspondence between Senator Owen and Dr. Charles A. L. Reed, printed on another page of this issue² seem to indicate that a movement for a Department, rather than a Bureau of Health, is taking shape in Congress; at least the cause has a staunch champion in the Senate. This is gratifying, since it is known that Senator Owen's bill was not prompted either by the American Medical Association or by the great lay movement represented by the Committee of One Hundred—the two organizations that have come to be recognized as the natural sponsors of all manifestoes in behalf of advanced health legislation. The measure is therefore to be accepted as additional evidence of popular interest in a movement of deep and vital concern to the people.

Senator Owen comes squarely to the old issue of a department versus a bureau and does so in language that leaves no doubt as to his attitude in favor of a department with a secretary in the Cabinet. His position is sustained by reasons that would seem sufficient. The importance and the dignity of the task of conserving human health as a means of preserving human life, efficiency and happiness, are considerations which enter into his argument for a department. As Senator Owen recognizes in his letter, we already have a Bureau of Public Health. The proposal to create another would be in a sense to propose a duplication of governmental machinery. If health agencies that exist in other departments are to be transferred and made parts of an existing bureau, they must become subordinate divisions of that bureau. While such a proposition might be considered, it would naturally arouse a storm of protest from the bureaus themselves as well as from the departments affected. The natural antagonism thus aroused would probably result in the defeat of the proposal. What is needed is to increase and not to lessen the prestige, influence, power and efficiency of every bureau, division, institution or agency that has to do with the conservation of health.

That this can be more satisfactorily done by a department seems evident from Dr. Reed's summary of rea-

sons for the creation of a department—namely, that sanitary science has demonstrated its efficiency and that the people are in need of its benefits; that a Bureau of Health now exists; and that the established precedent demands its advancement to a department. While no bill has as yet been introduced in the House, the Committee on Interstate and Foreign Commerce can take up the question, following the suggestions contained in the President's message regarding advanced health legislation. The Committee on Medical Legislation of the American Medical Association has already applied to Mr. Mann, Chairman of the House Committee, for a hearing on the general question, as well as on specific points enumerated in Dr. Reed's letters to Senator Owen and Mr. Mann.

Mr. Mann's championship of the pure Food and Drugs Act and his identification with other progressive public health legislation lead to the hope that he will be equally zealous in the behalf of the department idea. There is a growing demand on the part of the press, both lay and professional, for greater activity on the part of the national government in the conservation of the public health. It is also known that many senators and representatives are already favorably inclined to the idea of a department. It seems, therefore, that the time is opportune for every citizen interested in the welfare of the people not only to echo but also to act in accordance with the sentiment of Senator Owen, when he says: "I believe in *conservation*, and first of all in the conservation of human life."

THE CIRCULATORY CHANGES IN CHRONIC NEPHRITIS

Chronic arterial hypertension has long been recognized as one of the earliest and most important signs of chronic interstitial nephritis, and, together with hypertrophy of the heart and arteriosclerosis, forms a characteristic triad of signs. The several hypotheses which have been advanced to explain these circulatory changes may be classed as either mechanical or chemical.

The purely mechanical explanation, first advanced by Traube, and elaborated into its present widely accepted form by Cohnheim, assumes that the increased blood pressure is an attempt on the part of the heart and arteries to maintain a normal flow of blood through kidneys whose capillary bed has been narrowed to a greater or less degree by the interstitial cirrhosis. The cirrhotic kidney, according to this hypothesis, forms an obstacle to the normal flow of blood, a partial barrier which can be overcome only by a more powerful circulatory pressure. This very plausible explanation which refers the characteristic triad of circulatory signs to a common cause has, however, met with but little support from the experimental studies of the past few years.

Alwens¹ has recently attempted to verify the Traube-Cohnheim mechanical theory by subjecting the kidneys

1. THE JOURNAL A. M. A., Feb. 26, 1910, liv, 725.
2. Correspondence Department, p. 985.

1. Deutsch. Arch. f. klin. Med., xeviii, 137.

to an external pressure sufficient partially to obstruct the flow of blood. He used for this purpose oncometers, measuring the pressure applied by a manometer and the rate of flow in the renal veins. Only an insignificant rise of the general blood pressure could be demonstrated even when the external pressure on the kidneys was sufficient completely to stop the renal circulation. It is well known that ligation of both renal arteries causes only a transient rise in blood pressure, and Pässler and Heineke,² who excised increasing quantities of kidney tissue in dogs, could not convince themselves that the heightened arterial tension and heart hypertrophy which they were able to produce were solely attributable to loss of kidney capillaries and not due to toxins remaining unexcreted in the blood.

Finally, the mechanical theory has been severely shaken by Jores,³ who found in a carefully studied series of autopsies that the degree of heart hypertrophy in chronic nephritis could not be referred to the obliteration of the capillaries of the kidney, as Loeb and others have claimed. Indeed, in the red granular kidney, which is almost constantly associated with arterial hypertension and heart hypertrophy, Jores found less destruction of glomeruli than in the secondarily contracted kidney of parenchymatous nephritis, a form which not uncommonly fails to produce marked circulatory changes. The very extensive destruction of the glomeruli in amyloid kidneys was found to occasion no heart hypertrophy whatsoever.

The alternative hypothesis, which attributes the cardiac and vascular phenomena of chronic nephritis to chemical excitation of the walls of the vessels by pathologic constituents of the blood, has grown constantly in favor. The reports of Schur and Wiesel⁴ are of special interest. Using the frog-pupil reaction of Ehrmann, as well as chemical tests for adrenalin, they assert that they have demonstrated the presence of adrenalin in the blood of nephritics, normal controls failing to yield the reactions. They further describe as very constant the presence of hypertrophic changes in the medulla of the adrenals of chronic nephritics. From their observations they advance the theory that the arterial hypertension of chronic nephritis is due to an excessive adrenalin formation (hyperadrenalism), the adrenal medulla being stimulated to unwonted activity in some unknown way as the result of the pathologic alterations of the kidneys.

Asehoff and Cohn⁵ and Goldschmidt⁶ have failed to confirm the medullary hypertrophy described by Schur and Wiesel, and it may be further objected that, in their study of adrenalin in the blood, the tests used were not specific for adrenalin.

The presence in the blood of dogs with experimentally produced nephritis of a nephrotoxic substance,

which when injected into normal dogs will cause the appearance of proteins and casts in the urine, seems conclusively proved by Lindermann, Pearce⁷ and others. The nature of this toxin is unknown.

From this brief review it is obvious that we are as yet far from a satisfactory explanation of the circulatory changes in chronic nephritis. It is perhaps safe to assert, however, that the current trend is toward the chemical as opposed to the mechanical explanation of the phenomena, a view in agreement with the assumption of Barker and Hanes⁸ regarding the eye signs observed in nephritics.

THE APPLICATION OF IMMUNOLOGY TO BIOLOGIC PROBLEMS

Because nearly all the developments that have so far been made in the reactions of immunity have come from the laboratories of the pathologists and bacteriologists, the line of application has been chiefly toward clinical pathology, diagnosis and therapeutics, and we have largely lost sight of the fact that these reactions are fundamentally biologic phenomena. Our progress in serum pathology has undoubtedly been delayed by the tardiness of the physiologists and the biologists to enter this field, for with their different points of view they could certainly present new ideas to the pathologists concerning many of the fundamental principles of the reactions, while at the same time they would make much progress in their own problems by means of this new method of attack. The immunity reactions permit of the detection of differences in chemical structure which can be demonstrated in no other way, and by them specific chemical differences are brought out which distinguish not only between different species but also between different breeds and strains, and even between different individuals of the same strain. For the large problems of heredity and general biology how much more significant are these specific differences in the chemical constitution of the essential tissue elements than are such relatively superficial features as shape of head, limb and body, number and arrangement of scales and feathers, and distribution of various pigments in the dermal appendages, on which zoologists and biologists have based their studies in the past.

An illustration of the way in which problems of classification and of heredity may be attacked by means of the reactions of immunity is furnished by a recent investigation on "The Detection and Inheritance of Biochemical Structures," by v. Dungern and Hirschfeld.¹ These authors have undertaken to learn in what way these biochemical characteristics of protoplasm which can be demonstrated by antibody reactions are inherited, using for their investigations the agglutinins for red corpuscles of dogs. As is generally known, the rule in

2. Verhandl. d. deutsch. path. Gesellsch., 1905, ix, 99.

3. Verhandl. d. deutsch. path. Gesellsch., 1908, xii, 187.

4. Verhandl. d. deutsch. path. Gesellsch., 1907, xi, 175.

5. Verhandl. d. deutsch. path. Gesellsch., 1908, xii, 131.

6. Deutsch. Arch. f. klin. Med., xcix, 186.

7. Jour. Med. Research, 1908, xix, 2.

8. Am. Jour. Med. Sc., October, 1909.

1. Ztschr. f. Immunitätsforschung, 1910, iv, 531.

the immunity reactions is that the more closely related are the animals which furnish respectively the antibody and the antigen the less vigorous will be the antibody formation, but in spite of this fact it is nevertheless possible to secure antibody formation when the antigen is derived from closely related species, and even from different individuals of the same breed. Rabbits immunized with the blood of hares develop antibodies reacting with the blood of hares, but not with rabbit blood; Ehrlich and Morgenroth by injecting the blood of one goat into another goat caused the development of antibodies which would cause hemolysis of goat corpuscles, although not hemolyzing the corpuscles of the immunized goat; and on injecting guinea-pigs with extracts of guinea-pig testicles their serum becomes toxic for guinea-pig spermatozoa.

By immunizing a terrier and a shepherd-bitch with each other's blood, v. Dungern and Hirschfeld obtained from each animal a serum which would agglutinate strongly the corpuscles of the other, and also to greater or less degree the corpuscles of some other breeds of dogs. For example, the serum of the immunized terrier agglutinated the corpuscles of five out of ten dogs examined, including the corpuscles of a bull-dog and of some other terriers, but not the corpuscles of a St. Bernard, of a shepherd-dog, or of some other breeds. The serum of the shepherd-bitch showed similar peculiarities, agglutinating the corpuscles of but one of ten dogs of various breeds. Apparently the specificity observed in these reactions does not depend on breed or species, but on properties of individuals, since agglutination was sometimes obtained with corpuscles from dogs of the same breed as the immunized animal. By the agglutination reaction, therefore, one can only distinguish between dogs whose blood contains certain specific substances and those whose blood does not contain them, and the line will not correspond at all to the physical relationships of the animals. The two dogs were mated and four pups were obtained, whose blood reactions were tested against the blood of the parents. The blood serum of the father was found to agglutinate the corpuscles of two of the four pups, while the mother's serum agglutinated the corpuscles of one of these two, but of none of the other three pups. This last pup therefore differed from the rest of the litter in regard to the chemical composition of its corpuscles, which evidently contained substances corresponding to substances present in the corpuscles of both the father and mother; one of the other pups had corpuscles resembling those of the mother alone, since they react only with the serum of the father, while the corpuscles of the two remaining pups are probably different from the corpuscles of both parents, since they react with the serum of neither. By other immunization experiments these conclusions were further established.

From these preliminary observations it seems demonstrated that the chemical structure of the red cells of

different dogs is not the same, and this is the case even when there are no gross anatomic differences between the animals. Also it is shown that these biochemical properties are inherited in various ways, which will need to be established by extensive experiments in order that the underlying laws of the inheritance of chemical characteristics may be successfully formulated. For example, the pairing of animals with corpuscles having similar biochemical structure must be compared as to its effect on the offspring with the results of mating animals with unlike corpuscles, and these processes will need to be followed out for generations. Such experiments open an entirely new and fundamentally important field of general biology, the exploration of which undoubtedly will add fully as much to our understanding of the immunity reactions as they will contribute to biologic research.

POLYPHARMACY AND THE PHARMACOPEIA

The useless combination of a large number of drugs in a single preparation has been justly condemned. This practice was formerly much more in vogue among physicians than at present, but it is still recognized officially in the complex mixtures of the Pharmacopeia. The Council on Pharmacy and Chemistry has adopted a rule against the acceptance of mixtures containing an excessive number of ingredients. In the application of this rule the Council is likely to find itself greatly embarrassed by the fact that the Pharmacopeia contains many preparations in which the number of ingredients reaches a degree properly called excessive, nearly as great as in many of the objectionable proprietary mixtures. Thus liquor antisepticus has eight ingredients, *mistura glycyrrhizæ composita* seven (calling *tinctura opii camphorata* one, although it contains five ingredients), compound cathartic pills seven, vegetable cathartic pills nine, and compound syrup of hypophosphites nine. The National Formulary also contains a number of preparations which are even worse examples of objectionable polypharmacy. What excuse is there for placing in an official standard such admittedly unscientific mixtures? Probably it is true that some of these preparations were introduced with the view of providing substitutes for nostrums which had become popular through extensive advertising. If so, it is all the more important that they should be eliminated. These proprietaries maintained their hold on the medical profession largely through the mystifying influence of the unusual number of ingredients in the mixtures. The manufacturer, aiming to produce a preparation that will impress and mystify the physician, and which cannot readily be imitated, introduces small and essentially inefficient quantities of several ingredients. The physician, seeing that the medicine contains among its ingredients some substance which he knows has a remedial action, naturally supposes that the other ingredients, with which he is less familiar, enhance the value of the mixture. Hence he often prescribes it without stopping to think that he is giving an insufficient dose of the

remedy he desires and without realizing that a simple solution of one, two, or possibly three ingredients in effective doses would be better. Such mixtures should be condemned rather than sanctioned by admission into our official standards, and special care should be taken that future admissions to the Pharmacopeia—and, for that matter, to the National Formulary—do not embarrass the progress of pharmaceutical reform.

Medical News

ARKANSAS

Hospital Sold.—The directors of the Physicians and Surgeons College and Hospital, Little Rock, have sold the hospital connected with the institution to Dr. E. Meek for \$48,800.

State Society Meeting.—The Arkansas State Medical Society will hold its annual convention in Little Rock, May 3-6. Dr. Morgan Smith, Little Rock, is secretary of the organization.

Personal.—Dr. Ernest G. Epler, Fort Smith, has returned after a year abroad.—Dr. Thomas E. Holland, Hot Springs, announces that he has associated with him in business his son, Dr. Estill D. Holland.—The residence of Dr. William E. Hughes, Pocahontas, with almost all its contents, was destroyed by fire, February 17.—Dr. Daniel C. Carroll, Tillar, is reported to be seriously ill in Eureka Springs.

Saline County Physicians Elect.—Saline County Medical Society, at its annual meeting in Benton, February 28, elected the following officers: President, Dr. Daniel N. Fisher, Benton; vice-president, Dr. Warren Kelley, Benton; secretary-treasurer, Dr. Charles Prickett, Traskwood; delegate to the state society, Dr. J. M. Phillips, Benton, and alternate, Dr. John W. Melton, Alum. The county judge, on request of the society, appointed Dr. Daniel N. Fisher, president, and Drs. J. M. Phillips and Warren Kelley members of the board of health of Saline county, all of Benton.

CALIFORNIA

Antituberculosis Society Kirmess.—The antituberculosis society kirmess, held the first week in February for the benefit of the Alameda Society for the Study and Prevention of Tuberculosis, netted more than \$5,000 for the cause.

Society Meeting.—At the annual meeting of Napa County Medical Society, held in Napa, Dr. Frank C. Newton, St. Helena, was elected president; Dr. Edwin Z. Hennessey, Napa, vice-president, and Dr. Otto T. Schulze, Napa, secretary.

News About Hospitals.—Mrs. Russell Sage has given \$1,000 to the Pasadena Hospital.—A new isolation hospital is to be built and maintained for Stanford University.—The board of supervisors of San Francisco have decided that the California Women's Hospital is unfit for housing the sick and must be destroyed.—The directors of Mount Zion Hospital, San Francisco, have purchased a site for the institution for \$70,000, and a modern hospital of reinforced concrete will be erected immediately. Mr. I. W. Hellman has donated \$100,000 to the institution in memory of his late wife.

Personal.—Dr. J. Gordon Mackay, Truckee, was elected president of the Nevada, Placer and Eldorado Counties Medical Association, at its meeting in Auburn.—Dr. August C. Bothe has been appointed city chemist of San Francisco.—Dr. Arthur A. O'Neill, chief surgeon of the Isolation Hospital, San Francisco, has resigned.—Drs. George M. Terrell, John W. Callnon and O. E. Skoonberg have been appointed assistant surgeons of the San Francisco Emergency Hospital Service.—Dr. Louis D. Mead has been appointed visiting physician of the San Francisco Isolation Hospital.—The board of health of San Francisco has declared the office of chief sanitary officer vacant, to become effective April 1. Dr. William C. Hassler at present holds the position.—A session of the Los Angeles County Medical Society was recently devoted to the payment of a tribute to Dr. Elizabeth A. Follansbee, Los Angeles.

COLORADO

Personal.—Dr. and Mrs. William C. Mitchell, Denver, are in California for a holiday trip.—Dr. George H. Stover, Denver, expects to leave this month for Honolulu to make a study of leprosy.

Hospital Opened.—The Childrens' Hospital Association has opened a hospital at 2221 Downing street, Denver, with accommodation for 25 patients. Provision has been made for several free beds.

Bequest for Tuberculosis Sufferers.—By the will of the late Ascher Silberstein of Texas, the National Jewish Hospital for Consumptives, Denver, and the Jewish Consumptive Relief Society, Denver, are each bequeathed \$2,500.

New Sanatorium.—The Associated Danes, the amalgamated Danish societies of the United States, have perfected plans for a large sanatorium to be erected in or near Denver. The Danish Sanatorium at present in operation at Brush with a capacity for 100 patients, is inadequate to the demands.

Tuberculosis Camp Site Donated.—Mr. George J. Kindel, Denver, has donated five acres of land in Jefferson county for a tuberculosis camp to be opened in May under the auspices of the Colorado Society for the Prevention and Control of Tuberculosis. The dispensary will be under the charge of Dr. Sherman G. Bonney, Denver.

New Medical Society Organized.—Physicians of Routt county met at Steamboat Springs, February 22, and perfected a county organization, electing Dr. J. H. Cole, Yampa, president; Dr. Robert E. Jones, Steamboat Springs, vice-president; Dr. Horace C. Dodge, Steamboat Springs, secretary, and Dr. Loren G. Blackmer, treasurer.

ILLINOIS

Intern Examination.—The examination for internships in the Cook County Hospital and Cook County Institutions, Dunning, was taken by 140 men and women, March 9-11.

Verdict Against Doctors.—The case of Wilhelmina Hanson versus Dr. Fletcher L. Crocker and Dr. Barratt, Pontiac, is said to have been decided in favor of the plaintiff in the sum of \$6,000.

Hospital Staff Election.—At the annual meeting of the medical staff of St. Anthony's Hospital, Rock Island, March 4, Dr. Joseph P. Comegys was elected president; Dr. Frank H. First, vice-president, and Dr. Emily Wright, secretary-treasurer.

Contract Practice Discussed.—At the banquet given by the Winnebago County Medical Society, at its meeting in Rockford, Dr. Daniel R. Connell, Beloit, Wis., president of Rock County Medical Society, was the guest of honor. The subject of contract practice was fully discussed.

News About Hospitals.—It is announced that Harry M. Fisher, president of the Maimonides Kosher Hospital Association, Chicago, will erect a building for the institution to cost about \$150,000.—It has been decided to increase the capacity of St. Margaret's Hospital, Spring Valley, by the erection of an additional wing. This will increase the capacity of the institution more than 65 per cent.—Sarah A. Hartwell, Elgin, has given \$4,000 to the Elgin Woman's Club to maintain a free bed in Sherman Hospital.

Personal.—Dr. and Mrs. Vaclav H. Podstata, Elgin, and Dr. and Mrs. Thomas J. Watkins, Chicago, sailed for Europe March 12.—Dr. Samuel A. and Samuel L. Oren, Lewistown, have been appointed local surgeons of the Burlington System.—Drs. Charles W. Hall and John H. Oliver have been appointed local surgeons at Kewanee for the Burlington System.—Drs. Antonio Lagorio and Camillo Volini, Chicago, previously decorated for services to their countrymen, have been advanced from the rank of knights to officers of the Order of the Crown of Italy.

KENTUCKY

Personal.—The State Board of Control has appointed Dr. Lydia Lloyd Poage, Paris, as an assistant physician at the Eastern Kentucky Hospital for the Insane, Lexington.—Dr. John C. Vaught has been elected secretary of the Winchester Board of Health.—Drs. Carey E. Wamsley, F. A. Clark and W. A. Krieger have been appointed district physicians of Newport.

The Tuberculosis Conflict.—The tuberculosis hospital erected at Waverly Hill, six miles from Louisville, is approaching completion and will be opened formally in May.—The Louisville Antituberculosis Association has arranged with the school board to have lectures on the prevention of tuberculosis given in all of the schools.—Dr. A. M. Forster, who is in charge of the tuberculosis work in the city will soon open a tuberculosis camp where day treatment will be given to sufferers from the disease.—The Paducah Antituberculosis League has decided to establish a tent colony near the city farm.

City Hospital Bill Passes.—Without a dissentient vote, the bill enabling Louisville to erect a new city hospital, and previously passed by the senate, passed the house March

11, and now awaits the governor's signature. The bill provides for the creation of a bipartisan commission, composed of two democrats and two republicans, to be appointed at once to prepare plans for the erection of a new city hospital. The citizens will be called on November 1 to vote a bond issue of \$1,000,000 to provide for its erection.—The Jefferson County Medical Society has appointed a hospital committee, composed of Drs. Henry E. Tuley, Ap Morgan Vance, Leon L. Solomon, James W. Guest, and Bernard Asman, which will urge on the mayor the appointment of Dr. Ap Morgan Vance as the medical member of the commission.

Advocates Examination of Teeth.—Dr. W. E. Grant, health officer of Louisville, has recommended to the school board that the teeth of all children be regularly examined. It is probable that senior dental students of Louisville Dental College will be utilized in this department as school inspectors.

Bill Defeated in Senate.—Senate Bill No. 66, introduced by Senator Combs, was defeated in the senate March 10. This bill carried an appropriation of \$150,000 for the establishment of a medical department of the State University, two years of the course to be taken in Lexington, where the university is located, and two years in Louisville. The bill also carried an appropriation for \$45,000 for maintenance. Amendments were made cutting the appropriation to \$25,000, and an annual appropriation of \$25,000 for two years. Senators Burnam and Lynn, who spoke against the measure, stated that: "the consolidation of the five medical colleges of Louisville resulted in a number of men losing their positions and this bill was the outcome of the ill-feeling resulting therefrom." The bill was defeated by a vote of 18 to 14.

LOUISIANA

Sanitary Inspection Retained.—At a conference between officials of the state and the Board of Health of New Orleans, March 8, it was decided to ask the Secretary of the United States Treasury to reestablish sanitary inspection of passengers arriving in New Orleans from Central American ports, under the supervision of the U. S. P. H. and M.-H. Service.

Personal.—Dr. Junius J. Stagg, Eunice, charged with shooting Sevia Fuselier, February 26, was exonerated at the inquest two days later.—Dr. Stephen L. Powlett, mayor of Hammond, is said recently to have been convicted of unlawfully prescribing liquor and fined \$100.—Dr. John P. Scott has resigned as a member of Shreveport Charity Hospital Board.—Dr. Otis M. Patterson has been elected coroner of Bastrop.

Medical Society News.—The Orleans Parish Medical Society has had plans made for a new building on the site of its present home in Elk Place to cost \$25,000. The society now owns a library worth about \$60,000, and has assets amounting to \$15,000.—At the annual meeting of East Baton Rouge Parish Medical Society, held January 12, the following officers were elected: President, Dr. James A. Tucker; vice-president, Dr. Philip H. Jones, and secretary-treasurer, Dr. James J. Robert, all of Baton Rouge. Resolutions of respect and condolence were adopted regarding the late Dr. William D. Harrelson, and a resolution was also adopted condemning the practice of counter prescribing, said to be prevalent in Baton Rouge, and notifying druggists that steps are being taken to accumulate evidence to prosecute such violators to the fullest extent of the law.

MARYLAND

Annual Meeting of State Society.—The annual meeting of the Medical and Chirurgical Faculty of Maryland will be held in Baltimore April 26-28. The annual oration will be delivered by Dr. Clemens von Pirquet.

The State Tuberculosis Sanatorium.—A bill was introduced in the legislature, March 8, authorizing a bond issue of \$100,000 to provide additional buildings and improve the grounds of the Maryland Antituberculosis Sanatorium in Frederick county.

Medical Examiners Organize.—Life insurance examiners of Baltimore held a meeting in the hall of the Medical and Chirurgical Faculty of Maryland, March 7, organized the Baltimore Medical Examiners' Society, and elected Dr. James D. Iglehart, president; Dr. Charles E. Sadtler, vice-president, and Dr. W. Edward Magruder, secretary.

New Health Bill.—A new health bill for Washington county has been introduced in the legislature, which extends the term of office of the county health officer to two years; divides the county into fourteen sanitary districts, and provides for the appointment by the county commissioners of a sanitary officer for each district. The object of the new law is to place the

responsibility for the health of the community on the community itself.

State Lunacy Bill Discussed.—The State Lunacy bill which provides for the care of insane poor by the state instead of by counties, was discussed March 9, before the finance and judiciary committee of the senate. The bill passed the house some time since and has been held by the senate. By it the Lunacy Commission is given authority to remove acute cases from the county institutions to the state hospitals, and it also requires inspection of all public and private asylums by the commissioner.

Personal.—Dr. Joshua W. Hering, Westminster, state comptroller, celebrated his seventy-seventh birthday anniversary, March 8.—At the annual meeting of the Princeton Alumni of Maryland, held in Baltimore, March 11, Dr. Hiram Woods was elected president and Dr. John M. T. Finney, a vice-president, both of Baltimore.—Drs. Thomas A. Ashby, Randolph Winslow, G. Milton Linthicum, Charles O'Donovan, all of Baltimore, and Joshua W. Hering, Westminster, are the proposed regents of the state university, the plan for which is to be presented to the legislature.

State Board of Health Demands.—The State Board of Health appeared before the committee of ways and means of the House of Delegates, March 8, to ask for an increase in the appropriations, including \$1,000 a year for the publication of a monthly health bulletin; an increase from \$5,000 to \$10,000 to carry out the provisions of the tuberculosis law, the additional sum to be devoted largely to dissemination of prophylactics information and supplies, and \$24,000 for the establishment of five bureaus, namely, communicable diseases, bacteriology, chemistry, sanitary engineering, and vital statistics. The appropriation now made to the State Board of Health of Maryland is said to be lower than any state which makes pretense of any such work.

MASSACHUSETTS

Fortune Given for Care of Teeth.—Thomas A. Forsyth, Boston, plans to give \$2,000,000 for the care of the teeth of school children of the city, as a permanent foundation by which every child in the city to the age of sixteen may receive expert dental service free of charge.

Sanatorium Opened.—The State Sanatorium for Tuberculosis, Westfield, was opened for the reception of patients last month. Dr. Henry D. Chadwick, formerly of Waltham, is superintendent, and Dr. Harvey S. Wagner, formerly of Denver, assistant. The institution has accommodation for 150 patients.

New Health Officers.—Dr. Frederick F. Andrews has been elected chairman of the Revere Board of Health.—Dr. Charles A. Abbott, Andover, has been reelected a member of the local board of health.—Dr. Dean S. Luce has been elected a member of the board of health of Canton.—Dr. Osmyn Baker has been elected city physician of Northampton.

MINNESOTA

New Hospital Opens.—The new contagious disease hospital, Duluth, was opened for general use, February 14. The building was accepted February 10, after careful inspection by thirty physicians of the city.

County Health Association Organized.—Mower County Public Health Association was organized in Austin, February 7. The general work of the association is to be the study and promotion of the best possible sanitary conditions of the county and the dissemination of information regarding the prevention of disease.

New Sanatoria.—The new St. Paul Tuberculosis Sanatorium, Bass Lake, was opened January 25. The building is a two-story brick structure, with accommodation for 30 patients and necessary attendants, and has been erected at a cost of more than \$10,000, collected through the efforts of the St. Paul Antituberculosis Committee. Dr. H. Longstreet Taylor is medical director of the institution.—A sanatorium is to be established at Cold Springs, near St. Cloud, at a cost of \$25,000.

Personal.—Dr. James E. Moore, Minneapolis, professor of surgery in the University of Minnesota, was seriously injured, February 25, by the fall of a temporary roof of the building in which he was conducting a class in surgery. Nine students were more or less seriously injured.—The governor announces that he has decided to reappoint Dr. Henry M. Bracken, Minneapolis, a member of the State Board of Health.—Dr. Albert F. Groves, Brainerd, who has been seriously ill with rheumatism, is reported to be convalescent.

Reunions.—Three generations of physicians graduated at the University of Pennsylvania were represented at the meeting of the Northwestern Alumni Association, St. Paul, March 3. —Dr. Archa E. Wilcox, Minneapolis, was elected president of the organization and Dr. Arthur S. Hamilton, Minneapolis, secretary. —The Minnesota Wiener Medical Verein held its annual meeting in Minneapolis, February 5, and elected Dr. Charles D. Freeman, president; Dr. Paul B. Cook, vice-president, and Dr. Louis A. Nelson, secretary, all of St. Paul.

Medical Society Meetings.—At the annual business meeting of the Ramsey County Medical Society, held in St. Paul, January 31, Dr. Warren A. Dennis was elected president; Dr. James S. Gilfillan, vice-president; Dr. Frederick Leavitt, secretary-treasurer, and Dr. Alva F. Whitman, neurologist. The society has a membership of 200, and maintains a reference library of 5,000 volumes, and a working laboratory for its members. —At the annual meeting of Rice County Medical Society, held in Faribault, the following officers were elected: Dr. Arthur C. Rogers, Faribault, president; Drs. Warren Wilson, Northfield, and P. Albert Smith, Faribault, vice-presidents; Dr. Frederick U. Davis, Faribault, secretary-treasurer, and Dr. Frederick R. Huxley, Faribault, censor. —Clay-Becker County Medical Society held its annual meeting, January 31, at Moorhead and elected the following officers: President, Dr. Olaf J. Hagen, Moorhead; vice-president, Dr. Lew M. Lowe, Glyndon, and secretary-treasurer, Dr. Edgar R. Barston, Frazee.

NEW YORK

Cost of Food Affects State Hospitals.—The high price of certain foodstuffs has led the Commission in Lunacy to reduce the amounts of hams and smoked meats to about one-half the usual quantities and to substitute beef, milk and eggs to furnish an equivalent amount of nourishment.

New Legislation.—A bill has been introduced into the legislature which places cold storage warehouses under the supervision of the State Board of Health. All food must be stamped conspicuously with the date when storage began, and shall not be kept longer than six months except on special permission of the board, to which quarterly reports must be made. —Another bill includes within the definition of adulterated food, slaughtered game, animals, poultry or fowl, unless the carcass has been divested of its entire digestive tract within twelve hours after its slaughter. Any such carcass found in any refrigerator, ice chest, cooler, storage, apartment or market is to be presumed to have been slaughtered for a longer period than twelve hours. —Another bill requires the New York City Health Department during the summer months to operate hospital boats for the care of sick mothers and children.

A Tuberculosis Conference.—The New York State Charities Aid Association held a conference at Albany on March 18 and 19. This conference celebrates the beginning of a new period of constructive work by the state and local committees on the prevention of tuberculosis. The conference will be followed by sermons throughout the state on Tuberculosis Sunday, April 24, on the text "No unhealed-for tuberculosis in 1915." They will emphasize the demand for a county hospital for every county and at least one visiting nurse for every city and village, a free dispensary for every city or village having a population of over 5,000, the reporting of every living case to the health authorities, and the adequate treatment of every case either at home or in a hospital. If these plans are carried out there will be in the upstate portion of New York by 1915 at least 1,500 state beds for tuberculosis, 61 county hospitals, 22 city hospitals, 85 dispensaries, and 150 visiting nurses for the care of tuberculosis cases.

State to Make War on Disease.—Called together by Dr. Eugene H. Porter, State Commissioner of Health, nearly fifty experts of the State Department of Health met in Albany March 8 to plan a definite and detailed movement throughout the state for the suppression of communicable and preventable diseases. Dr. Porter stated that they were about to district the state and to appoint competent physicians to act as sanitary inspectors over such districts under the authority of the State Department of Health. He outlined legislation which would link the local health officer through the sanitary supervisor with the central health department at Albany. Dr. William A. Howe, Phelps, detailed the method of an investigation by the sanitary supervisor of an outbreak of typhoid fever and what he could do to lessen the excessive death rate from diphtheria, scarlet fever, measles, whooping cough and tuberculosis. Meetings will be held throughout the state and everything possible will be done to put the work on sanitation on a higher plane. This is the first time that a state has entered on such a thorough-going campaign against disease.

NEW JERSEY

Antituberculosis Society Organized.—A branch of the New Jersey Association for the Prevention and Relief of Tuberculosis has been organized in Moorestown with Dr. Nathan Thorne, president; Dr. Joseph Stokes, vice-president, and Dr. Frank G. Strond, secretary.

Surgical Dressing Maker Dies.—Robert Wood Johnson, New Brunswick, president of Messrs. Johnson and Johnson, makers of surgical dressings and organizer of the firm of Seabury and Johnson, died at his home in New Brunswick, February 7, from acute nephritis, aged 65.

Personal.—Dr. Thomas J. Smith, Bridgeton, sustained a fracture of the nose in a runaway accident recently. — Dr. Paul E. Kuhl, Trenton, has been secured to care for the diphtheria cases at the New Jersey State Epileptic Village, Skillman. —In the case of Dr. Herman A. Glatzmayer, Newark, sentenced to imprisonment for five years, and fined \$1,000 for malpractice, the verdict was set aside by the supreme court, March 7. Reversal was based on exclusion, at the trial, of questions put on cross-examination, concerning alleged acts injurious to the case of the defendant.

Osteopaths Recognized.—At a meeting of the house, March 9, the Ramsey Medical Bill was passed by a vote of 44 to 10. Under this bill, there is to be added to the State Board of Medical Examiners, now composed of nine members—five regular physicians, three homeopaths, and one eclectic—a tenth member who shall be an osteopath. Osteopathy is defined in the bill as: "a system of therapeutics, which seeks to secure normal adjustment of the anatomic structures through a process of scientific manipulations, recognizing as its proper heritage the use of air, water, light, heat, proper food, exercise or other physiologic measures." The bill prescribes the qualifications of an osteopath who may be licensed and provides: "the license granted under this section shall not authorize the holder thereof to use, prescribe, administer any drug or medicine, serums, antitoxin or vaccine, practice surgery, attend any contagious or infectious disease, or sign any birth or death certificate, and this together with the fact that it is issued without examination, shall be so stated in the said license." The advocates of osteopathy, it is said, are dissatisfied with the measure and their supporters voted in the negative.

PENNSYLVANIA

Personal.—Dr. Katharine W. Ulrich, Chester, a member of the staff of Chester Hospital, is reported to be ill with pneumonia. —The local board of health of Chambersburg has reorganized by reelecting Dr. Johnston McLanahan, president, and Dr. Harry M. Miley, secretary.

Railroad Relief Fund Report.—The Lehigh Valley Railroad announces that \$85,689.30 was paid from the relief fund in the year 1909 for the benefit of the company's employees, leaving a balance at the end of the year of \$28,099.91. In the 32 years of this fund's existence, the contributions have amounted to \$1,485,973.02. Of this, the employees have paid half and the company half.

Philadelphia

National Meeting on Alcohol and Drugs.—The American Association for the Study of Alcohol and Other Drug Narcotics will meet in Philadelphia, April 6 and 7. Arrangements for the sessions are in charge of Dr. Alfred Gordon, 1430 Pine street.

Personal.—Dr. Jacob Solis Cohen was tendered a testimonial dinner by the section on laryngology of the College of Physicians and his former and present assistants, March 15, in honor of his having completed half a century of active practice. —Dr. S. Hamill Horne sailed from San Francisco, March 8, on a tour around the world. —Dr. Ernest F. Apeldorn was thrown from a wagon, March 7, and sustained a fracture of the hand and concussion of the brain. —Dr. Gennaro Spazano was exonerated by Common Pleas Court No. 5, February 18, in a suit brought against him for alleged malpractice.

TENNESSEE

New Superintendent for State Asylum.—At a meeting of the trustees of the Tennessee Central Hospital for the Insane, Nashville, March 4, Dr. Albert E. Douglas, for nine years assistant superintendent, was appointed to fill the vacancy in the superintendency of the institution, caused by the death of Dr. John A. Beauchamp.

Hospital News.—St. Joseph Hospital, Memphis, during the twenty years of its existence, has ministered to 39,656 sick people, of whom 22,228 were charity patients. Dr. Benjamin F. Turner is president of the staff of the hospital. —A branch

isolation hospital to cost about \$2,500 is to be established in connection with the Knoxville General Hospital. The building is to be maintained for the exclusive occupancy of patients suffering from communicable diseases.

WISCONSIN

Building for Doctors.—Plans have been made for a four-story building at Mason street and Broadway, Milwaukee, to be used as an office building for physicians.

Society Meeting.—At the annual meeting of Outagamie County Medical Society, held in Appleton, March 3, Dr. Manly J. Sanborn was elected president; Dr. James V. Canavan, vice-president; Dr. Frank P. Doharty, secretary-treasurer, and Dr. George A. Ritchie, censor, all of Appleton.

Resolution Against Contract Practice.—Rock County Medical Association, at its meeting in Janesville, February 25, adopted a resolution forbidding members of the association to continue or to undertake contract lodge practice. Those members of the society who were not present at the meeting are to be notified not to take up the practice or to discontinue it within sixty days.

GENERAL NEWS AND COMMENT

Personal.—The Mary Kingsley Medal has been awarded to Walter Wyman, supervising surgeon-general U. S. P. H. and M.-H. Service, for the organization he has given to the service under him and for the manner in which he has also supported scientific principles in public sanitation.

The Isolation of Polonium.—Mme. Curie, who in conjunction with her late husband, M. Pierre Curie, discovered radium and polonium, has succeeded, with the cooperation of M. Debierne, in isolating a milligram of polonium from pitchblende. According to *Science*, several tons of the latter mineral treated with hydrochloric acid were required to produce this amount of polonium. While its radio-activity is greatly in excess of that of radium, it disintegrates and disappears with far greater rapidity, losing 50 per cent. of its weight in 140 days. It would require a like quantity of radium a thousand years to disappear. Polonium decomposes organic bodies with great rapidity, and when placed in such a refractory substance as a quartz vase the vessel is soon cracked. In the process of disintegration helium and another substance, supposed to be lead, are produced. The determination of this latter substance will also establish the fact that polonium is not an elementary body, as formerly believed.

Meeting of Association of Medical Colleges.—The twentieth annual session of the Association of American Medical Colleges will be held in the hall of the Medical and Chirurgical Faculty of Maryland, Baltimore, Monday and Tuesday, March 21-22, 1910. The Monday morning session will be taken up by reports of officers and special committees. Monday afternoon, the following addresses will be given:

"The Medical Curriculum," Dr. William H. Welch, Professor of Pathology, Johns Hopkins University, Baltimore.

"The Five Year Course," Dr. John W. Seane, Registrar, McGill University, Montreal, Canada.

"The Concentration Plan of Teaching," Dr. H. A. Christian, Dean, Harvard Medical School, Boston.

"The Teaching of Ophthalmoscopy," Dr. A. R. Baker, Professor of Ophthalmology, Cleveland College of Physicians and Surgeons.

Monday evening the address of welcome will be given by Dr. G. Milton Linthicum, president of the Medical and Chirurgical Faculty of Maryland, the response to which will be given by Dr. J. A. Witherspoon, professor of medicine, Vanderbilt University, Nashville, and a member of the Council on Medical Education of the American Medical Association. This will be followed by the address of the president of the association, Dr. George Howard Hoxie, Kansas City, Mo., dean of the School of Medicine of the University of Kansas. Tuesday morning, besides the reports of the committees, there will be addresses by Dr. Herbert A. Harland, president of the Maryland Board of Medical Examiners, on "State Boards and High Entrance Requirements," this to be followed by an address by Mr. Abraham Flexner of the Carnegie Foundation for the Advancement of Teaching, on "Medical Standards." Tuesday afternoon will be devoted to business and to the election of officers. A large and interesting meeting is expected.

CANADA

McGill Reunion.—A reunion of all graduates in medicine of McGill University, Montreal, is planned for the coming convocation, June 6 and 7.

Rabies in Ontario.—On account of the prevalence of rabies in Ontario, a deputation from the Academy of Medicine, of

Windsor, asked the provincial cabinet recently that a Pasteur institute be established in Toronto in connection with the university.

Typhoid Fever in Montreal.—The prevalence of typhoid fever in Montreal has moved the health committee to recommend the city council to vote \$15,000 for the maintenance of poor typhoid fever patients in the emergency hospital and other institutions in the city. Archbishop Bruchesi announces that there are 300 beds available in the institutions under his care.

News About Sanatoria.—The new Provincial Tuberculosis Sanatorium, Ottawa, which was erected by the antituberculosis association at a cost of \$50,000, was formally opened by Earl Gray, governor-general of Canada, February 15.—The new Tuberculosis Sanatorium of Manitoba, at Ninette, was opened March 1. It has a capacity of 75 patients and is under the superintendency of Dr. Stewart.

Hospital News.—By the will of the late Mr. Charles Cockshutt, Toronto, \$10,000 is devised to the Hospital for Sick Children in that city.—The Montreal General Hospital proposes an extension which will accommodate 38 more private patients and 84 more ward patients. A new operating theater is also contemplated.—The Ontario government has set aside a grant of \$5,000 to establish a hospital for New Ontario.

University News.—With the commencement of Michaelmas term, a scholarship for research work in surgery, known as the George Peters Memorial Scholarship, will be founded in connection with the Medical Faculty of the University of Toronto, in memory of the late Dr. George A. Peters, sometime professor of surgery in the institution.—The executors of the estate of the late Mr. Hart A. Massey have made a gift to the University of Toronto of buildings for the students' Young Men's Christian Association, a larger gymnasium, and the Students' Union.

Personal.—Drs. Charles F. Martin and Philip Burnett, Montreal, have gone to Europe.—Drs. J. Algernon Temple, Frederick LeM. Grasett, John L. Davison, Luke Teskey, and W. Theophilus Stuart have retired from the active teaching of medicine in the Medical Department of Toronto University.—Dr. Arthur F. Miller, formerly of Saranac, N. Y., has been appointed resident superintendent of Kentville Sanatorium for Tuberculosis in Nova Scotia.—Dr. and Mrs. John Bell, New Glasgow, N. S., sailed for Europe, January 29.—Dr. Herbert Young, Prince Rupert, B. C., has been appointed coroner for the province.—Dr. James A. McMahon has been appointed a member of the board of health of St. Catharines, Ont.—Dr. M. Capps Costello, Arnprior, Ont., has returned from Europe.—Sadik Bey, charged by the registrar of the College of Physicians and Surgeons of the Province of Quebec with practicing medicine illegally, was acquitted February 16.

Medical Societies Meet.—Lambton County (Ont.) Medical Association, at its annual meeting, February 16, elected Dr. Robert M. Calder, Petrolia, president; Dr. Robert G. McDonald, Sarnia, vice-president, and Dr. Robert G. C. Kelly, Watford, secretary-treasurer.—At a meeting of the local practitioners of Prince Rupert, B. C., a medical association was formed and the following officers were elected: President, Dr. J. O. Reddie; vice-president, Dr. Henry E. Tremayne, and treasurer, Dr. Neil M. McNeil.—The annual meeting and banquet of the alumni of Manitoba Medical College was held in Winnipeg, February 16. Dr. Henry H. Chown, Winnipeg, was the guest of honor, and Dr. Alexander J. Douglas, Winnipeg, presided. Dr. Edward W. Montgomery, Winnipeg, was elected president; Dr. James W. Armstrong, Gladstone, vice-president, and Dr. Campbell MacArthur, secretary-treasurer.—At the March meeting of the West Toronto District Doctors' Association, the society formally announced that it favored the principle of representation on the council of only those universities which had teaching medical faculties, namely Toronto, Queen's, and London; that representation should be reduced from seventeen territorial to nine, and the homeopaths from five to two, and also that each year a full and correct statement of the finances of the council should be published.—The Medical Association of Brandon (Man.): at its annual meeting, elected Dr. John S. Matheson, president; Dr. E. Charles Beer, vice-president, and Dr. J. G. B. Lynch, secretary, all of Brandon.—At a meeting of the Medical Association of Military District No. 8, N. B., held in St. John, a branch of the Association of Medical Officers of the Militia of Canada was formed, a constitution adopted and the following officers elected: President, Major Walker; vice-president, Captain Stewart S. Skinner, St. John; and secretary-treasurer, Captain Steeves.

FOREIGN

Recent English Deaths.—Among recent deaths in England are those of Henry John Manning, M.R.C.S., England, 1866; honorary secretary-treasurer of the Southern Branch of the British Medical Association, and superintendent and licensee of Lavestock House Asylum, Salisbury, on February 20, after a long and painful illness, aged 74; of John William Taylor, F.R.C.S., England, 1877; professor of gynecology in the University of Birmingham, and formerly chief assistant to Mr. Lawson Tait, who delivered the Engleby Lectures in 1898, was president of the British Gynecological Society in 1904, and died February 26 from chronic heart disease, aged 58; and of Surgeon-Major-General George Landford Hinde, C. B., who entered the Royal Army, Medical Corps, in 1855, and retired in 1892 after having served in the Crimean and first Boer wars, and with the Soudan expedition.

Professor Jonnesco at Home.—The following item appeared in the *Frankfurter Zeitung*, Feb. 25, 1910: "A MEDICAL QUARREL IN BUCHAREST.—The following letter has reached us from Bucharest: Sunday evening Prof. Thomas Jonnesco, dean of the medical faculty at the university of Bucharest, returned from a long foreign tour. He was met at the station by almost all the physicians of the city and the medical students who, together with a large crowd of people, had gathered to greet the clinician. Prof. Thomas Jonnesco had visited England and America on the invitation of the English and American universities to demonstrate his new method of anesthesia by injection of a stovain-strychnin mixture into the spinal canal (a method recently described in the *Frankfurter Zeitung*). The operations of Professor Jonnesco which were everywhere well received and very extensively described by all the English and American journals, have not been allowed to rest by a number of envious rivals. A bitter strife has developed between the adherents of the dean and some opponents, not, however, regarding the value of the method itself, but these physicians who are, however, in the minority, claimed that in his demonstrations of his method as carried out in foreign countries, Professor Jonnesco had entered the field of quackery and had brought disgrace on the entire Roumanian nation. In large placards and circulars it was demanded that Professor Jonnesco resign his place as dean and as member of the medical faculty and even the government was incited against the scientist. Luckily, however, these malicious attacks have had little effect for it was soon recognized that their real aim was directed against Thomas Jonnesco, not as a scientist, but as a brother of the former minister of finance, Take Jonnesco, with the purpose of injuring the latter who is the present leader of the conservative democratic party."

LONDON LETTER

(From Our Regular Correspondent)

LONDON, March 5, 1910.

The Beit Fellowships for Medical Research

The munificent gift of a million dollars for the foundation of fellowships for medical research by the Beit brothers was described in a recent letter (*THE JOURNAL*, Jan. 15, 1910, p. 217). The following fellows have been appointed: 1. George Harold Drew, who has made researches on the parasitic and other diseases of fish, the reproduction of laminaria, and marine bacteriology. He is authorized to make researches on the zoologic distribution of cancer, and a systematic experimental study on the mode of origin of neoplasms. These researches will be carried on at the Imperial Cancer Research Laboratories, London; the zoologic station, Naples; the marine biologic station, Plymouth; and the zoologic station, Roscoff, France. 2. Frederick W. Edridge-Green, a well-known authority on color vision, and the inventor of the color-perception spectrometer. He is authorized to investigate various problems in connection with vision and color vision especially in relation to the correct reading of signals on land and sea. 3. Edward Hindle, instructor in parasitology, University of Chicago, who is authorized to make researches into the morphology and treatment of protozoic blood parasites, especially *Spirocheta duttoni* and trypanosomiasis, at the London School of Tropical Medicine and in Uganda. 4. Thomas Lewis, physician to out-patients, City of London Hospital, the author of numerous papers on a new method of investigating the heart: is authorized to make researches on the mechanism of irregularities of the heart. 5. G. C. McKay Mathison, a writer on the estimation of phosphorus and the output of organic phosphates in the urine, and the nervous control of respiration, is authorized to make researches on the nervous control of respiration, the effect on respiration of changes in

the chemical composition of the blood, and the mechanism of biliary secretion and its general effect in digestive processes. 6. Otto May, physician to out-patients, Evelina Hospital, London, who is authorized to make clinical and experimental researches on lesions of peripheral nerves. 7. Edward Melanby, demonstrator of physiology, St. Thomas' Hospital, who is authorized to make researches on the mode of action of caffeine, theobromin and allied substances on the muscular and nervous systems. 8. Sydney Rüss, demonstrator in physics at the Victoria University, Manchester, who is authorized to make researches on the association of radioactivity with cancer. 9. Ida Smedley, assistant lecturer on chemistry, Victoria University, who is authorized to make researches on the processes involved in the formation of fat in the organism. It is evident that the researchers have been well selected, and that their subjects are of the first importance.

The Responsibility of Hospitals

A curious case has been decided in the Glasgow sheriff court. In the winter of 1907, a man, suffering from scarlet fever, was removed to a fever hospital belonging to the Glasgow corporation and died there. His widow sued the corporation for \$5,000 for failure to take proper care of her husband in removing him to the hospital and while there in allowing him, when delirious from fever, to escape into the grounds and get a chill, which led to his death. The sheriff gave judgment against the widow on the following grounds: As regards the removal, her point was that the nurse in charge of the ambulance allowed the patient to walk to it instead of having him carried. The sheriff found that the patient elected to walk and that there was no proof that he suffered from doing so. The main issue, however, was that the defendants were negligent in allowing the patient while delirious to escape. On the night in question the ward was admittedly abnormally full, containing 32 patients, of whom only 4 were adults, the others being boys. More than half of the patients were convalescent and needed no attention during the night. Under ordinary circumstances, the one staff nurse was considered sufficient, but on this night there were, in addition, a night sister within call, a male attendant watching this particular man, and another available in case of emergency. The resident physician was under the same roof and also within call. The patient was delirious, imagined he was ill-treated, and got out of bed more than once. At 11:30 he got up and evaded the male attendant and nurse. He ran about the ward a little and then suddenly broke a window and escaped into the grounds. He was captured, brought back and put into a restraining sheet. He died four hours later. The sheriff found that the attendance provided was sufficient and that there the responsibility of the defendants ended. The attendants had not failed in their duty, and there was no evidence that the use of the restraining sheet was improper. He did not consider that either the physician or the male attendant committed any error of judgment, and even if it were proved that the physician committed an error of judgment that was no liability of the defendants.

PARIS LETTER

(From Our Regular Correspondent)

PARIS, March 4, 1910.

Two New Professors at the College of Medicine

It will be remembered that there were two vacant chairs at the Paris college of medicine, one, that of internal pathology, made vacant by the death of Professor Brissaud, the other, that of general pathology and therapeutics, made vacant by the resignation of Professor Bonchard (*THE JOURNAL*, Jan. 15, 1910, liv, 217, and Feb. 5, 1910, liv, 478). The minister of public instruction has just appointed Dr. Fernand Vidal to the first chair and Dr. C. Achard to the second. The first was proposed to the minister by the professors of the college unanimously and the second by 43 out of 44 votes. Such unanimity is extremely rare at the college of medicine and it is altogether to the honor of the two new professors.

Dr. Vidal, *agrégé*, member of the Academy of Medicine and of the Superior Council of Hygiene of France, physician of the Cochin Hospital, thus becomes the youngest professor at the college. He is especially well-known by the method of serodiagnosis of typhoid fever which bears his name, as well as by his works on the cure of insufficiency of chlorids in diseases of the kidneys.

Dr. Achard, *agrégé*, physician of the Necker Hospital, is an investigator whose merit is equalled only by his modesty. His works deal with the most varied subjects, especially with the diseases of the kidneys and of the blood. He has written, in

collaboration with Professor Lannelongue, some interesting essays on serotherapy of tuberculosis. In 1901, while taking the place of Professor Bouchard at the college of medicine, he gave a series of instructive lessons on the new procedures of clinical exploration, which have been published. With M. Debove, he edited a text-book of medicine in nine volumes, and more recently, with MM. Debove and Castaigne, he edited a manual of the diseases of the alimentary canal and a manual of the diseases of the kidneys and the suprarenal capsules.

Action Against Fraud

The general confederation of wine-growers of France in a letter to M. Paul Bolo, general delegate of the White Cross of Geneva (*THE JOURNAL*, Oct. 9, 1909, liii, 1200) announces that it has just undertaken to unite the various agricultural societies for the purpose of fighting fraud, and it requests support of the White Cross in this work.

Personal

In its session of March 1, the Paris Academy of Medicine elected Dr. D'Espine of Geneva and Sir Victor Horsley of London, foreign associates.

The MacLaughlin Electric Belt in the Courts

On the initiative of three medical organizations, the *Syndicat des médecins de la Seine*, the *Syndicat médical de Paris*, and the *Syndicat général des médecins français électrologistes et radiologistes*, the directors and physicians of a widely advertised concern, the "McLaughlin Institute," which made extravagant claims for a belt called "Electro-Vigor," have finally been prosecuted for illegal practice of medicine and for fraud. It was shown that "Dr." MacLaughlin had no medical diploma from any country. The experts decided that the "Electro-Vigor" belt was a useless and harmful piece of apparatus. Nevertheless the court did not uphold the charge of fraud but only the charge of illegal practice of medicine. The three directors of the institute, Zook, Cooley and Cooper were condemned to pay fines of \$100 (500 francs) and Drs. Dumoret and Ficatier, the first of whom had already been cited before the court, were sentenced to pay the same fine for complicity. The three organizations which were civil parties to the suit had asked \$10,000 (50,000 francs) damages, but were awarded only \$200 each, because, according to the court, the injury to their interests was not as great as claimed, since the greater number of the patients thought of buying belts only after having exhausted other means and consulted one or more physicians. [EDITOR'S NOTE: In *THE JOURNAL*, Feb. 26, 1910, page 713, it was noted that a fraud order had been issued by the United States Postoffice Department against the "Dr. Hall Electro-Vigor Company"—a name under which, we are informed, the MacLaughlin people do business in this country.]

BERLIN LETTER

(From Our Regular Correspondent)

BERLIN, March 3, 1910.

Personal

Professor Kroemer, assistant to Professor Bumm at Berlin, has been appointed director of the university gynecologic clinic at Griefswald.—Dr. L. Seitz, privat-docent at Munich, has been called to the directorship of the university gynecologic clinic at Erlangen. These appointments fill the chairs left vacant by Pfannenstiel and Runge.—Professor Leber, the distinguished Heidelberg ophthalmologist, will celebrate his seventieth birthday, February 28.—Professor Bäumler of Freiburg celebrated the fiftieth anniversary of his doctorate February 18.

Age Limit for University Professors

The question of age limit for a university professor, which I touched on in my previous letter on the occasion of the announcement of Olshausen's resignation, will probably become a matter of a general regulation in Germany. Already in the last few years the opinion has been expressed that a similar regulation of the teaching of university professors should be established as is the case in Austria and to some extent in Italy. The universities have so far refrained from action in this matter so that the government has seen no occasion for a change in the legal status. Now, however, the medical faculty at Freiburg has itself made the proposal to the government of Baden to introduce an age limit at first for those in charge of the clinics. It is uncertain but not improbable that the Baden government will put in force the proposal of the Freiburg faculty.

International Congress for the Hygiene of Infancy

The third International Congress for Infant Hygiene will occur in Berlin in 1911. A few days ago the German committee on organization for this congress was established. Bum, the president of the imperial health office, who rendered very good service in a similar capacity for the Berlin International Congress on Hygiene, was chosen Chairman and Privy Counsellor; Dietrich and Heubner were chosen as his representatives. Professor Keller, the director of the Augusta Victoria institute to restrict infant mortality, was elected general secretary. The empress will probably assume the protectorate of the congress.

The Use of Beer in Greater Berlin

The use of beer in Greater Berlin is decreasing from year to year; especially is the so-called "genuine beer" (*Echtes Bier*) from Bavaria and Bohemia drunk to a less extent. The latter circumstance shows that the abstinence movement has gained a greater foothold among the better classes of the population than among those who drink the cheap domestic beer. Until the year 1906 the importation of beer into Berlin continually increased, but since then the importation has fallen off from year to year. In 1906 it amounted to about 99,000 hogsheads of 1,000 kilograms (about 100,000,000 liters, 25,000,000 gallons); in 1907 about 95,000 hogsheads; in 1908, 91,000.

Statistics of the State Supported Compulsory Insurance

From the business report of the imperial insurance office for 1909, just appeared, the following items are of general interest: About 27,000,000 persons were insured in Germany against accidents and 653,000 accidents were reported; \$15,000,000 (62,000,000 marks) were paid as compensation. In invalid insurance up to the end of 1909 2,300,000 invalid, sickness, and old age pensions were granted. In 1909 about \$46,000,000 were paid. The entire income from contributions of the insured amounted to about \$45,000,000; 2,828 persons were cared for in the homes for the disabled and infirm and in the hospitals. Up to Dec. 31, 1909, there had been loaned for public purposes from the funds of the insurance societies for the building of workmen's homes \$67,000,000 and for the building of hospitals and convalescence homes as well as for other philanthropic purposes \$94,000,000.

Treatment of Diffuse Peritonitis

At the last session of the independent surgical society of this city (*Freie Vereinigung der Chirurgen*) there occurred, following an address by the well known Professor Rotter, an interesting debate on the treatment of diffuse peritonitis. Rotter distinguished mild diffuse peritonitis, in which the lower abdomen contained an abundant purulent exudate, while the upper part of the abdomen was only slightly affected and severe diffuse peritonitis in which the entire cavity of the peritoneum is filled with pus. In each of the two groups an early and a late stage should be especially considered. Among the mild cases Rotter had treated from 1907 to 1909 33 cases with no mortality and in the late stage 17 cases with a mortality of 11 per cent. In the severe form the mortality in the early stage fell from 17 per cent. in 1905-06 to 10 per cent. in 1909. Fifty-eight cases in the late stage were operated on in 1905-06 with a mortality of 77 per cent., in 1907 and 1908, 72 cases with 41 per cent. mortality and in 1909 30 cases with 50 per cent. mortality. Rotter finds the reason for improvement in the death rate in the improvement of operative technic and in the change of indication. After 1907 the mild cases of diffuse peritonitis in the late stage were subjected to operation. In most cases Rotter wiped the cavity dry and more rarely irrigated, but as he has found that the irrigated cases less frequently show secondary abscesses he has again resorted to the irrigation method. At any rate he regards irrigation as the more thorough method. He has observed no essential improvement of the results from drainage.

Professor Körte emphasized the fact it was difficult to decide whether or not an individual case should be included in the class of diffuse purulent peritonitis. The wider the limits are extended the more favorable the results. Early operation is of great importance in all forms of peritonitis; this is seen most plainly in appendicitis. In this disease those operated on the first and second days showed a mortality of 21.5 per cent. and those operated on after the third day gave a mortality of 57 per cent. In 10 cases of perforation of the stomach with operation after the first day, only a single patient recovered, but of 38 operations within the first twenty hours nearly three-fourths recovered. The intensity of the infection is of very great significance for the result of treatment. The worst form

is that in which there is no formation of a purulent exudate but merely a clouding of the serous membrane with precipitation of fibrin. In these cases operation is very seldom of any avail. The putrid ichorous exudates are much less dangerous. Körte considers irrigation of the peritoneal cavity as the better procedure. Thorough irrigation with hot salt solution cleanses the peritoneal cavity with least damage, exercises a stimulating influence and arouses the activity of the intestine. It is important that a free outflow be provided for the liquid in irrigation. The peritoneal incision must be large enough to give a good view. He has almost always introduced drainage in appendicitis. It is a matter of indifference whether a rubber or glass drain is used. In perforation of the stomach he has lately regularly closed the abdomen after thorough irrigation. He has departed from the principle of operating on every case of peritonitis received. He operates only when a successful cure is still possible. Non-puerperal peritonitis arising from the female pelvic organs recovers relatively often of itself, so that Körte operates only in exceptional cases. Puerperal peritonitis affords a very unfavorable prognosis for operation.

According to the report of Professor Neumann, director of the surgical section of the municipal hospital at Friederichshain, the mortality of peritonitis operations made by him has decreased from 72 per cent. in 1903 to 23 per cent. in 1909. He also is an adherent of the irrigation method.

Professor Koblanek, head of the gynecologic section of the Rudolf Virchow hospital, has operated in 22 cases of diffuse puerperal peritonitis, with only two recoveries. Whether the sexual organs shall be extirpated at the operation is to be decided by the general condition and by the nature of the affection. He also advocates irrigation with sodium chlorid. The severity of puerperal peritonitis depends on several factors: First, it is often due to the most toxic germs, the hemolytic streptococci. Second, the inflammation spreading from the uterus is never limited to the peritoneum but also affects other tissues (connective tissue, vessels, etc.), and, thirdly, there are usually complications in distant organs.

Professor Borchardt, surgeon at the Rudolf Virchow hospital, saw much worse results by the dry method than by the irrigation method in Bergmann's clinic, where he was formerly assistant. He uses for irrigation a normal salt solution heated to 40 C. until the water runs away clear, using sometimes as much as 40 liters. In very virulent cases he pours into the peritoneal cavity after the irrigation 1 to 2 bottles of Hoechst's streptococcic serum. While he has never seen any indisputable benefit from this remedy, it has never done any harm. As a rule he drains.

Abuses in the Manufacture of Medicine

The abuses in the manufacture of medicines, existing in almost all civilized countries, which consist especially in the sale under false representations of medicines compounded by unreliable manufacturers, are attributed by Professor Thoms, the director of the pharmaceutical institute of the Berlin University, in a recent article, to the fact that physicians are forgetting more and more how to write prescriptions and content themselves with ordering ready prepared remedies which are furnished by the manufacturers. In his opinion this practice constitutes a danger for the future of the medical profession. The more the physician neglects to combine the simple articles of the materia medica in his remedies and the more he makes use of ready prepared compounds in his prescriptions, the less the public will employ physicians and the more they will resort to self-medication which is made extraordinarily easy by the preparations furnished by the manufacturer, already put up, and provided with directions for use. The practicing physician should cooperate in the effort to restrain this commercial exuberance on the drug business.

Fourth International Congress for the Care of the Insane

There will convene in Berlin from Oct. 3 to Oct. 7, 1910, in the house of delegates (*Haus der Abgeordneten*), the fourth international congress for the care of the insane; the meeting has been arranged by the German society for psychiatry. The congress is not exclusively concerned with the questions and problems of the temporary treatment and provision for insane patients but will take up all investigations, regulations, and arrangements which serve for the protection of mental health in all respects. For this reason the social defects and hygienic errors which are injurious to intellectual life, the origin of mental disease from the earliest childhood and its greatest possible prevention will form subjects of discussion. The remedies for abnormal psychic conditions, the treatment both in and out of asylums, the systematic care in families, employment and

relief of patients and their families, the determination of their legal relations, and their assistance and care after asylum treatment will be investigated. The education and protection of youthful psychopaths and imperfectly developed individuals will be established on the basis of scientific experience. There will be combined with the congress an exhibition of methods for the care of insane and nervous patients which will give a complete exhibition of the progress made in this field in Germany in the last three decades, and a view of the arrangements which are in use in other civilized countries. Most of the German authorities and societies have already signified their cooperation so that the exhibition promises to be very instructive.

The Action of Diphtheria Antitoxin

A remarkable evidence of the critical spirit of physicians and of their skepticism in regard to therapeutics is shown by the fact that even to-day, nearly twenty years after the introduction of diphtheria antitoxin, a debate in regard to its efficiency can be held in which there are many expressions of doubt.

A short time ago there occurred in the Hamburg medical society a discussion on this subject which continued through several sessions and which is of general interest. The reason for the debate is that there is now in Hamburg a severe epidemic of diphtheria, characterized by its extent, the large number of adults attacked, by intense symptoms in the throat and frequent involvement of the nose, a frequent hemorrhagic tendency, many late heart lesions, a high infectiousness for physicians and nurses, a marked tendency to relapses and a higher death rate. The hospital physician, Dr. Rumpel, was of the opinion that unexceptionable statistical evidence of the absolute efficiency of antitoxin has not yet been produced. The very severe epidemic in Hamburg toward the end of the 80's showed a mortality of 16.9 per cent., while that of the present epidemic is 12.3 per cent. It is interesting to compare the year 1893 (before antitoxin treatment) with 2,712 cases and 411 deaths, that is, 15.2 per cent., and 1909 (to the end of October) with 2,167 cases and 267 deaths, that is, 12.2 per cent. It is certain that with the present prevailing bacteriologic diagnosis of diphtheria, more mild cases are included than was the case in 1893.

Rumpel presented a compilation of the percentage death rates in diphtheria since 1880. The first curve represented the mortality rate of the Eppendorf hospital in which since 1894, nearly all and since 1899 all the patients have been injected; the second curve, that of the city (outside the hospital) in which antitoxin was given later and only partially, and, third, that of the country district in which the injections were made still later and less frequently. All three curves showed an identical sharp fall in 1894 and a renewed rise at the present time. If the statistics of the cases in the earliest stages and of the most favorable character are to be cited as evidence of the activity of the serum, it may be objected that with other patients also the mortality is less the earlier the treatment is instituted. Among those admitted to the hospital on the first day of the disease, there is found the great number of mild and brief cases which influence the statistics favorably. Those admitted on the third day or later do not include such cases because the disease has already run its course. To this must be added the fact that a patient still infectious on the fourth day with a bad prognosis, will more readily be sent to the hospital by the physician and relatives than one in whom the prognosis is evidently good. Rumpel distinctly admits the temporary favorable influence of the injection on the local process. If, in spite of this, the hospital mortality according to his statements is not materially diminished by the antitoxin, the explanation is found in the fact that many of those who are tided over the acute infectious stage with the help of the serum, succumb to later occurring complications, especially heart paralysis.

In opposition to Rumpel and some other physicians, particularly of the older school, Professor Lenhartz took a decided stand in favor of the importance of diphtheria antitoxin. Both on the ground of his own experience of many years and of the diphtheria conditions which had been observed in the last year in the Hamburg-Eppendorf hospital he would not neglect the use of antitoxin in any case of diphtheria. As has always been emphasized, the timely administration is very important for its successful action. In marked contrast with the high mortality of those cases which entered the hospital from the city are the results in cases of infection acquired in the hospital itself. In the Eppendorf hospital 54 patients and employees were taken with diphtheria, a part of whom had the disease severely; only 2 died, children of one and two years of age, both of whom were admitted with bronchopneumonia and were in a very bad general condition. All the other patients recov-

ered, but all had received an injection of antitoxin in the first twenty-four hours. In therapy Lenhartz advises not to give large doses of the serum; children and adults should commonly receive in the first twenty-four hours only 600 to 1,000 units and later, according to the severity of the case, 1,000 to 1,500 units.

Professor Deneke demonstrated the activity of antitoxin from the collective statistics of Hamburg. According to a report of the health office, the mortality before the introduction of antitoxin (1872 to 1894) varied between 12.4 and 19.6 per cent. and after the introduction of the serum (1895 to 1908) between 6.1 and 10.1 per cent., that is, the highest mortality of the antitoxin period is 2.3 per cent. below the lowest mortality of the ante-serum period. The average mortality has been reduced by one-half since the introduction of antitoxin. These results obtained from very large figures are, in my opinion, not to be invalidated by the statement of Rumpel that since the introduction of the bacteriologic method of diagnosis many mild cases are included. Deneke considers the experience of individual physicians as still more convincing than the statistics. "Previously we had the feeling of helplessness against the spread of the disease, but since the introduction of antitoxin, the disease is under our control if we are called on for treatment early enough."

The statistics introduced by Professor Deyke produced a distinct impression as he included in his tables all of the material published in the literature accessible to him. According to these, in about 80,000 antitoxin cases there was a total mortality of 15.2 per cent.; 4.3 per cent. on the first day; 7.6 per cent. on the second; 14.7 on the third and 31.6 on the fifth. On the other hand, in the statistics of Aoser, among 2,500 diphtheria patients treated without serum, there was a total mortality of 22 per cent.; 19 per cent. on the first day, 17 per cent. on the second, and 37 per cent. on the sixth.

In closing the discussion Rumpel still maintained that it was not correct to inject in the mild and subsiding cases. This view was sharply opposed by the other participants as cases originally mild suddenly might become very severe. As a practical result of the entire discussion it may be noted that the medical board of Hamburg appropriated \$750 (3,000 marks) to furnish diphtheria antitoxin for patients not able to pay, and the issuance of inoculation tubes and their transportation to the hygienic institute are simplified so that the bacteriologic diagnosis might be made and treatment begun earlier.

VIENNA LETTER

(From Our Regular Correspondent)

VIENNA, Feb. 25, 1910.

The Reorganization of Hospitals

In a previous letter to THE JOURNAL (Feb. 5, 1910, liv, 479) it has been explained that a reorganization of medical institutions was secretly prepared by the ruling political party, which would mean the handing over of these institutions to political influences. Vehement contradictions only proved the correctness of the information, but an energetic resistance from all concerned and from the general public was strong enough to block the scheme. Nevertheless the bankrupt condition of the *Krankenhausfond* (the fund for all hospitals of Vienna) is a bitter fact, and in order to make both ends meet, the charges for admission have to be raised. This necessity is very unpleasant for those in power now, for the majority of patients come from the country districts, where the staunchest supporters of the clerical party live, and thus their voters have to pay more than before for hospital treatment.

Prohibition of White Phosphorus

A bill prohibiting the use of white phosphorus in match-factories has recently become law. It is due entirely to the efforts of medical men (see THE JOURNAL, April 24, 1909, lii, 1345, and July 17, 1909, liii, 217).

The Health of Vienna Laborers

The law of 1885, which necessitated the formation of compulsory sick-benefit clubs for all laborers, factory hands and employed persons earning less than \$40 a month, has resulted in exact data on the health of part of the population. Thus the report for 1909 has just been published by the Union of Sick-Benefit Clubs which comprises 320,000 members, or about one-sixth of the inhabitants of Vienna. The report shows that the number of persons who were on the sick-list during 1909 was 115,525, or about 35 per cent. of all mem-

bers. Only the cases of those who were laid up for at least three days and were unable to earn their living are reported. The morbidity improved constantly from January to December, for in the four quarters of the year the figures were 34,257, 28,893, 26,289 and 26,086. These figures mean the newly notified cases of disease. Tuberculosis of the respiratory passages is the most important of all our diseases; nearly 10 per cent. of all the cases are classified under this head; cases of other diseases of the respiratory organs amount to 14 per cent.; rheumatic diseases, 9 per cent.; tuberculous disease of the bones, 6 per cent.; disorders of the alimentary canal, 7 per cent.; and 17.5 per cent. of disabilities are due to industrial accidents. The mortality amounted to 1 per cent. of all members or about 3 per cent. of all patients. Here again tuberculosis claimed 1,510 persons, or 44 per cent. of all deaths; injuries were responsible for 108 deaths, or 3 per cent.; cardiovascular disorders for 420 deaths, or 12.5 per cent. The mortality decreased as did morbidity, the first quarter of the year showing 944 deaths, the last only 734, the other figures being 909 and 795. The cost per patient per day was on an average about 75 cents, or about \$18 per patient, as the average duration of illness was twenty-four days. These figures comprise only the expenditure for sick-pay, doctor and medicines. A good many patients were sent to the public hospitals, for whom there had to be paid 50 cents per day to the hospital, while their sick-pay was reduced 50 per cent. If the different classes of diseases are considered separately, it appears that tuberculous patients were laid up the longest of all, the 11,000 phthisis patients being on the sick-list for eighty-six days on an average, or each tuberculous patient costing the club \$65. Therefore, the report points out, it would be a much more economical way to erect special sanatoriums for phthisical members, where they would be made fit for work and cured much more quickly than at home. As regards the distribution of this disease, the printers, tailors, stonemasons, ironworkers, bakers and boot-makers give the worst figures (in the order as they are enumerated). The serious condition shown by the presence of the disease among bakers is emphasized in the report and it is pointed out, very justly as I believe, that the only means of escape is the erection of mechanical bakeries, where the flour and bread are handled solely by machines. Such bakeries are in existence in this country only in a few places, and only one of this kind is in Vienna. It is interesting to note that this model bakery is owned and run by a laborers' cooperative society.

Miscellany

Earlier References to the Relation of Flies to Disease.—In *Science* for February 18, is an interesting note by Prof. William A. Riley of Cornell University on the fact that the idea of the transfer of disease by insects is by no means new. Professor Riley says: "It is not generally known that as early as the sixteenth century there was definitely promulgated the theory that flies play a rôle in the transmission of the plague. Dr. Josiah Knott, 1849, lists Athanasius Kireher as among the earlier writers who believed that insects served as transmitters of disease. Dr. Kelly, in his fascinating volume, 'Walter Reed and Yellow Fever,' goes further and quotes from Kireher's 'Scrutinium Physico-medicum,' published at Rome in 1658, the remarkable statement:

"There can be no doubt that flies feed on the internal secretions of the diseased and dying, then flying away, they deposit their excretions on the food in neighboring dwellings, and persons who eat it are thus infected.

"Unfortunately Dr. Kelly's translation stops just short of Kircher's clause in which he attributes this theory to Mercurialis. Mercurialis, a celebrated Italian physician, who lived from 1530 to 1607, was one of the encyclopedic writers typical of the period. I have searched the available volumes of his works, including several editions of his extended treatise on the cause and nature of the plague. ('De pestilentia . . . in univrsam, præsertim vero de Veneta et Patavina,' Venice, 1577.) So far I have failed to locate the reference in question, but it is evident that Kircher was indebted to Mercurialis for the suggestion. The statement of Mercurialis can be regarded as no more than a lucky guess, but to Kircher we must give more credit. This astute Jesuit, born in 1601, was

an indefatigable worker, and his writings are much more than mere compilations. There is no doubt that long before Leenwenhoek's discovery Kircher had seen the larger species of bacteria, which he described in the following words:

"It is known to all that decaying bodies abound in worms, but not until after the wonderful invention of the microscope was it found that all putrid substances swarm with an innumerable brood of worms which are imperceptible to the naked eye, and I would never have believed it if I had not proved it by frequent experiments, during many years. ('Scrutinium Physico-medicum,' 1658 ed., p. 42.) This is one of many references which might be cited. In his book 'Ars magna lucis et umbræ,' published twelve years earlier, there is to be found mention of these 'worms,' showing that Kircher's observations really had extended over 'many years.'

"Among the substances in which he found these 'worms' he mentions spoiling meat, cheese, milk, vinegar and decaying serpents. He does not stop with the mere discovery, but he attributes the production of disease to the organisms, and formulates a theory of the animate nature of contagion. Interpreted in this light, the statement of Mercurialis assumes a new dignity. The germ theory of disease, which became dominant so soon after this period, fell into disrepute, to be revived in the latter part of the nineteenth century. Only now are we putting to the test the theory of Kircher relative to the rôle which flies play in the dissemination of disease."

Pathology and Progress of Pulmonary Tuberculosis Read by Sign and Symptoms.—The symptomatology of tuberculosis becomes intelligible only as we understand what is taking place beneath the finger and stethoscope, says William Porter in the *Weekly Bulletin of the St. Louis Medical Society*. One of the earliest signs of localized disease in the lung is muscle tension of the corresponding side as noted by Pottenger. Examining patients with his eyes closed Porter was astonished to find how accurate the evidence was, and especially in the early cases in which the lesion is beginning and ordinary interrogations are inadequate. Next to this as an early sign is slight bronchial roughness due to tubercles in the lumen of the tubule, producing a slight change in the respiratory note, not to be confounded with the increased pitch in the finer bronchial murmur often heard in bronchitis. This antedates prolonged expiratory murmur produced by invasion of the vesicle with impaired elasticity of the vesicle wall. Bacilli are not found in this stage as a rule. Potter uses the Moro and v. Pirquet tests, but believes that time is the best test and that if the patient is under observation he is taking no risk. The stage of consolidation is next, with impaired circulation and closed vesicles. Necrosis follows and bacilli are now found, and often the germs of mixed infection. The fever of tuberculosis is undoubtedly caused by the absorption of tuberculin from points of infection. He offers as a suggestion to be followed up that when the local infection is surrounded, absorption lessened and temperature normal, immunity may be induced by stimulating absorption under careful observation by well-directed exercise or passive manipulation either by light percussion or by the vibrator. He has two patients in whom he can induce a degree of fever by gentle vibration over the site of the disease. Believing that the intercurrent diarrhea and distended ascending colon are suggestive of auto-infection from the intestinal tract, Porter has given an enema with the patient in the knee-chest position, followed after a week by the daily use of normal salt solution. This procedure is of value in many febrile cases. Hemorrhage is alarming to the patient but unless caused by perforation of a large vessel in the majority of cases is not dangerous, but may alleviate the symptoms.

Subpreputial Method of Applying Mercury.—G. Milian in the *Progrès Médical*, Dec. 11, 1909, suggests a novel way of administering mercury. A pastille the size of a bean is made with cocoa butter containing 0.01 gm. (1/6 grain) of mercurial ointment and this is softened and pressed into the sulcus behind the glans penis and the prepuce drawn over it. The medicament melts with the heat of the body and the mercury is absorbed. Not enough liquid is produced by the melting of the cocoa butter to cause its escape from the preputial sac and practically all of the medicine is absorbed. The method suffices for the treatment of disease, especially syphilis, in any part of the body. It is more particularly applicable, however, to the treatment of local lesions.

Pharmacology

PASSIFLORA AND DANIEL'S CONCENTRATED TINCTURE OF PASSIFLORA

Report of the Council on Pharmacy and Chemistry

The Council has voted that the drug passiflora (passion flower) be not accepted for New and Nonofficial Remedies and has recommended that the following article be published in *THE JOURNAL*. It is considered important to call attention, not only to the lack of reliable evidence of the therapeutic value of passiflora, but also to the absurdity of the claims which are made for Daniel's concentrated tincture of passiflora, a preparation which has been already refused recognition.

W. A. PUCKNER, Secretary.

PASSIFLORA

Although passiflora was introduced into medicine nearly seventy years ago, the literature concerning it is not very extensive; it is not mentioned in the standard works on pharmacology and its chemistry seems never to have been worked out. There appears, also, to be no record of experimental investigations of the drug with reference to its pharmacologic action, except an article by I. Ott,¹ who used "Daniel's concentrated tincture." Ott claimed that it lessened the reflex irritability of the cord and paralyzed motion by acting on the motor centers in the cord, and that it increased the rate of respiration. He also stated that because of its action on the vasomotor centers it reduced the frequency of the heart-beat and lowered arterial tension, but these effects were only temporary.

On the clinical side the reports are not numerous and such as have been made do not appear to be based on very extensive trials nor on conditions of observation that would entitle them to more than slight consideration. S. D. Bullington² reports good results, but no cure, in one case of epilepsy, and improvement in a case of insomnia. W. J. Stapleton³ recommends it in the form of a concentrated tincture (not the one advertised so extensively), and states that he has used it with great success in insomnia, hysteria, neurasthenia, neuralgia, nervous and physical prostration, and in alcoholism. In his opinion its action is most apparent in cases of nervousness due to causes other than pain. S. Harnsberger⁴ reports two cases in which partial blindness followed the taking of potassium bromid and passion flower.

Extravagant and inconsistent claims are made for Daniel's concentrated tincture of passiflora in the advertising literature, where it is recommended for such a wide range of diseases as asthma, typhoid fever, convulsions and paralysis.

None of the evidence is sufficient to show that passiflora has therapeutic value; hence it is deemed inadvisable to include this drug in the list of nonofficial remedies.

Chicago Medical Society Condemns Nostrum Work by American Druggists Syndicate

At the regular meeting of the Council of the Chicago Medical Society, March 8, 1910, resolutions presented by the Committee on Pharmacology through Dr. Walter S. Haines, chairman of the committee, were adopted as follows:

Resolved, That the Chicago Medical Society in council assembled, condemns these practices of the American Druggists Syndicate, and that it calls on the National Association of Retail Druggists to secure their discontinuance, in order that the Chicago Medical Society may, with self-respect, be able to continue to cooperate with the Chicago Retail Druggists' Association in the "get-together" movement; be it further

Resolved, That the Secretary of the Chicago Medical Society be instructed to publish these resolutions in *The Bulletin* of the Society, to transmit a copy of the same to *THE JOURNAL* of the American Medical Association and to editors of the various state journals, as well as other prominent medical journals, and that it be offered for publication in pharmaceutical journals.

1. *Med. Bull.*, 1898, xx, 457-464.

2. *Nashville Jour. Med. and Surg.*, 1897, lxxxv, 107-109.

3. *Detroit Med. Jour.*, 1904-5, lv, 17.

4. *Virginia Med. Semimonthly*, 1898-9, iii, 392.

MORE MISBRANDED NOSTRUMS

What Enforcement of the Food and Drugs Act Is Doing for the Protection of the Public

Lying on the label continues to be unprofitable, thanks to the efficiency of the officials who are intrusted with the enforcement of the national Food and Drugs Act. Many of the frauds which the government has shown up have been reported in *THE JOURNAL*; some of the latest judgments obtained against the exploiters of nostrums are now given.

"DR. FAHRNEY'S TEETHING SYRUP"

This preparation was put on the market by Drs. D. Fahrney & Son, Hagerstown, Md., and the following claims were made for it on the labels:

- "Is the best remedy for teething."
- "No bad results from the continued use of it."
- "Contains nothing injurious to the youngest babe."
- "A sure remedy for all ailments incident to babes from one day old to two or three years."

A sample of the preparation was analyzed at the Bureau of Chemistry, United States Department of Agriculture and was found to contain:

Alcohol, by volume	8.84 per cent.
Chloroform, to the fluid ounce.....	0.408 minims
Morphin, to the fluid ounce.....	0.126 grains

Inasmuch as a mixture of morphin, chloroform and alcohol cannot truly be said to be non-injurious to infants, and as "bad results" are likely to occur "from the continued use of it," as, too, it is neither "a sure remedy for all ailments" nor "the best remedy for teething," a United States district court decided that "Dr. Fahrney's Teething Syrup" was misbranded. The defendant entered a plea of guilty and a fine of \$100 was imposed.

"GOWAN'S PNEUMONIA CURE"

This nostrum, which was marketed by the Gowan Medical Company of Chicago, has been referred to before in *THE JOURNAL*,¹ a cursory examination having been made in the Association laboratory. The particular claims on which the government obtained its judgment for misbranding were:

- "It is entirely different from any other remedy, containing new principles never before applied."
- "Supplies an easily absorbed food for the lungs that quickly effects a permanent cure."
- "It was endorsed and advertisement accepted by the *American Medical Journal* as a valuable therapeutic agent."

A sample of "Gowan's Pneumonia Cure" was analyzed at the government laboratory and the product was found to consist of:

Lard	Opium
Camphor	Stearin
Turpentine	Quinin
Carbolic acid	Quinin sulphate

As the analysis showed that the product was not "entirely different from any other remedy" and did not contain "new principles," as, moreover, there is no such thing as a "food for the lungs" separate and distinct from a food for the whole body and, lastly, as the preparation was never advertised in, nor indorsed by, the *American Medical Journal*, the nostrum was declared misbranded. It was further misbranded in that the carton labels did not have printed on them in plain and conspicuous type the amount of opium which the preparation contained.

The defendant pleaded guilty and was fined \$200.

"EYELIN"

This was a Chicago product, marketed by the Eyelin Company and sold at one dollar a box. The label contained the statements:

- "Repairs and Rejuvenates the Eye and Sight."
- "Reshapes and Rejuvenates the Eye and Sight."

Analysis of the stuff in the government laboratory disclosed the fact that it consisted essentially of:

Vaseline, perfumed.

The court decided that petrolatum, even when perfumed, could scarcely be capable of repairing, reshaping or rejuvenating either the eye or the sight and that "Eyelin" was, therefore, misbranded. A plea of guilty was entered and a fine of \$10 imposed.

"BROMO FEBRIN"

William H. Smaw & Company, of Baltimore, Md., made a "headache powder" which they admitted contained 4 grains of acetanilid. The claims made for this preparation were:

- "Permanent in Results."
- "It is Absolutely Safe."
- "Sure Cure for Headache and Neuralgia."

Analyzed at the Bureau of Chemistry, each powder was found to contain:

Acetanilid 6 grains (nearly)

As a headache powder containing nearly 6 grains of acetanilid must be far from "absolutely safe," as, too, acetanilid is not a "sure cure for headache and neuralgia," and as the results obtained from the use of acetanilid are not "permanent," the court declared the nostrum misbranded and the defendant on entering a plea of guilty was fined \$20.

"RADOL"

This fake will have a familiar sound to many of our readers as it was exposed² in connection with its exploiter one "Rupert Wells," whose real name is Dennis Rupert Dupuis. This individual who for years conducted a viciously cruel "cancer cure" at St. Louis was finally put out of business by the government through the issuance of a postoffice fraud order. "Radol" was the "radio-active" and "radium impregnated fluid" which Dupuis sold to his dupes for the "cure" of cancer. As has previously been reported, analysis showed that "Radol" was in fact a weak, acidulated, watery solution of quinin sulphate, with about 7 per cent. alcohol. As it was neither radio-active (to a greater extent, at least, than any hydrant water) nor contained radium and as, too, the label failed to state the presence of alcohol the nostrum was declared misbranded on both counts.

A plea of guilty was entered and fines of \$100 and \$50 respectively were assessed.

Correspondence

Inconsistency in Medical Teaching

To the Editor:—As a senior student in a medical school I take the privilege of passing a criticism on one of the most glaring inconsistencies in our present system of medical training. In fact they are of such serious import that I sincerely hope for a thorough, emphatic comment editorially in *THE JOURNAL*. The seed is sown in the medical school and the harvest of weeds is reaped in professional life—I refer to the dispensing of proprietary medicines.

From what I am able to learn, most medical schools are alike in this. The good pharmacologists rack their brains and ingenuity to teach us to think treatment in drugs, not medicines, and treat each case for itself. Then the physicians in charge of the dispensaries prescribe treatment, "give prescription number so and so." The inconsistency is interesting if nothing else. One minute our professors shout their condemnation of proprietary medicines, and the next follow the "easiest way." Will you blame us next year?

EDWARD J. KEMPF, Cleveland, O.

The Distribution of Rabies

To the Editor:—In the editorial on page 799 of *THE JOURNAL*, March 5, 1910, the following sentence occurs: "In short, so far as can be learned, in the territory of the United States only the Rocky Mountain and Pacific Slope regions are free from the disease."

1. *THE JOURNAL A. M. A.*, May 9, 1908; reproduced in "The Propaganda for Reform," p. 137

2. *THE JOURNAL A. M. A.*, Feb. 20, 1909, and reprinted in pamphlet form as "The Rupert Wells Case," price, four cents.

This statement is erroneous for the reason that during the past few months rabies has been found among dogs in at least two localities in California, one focus being in the vicinity of Los Angeles and Pasadena, the other being in the central part of the state.

In the monthly bulletin of the California State Board of Health for January, 1910, v. No. 5, Dr. R. A. Ward, director of the State Laboratory of Hygiene reports four positive cases of rabies, presumably in dogs.

GEORGE W. MCCOY.

Passed Assistant Surgeon, U. S. P. H. and M.-H. S.

A Department of Public Health

The following correspondence, which explains itself, is commented on editorially in this issue:

UNITED STATES SENATE.

WASHINGTON, D. C., Feb. 23, 1910.

Dr. Charles A. L. Reed, Chairman of the Legislative Committee, American Medical Association.

My Dear Doctor Reed:—I greatly appreciate your courteous letter of the 18th inst. I am aware that there has been objection made to establishing a new cabinet officer, but I am unable to believe that the magnitude and importance of this subject has been realized by those who seem to think that a cabinet officer is too great a position for the officer responsible for safeguarding the public health, and that a subordinate bureau should suffice.

I called attention in the United State Senate a year ago (June 15, 1909) to the abnormal death-rate in the United States as compared to the death-rate in New Zealand and in the Australian states, where they have a better form of government for the preservation of human life; where the greed of money-making is not permitted to sicken little children with milk preserved with formaldehyd and other impure food and where monopoly is not permitted to establish or maintain unhealthy conditions destructive of human life.

The death-rate in the United States is 16.1 persons to the thousand, in the Australian states 10.6 to the thousand, in New Zealand 9.3 to the thousand, showing the average loss of life in the United States of seven to the thousand in excess of this better governed country. In other words our great republic shows an annual loss of over 500,000 human beings who might be saved, for our country is as healthful as New Zealand.

I believe in CONSERVATION, and first of all in the conservation of human life and that unthinking commercial ambition shall not be permitted to destroy it. The magnitude of this matter I am not willing to minimize or leave the care of the public health under a subordinate bureau however organized, although that is better than nothing. I should like to see a "Secretary of Public Health" because the importance and dignity of the work justifies it. If the medical men of the United States believe in this they should say so, as it is the duty of the profession to point out the importance of the matter.

In conclusion, permit me to say that I stand unequivocally for the principle of the bill as I have drawn it, that is, for a Department of Public Health to be made up of the health agencies of the government and to be under the direction of a Secretary of Public Health. If, however, it shall be found that the bill can be strengthened in its details, it can be done in committee and to that end I shall be very grateful for suggestions. Very respectfully,

ROBERT L. OWEN.

CINCINNATI, March 10, 1910.

Hon. Robert L. Owen, United States Senate, Washington, D. C.:

Dear Sir:—In compliance with your request for suggestions to be taken up in connection with the hearing on the bill recently introduced by you to create a department with a Secretary of Health, I beg to reply in my capacity as Chairman of the Legislative Committee of the American Medical Association. In that capacity I have the honor at the same time to request, first, that you avail yourself of an early opportunity, and in your own way, to lay before the Senate the facts which I shall present and, second, that you arrange at an early date for a hearing on your bill, the vital principle of which is so distinctly in consonance with the interests of the people as represented by and through the medical profession.

This is shown by the fact that the American Medical Association, through its legislative conference attended by delegates from thirty-six states and from the Army, the Navy and the Public Health and Marine-Hospital Service, held at Chicago, March 2, 1910, urged by resolution, as the Association has repeatedly urged for nineteen years, "that a bill be passed recognizing the health interests of the country in the title of a department of the national government and that within that department there be organized all national health agencies."

The physicians of the country who, as professional students of the question and as the natural advisors of the people on health questions and who, consequently, have first knowledge of the subject, have long maintained their present attitude for the following specific reasons:

First: The time has arrived when, under the law of precedence, the health interests of the country ought to pass from their present bureau stage of development to that of a department. This course of evolution was exemplified, first, I believe, in the development of the Department of the Interior, then that of Agriculture and, finally, that of Commerce and Labor. In each of these instances the antecedent bureaus had existed for periods varying from a few years to a decade or two. The health interests of the country, more fundamental than all, have been left in the form of, successively a "Service," then of a "Bureau," for more than a century.

Second: The creation of a Department of Health is furthermore demanded, first, because sanitary science has demonstrated its ability to conserve the efficiency and prolong the life of the people and, second, because nothing less than the establishment of a department can have that maximum of moral force and educational influence, that maximum of prestige and effectiveness combined with business-like economy of administration that will enable it to deal with the disgraceful, not to say monstrous, conditions now prevailing in this country.

Third: That a Department of Health with the fulness of power and influence that can inhere only in a department and nothing less than a department, is demanded by the conditions to which I have alluded is conclusively established by the fact that, first, about 600,000 people die in this country every year from preventable causes; second, that something more than 3,000,000 more are made ill and idle for variable periods every year from the same causes; and, third, that the annual economic loss from this source alone amounts to more than \$1,500,000,000 every year.

Fourth: That nothing less than a Department of Health acting in cooperation with the states and in full recognition of their rights and powers, is practicable for the assembling and coordinating of the existing health agencies of the government and for their effective, economic and business-like administration.

Fifth: That nothing less than the creation of a Department of Health can comprise a fulfilment of the pledge to the people contained in the platform of every political party that appealed to the popular suffrage in the last national campaign.

In view of the foregoing facts and considerations I have the honor to request that at the hearing on your bill care be taken to give special consideration to the suggestions which I shall enumerate.

Many, if not all of them, have been covered in general terms and some of them in specific terms, in your bill. It has seemed, however, that by presenting them somewhat in detail in the form of sections, to a possible bill I could facilitate their consideration in consecutive order as follows:

Section 1. ought to provide, as your bill does provide, for the establishment of a Department of Health under the supervision of the Secretary of Health who shall be appointed by the President by and with the consent of the Senate at a salary of \$12,000 per annum and who shall be a member of the cabinet of the President and who shall discharge the duties prescribed in the act.

Section 2 might with propriety provide for the constituent bureaus of the Department of Health as follows:

A. The Bureau of Hygiene and Preventive Medicine to which (a) shall be transferred the Laboratory of Hygiene now located in the Bureau of Public Health and Marine-Hospital Service in the Department of the Treasury together with all duties, functions, powers, rights and prerogatives now vested by law in such Laboratory of Hygiene; and it shall be the further duty of the Bureau of Hygiene and Preventive Medicine (b) to cooperate with the respective states, territories and dependencies in accumulating statistics and other information as to causes and prevalence of disease, (c) to conduct

continuous investigation into all sources of danger to human health and life, (d) to formulate rules and regulations for carrying out these provisions, and (e) to publish the records and results of its labors, all under the direction and by the approval of the Secretary of Health.

B. The Bureau of Foods and Drugs, to which (a) shall be transferred all duties, functions, powers, rights and prerogatives now devolving by the Food and Drugs Act of 1907 on the Bureau of Chemistry of the Department of Agriculture; and the Bureau of Foods and Drugs shall also (b) supervise the cleanliness and other hygienic and sanitary features of the buildings and products of manufactories, cold-storage plants and other establishments engaged in the commercial preparation or in the storage of any food product or products whatsoever destined for interstate commerce; (c) establish standards of purity of foods; (d) conduct investigations to determine the best method of preparing foods with reference to the full development of their nutritive value; (e) determine the food value of articles not now generally recognized as foods; (f) establish standards of purity for drugs; (g) make a systematic and exhaustive study of the medicinal flora of the United States and its territories and dependencies; (h) investigate, and where practicable, promote the naturalization and commercial cultivation within the United States, its territories and dependencies of medicinal flora indigenous to other countries; (i) publish reports of its investigations, activities and conclusions and, (j) formulate and enforce necessary rules and regulations all under the direction of the Secretary of Health.

C. The Bureau of Marine Hospitals, to which shall be transferred the marine-hospital service of the Bureau of Health and Marine-Hospital Service of the Department of the Treasury together with its present personnel and all duties, functions, powers, rights, and prerogatives now vested by law in such marine-hospital service, all to be administered under the direction of the Secretary of Health.

D. The Bureau of Quarantine to which shall be transferred the quarantine service now located in the Bureau of Public Health and Marine-Hospital Service of the Department of the Treasury together with its present personnel and all duties, functions, powers, rights and prerogatives now vested by law under such Quarantine Service, all to be administered under the direction of the Secretary of Health.

E. The Bureau of Institutions and Reservations, to which shall be transferred all hospitals, asylums, "homes" and infirmaries located in any other department of the government except the Department of War and the Department of the Navy. And there shall likewise be transferred to this bureau the Hot Springs Reservation and all other reservations now or hereafter established by the federal government for the conservation of health.

F. The Bureau of Vital Statistics, to which shall be transferred the Bureau of Vital Statistics now located in the Department of Commerce and Labor, together with its present personnel and all duties, functions, powers, rights and prerogatives now vested by law in such Bureau of Vital Statistics.

G. The Bureau of Publication and Publicity, which shall (a) publish the reports of the Secretary of Health and all reports, bulletins and documents of all bureaus of the Department of Health when approved for the purpose by the Secretary of Health; and (b) devise and carry out the most effective means by which information originating in the Department of Health or any of its bureaus may be most widely and effectively disseminated for the information and guidance of the people.

Section 3 might with equal propriety provide that (a) there shall be a medical service of the Department of Health (b) designated by the initials U. S. H. S., meaning "United States Health Service," (c) which service shall consist of (1), a Regular Medical Corps which shall consist of the United States Marine Hospital Corps with its present personnel and without other modification in the law governing the same or in the regulations enacted in pursuance of such law than may be necessary to comply with the provisions of this act; and (2) a special medical corps, which shall consist of all physicians, surgeons and medical officers now employed in any capacity in any Department of the Government, excepting in the Army and Navy who, subject to the direction of the Secretary of Health, but without having their status otherwise disturbed, shall continue in their present capacity until the expiration of their present tenure, but thereafter all such positions shall be filled by detail from the Regular Medical Corps, which shall be selected in the first instance in accordance with regulations not less exacting than those which now govern entrance into the Marine Hospital Corps. (d) The Secretary of Health shall, consistently with the provisions of this act, (1) define the

grades of health service with due regard to the period of service and efficiency record of its members, (2) prescribe uniforms and insignia for each grade, (3) formulate rules and regulations for the government of the corps and at his discretion (4) detail any member of the corps for duty in any bureau of the Department of Health, or (5) for duty in any other department on request of the secretary of such department or, (6) for duty in any state, territory or dependency or in the Panama Canal Zone when requested so to do by the proper authority of such state, territory, dependency or the Panama Canal Zone whenever the resources of the service will permit such detail.

Section 4 might further define the duty of the Secretary of Health by stating that in addition to the duties elsewhere prescribed in the act (a) he may, in his discretion, transfer specific duties from one bureau to the other whenever required in the interests of both economy and efficiency; (b) exercise all the functions heretofore exercised respectively by the Secretary of the Treasury, the Secretary of the Interior, the Secretary of Agriculture and the Secretary of Commerce and Labor in connection with any bureau, division or service transferred by the act to the Department of Health; (c) exercise all duties heretofore exercised by the Secretary of Agriculture in the enforcement of the pure Food and Drugs Act; (d) discharge such other duties as may be prescribed from time to time by the President and, finally, (e) prepare and submit reports relative to his department embracing suggestions for the improvement of its service including recommendations for change in personnel, duties and salaries.

Section 5 might provide (a) that the President be authorized and directed within one year from the passage of the act to appoint an Advisory Board of Health to consist of six members, two to be appointed for one year, two for two years and two for three years each, who shall serve without pay except their traveling expenses for not more than six meetings annually and whose functions shall be to confer with and advise the Secretary of Health relative to all questions of policy pertaining to human health and on other questions at the request of the Secretary of Health; (b) the present consultative arrangement between the present Bureau of Health and representatives of the state boards of health might with propriety be continued between the Department of Health, its secretary, advisory health boards, chiefs of bureaus and the representatives of the state boards of health.

Section 6 and succeeding sections might provide in the usual way for the transfer of officers, clerks, employees, property, fixtures, etc.

In asking that you take the foregoing points under special consideration, that the hearing be arranged for the earliest practicable date and that legislation be reached if possible at the present session of Congress, may I ask that you urge on your colleagues the importance to the people of giving due weight to the conditions to which I have referred?

I have said that over 600,000 of our people die every year from preventable causes. Suppose that our entire Army and Navy were swept off the earth not once, but three times in a year. Would the Congress do anything about it? There are nearly 5,000,000 needlessly ill every year. Suppose that every man, woman and child in all New York, with Boston and Washington added, were similarly stricken. Would the Congress inaugurate an inquiry? Our losses from these causes amount to \$1,500,000,000 every year. Suppose that every dollar appropriated annually for the expense of the government and half as much more were actually burned up and the ashes blown into the sea. Would the Congress take action in the premises?

Our health agencies are scattered, uncorrelated and unorganized. Suppose that our monetary system were looked after by a dozen or more bureaus in almost as many departments and that it were responsible for \$1,500,000,000 loss every year. Would Congress be disposed to think that there was possible relationship between the lack of organization and the deficit?

In reiterating the request for an early and full hearing on this question, I beg to emphasize the fact that I do so in behalf of the American Medical Association and in behalf of the interests of the people of the United States as represented by and through the medical profession. And in this behalf and in view of the fact, deducible from our vital statistics, that in this country alone the people are dying from preventable causes at the rate of more than one every minute, and that they are falling ill from the same causes at the rate of more than five every minute, may I not venture to suggest that the subject is one of sufficient importance to be entitled to precedence over some other questions that may possibly be engaging the attention of the committee?

Awaiting your early reply, I have the honor to be, very sincerely,

CHARLES A. L. REED, Cincinnati.
Chairman of the Legislative Committee, American Medical Association.

P. S.—I beg leave to advise you that I am sending a letter to the same purport and largely in the same language as this, to Hon. James R. Mann, of the House, who has requested suggestions to be considered in committee in connection with the recommendations relative to the public health clause contained in the President's message.

Queries and Minor Notes

PHYSIOLOGY OF THE TONSIL

To the Editor:—Please give in THE JOURNAL the physiology of the tonsil. Text-book literature is decidedly meager.

FRED W. A. BROWN, Oshkosh, Wis.

ANSWER.—The tonsils must be classified as vestigial in character, that is, they are vestiges in the mammals of structures that had important functions in the lower vertebrates. For an explanation of the origin of the tonsil and its nasopharyngeal relations we must go back to the lower forms of the mammals and to the lowest vertebrates. The higher fishes have four or five branchial arches between which are four branchial slits or gill slits. These branchial slits open out of the pharynx. Every mammal, including the human subject, show traces of the branchial arches and gill slits in the course of intrauterine development. Briefly stated, one may say that the first arch has its homology in the mandibular arch; the second and third in the arch of the hyoid bone; the fourth and fifth in the thyroid cartilage. In the pharynx of mammals the gill clefts do not form complete slits but simply pouches opening out from the side of the pharynx into the structures of the cervical region. The first branchial arch develops into the Eustachian tube and middle ear; the second into the tonsil; the third into the thymus gland; and the fourth into the thyroid gland. For a more extended description of this development of the tonsil Minot's work on human embryology may be consulted.

In common with other vestigial structures, the tonsil is more subject to diseased conditions than are structures which are not vestigial but actively functioning throughout the life of the individual. The tonsils are scarcely mentioned in any work on physiology. We quote two statements from medical authors regarding the function of the faucial tonsil; the conservatism of the author's statements is to be noted in each case.

"The physiologic function of the tonsil has never been established. From the experiments of Goodale and others it would seem that one of its offices is the arrest and destruction of pathogenic micro-organisms although the extent to which it is capable of this is limited and when the limit is exceeded the tonsil becomes a potent carrier of infection." From Dr. G. D. Bryden Delavan's article in the Reference Handbook of Medical Sciences, 1904, vii, 811.

The tonsils "probably protect the organism from infections of various kinds by acting as filters, and by in some way lessening the toxicity of micro-organisms which come within their sphere of activity. Although they are, accordingly, beneficent in their activity, the tonsils are very subject to morbid changes. Thus, they frequently become hypertrophied to such an extent as to interfere seriously with normal respiration, and they undoubtedly, under many circumstances, instead of acting as protectors against the invasion of micro-organisms, serve rather as portals of entry. The bacterial flora of the tonsillar surface is surprising in its number and variety and many virulent bacteria are found in the crypts." Francis R. Packard, M.D., Osler's Modern Medicine, iii, 596.

An excellent article on the anatomy and physiology of the tonsils, by Dr. C. M. Robertson, appeared in THE JOURNAL, Aug. 28, 1909, p. 684.

TREATMENT OF NITROGLYCERIN HEADACHE

To the Editor:—Dr. Laws in THE JOURNAL, March 5, 1910, says that treatment of nitroglycerin headache is very unsatisfactory. I have treated three cases of this kind of headache, with very satisfactory results, by having the patient inhale the fumes of iodoform. I have always had a vague idea that there was a chemical combination between the iodoform and nitroglycerin. Am I right? Or is it a case of the cure being worse than the disease? I refer to nitroglycerin in dynamite. H. C. CALDWELL, Ridgeland, Wis.

COMMENT.—So far as we know, there is no chemical reaction liable to take place between iodoform and nitroglycerin under the conditions given above. Nitroglycerin is a very slightly volatile substance having a boiling point above 160 degrees C. and, when poisoning had been caused by it, it would be in solution in the

blood. It is hardly to be supposed that iodoform in vapor would be sufficiently absorbed to react chemically with the nitroglycerin. Probably the relief of the headache is due to a sedative action of the iodoform vapor. Some caution should be exercised in using iodoform vapor in this way, however, as the toxic and fatal dose of iodoform when actually absorbed into the blood is not large, probably not more than from 1.20 to 2 gm. (from 20 to 30 grains).

The Public Service

Medical Department of the Army

Changes for the week ended March 12, 1910:

Gunckel, George L., dental surgeon, reports for temporary duty at Fort Moultrie, S. C., left Fort Morgan, Ala., on March 4, 1910.

Ames, John R., dental surgeon, returned to Fort Snelling, Minn., from duty at Fort Yellowstone, Wyo.

Ashburn, Percy N., major; Glennan, James D., lieutenant colonel; Frick, Enclid B., lieutenant colonel, appointed members of a board to meet at the Army General Hospital, San Francisco, for examination of such officers of the Medical Corps as may be ordered before it to determine their fitness for promotion.

Bradley, A. E., lieutenant colonel, granted 30 days' leave of absence about May 25, 1910.

Christensen, W. A., 1st lieutenant, M. R. C., ordered to active duty in the service of the United States, and will report to the commanding general, Philippines Division, for assignment to duty.

Mills, Robert H., dental surgeon, reported for temporary duty at Fort Ontario, N. Y.

Kean, Jefferson R., lieutenant colonel; Russell, Frederick F., major, ordered to make not to exceed four visits to Baltimore, Md., on official business pertaining to the inspection of plants for purifying water, and on the completion of the duty enjoined, will return to their proper station after each visit.

LeWald, Leon T., captain, orders directing him to proceed from Columbus Barracks, Ohio, to the Philippines for duty, April 5, is amended as to direct him to sail from San Francisco, Sept. 5, 1910, instead.

Mudd, Leo C., 1st lieutenant, M. R. C., ordered to active duty and will proceed to Jefferson Barracks, Mo., for station and duty.

Medical Corps of the Navy

Changes for the week ended March 12, 1910:

Halsey, W. H., acting assistant surgeon, appointed Acting Assistant Surgeon from March 1, 1910.

Wieber, F. W. F., surgeon, ordered home to wait orders.

Brown, E. M., P. A. surgeon, orders of February 28, to duty at the Naval Station, Guam, M. I., revoked; ordered to the Naval Hospital, Mare Island, Cal., for treatment.

Eaton, W. E., appointed Acting Assistant Surgeon from March 7, 1910.

Halsey, W. H., acting assistant surgeon, ordered to duty at the Naval Hospital, Norfolk, Va.

Public Health and Marine-Hospital Service

Changes for the week ended March 9, 1910:

White, J. H., surgeon, directed to proceed to Quarantine, La., on special temporary duty.

Lumsden, L. L., P. A. surgeon, granted 5 days' leave of absence from March 8, 1910, under Paragraph 191, Service Regulations.

Billings, W. C., P. A. surgeon, granted 3 days' leave of absence en route to station.

Robinson, D. E., P. A. surgeon, granted 4 days' leave of absence from March 3, 1910, on account of sickness.

King, W. W., P. A. surgeon, on being relieved by Passed Assistant Surgeon M. W. Glover, directed to proceed to Ellis Island, N. Y., and report to the Chief Medical Officer for duty.

Wille, C. W., P. A. surgeon, directed to attend the opening of a National Campaign on Oral Hygiene, to be held in Cleveland, Ohio, March 18, 1910.

Glover, M. W., P. A. surgeon, directed to proceed to San Francisco, for duty, relieving Passed Assistant Surgeon W. W. King.

Spratt, R. D., P. A. surgeon, on being relieved by Acting Assistant Surgeon J. A. Monenre, directed to proceed to Ellis Island, N. Y., and report to the Chief Medical Officer for duty.

Hotchkiss, S. C., assistant surgeon, relieved from duty at San Francisco, and directed to proceed to Honolulu, Hawaii, and report to the Chief Quarantine Officer for duty.

Branham, H. M., acting assistant surgeon, granted 3 days' leave of absence from March 8, 1910.

Bullard, John T., acting assistant surgeon, granted 30 days' leave of absence from March 1, 1910.

Earl, F. D., acting assistant surgeon, granted 5 days' leave of absence from March 7, 1910.

Frissell, C. M., acting assistant surgeon, granted 20 days' leave of absence from March 6, 1910.

Monenre, J. A., acting assistant surgeon, transferred from duty at Gulf Quarantine, Miss., to Brunswick Quarantine Station, Ga.

Tuttle, Jay, acting assistant surgeon, leave of absence granted Jan. 24, 1910, amended to read 30 days' leave from Feb. 25, 1910, and 22 days' leave, without pay, from April 1, 1910.

Wetmore, W. O., acting assistant surgeon, granted 7 days' leave of absence, Feb. 10 and Feb. 16 to 21, 1910, under Paragraph 210, Service Regulations.

Board of medical officers convened to meet at the Marine Hospital, Key West Fla., March 7, 1910, for the purpose of conducting a physical examination of an officer of the Revenue-Cutter Service. Detail for the board: Surgeon E. K. Sprague, chairman; Acting Assistant Surgeon S. D. W. Light, recorder.

Medical Economics

THIS DEPARTMENT EMBODIES THE SUBJECTS OF ORGANIZATION, POSTGRADUATE WORK, CONTRACT PRACTICE, INSURANCE FEES, LEGISLATION, ETC.

An Interesting Contribution to the Study of Lodge Practice

The following editorial article taken from the *Mid-West Eagle* of February 15 will interest all who have followed the discussion on lodge and contract practice. The *Mid-West Eagle* is the official organ of the Fraternal Order of Eagles for the middle west:

AERIE PHYSICIAN PROBLEM

The Grand Worthy President Has a New Proposition for the Smaller Aeries

One of the difficult problems has been the aerie physician. In cities where there is a large membership it is easy to secure doctors, for the pay is good. But in small towns where the membership is small and where the doctor would practically have to give up many of his regular customers and take care of his whole family for two dollars a year the job does not look so inviting. Many inquiries have been made on the solution of the matter. Medical societies have taken action against their members serving. As a result the Grand Worthy President has sent out the following circular, which explains itself:

"Dear Sirs and Brothers:—In certain parts of the country, we are having trouble with state, county and city medical associations, which refuse to permit their members to serve aeries in the capacity of aerie physician, as defined by our laws. This fraternity has no desire for controversy with any organization or members of the medical profession; but one of the important beneficial features of the Fraternal Order of Eagles is to supply the services of a physician to our members and their families. To disregard or not to provide for this important consideration would be to slight one of the basic ideas on which this organization is founded.

"There are, at the present time, aeries located in different cities and towns of the United States, which are unable to procure the services of a physician for aerie physician purposes, except at such outrageous terms as will ultimately, if acceded to, bankrupt such aeries.

"I have, therefore, determined to prepare a list of physicians who are competent to serve as aerie physician, who desire to change locality, and who will, if given a favorable contract by an aerie, move to the communities in which such aeries are located.

"Will you kindly read this communication at your next aerie meeting and ascertain if any members know of any physician qualified in every way to serve as aerie physician, who desires to change his place of residence? Will you also ask your aerie physician if he knows the names of any physicians who have the requisite qualifications and might wish to be considered by me? If your aerie is having difficulty in securing an aerie physician under favorable contract terms, because of the attitude of the medical association, will you kindly communicate with me at once?

"Of course, you understand that these physicians must be members of the Fraternal Order of Eagles.

"Trusting that the information received will enable us to solve this vexing question, I remain,

Yours fraternally in L., T., J. and E.,

FRANK E. HERING,
Grand Worthy President."

Probably no one of the so-called fraternal orders has as objectionable methods for the selection and payment of medical men as the Fraternal Order of Eagles. The communication given above from the "Grand Worthy President" is ample evidence that physicians in neighborhoods in which local organizations of this order are located are rapidly coming to appreciate the specious nature of the inducements offered to physicians by the order. The president recognizes the fact that it is impossible for his organization to secure the services of resident physicians on the terms offered. He therefore proposes as a remedy to supply cities and towns "unable to secure the services of a physician for aerie physician purposes . . . with a list of physicians . . . who desire to change localities (?) and who will, if given a favorable contract, move to the community in which such aeries are located."

One can readily imagine the scientific ability of the physician who is willing to move to a new location in order to secure \$2.00 per year per family as a reward for his services. Equally interesting are Grand Worthy President Hering's admissions that there is great difficulty in securing physicians willing to serve "except at such outrageous terms as will ultimately, if adhered to, bankrupt such aeries."

This is the equivalent to an official statement that this organization cannot pay physicians a decent price for their services without becoming bankrupt. If it is true that this organization can only exist by paying pauper wages to its physicians, then we can see no reason why it should not go into bankruptcy, and the sooner the better.

Another encouraging point is that the above letter shows that the organized profession is beginning to exert a real influence. We hope that every county society will take this matter up and will see that decent prices are insisted on for lodge work done for any fraternal order, or, better still, that it will persuade the entire medical population of the town not to make contracts for wholesale services that can be farmed out at retail for the benefit of a "fraternal" organization.

A correspondent also sends a copy of President Hering's circular letter and a copy of the constitution and by-laws which specifies in article 13. the duties of the "aerie physician." Section 1 provides that the aerie physician shall attend, prescribe for and perform such surgical work as may be necessary for all members of the aerie in good standing and their respective families, and that the words family or members of a family shall be understood as meaning a member, his wife and minor children and such other persons as reside with and are dependent on and are actually supported by the member. Such a definition would include not only a member's immediate family but all dependents living with him, such as father and mother, father-in-law and mother-in-law, etc. The physician is also required to attend all meetings of the aerie and report the condition of all sick members under his care. For these services he is paid the magnificent sum of \$2.00 a year for each member and is subject to a fine of \$1.00 whenever he fails to make a report. Section 9 of the same article provides that when any aerie has obtained a membership of over 600 it may elect two physicians, and if its membership exceeds 600 it may elect an additional physician for each 300 members or major fraction thereof. Consequently, \$600, or \$50 a month, would seem to be the average amount made out of this sort of practice. As 300 families would be equivalent to about 1,200 people the doctor would consequently be required to furnish all needed professional services, both medical and surgical, for 1,200 people for one year for \$50 a month. Under the circumstances, it is not strange that the Fraternal Order of Eagles has found it necessary to import physicians to do its work. Unless the order has some better excuse for existence than acting as middleman between physicians and patients and furnishing medical service for an entire family at the rate of four cents a week, its further existence is not warranted. The terms offered are such as no self-respecting physician could afford to accept.

POSTGRADUATE COURSE FOR COUNTY SOCIETIES

DR. JOHN H. BLACKBURN, DIRECTOR
BOWLING GREEN, KENTUCKY

[The Director will be glad to furnish further information and literature to any county society desiring to take up the course.]

Eighth Month—First Weekly Meeting

SUBJECT FOR THE MONTH: PHARMACOLOGY AND THERAPEUTICS

DEFINITION: Relation of pharmacology to (a) chemistry, (b) physiology and anatomy, (c) pathology and clinical medicine.

NATURE OF PHARMACOLOGIC ACTION: Conditions necessary for (a) chemical, (b) physical changes in cells. Evidences of chemical changes, of physical changes. Dependence of pharmacologic action on chemical structure of drug. Results of pharmacologic action, stimulation, excitation, irritation, depression, exhaustion, fatigue, paralysis, death.

Selective action, dependent on (a) structure and concentration of drug, (b) structure and function of cell. Pharmacologic classification of drugs: (a) locally acting drugs, irritants and demulcents; (b) protoplasmic poisons; (c) muscle-nerve poisons.

ACTIONS AND EFFECTS OF DRUGS: Local, remote, systemic, direct, indirect, reflex, immediate, late or secondary.

CONDITIONS MODIFYING THE ACTIONS OF DRUGS: Size and weight; age, rules for dosage for children, old age; sex, pregnancy, lactation; pathologic conditions, fever, diarrhea, etc. Synergism and antagonism. Time of administration of drug, preparation used, rate of absorption and elimination, disintoxication. Idiosyncrasy, susceptibility, cumulative action, tolerance, habitation.

METHODS OF ADMINISTRATION OF DRUGS: Local, preparations, effects. Oral, rectal. Hypodermic, preparations, advantages; intramuscular, subarachnoid, intracerebral and intravenous injections. Inunctions. Inhalations.

UNTOWARD EFFECTS OF DRUGS.

PHARMACOLOGIC AND THERAPEUTIC ACTIONS OF DRUGS

1. **DRUGS ACTING ON NERVOUS AND MUSCULAR SYSTEMS:** A. Drugs acting on muscles. Irritability, excitability and capacity for work increased or diminished. B. Drugs acting on peripheral endings of motor nerves. 1. Paralyzing nerve ends. 2. Stimulating nerve ends. C. Drugs acting on peripheral endings of sensory nerves. 1. Stimulating nerve ends. 2. Depressing nerve ends. D. Drugs acting on nerve trunks. Toxic effects, peripheral neuritis. E. Drugs acting on spinal cord. 1. Increasing irritability of anterior cornua. 2. Depressing anterior cornua. F. Drugs acting on the brain. 1. On motor cells of cortex (a) depress. (b) excite. 2. General cerebral stimulants. 3. General cerebral depressants (a) hypnotics, (b) narcotics, (c) anesthetics.

REFERENCE BOOKS FOR THE EIGHTH MONTH

Sollmann: Pharmacology. White and Wilcox: Materia Medica, Pharmacology and Therapeutics. Brnnton: The Action of Medicines. Cushny: Pharmacology. Wood: Therapeutics. Hare: Practical Therapeutics. Ortnor: Treatment of Internal Diseases. Forchheimer: Prophylaxis and Treatment of Internal Diseases. Publications of the A. M. A. and the Council on Pharmacy and Chemistry: New and Nonofficial Remedies, The Propaganda for Reform in Proprietary Medicines, The Broader Aims of the Council on Pharmacy and Chemistry, Physicians' Manual of the U. S. Pharmacopeia and the National Formulary.

Marriages

JOHN K. TRAIN, M.D., to Miss Lilla Comer, both of Savannah, in January.

A. V. RUTLEDGE, M.D., to Mrs. E. P. Erler, both of Denison, Texas, February 24.

WILLIAM A. LERIE, M.D., Chicago, to Miss Mabel L. Mayer of New Orleans, March 9.

THOMAS A. SPEIDEL, M.D., to Miss Marie Houghton, both of Felicity, Ohio, February 27.

JOHN TILDEN HARBOLD, M.D., Yorkana, Pa., to Miss Helen Presser, of Philadelphia, March 1.

FRANK M. LYNN, M.D., Peru, Ind., to Miss Myrtle Work, of New Richmond, Ind., February 28.

JULIUS C. LELLARDY, M.R.C., U. S. Army, to Miss Dorothea Clendenin, at Iloilo, P. I., Dec. 11, 1909.

RAYMOND VICTOR HARRIS, M.D., Savannah, to Miss Flora Middlebrooks, of Athens, Ga., January 6.

JOHN MONROE SIGMAN, M.D., Savannah, to Miss Leila K. Richbourg, of Bloomingdale, Ga., February 16.

WILLIAM OLIVER HOWARD, M.D., Elmore, Ga., to Miss Sarah N. McGoogan, of Shannon, N. C., February 23.

JOSIAH SLICER BOWEN, M.D., Mount Washington, Md., to Mrs. Elizabeth A. Bullington, at Baltimore, February 28.

RONAYNE DE KIRKBRIDE CLEBORNE, M.D., Cambridge, Mass., to Miss Mary Mossman Thomas, at Philadelphia, March 3.

MADGE PATTON HAWKINS, M.D., Terre Haute, Ind., and William Wallace Stephens, of Memphis, Tenn., at St. Louis, February 26.

JOSEPH E. KELTNER, M.D., El Paso, Texas, to Miss Daisy Engman, of Louisiana, Mo., at Albuquerque, N. M., February 14.

Deaths

Uzziel Ogden, M.D. Victoria University, Coburg, Ont., 1855; a student of Dr. John Rolfe, and licensed to practice by the Upper Canada Medical Board in 1849; professor of materia medica and therapeutics in the Toronto School of Medicine from 1853 to 1870; professor of obstetrics and gynecology until 1887, and professor of gynecology in the Medical Faculty of the University of Toronto until 1903 when he completed fifty years as a teacher of medicine, and for three years dean of the faculty; founder, in 1876, and for many years editor-in-chief of the *Canadian Practitioner and Review*; died at his home in Rosedale, Toronto, January 4, from paralysis, aged 82.

Jules Lazard, M.D. Tulane University, New Orleans, 1898; a member and formerly treasurer of the Louisiana State Medical Society, and the New Orleans Medical Society; for six years assistant to the professor of surgery in his alma mater; professor of physiology in the New Orleans College of Pharmacy; visiting surgeon to the Charity Hospital and Touro Infirmary; consulting surgeon to the Presbyterian Hospital; died in a sanitarium in Biloxi, Miss., March 4, from heart disease, aged 34.

Martin Van Buren Miller, M.D. Medical College of Alabama, Mobile, 1872; College of Physicians and Surgeons, New York City, 1878; for twelve years president of the Lauderdale County (Miss.) Medical Society; for many years president of the board of health; for eighteen years a member and for sixteen years president of the board of trustees of the Meridian public schools; died at his home in Meridian, February 21, from cholelithiasis, aged 59.

Edward C. Crum, M.D. Miami Medical College, Cincinnati, 1870; a member of the Ohio State Medical Association; died at his home in Dayton, March 4, from cerebral hemorrhage, aged 62. The Montgomery County Medical Society, at a special meeting, adopted resolutions expressing a deep sense of the loss sustained by the society in the death of Dr. Crum.

Louis Edmond Magnenat, M.D. University of Texas, Galveston, 1895; formerly a member of the American Medical Association; a member of the State Medical Association of Texas; demonstrator of surgery, chemistry and physics, and histology and pathology in his alma mater; died at his home in Amarillo, February 24, from pneumonia, aged 41.

William Everette Dempsey, M.D. University of Louisville, 1897; of Charleston, W. Va.; formerly a member of the American Medical Association; a member of the West Virginia State Medical Association; formerly secretary of the Fayette County Medical Society; died near Jacksonville, Fla., March 2, from pulmonary tuberculosis, aged 36.

Alexander J. Dallas, M.D. New York University, New York City, 1844; a member of the Medical Society of the State of New York; said to have been the oldest practitioner of Syracuse; in 1855, president of the Onondaga County Medical Society; and twice coroner of the county; died at his home, March 4, from heart disease, aged 91.

William Stuart Patterson, M.D. Jefferson Medical College, 1888; of Pittsburg; physician to the Pittsburg Hospital for Children; a member of the American Medical Association and the American Academy of Medicine; died March 2, in Southern Pines, N. C., where he had gone in hope of regaining his health, aged 44.

James Newton Matthews, M.D. Missouri Medical College, St. Louis, 1878; the first matriculant of the University of Illinois; a member of the Illinois State Medical Society; a poet of more than local repute, and a beloved physician of Effingham county; died at his home near Mason, March 7, from pneumonia, aged 57.

Charles B. Hawley, M.D. Cincinnati College of Medicine and Surgery, 1871; a member of the Medical Society of the State of New York, and of the pension examining board of Gouverneur; and coroner of St. Lawrence county for several years; died at his home in Gouverneur, February 28, from heart disease, aged 62.

Leroy S. Hopkins, M.D. Miami Medical College, Cincinnati, 1860; (license, years of practice, Ill., 1878); of Roanoke; for 65 years a practitioner of Illinois; a veteran of the Civil War; while fishing in Biloxi Bay, Miss., February 24, was seized with apoplexy, fell overboard, and was found dead, aged 71.

James M. Ayres, M.D. Medical College of Ohio, Cincinnati, 1882; formerly of Hamilton, Ohio; a veteran of the Civil War; consul to Para, Brazil, and later to Rosario, Argentine Republic; died at his home in Johnson City, Tenn., February 28, from pneumonia, aged 70.

James Sykes, M.D. College of Physicians and Surgeons, Keokuk, 1864; of Beverly, Ill.; surgeon of volunteers during the Civil War; and then acting assistant surgeon in the army until 1868; died at the home of his daughter, in Mercedes, Texas, March 3, from cerebral hemorrhage, aged 65.

Arthur Theakston, M.R.C.S., England; a pioneer of British Columbia, Alaska and Yukon; for many years mining recorder of Circle City, Alaska, and the first to suggest a mining code for the Yukon territory; died January 24, in Dawson, Yukon, from senile debility, aged 72.

Christian C. Miller, M.D. Western Reserve University, Cleveland, 1871; of Altoona, Pa.; manager of the Miller Medical Institute in that place; a member of the Medical Society of the State of Pennsylvania; died in Orlando, Fla., March 2, from rheumatism, aged 63.

John H. Simms, M.D. Eclectic Medical College of Pennsylvania, Philadelphia, 1856; a practitioner of Wilmington, Del., since 1854; surgeon of volunteers during the Civil War; a local preacher of the Methodist Episcopal Church; died at his home, March 4, aged 81.

George Edwin Ehle, M.D. Hahnemann Medical College, Chicago, 1882; of Grand Rapids, Mich.; at one time physician to the State House of Correction, Ionia; died in the University of Michigan Hospital, Ann Arbor, February 27, from chronic nephritis, aged 61.

James H. Bean, M.D. Jefferson Medical College, 1877; for several terms physician of Pocastello and Bannock county, Idaho; a member of the Idaho State Medical Society; died in the Angelus Hospital, Los Angeles, Cal., February 26, from uremia, aged 53.

Walter B. Purcell, M.D. Gross Medical College, Denver, 1890; of Tucson, Ariz.; a member of the American Medical Association; while on his way from Tucson to Twin Buttes, February 27, was crushed under his automobile and instantly killed, aged 41.

William Gleason Stone, M.D. Bellevue Hospital Medical College, 1878; from 1883-1893, assistant superintendent of the Illinois Northern Hospital for the Insane, Elgin; died at his home in Montclair, N. J., Nov. 14, 1909, from tuberculosis, aged 52.

W. C. D. Bond, M.D. Medical College of Ohio, Cincinnati, 1857; for a number of years a Baptist clergyman; a member of the local board of pension examiners of Parkersburg, W. Va.; died at the home of his son in Wheeling, February 27, aged 75.

George Lucius Beardsley, M.D. Bellevue Hospital Medical College, 1873; for 35 years practitioner of Derby, Conn., and city health officer; died in the New Haven City Hospital, February 26, from chronic nephritis and pneumonia, aged 61.

Isaac J. Daniel, M.D. College of Physicians and Surgeons, Baltimore, 1885; formerly of Battle Creek, Neb.; died at his home in Lamont, Okla., Dec. 8, 1909, from general carcinoma, for which repeated operations had been made, aged 57.

Robert Henry Golder, M.D. New York University, New York City, 1851; a member of the Medical Society of the State of New York; for fifty-nine years a practitioner of Rossville, Staten Island; died at his home, March 6, aged 89.

Gustave Liebermann, M.D. New York University, 1887; of Brooklyn; one of the founders and first superintendent of the Lebanon Hospital, New York City; died in that institution, February 28, after a surgical operation, aged 55.

Jonas D. Johnson, M.D. Eclectic Medical Institute, Cincinnati, 1878; of Wharton, Ohio; died at his home, February 26, from the effects of a gunshot wound of the head, self-inflicted, it is believed with suicidal intent, aged 64.

Augustus Frederick Wohlfarth, M.D. (license, Ill., 1882); died at his home in Grantwood, N. J., Nov. 28, 1909, from the effects of a gun-shot wound of the head, self-inflicted it is believed with suicidal intent, aged 50.

James Wallace Milliken, M.D. New York University, New York City, 1877; a member of the Medical Society of the State of California; died at his home in Mendocino, May 27, 1909, from angina pectoris, aged 58.

Thomas A. Enos, M.D. Jefferson Medical College, 1879; division surgeon of the Pennsylvania System at Townsend, Del.; died at his home February 27, from typhoid fever, complicating pneumonia, aged 55.

James Levi Day, M.D. Washington University, St. Louis, 1873; Bellevue Hospital Medical College, 1879; a veteran of the Civil War; died at his home in St. Louis, March 1, from cerebral hemorrhage, aged 69.

Lewis Alfred Flexer, M.D. University of Michigan, Ann Arbor, 1879; formerly a member of the Medical Society of the State of Pennsylvania; died at his home in Delano, March 5, from erysipelas, aged 57.

Louis B. Hughes, M.D. Jefferson Medical College, 1902; of Hebron, Neb.; died on a Santa Fe train near La Junta, Colo., while en route to his home from California, February 18, from nephritis, aged 35.

George W. Clemson, M.D. Starling Medical College, Columbus, Ohio, 1874; formerly a member of the Ohio State Medical Association; died at his home in Thornville, March 7, from tuberculosis, aged 61.

Junius Tompkins, M.D. Missouri Medical College, St. Louis, 1855; a member of the Missouri State Medical Association; died at his home in Canton, Sept. 18, 1909, from cancer of the rectum, aged 75.

Ottoway T. Fields, M.D. Meharry Medical College, Nashville, 1893; one of the organizers of Provident Hospital, St. Louis; died at his home in that city, March 1, from cirrhosis of the liver, aged 43.

Charles W. McMillan, M.D. University of Nashville, 1900; a member of the Oklahoma State Medical Association; formerly of Harrison, Ark.; died at his home in Ada, Okla., February 23, aged 40.

Henry Clay Smith, M.D. University of Nashville, 1875; a member of the Kentucky State Medical Association; died at his home near Allen Springs, March 1, from pneumonia, aged 66.

James Mackeand Cochrane, M.D. University of Toronto, 1884; L.R.C.P., London, 1899; a fellow of the Medical Society of London, where he had resided since 1890, died recently at his home.

John M. Davis, M.D. Physio-Medical College of Ohio, Cincinnati, 1857; a veteran of the Mexican and Civil wars; died recently at his home near Staunton, Ill., from senile debility, aged 84.

Luther Ward Alger, M.D. Jefferson Medical College, 1861; for forty years a practitioner of LaCrosse, Wis.; died at his home in Everett, Wash., February 20, from heart disease, aged 72.

Alonzo D. Birchard, M.D. Bellevue Hospital Medical College, 1864; for 44 years a practitioner of Cambridge Springs, Pa.; died at his home, February 23, from angina pectoris, aged 73.

Richard M. Pancoast, M.D. Jefferson Medical College, 1845; for more than half a century a practitioner of Philadelphia; died at the Old Man's Home in that city, March 3, aged 85.

Thomas Coates Stockton, M.D. Bellevue Hospital Medical College, 1868; a pioneer practitioner of San Diego, Cal.; died at his home in that city, March 1, from paralysis, aged 72.

Adam Overfield, M.D. University of Michigan, Ann Arbor, 1870; for more than thirty years a resident of Houghton, Mich.; died at his home in Toledo, Ohio, February 27.

Mary E. McCarty, M.D. Homeopathic Medical College of Missouri, St. Louis, 1890; died recently at her home in St. Louis, and was buried in Boonville, Mo., March 4.

Fred C. Abbott, M.D. University of Louisville, 1908; an intern in the Springfield (Ohio) City Hospital; died in that institution, March 5, from typhoid fever, aged 29.

Franklin T. Cook, M.D. University of Tennessee, Nashville, 1881; for 33 years a practitioner of Taylor, Texas; died in Phoenix, Ariz., March 2, from nephritis, aged 57.

Israel S. Brault, M.D. Ecole de Médecine et de Chirurgie, Montreal, 1890; of St. Albans, Vt.; died in Montreal, February 1, from lobar pneumonia, aged 48.

Samuel Smith Brecht, M.D. Pennsylvania Medical College, Gettysburg, 1859; died at his home in Manheim, Pa., March 5, from cerebral hemorrhage, aged 79.

Charles W. Fall, M.D. Central College of Physicians and Surgeons, Indianapolis, 1889; died at his home in Fowler, Ind., February 24, from nephritis, aged 51.

George Madison Cooper, M.D. Hahnemann Medical College, Philadelphia, 1895; died at his home in Bryn Athyn, Pa., March 2, from heart disease, aged 36.

Mandeville Thum, M.D. Kentucky School of Medicine, Louisville, 1881; of Louisville; died in the Louisville City Hospital, March 4, from pneumonia, aged 52.

Robert Clay Henderson, M.D. Memphis Hospital Medical College, 1902; was shot and killed in a family feud near Zion, Miss., Nov. 28, 1909, aged 42.

John A. Craighead, M.D. Western Reserve University, Cleveland, 1877; died at his home in East End, Pittsburg, March 3, from heart disease, aged 57.

Robert Emmett Graham, M.D. University of Missouri, Columbia, 1894; died in his office in Columbia, March 3, from cerebral hemorrhage, aged 40.

Franklin Buckwater Richards (license, Ind., 1897); for sixty-two years a practitioner; died at his home in Taylorville, Ind., recently, aged 85.

Stephen R. Cook, M.D. University of Alabama, Mobile, 1890; of Epes, Ala.; died at an infirmary in Birmingham, Ala., February 26, aged 41.

Frank Rossiter Porter, M.D. New York University, 1882; of New Windsor, Colo.; died in a hospital in Loveland, Colo., March 3, aged 50.

Joseph B. Sargent, M.D. Homeopathic Hospital College, Cleveland, 1875; died at his home in Tyrone, N. Y., Oct. 4, 1909, aged 58.

Harry E. Baine, M.D. Hospital College of Medicine, Louisville, 1875; died at his home in Waco, Texas, March 1, aged 55.

Elton E. Weary, M.D. Michigan; died at his home in Cleveland, Ohio, Aug. 4, 1909, from tuberculosis, aged 51.

Phillip Rosenberg, M.D. Russia; died in Los Angeles, Cal., Oct. 28, 1909, from heart disease, aged about 59.

John Wilbur Roberts, M.D. died at his home in Alameda, Cal., March 26, 1909, from uremia, aged 74.

Society Proceedings

COMING MEETINGS

Alabama, Medical Association of State of, Mobile, April 19-22.
Am. Laryn., Rhin. and Otol. Society, Washington, D. C., April 28-30.
Arizona, Medical Association of, Phoenix, April 20-21.
California, Medical Society of State of, Sacramento, April 19-21.
Conf. State and Prov. Bds. of Health, Washington, April 28-29.
District of Columbia, Medical Association of, Washington, April 26.
Florida, Medical Association of, Jacksonville, April 6-8.
Georgia, Medical Association of, Athens, April 20-23.
Maryland, Med. and Chirurgical Faculty of, Baltimore, April 26-28.
Mississippi State Medical Association, Oxford, April 12.
South Carolina Medical Association, Laurens, April 19-21.
Tennessee State Medical Association, Memphis, April 12-14.

CONFERENCE OF THE COUNCIL ON MEDICAL EDUCATION AND OF THE COMMITTEE ON MEDICAL LEGISLATION OF THE AMERICAN MEDICAL ASSOCIATION

Held in Chicago, Feb. 28—March 2, 1910

(Concluded from page 898)

TUESDAY AFTERNOON SESSION

Some of the Constitutional Aspects of Medical Licensure

PROF. ERNEST FREUND, Professor of Jurisprudence and Public Law, University of Chicago: The serious difficulty of the licensing system lies in the details of its working out and relates both to its scope and its requirements. The problem has generally been treated as one of legislative policy and statutory construction. Our courts have found it possible to construe the term "practice of medicine" in such a way as to exclude osteopathy, optometry, massage and Christian science treatment. In a great many cases the legislature has inserted liberal exceptions into the statute, especially so with regard to mental treatment. In other cases, and particularly with regard to osteopathy, it has prescribed special tests of qualifications. There is a double objection to a licensing law too sweeping in its terms, and not sufficiently regardful of simpler methods of treatment. One objection is that it will give color to the charge or suspicion of monopolistic exclusiveness; the other is that it will lead to exemption by judicial interpretation, or if the terms of the statute make that possible, to a

breaking down of the law through non-enforcement, and the consequent toleration of a class of outlawed practitioners who might with advantage to the community be given a status of legal recognition. To discover the sound principles of medical practice legislation, a study of the history of legislation is as important as a study of judicial decisions. Under prevailing conditions in this country the preponderance of argument is in favor of the maintenance of the license system, and sound principle requires a careful definition of licensed practice, and its protection as a right of property. The whole matter of qualification, differentiation and exemption, on the other hand, is one in which there must be much of positive or conventional regulation, and in which conclusions must be reached mainly on the basis of experience, expediency and the compromise between conflicting views.

Uniform State Laws

PROF. ROSCOE POUND, University of Chicago, discussed the value of uniform state laws regulating the practice of medicine.

Importance to the Public of the Proper Enforcement of Medical License Laws

HON. HARRY OLSON, Chief Justice Municipal Court, Chicago: The American Medical Association, through its Council on Medical Education and its Committee on Medical Legislation, is rendering the public most important service by its efforts to secure a uniform and high standard of medical education and licensure in all the states. The intelligent and thoughtful layman is encouraged by the progress made by the association in this regard since 1904. The wonderful progress of medicine in the last thirty years has increased the need of a thorough education of those who contemplate its practice. The machinery to enforce the medical license laws should not be in the board of health. That body has its hands full with the questions of public sanitation, quarantine, and occasionally, it is said, politics. There should be a separate body composed in the majority of medical men, but it would do no harm to have a lawyer on it which should control not only the licensing of physicians, but the requirements of the accepted medical colleges and the requirements of preliminary education for entrance on the study of medicine as well. This body should have power on complaint and after giving due notice to hear evidence as a court and to determine whether a license once granted should be revoked for conduct involving immorality in the practice of medicine, and such offenses as dishonesty, conviction of crime, addiction to drug habits, etc. The power the Supreme Court of this state has to disbar a lawyer on a proper showing made to him by the state's attorney, the bar association, or an individual, after notice and after a hearing of his dishonesty, is a tremendous factor in purifying the legal profession and in keeping its dishonest members within bounds. The licensed lawyers who were convicted during the ten years that I acted as a prosecutor in the criminal courts of Cook county were promptly disbarred by the Supreme Court. The physicians who served in the penitentiary promptly on their discharge resumed the practice of medicine, even though the crimes they committed involved falsification of vital statistics, and in one case, though the indictment was based on the charge of conspiracy to obtain money by false pretenses, the court and jury were of the belief that a murder had been committed. Without examining the law and decisions of the courts of this state, it would seem that the local medical profession had been derelict in the matter of its failure to present evidence to the state board of health against those members of their profession licensed in the state who ought to have forfeited their right to practice by unprofessional or dishonorable conduct.

The law of this state permitting the revocation of physicians' licenses for dishonorable conduct only applies to those physicians whose licenses were issued since 1899. As the law now stands, those licenses issued prior to 1899 may not be revoked. This defect in the law should be amended at the next session of the legislature, so as to apply to all physicians who are permitted to practice their profession in this state, no mat-

ter when their licenses were procured. The statute should be amended to state plainly that a license might be revoked for malconduct as a physician, which malconduct should be specifically enumerated in the statute. Conviction of a felony should be added as one of the causes. The responsibility for the proper enforcement of medical license laws falls first on the medical profession itself. It must furnish the initiative. The machinery is at hand now for all licensed since 1899. An amendment to the law will reach all. The state's attorney and the courts are at the disposal of physicians and the people are with them.

The Attitude of the Medical Profession Regarding Medical Practice Laws

DR. HENRY B. FAVILL, Chicago: The majority by far of the members of the medical profession have no concern or no conscious interest in medical practice acts. Elevation of the rank and file of physicians in point of fundamental education and practical efficiency clearly rests with the medical profession. Yet, as a practical feature, it is found to go only *pari passu* with public demands. The improvement in standards and requirements in medical schools in recent years have been particularly in those schools in which the nature of things would have improved under growing conceptions and higher ideals. All the leading colleges as a mere evolution of medical thought would have reached their present status without state requirements. To declare any candidate eligible who has a diploma from a recognized medical school; to recognize medical schools on the basis of fictitious presentation and fraudulent methods, and then to complete the test by an examination which any man with a good memory and no medical training can easily pass, is not only futile, but in the highest degree iniquitous. The more clearly the elements of qualification and competency can be set forth, the greater will be the influence among the minds of the public.

The early history of reform movements may be a necessity marked by arbitrary and restrictive measures. As a feature of permanent and well-constructed society, however, that custom which rests on widespread intelligence is the only custom which can be expected to endure. The merits of the suggestions which I make are three. (1) The highest degree of individual freedom; (2) the highest standard of classification as a guide to public judgment; (3) limitation of the stamp of approval or employment by the state to individuals whose qualifications have been actually determined. I believe that there is but one ground on which to justify the interest and agitation in the matter on the part of the profession. That ground is protection of public interests.

WEDNESDAY MORNING SESSION

Chairman's Address: Work of the Committee on Medical Legislation

On the third day of the joint conference, Dr. Charles A. L. Reed, Cincinnati, chairman of the Committee on National Legislation, presided, and in calling the conference to order said:

In the report of last year following the meeting of the Committee on Medical Legislation I sent to the president of the association my resignation from this office. I did so with reluctance because it involved my severance from duties which had been exceedingly pleasant. I was forced to take that step for reasons which I explained in my letter at the time. It seems, however, that the organic law of the association is so framed that there is no authority vested in the president either to accept a resignation from a committee or to fill a vacancy, and insistence on my resignation under that state of facts would have involved an arrest of the work of the committee which was exceedingly important during this year. Therefore, I reconsidered the step until June next, when the House of Delegates will be vested with adequate authority to make the necessary changes in the committee.

As to the work of the committee during the time that has intervened since the last meeting, which was held in Washington, the energies of the members of the committee have been concentrated more particularly on an effort to formulate acceptable legislation looking to the improvement of our

national public health service. I say this without any reflection upon the existing national health service, or without any desire to indulge in a criticism on that service as it exists to-day; but I say it with reference to the progressive steps looking to the assembling and to the coordinating of the various national public health agencies under one organic head. It is apparent that the establishment of a *de novo* department involving an addition to the personnel of the Cabinet is not practicable as an initial step, and there seems to be a very decided feeling of opposition against an increase in the number of the Cabinet, and the tendency in executive circles in Washington is rather to diminish than to increase the number of members of the Cabinet.

The details of the work of the Committee on National Legislation will be laid before the conference to-day.

Secretary's Report

DR. FREDERICK R. GREEN, Chicago: The careful attention of members of the National Legislative Council should be given to the advisability of selecting, so far as possible, men for appointment on the National Auxiliary Legislative Committee who are interested in legislative matters and active in medical society and political work, and especially the selection of those who will give prompt attention to communications sent from the committee, the bureau or the members of the National Legislative Council. It is also advisable to consider carefully each member's record or efficiency in making reappointments or filling vacancies in order that the best and most experienced men may be retained and those who show inefficiency or lack of interest may be eliminated.

In regard to the work of the Bureau of Medical Legislation, no laws of particular interest to the medical profession were passed by the national Congress in 1909. During the spring of 1909 a number of bills were enacted into laws by the various state legislatures then in session. In Colorado, an amendment to the medical practice act was defeated. An osteopathic bill was defeated. A bill putting all hospitals under the control of the state board of health became a law. Delaware adopted an amendment to the vital statistics law which it is hoped will admit it to the registration area. A public institution bill was passed in Illinois providing for the appointment of a commission for the management of all public institutions in the state. This bill was originally drafted and endorsed by the Illinois State Board of Charities, but was considerably amended in passage. The legislature also passed a bill authorizing cities to establish tuberculosis sanatoria under certain conditions. The vital statistics bill was not passed. In Indiana a bill was adopted for the prevention of pollution of streams. In Iowa probably the most important single bill adopted was that providing for the establishment of county hospitals. In Kansas the pure food law was amended, also the law relating to water and sewage. A bill was passed making notification of tuberculosis compulsory. The principal work done in Massachusetts was to prevent the passage of pernicious bills, including optometry, antivaccination, etc.

Missouri has the honor of being the only state to pass a vital statistics bill last year. Three amendments to the medical practice act were adopted which greatly strengthen this measure. In Nebraska a bill providing for the care of indigent consumptives became a law. In New York the bills against animal experimentation which have been introduced into the state legislature were defeated. In North Carolina an optometry bill was adopted. In North Dakota an osteopathic bill became a law. In Pennsylvania an osteopathic bill, similar to bills introduced in other states, became a law. The principal fight was over a new medical practice act which after a long struggle was withdrawn. In Rhode Island an optometry bill became a law. Vermont has adopted an optometry law, also amendments were made to the medical practice act and the food and drugs act.

The secretary then discussed vital statistics, pure food and drugs, state medical practice acts, expert testimony, sectarian legislation, reorganization of the legislative work of the association, and closed by saying that the value of the Bureau of the Council, the various state associations, and the American

Medical Association itself, will be in direct proportion to the assistance and cooperation rendered by the representatives of the different states.

The report of Dr. Green was referred to a reference committee consisting of Drs. F. A. Long, D. C. Budge, and Major M. W. Ireland. This committee subsequently reported as approving the recommendations therein contained, and on motion the report was adopted.

WEDNESDAY AFTERNOON SESSION

Report of Reference Committee on National Legislation

Dr. G. B. Young, U. S. Public Health and Marine-Hospital Service, presented the report of this committee, as follows:

The Reference Committee on National Legislation to which was referred certain bills pertaining to the Medical Corps of the United States Navy presented to the Council by the representative of that department, presents the following report:

The bills in question are as follows: S. 1017, H. R. 6184, Sixty-first Congress, first session. "A bill to Reorganize and Increase the Efficiency of the Hospital Corps of the United States Navy and to Regulate its Pay." S. 1015, H. R. 4305, Sixty-first Congress, first session. "Authorizing the Appointment of Dental Surgeons in the Navy." S. 4745, H. R. 16892, Sixty-first Congress, second session. "To Equalize the Pay and Allowance of Assistant Surgeons and Acting Assistant Surgeons in the United States Navy." Bill submitted in draft and not numbered: "To Increase the Efficiency of the Medical Department of the United States Navy."

Your Reference Committee has carefully considered the bills above referred to and earnestly recommends the unanimous support of the Council for these measures.

Committee on Federal and State Regulation of Public Health

This committee, composed of Drs. C. H. Cook, B. M. Caples, and W. Jarvis Barlow, reported that the bill now before Congress, asking for a department of health, will probably not be passed at the present time. The committee suggests that a bill be passed that will give recognition to the health interests of the country in the title of "a department," and that within that department there be organized an efficient bureau of health to consist of all present public national health agencies. On motion, the report was adopted.

Report of Committee on Optometry

Dr. George W. Gay, Boston: The committee believes most emphatically with the medical profession that as a rule a medical training is indispensable for a proper treatment of the eye on account of the close relationship between the eye and other parts of the body, and between eye symptoms, like headache and poor sight, and general constitutional conditions. Without medical training and with nothing but his crude untrained observation how will the optometrist be able to tell the presence of deep-seated intraocular disease? The optometrists have few, if any, proper schools and those already in existence are not officially recognized by the optical societies. The great state of New York has but one school of optometry and that is located in Rochester, the city of New York having none. Furthermore, an overwhelming majority of the optometry or optical schools consists entirely of correspondence courses of a few weeks or months, giving a degree in which the title "doctor" is apt to figure prominently. The price of these courses varies from five to twenty-five dollars and usually includes a handsomely engraved diploma. Optometry is a trade, not a profession. Like that of the optician, it is learned as are many trades, the watchmakers, for example, by working in a shop as an apprentice for a time, then perhaps as a journeyman until able to set up business for himself. No special preliminary education is required, and he earns his living while learning the business. This is a very different experience from that of learning a profession, as that of an oculist, for instance, which requires several years of preparatory study before entering the medical school term of four years, then the hospital course and the post-graduate courses, to say nothing of the considerable expense involved in this career of the practitioner.

Medical Expert Testimony

Dr. L. M. Halsey, New Jersey, presented the report of this committee. The report is considered preliminary with a view to throwing some light on a topic, which, for a long time, has engaged the attention of some of the brightest minds in the legal and medical professions.

As the result of a recent canvass made by the Committee on Medical Legislation of the American Medical Association it was found that of thirty-five states heard from only two, Michigan and Rhode Island, had statutes regulating the admission of medical expert testimony to the courts. In summarizing its work the committee offered the following suggestions:

1. Give the courts the common-law power to charge the jury on the expert evidence.

2. Also give them the authority to call experts of their own motion under certain conditions, said experts to be paid by the county in which the case falls.

3. Resort more frequently to medical commissions and to the custom which obtains in ordinary consultations.

4. Let the courts allow to serve as experts only those who are properly qualified and let them be treated as gentlemen in court, abolishing the custom, too prevalent in some places, of badgering and insult during cross-examination.

Could these suggestions be adopted, there would be little cause for complaint as to the character of medical expert evidence in our courts. Expert medical testimony would occupy a higher standard of excellence than it has ever done before, one commensurate with its importance and its universal demand.

The reports submitted by various committees were adopted.

As Secretary Green called the roll of states, each delegate stated briefly the condition of medical legislation in his state.

Report of the Carroll Fund Committee

Major M. W. Ireland, U. S. Army, chairman of the Carroll Fund Committee, gave a detailed statement of the work of this committee, giving the names of all subscribers and the amounts subscribed. The committees urged that action be taken to secure the property of Mrs. Carroll from future indebtedness, and on motion the committee was given power to act in this regard.

Report of Committee on Conclusions and Plans of Action

Secretary Green presented the following report of this committee:

1. *Resolved*: That it be the sense of this Conference that opticians be licensed as such by the state medical boards, and that Dr. Gay's pamphlet be endorsed and ordered distributed.

On motion, this resolution was adopted.

2. *Resolved*: That the Conference recommends the passage of bills S. 1017, H. R. 6184, Sixty-first Congress, first session; S. 1015, H. R. 4305, Sixty-first Congress, first session; S. 4745, H. R. 16892, Sixty-first Congress, second session; also the bill to increase the Medical Department of the United States Navy.

On motion, the resolution was adopted.

3. *Resolved*: That the Conference recommends the passage of the bill for the relief of the estate of late Assistant Surgeon, W. H. Miller, U. S. P. H. and M.-H. S., and recommends the passage of legislation in the interests of the personnel of the U. S. P. H. and M.-H. S.

On motion, this resolution was adopted.

4. *Resolved*: That the Conference recommends that state food laws be so amended as to provide that advertisements of food and drug products correspond with the labels; and that the drug section of the model pure food law conform as closely as possible to the national Food and Drugs Act.

On motion, the resolution was adopted.

5. *Resolved*: That the Conference heartily endorses the position taken by the President in his message to Congress in regard to national health legislation, and urges on Congress the passage of legislation looking toward such ends.

6. *Resolved*: That the Conference endorses the control by state medical examining boards the standards of medical education, and also endorses the standards of education, both preliminary and collegiate, recommended by the Council on Medical Education, but it is the sense of the Conference that adherence to these standards should not be allowed to result in the destruction of a single sectarian board.

On motion, the resolution was adopted.

On motion of Dr. Halsey, the report was then adopted as a whole.

The conference then adjourned *sine die*.

AMERICAN CONFEDERATION OF RECIPROCATING MEDICAL EXAMINING AND LICENSING BOARDS

Annual Meeting, held in Chicago, March 3, 1910

DR. W. A. SPURGEON, President of the Indiana State Board of Registration in Medicine, in the Chair

Out of a membership of fourteen states, eight states were represented and three reciprocating states, not in membership, however, were represented. Dr. B. D. Harison, secretary of the Michigan State Board of Registration in Medicine, is the secretary of the confederation.

President's Address: Work of the Association During the Past Ten Years

DR. W. A. SPURGEON reviewed the work of the association for the past ten years, showing that much progress has been made toward establishing reciprocal registration between nearly all the states. He pointed out the necessity for such an arrangement, and held that the professional liberty or freedom obtained in reciprocity must be regarded as a reward of merit, and that it becomes a most effective incentive to high uniform attainments on the part of the individual physician as well as on the part of the examining board, and that medical legislation has accomplished much good in the unification of the profession in the elevation of standards of medical education and premedical training, and in the elimination of inefficient medical colleges, fakers and ignorant pretenders. The absence of uniformity of requirements of the medical laws of the country is one of the chief defects and objections to such laws.

Dr. Spurgeon recommended the appointment of a committee on uniform legislation, this committee to be instructed to formulate an address to the governors of the several states and territories, asking the executive to appoint representative men in his state conversant with medical legislation and not necessarily physicians to cooperate with this committee in the formulation of a model medical bill, to be submitted to the legislatures of the states and territories, to the end that uniform requirements may be obtained in all the states. He also recommended the appointment of a standing committee on inspection and rating of medical colleges. Specifically stated, it shall be the duty of this committee to determine the relative educational value of the medical educational institutions of the country, and also of the preliminary training schools, report to the confederation annually, and recommend standard minimum requirements that shall form the basis of its work. This committee should be distributed geographically and should represent the several so-called schools of medicine recognized by the confederation. The active work of investigation and inspection should be delegated to an executive sub-committee to be chosen by the original committee. The annual report of this committee should be thoroughly discussed by the confederation and the report as finally adopted to be spread on the records of the confederation and a copy sent to the various medical examining boards, with the view that the boards will unite in adopting the findings of the confederation.

Report of Secretary

DR. B. D. HARISON, Detroit, reported that the following states are now in membership in the association: Georgia, Indiana, Iowa, Kansas, Maryland, Michigan, Nebraska, Nevada, Ohio, Oklahoma, Utah, West Virginia, Wisconsin and North Dakota. The following states are on a reciprocal basis: Arkansas, Colorado, Delaware, District of Columbia, Illinois, Kentucky, Louisiana, Maine, Minnesota, Missouri, North Carolina, New Hampshire, New Jersey, New York, South Carolina, Tennessee, Texas, Vermont, Virginia and Wyoming.

During 1909, 1,009 reciprocal registrations were granted, 933 under Qualification I, and 76 under Qualification II. This report does not include reciprocal registrations that may have been made in the following states, from which a report was not received: District of Columbia, Georgia, Kansas, Missouri, Nebraska, South Carolina, Tennessee, Virginia and West Virginia.

Committee on College Rating

The committee to which was referred the address of the president recommended the appointment of a standing committee on college rating, consisting of seven members, representing the several colleges of medicine recognized by the confederation, to be known as the "Committee on College Standing and Rating." It shall be the duty of this committee to investigate, by inspection or otherwise, the medical institutions and secondary schools of the country, and to report its findings to the confederation from year to year. The report of this committee when adopted by the confederation shall be available for the information of the state boards of the country. The president of the confederation shall be a member of this committee.

Committee on Legislation

The committee also recommended that each state examining board be requested to appoint a delegate, and that the governor of each state be likewise requested to appoint a delegate, not necessarily a medical man, and that these delegates shall compose a standing committee on legislation. It is to be the duty of this committee to prepare a uniform medical law, with a view to securing its adoption by the legislatures of the several states.

The report of the committee was adopted.

Investigation of Methods of Examining Boards

On motion of Dr. Herbert Harlan, president of the Maryland Board of Examiners, the Committee on College Rating was instructed to consider the advisability of making an investigation into the methods employed by the various examining boards.

It was also decided to appoint a committee looking toward effecting an amalgamation of this confederation and the National Confederation. This committee is to consist of three members, two of which shall be the president and secretary of the confederation. (The president was empowered to appoint these committees *ad interim*.)

Officers Elected

Dr. Spurgeon was reelected president and Dr. Harison was reelected secretary of the confederation. The time of meeting for next year was left to the discretion of the committee on amalgamation, inasmuch as it seemed inadvisable to set any time of meeting without consultation with the national confederation.

TRI-STATE MEDICAL ASSOCIATION OF THE CAROLINAS AND VIRGINIA

Twelfth Annual Meeting, held in Richmond, Va., Feb. 15, 1910

DR. JOSEPH WHITE, Chairman of the Committee of Arrangements, Presiding

The officers elected were given in THE JOURNAL, Feb. 26, 1910, p. 716.

Addresses of Welcome

Hon. William Hodges Mann, Governor of Virginia, delivered the address of welcome, which was responded to on behalf of the society by Dr. Hubert A. Royster, Raleigh, N. C.

Education of the Public Regarding Cancer

The president, Dr. LeGrand Guerry, Columbia, S. C., delivered an address on "Some of the Things the Profession Can Do in Regard to Cancer." The following papers on cancer were also read: Dr. Southgate Leigh, Norfolk, Va., "Cancer Education," and Dr. Stephen Harnsberger, Catlett, Va., "Cancer in Virginia—Trustworthy Vital Statistics the Foundation of Public Health—The Organization of a Cancer Association in Virginia."

At the suggestion of Dr. Leigh a resolution was adopted to the effect that the association should take some action in connection with the dissemination among the public and the profession of the proper views in regard to cancer.

A committee of six was appointed—two members from each of the three states—to take the matter up with the state boards of health, and any other officers in authority, whom they thought best, to act with the society in this important matter.

The Religious Press and Quackery

DR. ROLFE E. HUGHES, Laurens, S. C., read this paper, at the conclusion of which it was unanimously resolved that a copy of the paper be sent to the editor of every religious paper in the three states.

Annual Oration: Contributions of Animal Experimentation in Medicine

DR. HENRY A. CHRISTIAN, Boston, read this paper to a packed house, a large number of laymen being present:

This subject was selected because much of the recent progress in medicine has been founded on the results of animal experimentation, and because it is important that the medical profession should recognize this fact since an active campaign has been developed against animal experimentation. The attacks are best met by spreading among the people general information about the aims and ideals of medicine, its methods and the part played by animal experimentation in them. This must be done by the physicians, and to do it they must appreciate the value of animal experimentation to clinical medicine. This paper deals not with the individual contributions of animal experimentation to medicine, but emphasizes the value of animal experimentation as a method which has served, and is serving, to widen the scope of investigations in clinical medicine. From the use of the method of animal experimentation along with other methods of investigation, practical knowledge has come which has increased the power of physicians in dealing with disease.

The study of epidemic cerebrospinal meningitis during the period of a hundred years yielded much knowledge of the disease, but not until the method of animal experimentation was utilized was there discovered a satisfactory method of treating the condition. In this disease discovery of a serum resulted from the method of animal experimentation, and the use of this serum has reduced the mortality from some 80 to about 20 per cent. Nephritis is an example of a chronic condition whose study has been aided much by animal experimentation in recent years. Finally, the result of the recent successful production of anterior poliomyelitis in monkeys will probably be knowledge of facts which would be likely to serve in the prevention of the spread of epidemics of this condition. Moreover, an opportunity may be furnished by this experimental poliomyelitis in monkeys to study the results of various forms of treatment of the secondary paralysis of the disease. Even if the concrete advances already made by animal experimentation were effaced, still the potential value of the method would fully justify its use.

Hereditary Criminals—The One Sure Cure

DR. CHARLES V. CARRINGTON, Richmond, Surgeon to the Virginia Penitentiary, went fully into the profound influence heredity excited on the lives of every one, saint and sinner. The powerful effect of environment on criminals was made clear. The paper was full of facts and figures, showing the steady increase of crime throughout the country and in Virginia. The "one sure cure," restriction of procreation in the idiot, imbecile, habitual criminal, and insane person, was fully gone into, and it was clearly shown that vasectomy in the male, and resection of the Fallopian tube in the female, was the safe, sure and right solution of this problem. A bill is now pending in the Virginia legislature to prevent procreation by confirmed criminals, imbeciles, rapists and insane persons.

Dr. Carrington's paper received close attention and the following resolution was unanimously adopted:

Resolved: By the Tri-State Medical Association, that it unanimously endorses the proposition covered by Dr. Charles V. Carrington's paper on "Hereditary Criminals—the One Sure Cure," and respectfully urges the Virginia legislature, now in session, to pass the bill to prevent "procreation by confirmed criminals, idiots, imbeciles and rapists."

Another resolution was adopted, in connection with this matter, appointing three members each from the states of North and South Carolina, to see what action could be taken in those states in regard to the criminal insane.

CHICAGO GYNECOLOGICAL SOCIETY

Regular Meeting, held Feb. 18, 1910

The President, DR. CHARLES B. REED, in the Chair

Carcinoma of the Uterus

DR. EMIL RIES: The specimens of carcinoma of the uterus here shown illustrate the perniciousness of the altogether too common treatment by means of local applications employed by many general practitioners, in the absence of a correct diagnosis. One patient, aged 50, was treated locally for 7 months, when an operation was performed. She was alive and well 2 years later. A second patient, aged 57, had been treated locally for a year, and is now alive and well, 3 years after operation. A third patient had uterine hemorrhages for 2 years, and on examination it was found that the carcinoma involved the entire body of the uterus. The organ was removed, but an extensive recurrence was noted 4 years later. In a case of carcinoma of the cervix occurring in a syphilitic weighing 250 pounds, all the glands were removed together with the uterus and adnexa, and 6 months after the operation the patient was in good health with no sign of recurrence. A woman, aged 57, had glandular carcinoma of the cervix. The uterus, tubes, ovaries, ligaments and all the lymph vessels and glands were removed thoroughly. The operation was done 9 years ago, and the patient is still in good health. The diagnosis was confirmed microscopically. I think that this proves conclusively that even in cases of glandular carcinoma the diagnosis need not necessarily be grave.

Pregnant Cornu of Uterus

DR. LESTER E. FRANKENTHAL: I removed a pregnant cornu of the uterus from a woman in whom the corpus luteum was on the side corresponding to the cornu, showing that the transmigration of the fecundated ovum is not necessary, and that fecundation may occur on the same side.

Missed Abortion

DR. LESTER E. FRANKENTHAL: The patient menstruated last June 10, 1909. Early in November, she had uterine hemorrhages, and on examination I found the uterus to correspond in size to a fourteen or sixteen weeks' pregnancy, although it should have corresponded to a twenty or twenty-two weeks' pregnancy. Inasmuch as the husband of the patient was syphilitic, I gave large doses of iodid of potassium, and the bleeding stopped. Early in February, I called on the patient to leave final instructions and on inquiry she told me that the baby was very lively. When I examined the uterus, however, I found that it had grown smaller, and, believing that the child was dead, I did a tent dilatation, removing the secundines with the fetus, which was well-preserved and evidently was no more than eight weeks old. The patient had carried the fetus in the uterus for twenty-seven or twenty-eight weeks after its death, and yet the fetus was well preserved.

SYMPOSIUM ON ABORTION

Legal and Moral Aspect of Abortion

MR. SIGMUND ZEISLER: According to the common law it is criminal to produce abortion even up to the time of quickening or with the consent of the mother. To produce miscarriage prior to the time of quickening is a misdemeanor. The statutory law of this country has made abortion or miscarriage of pregnant women in any stage a crime. The law also provides that the woman must be pregnant with child, so that a *corpus delicti* must be established. Unless this is done, it is impossible to be guilty of abortion or the crime of attempting it. The punishment is the same in either case. In Illinois, it would not make any difference how long the fetus had existed. To cause the destruction and expulsion of the fetus is to commit abortion, and that is a crime. The law provides that "unless the same is done as necessary for the preserva-

tion of the mother's life." This does not mean that any one can produce the abortion and say it was necessary to preserve life. If a reputable physician declared under oath that he aborted a woman to save her life, his statement would not be questioned. The presumption is that unless the one who produces the abortion is a reputable physician, the act is not committed for the purpose of saving life. It might be argued that if an abortion be induced in a woman who is insane with the fear of detection of being pregnant, it is done to save her life, because otherwise she would commit suicide. That would not be an offence, because it can never be told whether a woman threatening to commit suicide will really do so. Again, an attempt to produce abortion may fail, but still the attempt is punishable under the statute and constitutes the crime of abortion. There must, however, be some aptitude of the means employed before a man can be adjudged guilty of an attempt to commit this crime. If a man advised a woman to take Huyler's chocolates, although he might intend to commit the crime of abortion, still he would not be guilty. On the other hand, if a man advises a woman to take an apt medicine and she does not take it, he is guilty of an attempt to produce abortion. Under the statute, the woman who consents is not guilty of producing abortion, but there is a statute which speaks of an accessory before the fact, and it is my opinion that a woman who consents and aids in the production of an abortion on herself is guilty as an accessory, hence is a principal under our statute. There is also the statute of conspiracy, which provides that if two or more persons shall combine or conspire to do an illegal act, they shall be guilty of conspiracy. This makes the woman equally guilty with the operator.

As to the moral aspect: It is wrong to commit abortion. It is a violent interference with normal physiologic processes. It is fraught with danger to life or at least health. In the case of married people, if abortion were to be sanctioned, it would be an encouragement to race suicide. In the case of unmarried women it would encourage licentiousness. However, there are circumstances which would prompt one not to condemn a woman. If I could do it and others would help me, I would try to fight that prejudice which generally and under all circumstances condemns the unmarried woman. We ought to educate society not to indulge in this anathema of every woman, but to inquire into the circumstances of each case, and extend forgiveness, indulgence, helpfulness, to every woman who richly deserves it. Unfortunately, that is not the view of society at the present time.

Methods of the Professional Abortionist

DR. RUDOLPH W. HOLMES: The professional abortionist, transgressing one law, finds that he must defend his position by various other criminal acts, by knavery and revolting manifestations of cupidity. The perpetration of one criminal abortion obtunds the moral sense and leads to others. The risks of prosecution, and the prolonged incarceration, if convicted, demand excessive rewards—fair compensation is inadequate, so he secures large compensation, too often by intimidation, coercion, and even robbery. The criminality of the professional abortionist is not composed of the production of illegal interruptions of pregnancy alone, but includes all the machinations stimulated by his avarice. It is possible to view this question from two points: One, the discussion of the frauds, chicanery employed in obtaining clientele, and securing the rewards; secondly, the methods employed in the production of the felonious attack.

There are three kinds of abortionists: First, the young man, starting in practice, who is inveigled into committing his first offense in his pressing need of money; secondly, the man who stands fairly well in his community with a certain clientele, and who largely is engaged in ethical practice, but who relieves his patients in order that he may hold his families; thirdly, the professional abortionist, who works for revenue only. There are too many members of the second class, who even may be members of the local, state and national medical societies.

Professional abortionists have a trust, have, like the financial organizations, a strong legal department, a central office, a manager who attends to routine matters; this organization

is for offensive and defensive warfare. The legal department, skilled in all devious means of combating a prosecution, experts in medical matters concerned, is able easily to outweigh the young Assistant State's Attorney; defenses are prepared for every contingency. Alibis, bribery, perjury, are ready in rebuttal.

Until three or four years ago, the professional abortionists advertised most extensively in the daily press; this was stopped by the postal department on evidence presented by the Committee on Criminal Abortion of the Chicago Medical Society. In the old days, one paper had a department whose sole business was to look after the abortion advertisements. The fees for doing abortions vary from two dollars, in the hands of the poorest midwives, up to any sum possible of securing by contract—after that, many abortionists use devious means of obtaining additional compensation, even to blackmail. As chairman of the abortion committee, previously mentioned, repeated examples of the chicanery, fraud, robbery, blackmail and perjury came to my attention. The advertising physician tries to make a charge of from 50 dollars to 75 dollars; a similar fee is charged for the first week's attendance at a "maternity home," of which there are many in Chicago. Bath parlors give local electric treatment, with or without general baths, for two or three dollars. Abortionists frequently work in pairs; one makes the arrangements, and the other performs the operation—often in such a manner that the victim cannot see who performs the operation. The popular way for the woman abortionist is to operate under two names—her own and that of some retired prominent operator.

A discredit to the medical profession is brought about by the fact that some physicians in good standing have a working agreement with abortionists to attend patients after the operation has been performed, thereby assuming a responsibility, and becoming virtually, if not actually, accessories after the fact. They lend themselves as character witnesses in trials, and prostitute themselves by appearing as experts to befog the situation with specious arguments, or even perjury.

The methods employed in producing abortions are of comparatively little value in comparison to the frauds perpetrated by the abortionists. However, the methods commonly employed by reputable men in inducing premature labors are resorted to by the criminal operators. The rupture of the membranes, introduction of rubber catheters, and tents, are the usual operative means; drugs are frequently given by those too fearful to employ instruments, knowing that the money is given, and that with high probability, no effect will be produced. Irrespective of the method employed, the operations are generally performed without any regard to the observance of surgical cleanliness, either of patient or instruments; as a result, infections are frequent. Death is not solely sequential to an infection, but also may be the result of uterine and vaginal perforations. From 40 to 60 deaths by abortion come to the attention of the coroner each year; these surely must be but a fractional portion of those occurring from this cause.

The Forensic Diagnosis of Criminal Abortion

DR. MAXIMILIAN HERZOG: The forensic diagnosis of criminal abortion has to establish two points; namely, that a gestation has been going on, and that it has been intentionally interrupted by means adapted or supposed to be adapted for this purpose. But whether the object of a criminal abortion is alive or dead, the fact of the preceding pregnancy has to be established by objective findings and not by mere subjective statements, because these may be entirely unreliable. A woman may have some motives for simulating a previous pregnancy, or she may have been mistaken about her condition. It is a well-known fact that cessation of the menses is not at all a reliable sign of pregnancy, but that a guilty conscience and purely nervous influences may be responsible for it. It is to-day a principle of the law, not merely in suspected criminal abortions, but in other cases of forensic bearing, that diagnosis of pregnancy to be fully accepted has to be based on objective findings. However, even this evidence is available only a short time after an abortion has occurred. When the latter has not led to a local or general infection, or

to any other more severe disturbance, and when the abortion has occurred in the earlier months of gestation, all objective signs will disappear within one or two weeks. When, however, the object of an abortion dies shortly after the latter has occurred, it is comparatively easy to establish the fact of the previous pregnancy interrupted by an abortion. It is a different thing, however, to establish the fact that the woman came to her death in consequence of a criminal and not of a spontaneous or accidental abortion. According to the statistics of various observers, spontaneous abortion occurs in 1 out of every 4 to 8 pregnant women, and these figures undoubtedly do not include the abortions in women during the first few weeks of pregnancy. While criminal abortion is unfortunately very common and has been practiced extensively for many centuries among civilized as well as among uncivilized nations, it is generally only taken notice of among the former, if it leads to a fatal issue. It is impossible, therefore, to give any reliable statistics, but we must assume that it is much more common than can be proved, and that even of undoubted cases only a very small proportion of the guilty are punished.

When an abortion is induced in a woman, not on account of well-recognized medical indications, but for reasons which stamp it a criminal case, this is frequently done by incompetent persons, hastily, and not in the most approved aseptic manner, safeguarding the best results as to the health and life of the woman; hence, even if a fatal infection does not occur, the products of the conception generally come away piecemeal, portions of the placenta generally remain behind, cause long-continued hemorrhages, and lead to curettage by skilled and reputable practitioners.

The forensic diagnosis of criminal abortion must establish that there recently existed a pregnancy which was interrupted by an abortion. This is usually comparatively easy, provided that uterine curettings can be obtained or a proper post-mortem examination made. To establish from objective findings that the abortion was due to mechanical means, criminally employed, is difficult, even when a strong suspicion exists, and when a fatal issue was due to sepsis. When the abortion was due to the use of medicinal agents, these may be identified by the toxic symptoms to which they give rise, and by chemical tests. However, there is no set of symptoms by which a spontaneous abortion can infallibly be distinguished from one following mechanical interference.

Discussion on Abortion

DR. CHARLES S. BACON: Why is there a distinction between fetal life and post-natal life? Why is not feticide the same as murder, and why should not the law recognize this by meting out the same punishment in both cases? Another question I would like to bring up is: What are the limits of therapeutic abortion? According to the law, it is recognized only when it is necessary to save the life of the mother. As a matter of fact, almost all therapeutic abortions are done to save the health of the mother. Therefore, when a physician operates for that reason, he is breaking the law. The law should make a provision for this, and not make us unwilling lawbreakers.

DR. RACHELLE S. YARROS: We are frequently far too hard in some cases. I have frequently thought that instead of taking the woman and punishing her in every possible way as the responsible person, why not also punish the man? Society should in some way make him responsible, at least to the extent of having him carry the burden by making him legally the father and forcing him to support the child. I am sure that if this were done some men would not be placed in that position; and many women would not think of having an abortion performed if they had support from the man. The man who has seduced the girl knows that she will either have an abortion or, if not, that she will suffer. He should be made responsible. I think that with proper education on the subject, showing women the danger they are in, they will control themselves more.

DR. EFFA V. DAVIS: I was glad to hear Mr. Zeisler's exposition of the law and his discussion of the moral side. We must educate the public. People should be taught what is right and just about sexual relations. As we have talked so much about the illegitimate child and felt so keenly that it

is wronged, why should we not from now on labor to make the illegitimate child a legitimate child by making its father its legal father? I believe that the birth of a child of healthy parents in the unmarried state should constitute a marriage.

DR. EFFIE LOBBELL: Mr. Zeisler struck the keynote of the whole question when he spoke of the attitude toward the woman. It seems to me that the only way in which a cure can be brought about is by placing the matter on an economic basis; that is, a consideration of the laws of the community, of the laws of life, and also the value to the community of a cure of these irregularities.

DR. RUDOLPH W. HOLMES: Three or four years ago there was a case of prosecution for the production of abortion in the criminal court of Illinois. The Assistant State's Attorney told me that after carefully looking through all the records he could not find a single instance of conviction for the production of abortion.

MR. SIGMUND ZEISLER: I do not recall that there is a definite provision in the criminal code of Illinois on the subject of feticide. I presume that the legislature has been under the impression that most feticides are coincident with the production of abortion. Of course, there may be feticide other than in the shape of miscarriage. A child is recognized as a living human being after the quickening period, and is capable of being appointed administrator or executor of an estate. The destruction of the fetus in any way separate from abortion is, if not a crime, at least a misdemeanor. Under the common law it was a criminal act, and I think that it is still so at the present time. If not, Dr. Bacon is right in stating that that is a defect in the law. Every profession has its code of ethics, and I would not presume to dictate to physicians what professional ethics would make it their duty to do under certain circumstances. However, I do not believe that under any circumstances a physician should consider it his business to aid in the covering up of crime, if called as a witness in court. He should not attempt to abuse any so-called privilege, but should freely tell the truth.

Some one has referred to the innocent child as an important factor. That also I discussed. It is the child that we do consider when we say that future generations must be provided for. It is true that the woman is made to bear almost entirely the consequences of the illicit intercourse between man and woman. I regard that as a great reproach to our conventional morality and to the law, and the law is very deficient in that matter. If the man can be pointed out with any degree of certainty as being the father of an illegitimate child, there is a proceeding known as bastardy proceeding, through which he can be compelled to pay to the mother for the support of that child the sum of fifty dollars a year for nine years. But why this ridiculous sum? Why not provide that the child shall be an heir of the father just the same as the child born in wedlock? Why not compel the father to support the child according to his means? If not to provide any support for the unfortunate woman will deter her from illicit intercourse, then to provide that the father must recognize the child and make it his heir may deter the man from illicit intercourse; and I am heartily in favor that this latter view should prevail in the law.

DR. CHARLES B. REED: What is the attitude of the legal profession toward the physician as an informer or as an instigator of action in cases coming under his notice?

MR. ZEISLER: I do not know what physicians' ethics are, but I should say that the physician who obtains evidence in the course of his practice of the fact that an abortion has been committed should by all means place his information in the possession of the state's attorney.

DR. MAXIMILIAN HERZOG: Dr. Bacon suggests that we make the production of abortion murder. Murder, of course, consists in the killing of a human being. To look on an embryo, four weeks old, as a human being seems to be an exaggerated view. Again, the law allows murder only in the act of self-defense, whether against individuals or nations. How can we make the crime of abortion murder? That would prohibit the performance of an abortion under any condition, and we would have to accept the standpoint of the Catholic Church, that a living child must not be killed, no matter what the circumstances may be.

As to whether a physician who gains knowledge of an abortion having been performed should report to the state's attorney, the German law places the physician in his relation to his patient in the same position as the confessor stands to his parishioner. Everything he learns is secret, and the German law makes the woman just as responsible for the abortion, whether she does it alone, or whether she consults some one. It makes her punishable under every condition.

There is a way of doing away with illegitimate children—the plan which is prevalent in Japan. There, if a man becomes a father of an illegitimate child, he adopts the child under the general system of Japan, and takes the woman into his own household. Any man who is the father of an illegitimate child, and who has the feelings of a father, will take care of that child and of the woman. That can be regulated by law.

CONFERENCE ON HOSPITAL APPROPRIATIONS

Held under the auspices of the Medical Society of the State of Pennsylvania, at the College of Physicians, Philadelphia, Feb. 4, 1910

The Chairman of the Committee, DR. WILLIAM L. ESTES, in the Chair

DR. THEODORE B. APPEL, Lancaster, president of the Medical Society of the State of Pennsylvania, in explaining the object of the appointment of the Committee on Hospital Appropriations said that within a few years appropriations asked for by charitable institutions not under state control have increased from \$18,000 to almost \$5,000,000; that charges had been made that money had not been appropriated in a proper way, and that hospitals were created and developed on state appropriations when there was no demand for them and no local support given.

GEN. FRANK REEDER, Easton: I believe that much of the abuse connected with state appropriations is due to the fact that until 1893 the appropriations were all subject to the judgment of the State Board of Public Charities. Since then the exercise of the veto power of the governor has led the legislators to feel that they may appropriate any amount and look to the governor to save the state from extravagance. The power of the governor being therefore firmly established, no hospital after that date has submitted to a reduction of its claims by the State Board of Charities. I believe that the first thing to do is to put into the hands of the State Board of Public Charities a positive and final veto power. I would give to that body the power which the supreme court accords to a jury.

DR. GEORGE WOODWARD distributed a pamphlet written by Mr. Frank J. Firth entitled "Grants of Public Funds of the State of Pennsylvania in Aid of Hospitals that are Privately Owned and Managed," in which was considered the policy adopted by the State of Pennsylvania, and facts noted as to the policy governing in other important neighboring states. "The State of Indiana does not subsidize or grant public funds to any private institution." "Michigan has never subsidized any private institution in the state, of any character." In Massachusetts: "The state does not contribute regularly to the support of any private hospitals. . . . Special cases sometimes arise where the legislature deems it wise to grant aid to private institutions, but, of course, they are very rare." In New York: "General hospitals receive no appropriations from the state itself, but are authorized to receive appropriations from counties, cities, towns and villages. As a rule, such appropriations are made on a *per capita* basis." "The state of Illinois does not extend financial aid to hospitals and charitable institutions not owned and operated by the state."

MISS BANFIELD, Superintendent Polyclinic Hospital, Philadelphia: I think the remedy in the dispensary abuse is to have the dispensary physician paid. In this connection state aid might come in. I think we have a right to receive state aid to keep a man at work as part of the body politic.

MR. FRANCIS A. LEWIS, Philadelphia: I represent a hospital which has never asked for state aid, yet when a bequest is left to the hospital we are compelled to pay a 5 per cent. collateral inheritance tax. If the Commonwealth of Pennsylvania needs such bequeathed money for carrying on the

expenses of the state, well and good; but, if a hospital is to be docked 5 per cent. in order that the money may be given to some institution for which the testator did not intend it, it seems to me wrong. I believe that no state aid should be given to any institution not controlled by the state which does not provide for two-thirds of its current expenses. This policy also, I think would reduce the number of hospitals and they would be stronger and better managed. Further, I believe that distribution should be made on some sort of *per capita* basis. Political influence would then not have to be sought, and this would prevent state appropriations drying up the wells of private charities. I think no appropriations should be made for buildings; only for maintenance.

MR. THOMAS R. McDOWELL, of the Legislature of Pennsylvania: I believe that we ought to revive and enlarge the powers of the State Board of Public Charities, and that in the judgment of this board is the best safeguard under our present system. I believe, however, that wherever the state money goes there ought to be representation on the part of the state. A *per capita* basis carries with it the danger of padding the rolls.

DR. J. M. BALDY, Philadelphia: This whole question of state aid is improving every day, and it is not fair to burden this magnificent charity with isolated cases of wrong which are of the past. It is impossible for any individual hospital to divert one penny of appropriated money. If the powers of the State Board of Public Charities are revived they should also be enlarged, and the board should be made a paid body of men who shall have no other business than the investigation of reports from institutions seeking state aid. A *per capita* basis would defeat the very object of our effort; every bed would be reported occupied and graft would be engendered.

DR. C. E. THOMSON, Scranton: I take issue with Dr. Baldy and think that the *per capita* basis is the only proper one on which to work. Moreover, Dr. Baldy's statements are not consistent. He says the hospitals are absolutely square, and then he says that if they are run on a *per capita* basis every bed would be reported occupied. To show how the physicians are faring in this deluge of appropriations, last year nine very good physicians were starved out of Scranton. Of all the hospital abuses we know of the Wills Eye Hospital is responsible for the worst.

DR. S. LEWIS ZIEGLER, Philadelphia: As a representative of the Wills Eye Hospital, I am sorry to state that there are so many persons in Scranton who are untruthful concerning their financial standing. We have no pay patients, the hospital is purely a charity organization, and a person must commit perjury to be entered. The criticism has been made that hospitals which have private rooms should not receive state aid. Were it not for the income from the private rooms of some hospitals their charity work would have to cease.

DR. L. H. TAYLOR, Wilkes-Barre: There is much truth in what Dr. Baldy has said. There should not be given exactly the same amount to every hospital throughout the State. I believe that hospitals receiving state aid should be open to inspection at any time and that appropriations should be made on the basis of what the hospital is doing, its cost, etc. I believe that the State Board of Public Charities should have its powers enlarged and that its members should be paid.

DR. W. S. ROSS, Altoona: The question is largely one of indigency. There is a large population able to pay a reasonable sum toward the maintenance of a hospital. Any rule would sometimes fail, but it is better to let a rich man in than to keep a poor man out.

DR. SHILLITO, Pittsburg: One of the greatest hospital abuses is in large corporations sending their injured into the hospitals and expecting them to be cared for at the actual cost.

DR. FREDERICK W. COOVER, Harrisburg: In our treatment of the men from Steelton bills are rendered the firms. To check the charity abuse we use the card system.

MR. S. B. BENNETT, Pittston: To compensate the members of the State Board of Public Charities would lower its standard. A better plan, it seems to me, would be the appointment by the board of an assistant to the general agent.

DR. J. M. GAY, Philadelphia: I would suggest that no more hospitals be chartered unless it is proved that they are needed; also, that no money be appropriated for buildings. The *per*

capita basis would be a better proposition if it were operative on the plan of allowing a definite rate *per diem* for every day patient.

MR. G. E. FARQUHAR, Pottsville.: If proper attention were given by the legislature to the recommendations of the State Board of Public Charities, justice would be done to every hospital in the state. The opinion and work of the board should be made authoritative.

MR. GREENWOOD, Coatesville: If, as has been suggested, appropriations were made only to hospitals in which two-thirds of the cost were already provided, a large population would be without medical attention. Mr. McDowell says that the state ought to have representation where appropriations are made, but I think the personnel of the hospital boards had better be left to the community. The *per capita* basis of appropriations would not apply because of the possibility of its variation. Our *per capita* cost has been as low as \$1.30 a day; with but a few in the hospital it might run to \$2.50.

DR. E. V. SWING, Coatesville: There seems to be a difference of opinion as to what constitutes an indigent person. A man making \$1.25 or \$1.50 a day is barely able to feed and clothe his family and is properly a ward of the state when needing hospital treatment.

DR. FRANK HARTMAN, Lancaster: I believe that by putting the work of the State Board of Public Charities alongside the work of the auditor-general there would be no difficulty in ascertaining the amount to which each hospital is entitled.

DR. A. B. HIRSH: There should be a united effort by all institutions through some such plan as a central bureau to get rid of the frauds who apply for treatment at dispensaries and hospitals. Our State Board of Public Charities should have the power, such as the New York board has, of controlling the creation of new dispensaries and hospitals.

REV. MR. ROTE, Pittsburg: One feature not sufficiently emphasized, I think, is that we cannot send out and get a card account concerning an applicant for hospital treatment. We must act on the instant, and if he prove to be a fraud, get rid of him afterward if we can. There should be some rule on which the actual *per diem* cost of a patient shall be based.

DR. A. M. EATON, Philadelphia: The method mentioned by Dr. Hirsh could be adopted in large hospitals. At the first visit the patient should be accepted and his financial condition ascertained. One man representing himself as indigent I learned was the owner of fifteen two-story houses. A woman in my clinic wore diamonds for which she admitted she would not take fifteen hundred dollars. We should petition the legislature to make it a misdemeanor for a person falsely to represent that he is indigent in order to obtain free medical service. One difficulty is in the fact that many hospital boards desire a large number of patients entered on their reports.

DR. P. Y. EISENBERG, Norristown: I believe that the State Board of Public Charities should have additional power and that their recommendations should be final. A member of our board has made the suggestion that an account be opened for every patient, that the hospital shall collect something from the patient if possible; and that on the basis of the account the state may say how much it will give toward paying the cost of that particular patient.

DR. TAYLOR, of Wilkes-Barre, offered the following resolution:

Resolved: That in the sense of this meeting a definite plan should be adopted by which appropriations of state money to charitable institutions should be equitably and justly distributed, and to this end we recommend that the powers of the State Board of Public Charities be enlarged, and that a thorough inspection of all institutions receiving state aid, either in whole or in part, should be made by the State Board of Public Charities and that appropriations should be made by the legislature only on recommendations of said board."

DR. WILLIAM T. SHARPLESS, West Chester: I am in favor of the resolution offered by Dr. Taylor. It also seems to me fair that if the state appropriates money for hospitals it should have something to say about the management. Further, I think we are all agreed that we should like to see the powers of the State Board of Public Charities increased.

The resolution was not voted on, but was referred to the committee on hospital appropriations.

Medical Education and State Boards of Registration

COMING EXAMINATIONS

ARIZONA: Phoenix, April 4-5. Sec., Dr. Ancil Martin.
CALIFORNIA: San Francisco, April 5. Sec., Dr. Charles L. Tisdale, 929 Butler Building.
COLORADO: Denver, April 5. Sec., Dr. S. D. VanMeter, 1723 Tremont Place.
FLORIDA: Jacksonville, April 4-5. Sec., Dr. J. D. Fernandez.
IDAHO: Boise, April 5. Sec., Dr. O. J. Allen, Bellevue.
ILLINOIS: Chicago, April 14-16. Sec., Dr. J. A. Egan, Springfield.
MINNESOTA: State University, Minneapolis, April 5. Sec., Dr. W. S. Fullerion, 214 American Nat'l Bank Bldg., St. Paul.
MONTANA: The Capitol, Helena, April 5. Sec., Dr. W. C. Riddell.
NEW MEXICO: Santa Fe, April 11-12. Sec., Dr. J. A. Massie.
NORTH DAKOTA: Grand Forks, April 1-4. Sec., Dr. H. M. Wheeler.
OKLAHOMA: Ione Hotel, Guthrie, April 12. Sec., Dr. Frank P. Davis, Enid.
RHODE ISLAND: State House, Providence, April 7-8. Sec., Dr. Gardner T. Swarts, Room 315, State House.
WEST VIRGINIA: Wheeling, April 12-14. Sec., Dr. H. A. Barbee, Point Pleasant.

Oregon July Report

Dr. R. C. Coffey, secretary of the Oregon State Board of Medical Examiners, reports the written examination held at Portland, July 6, 1909. The number of subjects examined in was 16; total number of questions asked, 108; percentage required to pass, 75. The total number of candidates examined was 111, of whom 74 passed, including 10 osteopaths and 37 failed including 2 non-graduates and 2 osteopaths. The following colleges were represented:

College	PASSED	Year Grad.	Total No. Examined.
Birmingham Medical College.....	(1907)		1
Coll. of Phys. and Surg., San Francisco..	(1898) (1907)		2
Gross Medical College, Denver	(1899)		1
University of Colorado.....	(1904)		1
George Washington University	(1908)		1
Rush Medical College.....	(1886) (1907)		2
Northwestern University Medical School.....	(1904)		
..... (1907) (1908) (1909)			4
College of Physicians and Surgeons, Chicago..	(1895)		
..... (1899) (1903) (1905) (1909)			5
University of Iowa, Coll. of Homeo. Med. (1905)	(1909)		2
University of Kansas	(1903)		1
University of Louisville.....	(1909)		1
Hospital College of Medicine, Louisville.....	(1894)		1
Baltimore Medical College.....	(1902)		1
University of Michigan, Coll. of Med. and Surg. (1909)			2
University of Michigan, Homeopathic College..	(1904)		1
University of Minnesota, College of Medicine..	(1898)		1
University of Minnesota, Coll. of Homeo. Med. (1897)			1
Kansas City Medical College.....	(1891) (1902)		2
St. Louis College of Physicians and Surgeons..	(1908)		1
Missouri Medical College, St. Louis.....	(1894)		1
Bellevue Hospital Medical College.....	(1867)		1
Ohio Medical University	(1905)		1
Pulte Medical College	(1894)		1
Miami Medical College	(1891) (1908)		2
University of Oregon.....	(2, 1908) (10, 1909)		12
Willamette University	(1906) (3, 1907) (4, 1909)		8
University of Pennsylvania	(1908)		1
Medico-Chirurgical College, Philadelphia.....	(1906)		1
University of Tennessee.....	(1903)		1
University of Vermont	(1886)		1
Marquette University, Milwaukee.....	(1908)		1
Queens University, Kingston, Ontario.....	(1906)		1
Trinity Medical College, Toronto	(1890)		1

FAILED

University of Colorado.....	(1904)	1
Atlanta College of Physicians and Surgeons....	(1891)	1
College of Physicians and Surgeons, Chicago..	(1905)	1
Illinois Medical College.....	(1908)	1
Rush Medical College	(1903)	1
Chicago College of Medicine and Surgery.....	(1904)	1*
Drake University, College of Medicine.....	(1904)	1
University of Louisville	(1907)	1*
Kentucky School of Medicine.....	(1908)	1
Michigan College of Medicine and Surgery....	(1898)	1
St. Louis College of Physicians and Surgeons..	(1904)	1
Barnes Medical College.....	(1906)	2
Bellevue Hospital Medical College.....	(1867)	1*
Ohio Medical University	(1904)	1
Univ. of Oregon... (1905) (1906) (2, 1908)* (2, 1909)		6
Willamette University.....	(1904) (1906)* (1907)*	
..... (1907) (1908) (3, 1909)		8
Memphis Hospital Medical College.....	(1909)	1
Tennessee Medical College.....	(1908)	1
Western University, London, Ontario.....	(1900)	1*
University of Turin, Italy	(1899)	1*

* Second examination.

Illinois October Report

Dr. J. A. Egan, secretary of the Illinois State Board of Health reports the written examination held at Chicago, Oct. 20-22, 1909. The number of subjects examined in was 16; total number of questions asked, 100; percentage required to pass, 75. The total number of candidates examined was 84, of whom 52 passed and 31 failed. One candidate took an incomplete examination. The following colleges were represented:

College	PASSED	Year Grad.	Total No. Examined.
Medical College of Alabama.....	(1904)	1	
Howard University, Washington.....	(1907)	1	
Bennett Medical College.....	(1909)	3	
Hahnemann Medical College and Hosp., Chicago.....	(1909)	2	
Illinois Medical College.....	(1908) (6, 1909)	7	
Jenner Medical College.....	(1908) (2, 1909)	3	
National Medical University.....	(1909)	5	
Northwestern University Medical School.....	(1909)	3	
College of Physicians and Surgeons, Chicago.....	(1909)	4	
Reliance Medical College.....	(1909)	2	
Rush Medical College.....	(1900) (1906) (5, 1909)	7	
College of Physicians and Surgeons, Keokuk.....	(1897)	1	
Kentucky School of Medicine.....	(1902)	1	
University of Louisville.....	(1909)	1	
Johns Hopkins University.....	(1907)	1	
St. Louis College of Physicians and Surgeons.....	(1909)	3	
Barnes Medical College.....	(1908)	1	
Mohr Medical College.....	(1909)	2	
University of Nashville.....	(1909)	1	
Vanderbilt University.....	(1908)	1	
Western University, London, Ontario.....	(1909)	1	
Royal College of Physicians and Surg., Dublin.....	(1889)	1	

College	FAILED	Year Grad.	Total No. Examined.
University of Arkansas.....	(1909)	1	
Bennett Medical College.....	(1909)*	2	
Chicago College of Medicine and Surgery.....	(1909)	4	
Chicago Medical College.....	(1877)	1	
College of Medicine and Surgery, Chicago.....	(1908)†		
.....	(1909)* (2, 1909)	4	
Hahnemann Medical College and Hospital, Chicago.....	(1908)** (1909)	2	
National Medical University.....	(1909)	2	
College of Physicians and Surgeons, Chicago.....	(1909)	1	
Reliance Medical College.....	(1909)* (2, 1909)	3	
Illinois Medical College.....	(1908)	1	
Jenner Medical College.....	(1907)** (1909)*	2	
Drake University, College of Medicine.....	(1909)	1	
Keokuk Med. Coll., College of Phys. and Surg.....	(1908)**	1	
Hospital College of Medicine, Louisville.....	(1904)**	1	
Barnes Medical College.....	(1908)‡ (1908)‡	2	
St. Louis Coll. of Phys. and Surg.....	(1906)† (1909)**	2	
Vanderbilt University.....	(1909)	1	

* Second examination.
** Third examination.
† Fourth examination.
‡ Sixth examination.

Nebraska November Report

Dr. E. Arthur Carr, secretary of the Nebraska State Board of Health, reports the written examination held at Lincoln, Nov. 10-11, 1909. The number of subjects examined in was 8; total number of questions asked, 80; percentage required to pass, 75. The total number of candidates examined was 6, of whom 5 passed and 1 failed. A report of sixteen candidates who were licensed through reciprocity since Aug. 10, 1909, has also been received. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Louisville National Medical College.....	(1909)		78.2
Ensworth Medical College.....	(1909)		75.7, 79.8
Barnes Medical College.....	(1909)		76.5
University of Tennessee.....	(1909)		91.5

College	FAILED	Year Grad.	Per Cent.
Chicago College of Medicine and Surgery.....	(1909)		72.2

College	LICENSED THROUGH RECIPROCITY	Year Grad.	Reciprocity with
Hering Medical College.....	(1904)		Kansas
Northwestern University Medical School.....	(1903)		Minnesota
Rush Medical College.....	(1908)		Utah
College of Physicians and Surgeons, Chicago.....	(1897) (1901) (1906)		Iowa
Drake University.....	(1909)		Iowa
University of Kansas.....	(1906)		Kansas
Kansas Medical College.....	(1904)		Kansas
St. Louis University.....	(1906)		Missouri
Ensworth Medical College.....	(1909)		Kansas
Creighton Med. Coll., (1907) Iowa; (1908) Kansas; (1909)			Wisconsin
Nebraska College of Medicine.....	(1908)		Kansas
Jefferson Medical College.....	(1888)		Iowa

Book Notices

DIAGNOSTIC METHODS, Chemical, Bacteriologic and Microscopic. By Ralph W. Webster, M.D., Ph.D., Assistant Professor of Pharmacologic Therapeutics and Instructor in Medicine in Rush Medical College, University of Chicago. Cloth. Pp. 611, with 211 illustrations. Price, \$6.00 net. Philadelphia: P. Blakiston's Son & Co., 1909.

The distinguishing feature of this book is the exhaustive diagnostic interpretation of the laboratory findings. In this respect it contrasts most favorably with other books of a similar character in which undue attention is bestowed on the purely academic and theoretic aspects of laboratory medicine, while the clinical significance of laboratory symptoms is only vaguely dealt with. The author manifests the courage of his convictions in a refreshing manner by confessing ignorance in regard to the clinical explanation of certain laboratory phenomena, rather than by indulging in theoretical speculations which are still matters of controversy and which, to the practical medical man, would be misleading. In questions still *sub judice* the opinions expressed are sane and conservative, and depart in no way from established and reasonable premises.

The description of methods is clear; the details are explained in such a manner that even the inexperienced can become proficient if only he will carefully follow directions; much space is properly given to the things that should not be done and to the difficulties one may expect to encounter in performing the different tests. Not all the methods that have ever been described are given, and no claim for completeness in this direction is made. This is commendable rather than otherwise, particularly as the selection of the methods is judicious, and those that have been principally selected by the author are both accurate and relatively easy of execution. While some of the more complicated tests required for purely scientific work are also described—tests that require a high degree of special training and rather extensive paraphernalia—most of the manipulations recommended can be performed by any one with ordinary training and with simple and few apparatus. One is impressed, in reading the author's technical descriptions, with the conviction that he speaks from personal experience with methods and not from purely literary research.

Particular emphasis has been placed on the various nitrogenous excreta of the urine, their recognition, analysis and clinical significance. The introduction of this subject into clinical medicine is comparatively recent, but much of value has been learned from it. The methods of isolating and separately estimating the nitrogenous end-products of metabolism as they appear in the urine in health and in disease are excellently rendered; the interpretation of the various findings in this field is in accord with modern scientific thought; common fallacies in regard to urea and ammonia excretion, in regard to the appearance of rarer nitrogenous excreta, are exposed and correct explanations given in their place. The clinical significance of the aromatic urinary radicals, and the factors that operate to cause their excretion are fully explained; these paragraphs make very interesting reading. No objection can be formulated against the ideas expressed in regard to the significance of the uric-acid excretion and of the metabolism of the whole purin group. The chapter on urine essentially represents a concise section in metabolism and its disorders in so far as the latter become manifest in perversions of the urinary excreta.

The chapter on blood is profuse, with good plates and illustrations, and incorporates the best and simplest methods of blood analysis, morphologic, biologic and chemical. All that is of practical value in the physiology of the blood prefaces the remarks on blood pathology, so that a clean-cut basis for comparison is given, both in regard to the anatomy, i. e., structural, changes of the blood and in regard to the perversions of its functions. Similar praise can be bestowed on the sections on the feces, the gastric contents, the sputum, the secretions of various orifices of the body and the purely descriptive chapters on human parasites.

What is known in regard to functional diagnosis is duly incorporated in its proper place; the attitude of skepticism expressed particularly in regard to the value of some of the

tests in vogue for renal inadequacy is justified; the methods are merely described for what they are worth, and the hint is given, rightly, that from the clinical standpoint, at least, they are not worth much.

Both as a reference handbook and as a text-book for continuous reading for the research worker, as well as for the medical student and the practitioner, this book should prove of much value. It is one of the best of its kind in any language.

THE PRINCIPLES OF PATHOLOGY. By J. George Adami, M.A., M.D., LL.D., F.R.S., Professor of Pathology in McGill University, Montreal, and Albert G. Nicholls, M.A., M.D., D.Sc., F.R.S., Assistant Professor of Pathology and Lecturer in Clinical Medicine in McGill University. Vol. II. "Systemic Pathology." Cloth. Pp. 1064, with 310 engravings and 15 plates. Price, \$6 net. Philadelphia: Lea & Febiger, 1909.

In this volume of over a thousand pages is continued the work begun by the senior author in the first volume on special pathology. The unusual character of the general pathology is not so evident in this volume, which is to be expected from the nature of the subjects under consideration. Being written by two men with marked difference of style, the work is very uneven; this is the common fault with books constructed by two men, that they lack the cohesion and uniformity of books written by a single author, without securing the thorough mastery of each topic which is obtained in works written by many well-selected specialists.

As being the largest and most pretentious work ever published in English, this is undoubtedly the best book on special pathology available to those who cannot read German. But having aimed so high, the authors and publishers cannot complain if their product is compared with the best of the foreign pathology, rather than with its English and American predecessors which are mostly expanded quiz compends and not serious attempts at exhaustive treatises on pathology. Our pride of race is sufficient to make us wish we could say that this American production is the best in any language, but this we cannot honestly do. Compared with the most recent German texts it may excel them somewhat in its discussion of certain aspects of pathologic physiology, but it is far short of them in systematic arrangement, in illustrations, in bibliography, and above all in wealth of facts and concise thoroughness of exposition. A tremendous diffuseness of language prevails, and at times seems to be substituted for facts that the reader desires to secure. Omissions of important details are common, and often are too serious to be fully atoned for by the interesting suggestion or capable discussions of disputed points with which the book abounds. It can, indeed, be said that few topics are exhaustively covered. The illustrations are not numerous, a few are excellent, many of the microphotographs will fail entirely to convey any idea of the structure represented to the untrained eyes of those for whom the book is intended—this, in fact, is the common condition of text-book illustrations from microphotographs.

The bibliography is not at all complete, and contains among valuable references also references to articles of little moment which seem to have been included chiefly for local reasons. In the present day no book can claim standing as a work of reference which does not indicate intelligently where one may go to get the best first-hand accounts by those who have made special study of each and every topic under discussion. In this book, not only are the references scanty and incomplete, but much important modern work has failed to receive proper recognition in the text.

In spite of all these drawbacks which must arouse sincere regret in those who have long been waiting for an American pathology that should be the equal of the best, yet the fact remains that this is the best book now available for the student and practitioner who is limited to English for his reading, and it has many points of merit. It is nearly always accurate, its faults being more of omission than of commission, and it is more readable than the average book of the kind. The relation of the physiologic and pathologic behavior of the different organs is kept in mind more than is usual. There are also many original ideas and suggestions, some of great value, which cannot be found in any other place.

A PRACTICAL STUDY OF MALARIA. By William H. Denderick, M.D., President of the Tri-State Medical Society. Cloth. Pp. 396, with illustrations. Price, \$4.50 net. Philadelphia: W. B. Saunders Co., 1909.

This is more than an excellent compilation of what is known of the subject, for the knowledge is carefully filtered and weighed by one who is familiar with the disease in its various phases.

If any criticism is to be made of this excellent book it is that sometimes quotations from others are too long. They are so well selected, however, that one cannot find serious fault with them. Moreover, they have the advantage of enabling the reader to get his information at first hand and not from abstracts. The long key to mosquitoes of North and Central America taken from Coquillett's classification and descriptions prepared for and published by the United States Department of Agriculture might well have been omitted, for it can be readily procured by any one desiring it. The description of the parasite in all its varied forms and phases is full and accurate. This constitutes one of the most interesting portions of the book.

The author describes fully the gross and histologic pathology of malaria. The chapter on this subject is illustrated by excellent plates copied from Kelsch and Kiener, and from Werner. Unfortunately, no direct reference is made in the text to these illustrations; no description is given of what they illustrate; even the numerous references given on the original plates are here omitted. This lessens their value and makes them seem less related to this book than ought to be the case.

The clinical history of malaria in all its varieties and with all its complications is fully considered, and the important paramalarial condition, hemoglobinuric fever, is also described and discussed fully. As would be expected, the technic of making blood-smears and staining and examining them is described and illustrated fully. The importance of blood-examinations for a diagnosis is dwelt on, but the difficulty of obtaining positive results in such examinations is not minimized. Also, as would be expected in so exhaustive a treatise, the various preparations of quinin are studied statistically and the best are pointed out. The value of substitutes is carefully estimated. The best method of administering drugs, the dosage and time of administration, are fully considered. The chapter on prophylaxis is one of the most interesting and practical.

The book as a whole is commendable, well written and interesting. The illustrations are numerous and well selected, and include portraits of Laveran and Ross. It is instructive and interesting thus to become acquainted with investigators who have done so much in unraveling the problems of malaria.

DISEASES OF THE NOSE, THROAT AND EAR. By Charles Huntoon Knight, A.M., M.D., Professor of Laryngology, Cornell University Medical College, and W. Sohler Bryant, A.M., M.D., Consulting Otologist, Manhattan State Hospital. Second Edition. Cloth. Pp. 609, with 239 illustrations. Price, \$4.50 net. Philadelphia: P. Blakiston's Son & Co., 1909.

This work consists of a new edition of Knight's "Diseases of the Nose and Throat," with a new section on "Diseases of the Ear," by Bryant. The new edition of the section on "Diseases of the Nose and Throat" differs from the old, chiefly in the addition of new material on the subjects of deviated septum and accessory sinus diseases. The section on "Diseases of the Ear" comprises 219 pages, of which 87 pages deal with the anatomy and physiology. The portion on the anatomy of the external and middle ear is well written, and the illustrations are fairly good. In the discussion of the histologic structure of the membranous labyrinth some statements are made that are not in accordance with the generally accepted views. For instance, quoting from page 463, "the so-called tectorial membrane of the organ of Corti is an artifact of long hairs of neuro-epithelium of the organ of Corti."

The diseases of the middle ear are covered in 17 pages. The author recognizes two main groups of middle-ear: inflammation and atrophic changes. Under the latter the author includes "what has been called chronic middle-ear catarrh and otosclerosis and also tympanic atrophy following purulent otitis media." It is further stated that the complication to be feared is possible involvement of the labyrinth due to the extension of the atrophic condition of that organ." According to the last edition of Politzer's "Diseases of the Ear," recent pathologic investigations have demonstrated beyond doubt

that otosclerosis is a primary disease of the labyrinthine capsule.

A chapter is devoted to aural surgery. The discussion of the different operative procedures are lacking in systematic description and important detail. Some of the illustrations are excellent.

DIE SERODIAGNOSE DER SYPHILIS. By Dr. Carl Bruck, Privatdozent and Oberarzt of the Dermatologische Universitätsklinik in Breslau. Paper. Pp. 166. Price, 4.80 marks. Berlin: Julius Springer, 1909.

Bruck's monograph is a masterly presentation of all the work done by him in collaboration with Wassermann and Neisser in developing the complement-fixation method.

The author reviews the literature on the subject up to September, 1909, and insists that all the modifications of the method are unreliable and should not be permitted to replace the original Wassermann-Neisser-Bruck technic, and he considers it essential to confine it to special institutes in the medical centers only, as has been done already in Vienna, as well as to specially trained men, to prevent the numerous possibilities of error in interpretation. The original method is described in detail. Bruck attributes all positive reactions in other diseases than syphilis, framboesia tropica and leprosy to faulty technic. The author admits that the reaction is not biologically specific, however. A positive reaction may not usually be expected before the sixth week after infection, and indicates the generalization of the virus. During the secondary stage, 94 per cent. of all cases give a positive reaction after specific treatment indicates the destruction of the virus, and repeated tests should be made to ensure the permanence of the negative reaction. In the later stages, a positive reaction is also an indication for treatment, but a permanent negative reaction is more difficult to obtain. In the primary stage, the finding of *Spirochaeta pallida* is sufficient to begin specific treatment. If no spirochetes have been found, a positive serum reaction may be expected six weeks after the infection, which indicates antisyphilitic treatment before secondaries appear. A permanent negative reaction is obtained more easily by early treatment.

A TEXT-BOOK OF EXPERIMENTAL PHYSIOLOGY FOR STUDENTS OF MEDICINE. By N. H. Alcock, M.D., and F. O'B. Ellison, M.D. Preface by E. H. Starling, M.D. Cloth. Pp. 139, with illustrations. Price, \$1.50 net. Philadelphia: P. Blakiston's Son & Co., 1909.

The present work is called an attempt to put into practice "the syllabus of practical physiology of the University of London. It is a laboratory manual and is designed, as is indicated in the preface "more in accordance with the actual requirements of the student of medicine" than as a laboratory guide to general physiology. The subjects dealt with are the physiology of muscle, digestion, respiration, circulation, the blood, secretion of urine, temperature, nervous system and special senses. The topics and experiments are well chosen and there are 36 helpful illustrations in the text. Few of the experiments are complicated and many of them have some practical bearing on questions encountered later in the medical course. Of recent years the subject of physiology has grown to such immense proportions that it is impossible to include the entire subject in the medical curriculum. It has thus become a question with authors of text-books on physiology and teachers of physiology just how much and what were good to give a student of medicine. In so far as the laboratory work is concerned (and this has grown to be one of the most important practical parts of the subject) the present volume shows an excellent selection and limitation of topics and is a good answer to this question.

RENAL, URETERAL, PERIRENAL AND ADRENAL TUMORS AND ACTINOMYCOSIS AND ECHINOCOCCUS OF THE KIDNEY. By Edgar Garceau, M.D., Visiting Gynecologist to St. Elizabeth's Hospital, and to Boston Dispensary, Boston, Mass. Cloth. Pp. 404, with 72 illustrations. Price, \$5. New York: D. Appleton & Co.

The book contains the following chapters: (1) solid tumors of the renal parenchyma; (2) embryonic tumors; (3) tumors of the renal pelvis and ureters; (4) polycystic kidney; (5) simple serous cysts of the kidney; (6) perirenal tumors; (7) adrenal tumors in adults; (8) adrenal tumors in children; (9) actinomycosis of the kidney; (10) echinococcus of the kidney; (11) determination of renal efficiency. The longest chapter is the first, which deals with the solid tumors, in which are included hypernephroma, carcinoma, sarcoma, and malignant

adenoma, as well as benign tumors. The etiology, pathology, anatomy, symptoms, diagnosis, and treatment of the various tumors and other conditions considered are fully and clearly discussed. In connection with hypernephroma, embryonic tumors and adrenal tumors in children are given instructive tables of cases. The illustrations are satisfactory; possibly those of carcinoma of the renal parenchyma leave something to be desired in clearness. The book is well written and gives a valuable presentation of the principal facts in regard to the conditions discussed.

HANDBOOK OF THERAPY. Cloth. Price, \$1.50. Pp. 421. Chicago: American Medical Association, 1910.

This handbook has been compiled from articles which have appeared in the department of therapeutics of THE JOURNAL. The usefulness of the book for reference has been increased by the addition of tables of weights and measures, lists of latin terms and abbreviations, poisons and their antidotes and treatment in brief, synonyms, and "New and Nonofficial Remedies" that have been passed on favorably by the Council on Pharmacy and Chemistry. Under the head of general diseases various topics are discussed briefly, such as diet in typhoid fever, alcoholic cerebral edema, tobacco, snake poisoning, illuminating gas poisoning and a number of others. Under the head of the various systems, as the digestive, respiratory, circulatory, etc., various diseases are taken up and valuable suggestions given in the way of prescriptions and directions for their general management. Diet and physical remedies are treated briefly, and following this, systemic remedies, hypnotics, circulatory depressants, alkalies, cathartics, antiseptics, etc., though only a few under each class are described. The book closes with a brief chapter on proprietaries versus U. S. P. and N. F. preparations.

DISEASES OF THE EAR. By Edward Bradford Dench, Ph.B., M.D., Professor of Diseases of the Ear in the University and Bellevue Hospital Medical College. Cloth. Pp. 696, with 158 illustrations in text and 9 plates. Fourth Edition. Price, \$5. New York: D. Appleton & Co., 1909.

During the six years that have elapsed since the appearance of the last edition of this work, the most marked advances in otology have been made in the physiology and the pathology of the internal ear, the surgery of labyrinthine disease and of intracranial lesions of otitic origin. In the new edition will be found a description of the recent investigations for the examination of the static function of the labyrinth. The technic of the operative treatment of labyrinthine suppuration has been considered in detail. The chapters dealing with brain abscess and intracranial surgery are practically new and give the results of the clinical experience of the author and numerous other observers.

New material has been added on various subjects throughout the text, which brings the work thoroughly up to date. The new material is of the same high standard that has characterized the former editions of this well-known text-book.

A TEXT-BOOK ON THE PRACTICE OF GYNECOLOGY. By William Easterly Ashton, M.D., LL.D., Fellow of the American Gynecological Society. Fourth Edition. Cloth. Pp. 1099, with illustrations. Price, \$6.50 net. Philadelphia: W. B. Saunders Co., 1909.

In this new edition alterations have been made in the chapter on ectopic gestation. The subject of tuberculosis of the genital organs has been revised and additions made to the treatment of cystitis. Several changes have been introduced in the technic of abdominal and pelvic operations. In those pages devoted to the pathology of shock, to peritonitis, and to movable kidney, the subject matter has been brought up to accord with the results of most recent experiments. Some change is noticed also in the operative management of suppuration of the pelvic connective tissue, emphasis being placed on evacuation of pus by vaginal section.

A TEXT-BOOK OF OBSTETRICS. By Barton Cooke Hirst, M.D., Professor of Obstetrics in the University of Pennsylvania. Sixth Edition. Cloth. Pp. 953, with 847 illustrations. Price, \$5. Philadelphia: W. B. Saunders Co., 1909.

This edition has been reedited throughout; new illustrations have been added and many older ones removed. It is a satisfaction occasionally to see an author replacing some old-time illustrations with others more true to life and more nearly representing the subject to be illustrated. The author has taken the stand that obstetrics and gynecology should be united; that the obstetrician should be a gynecologist. He says in his preface that panhysterectomy for chorio-epitheli-

oma is as much of an obstetric operation as the application of forceps. Most text-books mention that certain operations should be done for conditions incident to childbirth, but they give no idea of how this operation should be done or the technic of its performance. This work, however, includes the operation and technic of pelvic surgery, which certainly renders it most valuable. To the specialist in obstetrics, the general physician or the student this work is to be highly recommended.

A TEXT-BOOK OF THE PRACTICE OF MEDICINE. By James M. Anders, M.D., Ph.D., LL.D., Professor of Medicine and Clinical Medicine at the Medico-Chirurgical College. Ninth Edition. Cloth. Pp. 1326, with illustrations. Price, \$5.50 net. Philadelphia: W. B. Saunders Co., 1909.

By a careful revision with exclusion of more or less obsolete matter, the new edition has been brought up to date without any material increase in the size of the volume. The attention given to diagnosis makes the work valuable to the practicing physician. The newer methods are generally referred to, but the technic is reserved for special works. The more modern methods of treatment are represented, but while condensation is absolutely necessary in such a work, we believe that most readers will be disappointed to find so little discussion of such important subjects as tuberculin therapy and pellagra. The information given is sometimes so incomplete as to be of little use. For instance, on page 947 occurs the sentence, "Walko regards the muscle-nucleus test as being of diagnostic value." Recent text-books on diagnosis do not index the "muscle-nucleus test." The book gives no reference by which a description of the test could be found. In spite of these criticisms we must accord the work a high rank among treatises on the practice of medicine.

THE DISEASES OF CHILDREN. By Henry Enos Tuley, M.D., Professor of Obstetrics, University of Louisville, Medical Department. Cloth. Pp. 631, with illustrations. Price, \$5. Baltimore: Southern Medical Pub. Co., 1909.

This book begins with chapters on the anatomy, physiology and hygiene of infants. Methods of examination are clearly explained and methodical consideration of each disease of childhood follows, giving both in the text and in the appendix standard formulas used in pediatrics. Chapters on the nose and throat, the ear, and the eye are included. The chapter on infant feeding is particularly full and satisfactory. The section on malaria is noteworthy because of its thorough historical paragraph. The book is well printed, usefully arranged, and can be commended.

SPRAINS AND ALLIED INJURIES OF JOINTS. By R. H. Anglin Whitelocke, M.D., M.C., F.R.C.S., Honorary Surgeon to the Radcliffe Infirmary County Hospital at Oxford. Cloth. Pp. 241, with 65 illustrations. Price \$3. New York: Oxford University Press, 1909.

The chief points of importance emphasized in this little volume are (1) the necessity of examining patients with injuries to the joints more carefully in order to differentiate the simple sprains from those complicated slight fractures which often are recognizable only by the use of the x-ray; and (2), the use of fixation in fracture-sprains, whereas the simple sprains should be treated by massage and early active motion of the joints. These points the author brings out quite clearly in a simple though practical manner.

A MANUAL OF OTOTOLOGY. By Gorham Bacon, A.B., M.D., Professor of Otology in the College of Physicians and Surgeons, Columbia University, New York. Fifth Edition. Cloth. Pp. 492, with 147 illustrations and 12 plates. Price, \$2.25. Philadelphia: Lea & Febiger, 1909.

Bacon's "Manual of Otology" continues to be a popular text-book, brevity combined with clearness of description making it especially well adapted to the needs of the student. The subject of otology is covered as thoroughly as by many much larger works. Addition of new material and revision of the old brings this work thoroughly up to date without greatly increasing its size.

A MANUAL OF NATURAL THERAPY. By Thomas D. Luke, M.D., F.R.C.S., Physician at the Peebles Hydropathic. Cloth. Pp. 295, with 125 illustrations. Price, \$2.50. New York: William Wood & Co.

While all may not agree as to the appropriateness of the title of this book, it forms a convenient term under which to group the non-medicinal measures used in the treatment of disease. The subjects included are hydrotherapy, thermotherapy, phototherapy, massotherapy, electricity and dietetics. The various technics are described and well illustrated.

Medicolegal

Damages for Injury to Artificial Anus—Exhibiting Injured Parts to Jury and What Not Indecent Evidence— Second Examination Not Required

The Supreme Court of Washington says that the case of *Dunkin vs. City of Hoquiam* (105 Pac. R., 149) was brought to recover damages for personal injuries alleged to have been sustained by the plaintiff in being thrown from a bicycle by an obstruction in a street along which he was riding one evening in September, 1908. Now about 29 years of age, his evidence tended to show that in 1900 he contracted the yellow fever, which resulted in the closing of the lower bowels, since which time he had an artificial anus, which he could partially control. The testimony of a physician showed that he examined him in January, 1901; that the artificial anus was then in good condition, the projection of the bowel being about one-twelfth of an inch; that he next examined him about two years before the trial, his condition then being about the same as when he made the former examination, and that he was then in good health; that he examined him at the time of the trial, and found that seven or eight inches of the lining of the bowel protruded from the side; that he had no control over the bowel; that he was not able to do any kind of work; that he was in constant pain; and that the injury would increase as time progressed. On this evidence it seemed certain that the jury did not award excessive damages in rendering a verdict for \$7,500, judgment on which, in the plaintiff's favor, is affirmed.

Nor does the court think that it was error to permit the plaintiff to twice exhibit the injured part to the jury. This was urged as error on two grounds: (1) That it had a tendency to enlist the sympathy of the jury; and (2) that it was indecent. On the first contention the court assumes that, had the injury complained of been a broken leg or arm, the contention would not be tenable. The fact that the injury occurred to some other part of the body would not change the rule of evidence. This court apprehends that no court would permit the introduction of indecent evidence unless it was so connected with the *res gestæ* or essential facts of the case as to become necessary to the administration of justice. Indecency depends on the purpose of the utterance or act. "What we are to conclude, then, since the progress of investigating the truth in courts of justice is both an indispensable and a dignified function in life, is that no utterances or acts called for in evidence in that process are to be prohibited because under other circumstances they might be characterized by indecency. In other words, the general policy of discountenancing indecency does not extend to the exclusion of evidence in a court of justice." 3 Wigmore on Evidence, section 2180.

The court sees no error in a ruling sustaining an objection to a question asking the plaintiff, on cross-examination, if he was not drawing a pension for total disability at the time of receiving the injury, where the object was to show, not that he was suffering from a total disability before the accident, but rather that, owing to his physical condition, it was negligence for him to have ridden a bicycle in the dark without a lantern, and that his ailment was not increased by reason of the accident. What was claimed to be the medical examination and physician's certificate made, in February, 1901, in the pension matter, were inadmissible in evidence as too remote in point of time and because the certificate of the medical examiner was hearsay.

Prior to the trial the trial court appointed certain physicians to examine the injuries sustained by the plaintiff, and they examined him. During the trial the defendant asked the court to require the plaintiff to submit to a further examination by one of these physicians. The court refused to do so. There was no error in this. The authorities cited were cases where there had been no previous examination.

Officials Legally or Negligently Discharging Patient from Insane Hospital Are Not Liable for Crime Subsequently Committed by Him

The Supreme Court of North Carolina had, in *Bollinger vs. W. P. Rader and others* (66 S. E. R. 314), a case which embraced among the defendants the superintendents and three directors of a state hospital for the insane and wherein it was complained that a patient named Lonnie Rader had been negligently discharged and some six months afterwards, while insane, killed a girl, described as "the plaintiff's intestate." The complaint was demurred to on the ground that it did not state a cause of action against the defendants individually or collectively in that it appeared from it that said defendants held the official positions above mentioned; that it was by virtue of their said offices and while acting within the scope of authority conferred by law that they discharged or released the said Lonnie Rader, and that the four defendants referred to were by section 4560 of the Revisal of North Carolina Statutes of 1905 exempted from all personal liability for the alleged acts and omissions complained of.

Section 4560 referred to is a portion of the statute under which the hospital was created, organized, and now exists. It provides that: "No director or superintendent of any state hospital shall be personally liable for any act or thing done under or in pursuance of any of the provisions of this chapter." Section 4596, under and by virtue of the authority conferred by which the discharge was made, provides: "Any three of the board of directors of any hospital . . . shall be a board to discharge or remove from their hospital any person admitted as insane when such person has become or is found to be of sane mind, or when such person is incurable, and in the opinion of the superintendent, his being at large will not be injurious to himself or dangerous to the community; or said board may permit such person to go to the county of his settlement on probation, when, in the opinion of said superintendent, it will not be injurious to himself or dangerous to the community, and said board may discharge or remove such person on other sufficient cause appearing to them."

Under these circumstances the court thinks that the defendants' demurrer was properly sustained, on the ground stated, and judgment rendered for them.

But what is of still more general interest, the court adds that it does not seem to it that the discharge of Lonnie Rader on March 5th, even if negligently made, was the proximate cause of the death of the girl, which occurred September 13th following. The allegation was in the nature of "Post hoc, ergo propter hoc" (after this, therefore on account of this). The defendants could not, by the exercise of ordinary care and caution, have anticipated, foreseen, or expected that the death of the plaintiff's intestate would follow as the natural result of their act in discharging Rader from the hospital. Their erroneous or mistaken opinion or judgment that Lonnie Rader was sane, or insane, that his being at large would not be injurious to him or dangerous to the community, or that there were other sufficient reasons why he should be discharged, and their act in discharging him, did not cause her death. It might be that, if they had kept Rader confined in the State Hospital, he might not have killed her; but it was equally true that if he had never been born, or had never become insane, he would not have killed her. The discharge of Rader, his absence from the hospital, his presence in Catawba county, and his presence at church on the day of the homicide, was a mere condition which accompanied, but did not cause the injury.

Validity of Law Requiring Proper Factory Ventilation—Against Whom it May Be Made Enforceable

The First Appellate Division of the Supreme Court of New York says, in *People, on the relation of Williams, Commissioner of Labor, vs. Eno* (119 N. Y. S. 600) that section 86 of the New York labor law, as amended in 1907, provides that: "The owner, agent or lessee of a factory shall provide, in each workroom thereof, proper and sufficient ventilation; if excessive heat be created or if steam, gases, vapors, dust or

other impurities that may be injurious to health be generated in the course of the manufacturing process carried on therein, the room must be ventilated in such a manner as to render them harmless, so far as practicable; in case of failure the commissioner of labor shall order such ventilation to be provided. Such owner, agent or lessee, shall provide such ventilation within twenty days after the service on him of such order, and in case of failure, shall forfeit to the people of the state ten dollars for each day after the expiration of such twenty days, to be recovered by the commissioner of labor."

It is clear that the law was passed by the legislature in the exercise of the police power of the state, and that it tends "in a degree that is perceptible and clear towards the preservation of the lives, the health, the morals or the welfare of the community," and so is a valid exercise of the police power within the principles thoroughly established in New York state.

When it is admitted that the subject-matter of the act comes within the exercise of the police power by the Legislature, it was for that body to determine the most efficacious way to insure its enforcement. It has determined that, when an owner of a building turns it into a tenant factory as defined by the law, that owner shall be held responsible in defined particulars for the observance of this health law; and by specific provisions has conferred on him opportunity and power to observe those provisions by right of entry, and, if necessary, dispossession proceedings. It has in terms also made the tenant responsible. Whether the public officer charged with the enforcement of the law should proceed against the owner, or the tenant, or both, is a matter of administration of the law, with which the court has nothing to do. It is no answer for one person, who is made responsible by law for an existing condition, to say that another person is also responsible, and should be proceeded against.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

Medical Record, New York

March 5

- 1 *Phases of the Evolution of Modern Preventive Medicine, as Illustrated by the Present Campaign against Tuberculosis. G. S. Woodhead, Cambridge, England.
- 2 *Special Features in Symptomatology and Pathology of Anemia of the Central Nervous System. S. Leopold, Philadelphia.
- 3 *The Splashing Sound of the Stomach. J. W. Weinstein, New York.
- 4 *Successful Treatment of Specific Salpingitis with Gonococcus Vaccine. A. L. Tuttle, Milford.
- 5 *Surgical Accident Necessitating Intestinal Resection. E. H. Elsing, New York.

1. **Prevention in Tuberculosis.**—It is pointed out by Woodhead that the aim of those interested in preventive medicine is to "corral" the tubercle bacillus. As in the case of typhoid carriers and lepers we have to devise some practical and practicable method of dealing with each set of cases, and even with each case as it arises and it is for this reason that the work of the tuberculosis dispensaries has been attended with such a large measure of success. The medical men and their assistants in these dispensaries, from one case are able to trace others. They come across cases of tuberculosis in all stages of development, and among all sorts and conditions of men, they weigh up the possibilities of treatment in various individual circumstances, and having adopted the treatment that seemed best to meet the conditions and necessities of the case, they are able to provide a resting place in which the poor worn-out worker can end his days in comparative peace and comfort without being a danger to his fellows. They are able to train the patient suffering from incipient phthisis in cleanly and in effective and safe methods of disposing of his sputum, etc. So that should all efforts at cure be unavailing, the patient, even in the most infective stages of his disease, by the care he exerts, is able to reduce the danger of infection from himself to others to a minimum. From all

this it is evident that we must make use of those means which come most readily to hand and which, at the same time, appear to meet most closely the exigencies of any special case.

2. Anemia of the Central Nervous System.—Leopold reports six cases of anemia of the central nervous system, resulting in sclerosis of the cord. The onset of the disease is gradual. The symptoms are very variable, as are the changes in the spinal cord. Sometimes the posterior columns are involved, sometimes the lateral tracts are added; again there is a diffuse sclerosis of the entire cord. Paresthesia and ataxia may persist for years with few changes in the cord, or the intensity of the alterations may be much greater than the clinical symptoms. The mental state may be dull and inattentive, and there may be various muscular palsies of eye muscles or face. But the spinal cord muscles predominate over those of the brain.

3. Splashing Sounds of the Stomach.—Weinstein holds that a splashing sound in the stomach may be obtained in any case in which there is fluid present with gas in the stomach, when the abdomen is tapped or shaken. Such a stomach is not necessarily the seat of atony. If the sound is obtained when the stomach should be empty it may show pyloric obstruction. If it is found over the normal area of the stomach it indicates a condition to be referred to that viscus, while if found lower down it is due to the same conditions located in the colon. After lavage this sound will show that the stomach is not yet empty. When the patient himself observes the splashing, the stomach is generally atonic.

4. Gonococcus Vaccine in Specific Salpingitis.—A case of gonorrhea of the genital organs, including inflammation of the adnexa, was treated by Tuttle with large doses of vaccine, with complete restoration of health after a month. The patient gave birth to a healthy child after her recovery.

5. Surgical Accident Necessitating Intestinal Resection.—Eising describes a case of curetting in which the instrument penetrated the wall of the uterus and drew down a loop of ileum destroying the mesenteric connections so that an anastomosis had to be done.

Boston Medical and Surgical Journal

March 3

- 6 *The Rehabilitation of Neurasthenia. P. C. Knapp, Boston.
- 7 Anesthesia for Prostatectomy. F. H. McMechan, Cincinnati.
- 8 The Aftermath of Childbirth. W. P. Manton, Detroit.
- 9 Place of Braces in Treatment of Weak, Pronated and Flat Feet: Special Reference to a Simple Method for Preparation of the Plaster-of-Paris Casts on Which they are Fashioned. A. M. Forbes, Montreal.

6. Rehabilitation of Neurasthenia.—The authors emphasize the necessity of a distinction between *folie du doute* and neurasthenia, and hold that the real essence of neurasthenia as a state of exhaustion should be maintained. Too much emphasis has been laid on the psychical element in neurasthenic conditions, and the encouragement which has thus been given to the mob of charlatans who are so vociferous and ignorant in the advocacy of some new cult of psychotherapeutics, not only by incompetent physicians, but even by some who ought to know better, is much to be deplored. While the psychical element in neurasthenia is not to be neglected, and while an intelligent psychotherapy is often to be employed, it must be recognized that there is a real nervous exhaustion in many cases which demands the best therapeutic efforts on the physical side. It is absurd to lump all the cases together under the one vague heading of psychoneurosis. We must analyze cases more deeply and determine to the best of our ability how much is due to physical causes, how much to morbid psychical processes, and whether the psychical disturbance is the cause or the result of the neurasthenic state.

New York Medical Journal

March 5

- 10 *The Painful Uterus and its Autonomic Relations. C. A. L. Reed, Cincinnati.
- 11 *Sanitary Housing for Tuberculous Families. H. L. Shively, New York.
- 12 Gummy of the Dura Indenting the Left Hemisphere of the Cerebellum, with Autopsy. B. R. Tucker, Richmond.
- 13 Multiple Exostoses Coupled with Syringomyelia. C. P. Oberndorf, New York.
- 14 *School Dentistry Hysteria. S. W. Newmayer, Philadelphia.
- 15 Visceral Angioneurosis. S. S. Cohen, Philadelphia.

- 16 Recurrent Dislocation of the Patella. S. Tousey, New York.
- 17 Hemorrhagic Pericarditis. C. W. H. Mitchell, Columbia, Mo.
- 18 *Effective Treatment of Pompholyx. G. E. Barnes, Herkimer, N. Y.

10. The Painful Uterus and Its Autonomic Relations.—Reed emphasizes the fact that the uterus itself, independently of its adnexa, may be the seat of pain—a commonplace which seems to be overlooked if we may judge from the frequency with which the diseased uterus is left behind after the diseased appendages have been removed; the autonomic manifestation of uterine pain; and the method of its control. Reed employs the term "painful uterus" to designate a uterus that is the seat of pain which, in turn, depends for its causation on conditions either within or related to the organ itself, and, furthermore, to designate pain that originates within the uterus, whether that pain is manifested directly at its point of origin, that is, within the uterus, or is referred to some superficial area. The treatment of the painful uterus must be based on the principle that the logical cure of any pain must begin by removing the cause of that pain. Thus, cystic nabothian follicles should be destroyed, preferably by the canter; varices of the pampiniform plexus should be broken up by ligating the veins in the broad ligaments; displacements should be overcome by surgical treatment addressed to the suspensory apparatus of the uterus; myomata and polypi should be removed when possible without removing the uterus, polypi always, but hysterectomy is demanded when the condition cannot be otherwise eliminated. This, likewise, is the only curative treatment of diffuse fibrosis. Chronic atrophic parametritis also demands the removal of the organ. Reed says that in all operations for the removal of infected uterine appendages associated with acute infectious parametritis, the uterus should be removed at the time of the first operation—the justification of the step being found in the uniformity with which the atrophic change follows the acute infection. Visceral pain, so far as the abdomen, pelvis and thorax are concerned, is expressed chiefly but not exclusively in the autonomic algetic areas in the protective walls covering the respective viscera, such algetic areas corresponding in extent with the peripheral distribution of the autonomic nerves coincidently with the peripheral distribution of the respective spinal nerves in the muscles and subserous connective tissue. These distributions can generally be determined clinically by determining the area of parietal hyperalgesia. The pain itself, consisting chiefly of hyper-excitation of muscle irritability, can be proportionately, and, as a rule, entirely, inhibited by inhibiting the muscle sensibility in the hyperalgesic areas.

11. Sanitary Housing for Tuberculous Families.—Shively describes the tenements now being constructed in New York by Mrs. W. K. Vanderbilt which will house only persons afflicted with tuberculosis.

14. School Dentistry Hysteria.—Newmayer considers the various phases of dental conditions found in school children; the methods of examination as now practiced; the reasons for not obtaining practical results, and the seeming impossibility of the work.

18. Effective Treatment of Pompholyx.—The first purpose of treatment, according to Barnes, is to free the skin of these foreign bodies and this can be done by passing with sufficient pressure the back of a knife over the diseased surfaces until every vesicle is burst. Then the abraded areas should be washed with sterile water and soap to remove all adhering serum. A weak solution of lead, zinc, or bichlorid of mercury may or may not next be applied. The denuded spots usually heal after the cleansing, but it is well, especially when the disease is extensive, to bathe them with weak bichlorid of mercury solution for its antiseptic as well as astringent action. The parts should finally be protected with a dry sterile dressing. As new vesicles appear from day to day they should be treated in the same manner. After a few days the involved surface becomes covered with a thick, shiny, parchment-like skin which is apt to crack and to improve very slowly. Oleum cadini, from one-half to one dram to the ounce, in some simple vehicle like petrolatum and lanolin, thoroughly applied once or twice daily will stimulate and soften the skin so that it will soon become normal. The

invariable accompaniment of this treatment of pompholyx should be its constitutional treatment.

Medical Fortnightly, St. Louis

February 10

- 19 Early Diagnosis of Pulmonary Tuberculosis. T. Y. Hull, San Antonio, Tex.
- 20 Stricture of the Male Urethra. E. O. Smith, Cincinnati.
- 21 Foreshadowing of Democracy in American Medical Association. G. F. Lydston, Chicago.

February 25

- 22 *Value of Surgical Celerity. C. Blickensderfer, Shawnee, Okla.
- 23 *Tendency of Modern Surgery. J. M. Inge, Denton, Tex.
- 24 Vaccination, Vivisection and Egotism. C. H. Hughes, St. Louis.

22. **Value of Surgical Celerity.**—Blickensderfer declares that rapid surgery depends for its success on a true knowledge of anatomy, structural relations and physiologic phenomena; a correct diagnosis; a proper appreciation of the patient's condition, and the ability to use, to many purposes, a few instruments, where many are generally required.

23. **Tendency of Modern Surgery.**—Inge believes that at least 30 per cent. of surgery is unnecessary and unwarranted. In this he includes minor and major operations, such as curettage without pathologic warrant, repair of the ordinary torn cervix; amputation of the cervix, repair of the relaxed vaginal outlet without visible impairment of function. The many operations for retropositions of the movable uterus, operations for so-called cystic degenerations of the ovaries, a condition which, he says, is found in almost all female cadavers, and which is physiologic and not pathologic, the removal of the uterus for prolapsus and small fibroids. The fixation of the palpable right kidney which is so common in women that depending on the personal equation of the operator, it can be found in from 10 to 30 per cent. of women. The remedy for such conditions in his opinion, is a frank, open discussion before medical associations and through medical journals by means of which the profession may be made to see the importance of a more rational and broader view of the true situation.

Ohio State Medical Journal, Columbus

February

- 25 Heart Tones and Heart Murmurs. J. E. Greiwe, Cincinnati.
- 26 The Factors of Safety in Abdominal Operations. G. W. Crile, Cleveland.
- 27 Acne Vulgaris: With Special Reference to its Etiology and Treatment. W. O. Roop, Dayton, Ohio.
- 28 *Etiology and Treatment of Acne Vulgaris. W. E. Sampliner, Cleveland.
- 29 Psychasthenic States. W. D. Deuschle, Columbus.
- 30 Ocular Symptoms of Arteriosclerosis. W. E. Bruner, Cleveland.
- 31 One Thousand Recorded Obstetric Cases without Maternal Mortality. A. Gaither, Cincinnati.

28. **Acne Vulgaris.**—It is not the number of remedies that are used which give the best results, but the thorough understanding of the method of application of those we do make use of, which counts the most in the successful treatment of this disease. The reaction of the skin must be carefully watched and the treatment varied to suit the conditions. When the lesions are somewhat indurated, the use of the actinic lamp twice weekly for periods of from 15 to 30 minutes has given Sampliner excellent results as a supporting measure. For the deeper indurations the x-ray has given good results, and by many dermatologists this is the method of choice. It is, however, in the long run, no more successful than some of the older methods, and should be reserved for those cases which are obstinate to other forms of treatment. The injection of vaccine made from dead cultures of the acne bacillus and the staphylococcus suspended in salt solution has given good results, and in Sampliner's opinion, should be given the preference over the x-ray. On the whole, the reports of cases treated by vaccine therapy show it to be a method that is well worthy of a careful trial in rebellious cases.

Denver Medical Times and Utah Medical Journal

February

- 32 General Etiology of Ureter. B. Robinson, Chicago.
- 33 Report of Six Cases of Ludwig's Angina. J. Lindahl, Denver.
- 34 Cutaneous Blastomycosis. A. J. Mackley, Denver.
- 35 Epilepsy: Case Cured by Oöphorectomy. H. R. McGraw, Denver.
- 36 Therapeutic Fads and Fancies. F. Clift, Provo, Utah.
- 37 Value of Early Diagnosis in Treatment of Epidemic Cerebro-spinal Meningitis. R. C. Smedley, Salt Lake City.

Journal of the Indiana State Medical Society, Fort Wayne

February

- 38 Acute Dilatation of the Stomach. E. Walker, Evansville.
- 39 *What the General Practitioner Should Know about Mastoiditis. A. E. Bulson, Fort Wayne.
- 40 Treatment of Pancreatitis. J. C. Sexton, Rushville.
- 41 Acute Dilatation of the Stomach: Treatment. E. D. Clark, Indianapolis.
- 42 Sketches of the Medical History of Indiana (continued). G. W. H. Kemper, Muncie.
- 43 Eyestrain Due to Accommodation. L. Leeds, Richmond.

39. **Mastoiditis.**—That every general physician should consider a persistent earache as significant and not pass it over with a prescription for a local application of lanadum and sweet oil, or, what is worse, a prescription for an opiate to be taken internally, is the basis of Bulson's paper. The pain from a middle ear or mastoid inflammation should never be quieted with any form of opium, as by so doing the symptoms are masked. The cause of the pain, which in all cases is pent-up secretions and infection, must be treated. A free incision of the drum membrane, done under proper aseptic precautions, is comparatively harmless and at once opens an avenue for the escape of infectious material which for the want of an opening may be extended into the antrum or the brain cavity, because that direction may be the one of least resistance. With the establishment of free drainage the severe pain should cease. If pain persists there is something more serious than a simple middle-ear trouble to deal with. An acute suppuration of the middle ear, if it is progressing toward a cure, will subside gradually. If a profuse discharge stops suddenly, then the physician should look out for a mastoid, or intracranial complications, and especially if at the same time the temperature jumps upward. If mastoid symptoms develop, as evidenced by pain, tenderness, redness or swelling of the mastoid, cold should be applied to the mastoid at once, but should not be persisted in if it does not produce a decided relief of all symptoms within a few hours, and not tried at all if the mastoid symptoms have existed for 36 hours, in which case the patient should be operated on.

Finally, every middle-ear suppuration has elements of danger in it, and it should be given careful attention; that mastoid or intracranial complications and the indications for an operation therefore are clearly marked; and that 75 per cent. of the deaths as a direct result of extension of a suppuration from the middle ear can be prevented by early and proper operative procedures.

Journal Oklahoma State Medical Association, Muskogee

February

- 44 Tuberculosis. H. M. Williams, Wellston.
- 45 Surgical Aspect of Tuberculous Uterus and Appendages. C. N. Ballard, Oklahoma City.
- 46 Tuberculin. C. Blickensderfer, Shawnee.
- 47 Surgical Treatment of Tuberculous Glands. W. T. Tilly, Muskogee.
- 48 Medical Education of the Public on Tuberculosis. J. M. Postelle, Oklahoma City.
- 49 How Bovine Tuberculosis is Transmitted to Man and its Prevention. L. A. Turley, Norman.
- 50 Tuberculosis of the Tonsil. J. H. Barnes, Enid.
- 51 How Can we Care for the Tuberculous Children of Oklahoma. L. E. Andrews, Oklahoma City.
- 52 Tuberculosis in the Public Schools from a Medical Standpoint. W. G. Little, Okmulgee.
- 53 Tuberculous Meningitis. F. B. Erwin, Wellston.
- 54 Government Supervision of Tuberculosis. G. S. Barger, Wayne.

Therapeutic Gazette, Philadelphia

February

- 55 Surgical Affections of Meckel's Diverticulum; Case of Inguinal Hernia. J. B. Carnett, Philadelphia.
- 56 *Serum Sickness and Sudden Death Following Hypodermic Administration of Antitoxin. E. C. L. Miller and W. W. Root, Detroit.
- 57 Skin Varnishes. H. G. Klotz, New York.
- 58 Simple Methods of Applying the Metric System. M. S. Woodbury, Clifton Springs, N. Y.

56. **Serum Sickness and Sudden Death.**—While it is conceded by Miller and Root that it may be said that in cases of death following the administration of some antitoxin, death may have been caused by the serum, it has been shown that the use of small amounts of serum containing the necessary antitoxic dose, viz., from 5 to 10 c.c. of high potency serum, even with small children, is absolutely harmless. The death may have been caused by the condition known as "status lymphaticus" or some allied conditions, or it may have been

from causes unknown. As the facts in hand are not sufficient to exclude definitely any one of these three possibilities, they should all be carefully considered before reaching a conclusion.

Journal Kansas Medical Society, Kansas City

February

- 59 Hydrocele.—Recent Work with It. The Radical Operation. H. Wilkinson, Kansas City.
60 One Hundred Consecutive Accouchements. L. C. Lardner, Chanute.

Pennsylvania Medical Journal, Athens

February

- 61 Recovery of Vision in an Amblyopic Eye after Four and One-Half Years of Blindness: A Contribution to the Question of Amblyopia Ex Anopsia. C. M. Harris, Johnstown.
62 *Psychoses Associated with Ocular Affections. S. D. Risley, Philadelphia.
63 *Relation Between Diseases of the Mouth and Systemic Diseases. H. B. Allyn, Philadelphia.
64 *An Improved Apparatus for Test-Meal Removal. Gastric Lavage and Inflation. F. A. Faught, Philadelphia.
65 *Study of Hyperchlorhydria. G. M. Piersol, Philadelphia.
66 *Pylorospasm. J. J. Gilbride, Philadelphia.
67 *Influence of Hydrogen Peroxid on Hydrochloric Acid Secretion. E. H. Goodman, Philadelphia.
68 Symptom Complex of Pernicious Anemia with Small Carcinomata of Pylorus. J. E. Talley, Philadelphia.
69 *Home Treatment of Epilepsy as Contrasted with Institutional Treatment. M. Woods, Philadelphia.
70 *Epilepsy in its Relation to Menstrual Periods—Study of 23 Cases. A. Gordon, Philadelphia.
71 Obstetrics in General Practice. J. O. Arnold, Philadelphia.
72 Reforms Essential to Good Obstetric Practice. C. S. Barnes, Philadelphia.
73 *Refracting Opticians. J. Thorington, Philadelphia.

62. Abstracted in THE JOURNAL, Nov. 6, 1909, p. 1589.

63. Diseases of Mouth and Systemic Diseases.—Allyn believes that diseases of the gums and teeth are of great interest: (1) because they show manifest local disease with absorbent surfaces from which pathogenic bacteria may be carried to produce systemic disease, or local disease elsewhere; (2) because the diseases of the gums and teeth may be mere local expressions of systemic diseases. Carious teeth, gingivitis and stomatitis not only lead to malnutrition but produce a foul mouth, from which are absorbed poisons which cause a variety of local and general disturbances. On the other hand, dentists especially have discovered that it is sometimes impossible to arrest erosion and to cure gingivitis until a toxic state of the tissues is recognized and removed. The lesson to be learned is that the mouth must be carefully inspected both for the prevention of disease and for the diagnosis and cure of obscure metabolic disorders.

64. Improved Apparatus for Test-Meal Removal.—By the addition to the apparatus devised by Daland of a valve somewhat similar to that employed in certain steam engines which, because of the function which it performs, Faught has termed a reversing valve, all tube connections can be made before the tube is passed and the operator is given complete control of the flow of air or fluid by the simple turning of a lever. The parts of the apparatus are given and the method of its application outlined. Among the advantages of the method may be mentioned the ease and dispatch with which it can be carried out; its freedom from disagreeable features; uniformity of results and accuracy of findings; freedom from danger because of the feeble and easily controlled suction and pressure employed.

65. Hyperchlorhydria.—From an analysis of 300 cases of gastric hyperacidity by Piersol, it was shown that in 156 the abnormality in the gastric secretion was the result of a primary functional disturbance of the stomach, namely, hyperchlorhydria, while in the remaining 144 cases the hyperacidity was symptomatic of gastric dilatation, gastroparesis, gastric ulcer, gall-stones, etc. A further investigation of the 156 cases of hyperchlorhydria *per se* demonstrated that this condition is most commonly encountered during the second and third decades of life, that it is more frequent in men than in women, and that it is most often encountered in those who live under mental strain. Careless habits of eating, and the use of coffee, alcohol and tobacco predispose to its occurrence. The symptomatology of hyperchlorhydria was found to be variable and the gastric symptoms usually regarded as characteristic did not occur with sufficient constancy to be of definite diagnostic significance. The digestive power of the

stomach was found to be good in hyperchlorhydria. Anemia was not as a rule found to accompany hyperchlorhydria.

66. Pylorospasm.—Gilbride states that the condition, which is only a symptom, occurs most frequently in gastric and duodenal ulcer, gastrosuccorhea, and in other conditions in which there is an associated increase in the hydrochloric acid secretion of the stomach. It occurs less frequently in gastric carcinoma, occasionally in disease of the biliary passages and pancreas, also in appendicitis, etc. Pain or cramp is the most prominent symptom and it varies in intensity, duration and recurrence in each individual case. At the time of the spasm there is usually an increased peristalsis of the stomach, and when ingesta are present in the stomach vomiting may occur.

67. Influence of Hydrogen Peroxid on Hydrochloric Acid Secretion.—In 14 patients suffering with an excess of hydrochloric acid in the gastric content the following observations were made by Goodman: An ordinary test-meal, consisting of a piece of dry toast and 300 c.c. tea was given, extracted at the end of the usual time, and examined. After twenty-four hours a test meal consisting of a piece of toast and 300 c.c. 0.5 per cent. hydrogen peroxid solution was given and subsequently examined. There was with the latter (so-called peroxid meal) a remarkable diminution of the free hydrochloric acid in comparison to the amount aroused by the ordinary Ewald meal. In some instances there was a total absence of free acid, but in no instance were unpleasant symptoms complained of. Therapeutic use was made of the above knowledge with fairly good results. Goodman believes that in hydrogen peroxid has been found a new, safe and comparatively satisfactory remedy in hyperchlorhydria.

69. Home Treatment of Epilepsy.—Woods believes that in the home or small homelike sanatorium with the patient engaged in some safe and congenial occupation he may be of service to the community. In the institution, on the other hand, his identity is often lost and he becomes a mere bit of driftwood in an economic sea. He may also be seriously disturbed by the alarming manifestations of the disease about him and from the disturbing presence of which he cannot escape.

70. This article was published in the *New York Medical Journal*, Oct. 16, 1909, and was abstracted in THE JOURNAL, Oct. 30, 1909, p. 1511.

73. Abstracted in THE JOURNAL, Nov. 6, 1909, p. 1590.

Mississippi Medical Monthly, Vicksburg

February

- 74 The Mechanical Factor in Lobar Pneumonia. J. W. Primrose, Sarah.
75 Treatment of Pneumonia. S. E. Frierson, Lyon.
76 Uremia Associated with Motor Aphasia. C. J. Marshall, Lambert.
77 Urethrocrotal Fistula with Extravasation of Urine. G. F. Carroll, Biloxi.
78 Uncinariasis. T. K. Magee, Hamburg.

California State Journal of Medicine, San Francisco

February

- 79 *Uses of *B. Coli* and *Streptococcus Vaccine* in Urinary Diseases. A. B. Grosse, San Francisco.
80 Carcinoma and the Cervical Lymphatic System. R. Russ, San Francisco.
81 Importance of Eye, Ear, Nose and Throat Examinations in the Railway Service. A. C. Seely, Roseburg, Ore.
82 Amebiasis. J. D. Long, U. S. P. H. and M.-H. S.
83 Cesarean Section: Report of Nine Cases. A. B. Spalding, San Francisco.
84 Gunshot Wound of the Heart with Recovery. C. J. Teass, Kennett.
85 Phases in the Handling of Tuberculous Patients. G. H. Evans, San Francisco.
86 Present Status of the Osmic Acid Treatment of Neuralgia. T. C. McCleave, Berkeley.
87 Occurrence and Significance of the Boas-Oppler Bacillus in the Stools in Carcinoma of the Stomach. H. W. Allen, San Francisco.
88 Comments on Tropical Medicine. C. Wellman, Oakland.
89 Dermatitis Factitia in a Patient with Pruritus Generalis. H. E. Alderson, San Francisco.

79. Vaccine in Urinary Diseases.—Grosse concludes that autogenous vaccines have a definite place as therapeutic agents in urinary diseases, but must be prepared by a proficient bacteriologist, and that a well-equipped laboratory in conjunction with treatment rooms is essential. Fresh vaccines are necessary, as vaccines deteriorate much more rapidly than is generally conceded. Individuals with enlarged pros-

tate and an infected bladder, in whom a fair-sized Nélaton catheter enters the bladder easily, should not be operated on until vaccines have been given a thorough trial. In infected and encapsulated organs or when chronic inflammatory infiltrates surround the infected areas, vaccines should be supplemented by the Bier treatment to enhance the blood supply.

New Mexico Medical Journal

January

- 90 Pelvic Inflammation. A. H. Faith, Clovis.
- 91 Treatment of Typhoid in Private Practice. L. H. Pate, Lake Arthur.
- 92 Extruterine Pregnancy. H. A. Ingalls, Roswell.

Buffalo Medical Journal

February

- 93 Nasopharynx, with Description of Electric Pharyngoscope. H. Hays, New York.
- 94 Types in Gynecologic Practice. J. E. King, Buffalo.
- 95 Infantile Scurvy Involving the Hip-Joint. N. Jacobson, Syracuse.

American Journal of Obstetrics and Diseases of Women and Children, York, Pa.

February

- 96 Injuries to the Puerperal Uterus. E. B. Cragin, New York.
- 97 Injuries to the Uterus—Non-Puerperal. H. C. Coe, New York.
- 98 Relations of the General Practitioner to Obstetric Surgery. R. Peterson, Ann Arbor, Mich.
- 99 *The Menopause: Analysis of 200 Cases. C. C. Norris, Philadelphia.
- 100 The Forceps Operation. E. McDonald, New York.
- 101 Enteroptosis. I. S. Stone, Washington, D. C.
- 102 Malpresentation or Malposition not the Cause, but the Symptom of Dystocia. C. A. von Ramdohr, New York.
- 103 *Malformation Identical in Both Arms. C. R. Stockard, New York.
- 104 Two Cases of Tubal Pregnancy. A. L. Smith, Montreal.
- 105 Colpoceliotomy and its Place in Pelvic Surgery. K. I. Sanes, Pittsburg.
- 106 *Extirpation of Upper Portion of Rectum and Sigmoid. T. B. Noble, Indianapolis.
- 107 Malignant Tumor of Undescended Testicle. O. G. Pfaff, Indianapolis.
- 108 Gangrene of the Gall-Bladder. M. A. Tate, Cincinnati.
- 109 Retrodeviations of the Uterus and their Medical and Surgical Treatment. G. K. Dickinson, Jersey City, N. J.
- 110 Operation for Cystocele that has Given Satisfactory Results. F. Reder, St. Louis, Mo.
- 111 Diabetes in Children. J. Rudisch, New York.
- 112 Diagnosis of Typhoid in Young Children. G. N. Acker, Washington, D. C.

99. **The Menopause.**—Of the 200 women forming the basis of Norris' paper, 136 were married at the time of the menopause; 30 were widows, and 34 were spinsters. The average age at which the menopause appeared among the married women was 48.99 years; among widows, 47.75 years, and 46.93 years among spinsters. The average duration of the menopause was 11.46 months. In 68 per cent, the menopause lasted between 10 and 12 months, and in but 5 per cent, of the cases did the menopause last more than 16 months.

The clinical lesson to be learned from this, says Norris, would seem to be that the menopause lasting more than one year is unusual, and that if this period be extended to 14 months it is so rare among normal women that a thorough physical and pelvic examination is indicated.

103. **Malformation Identical in Both Arms.**—Stockard describes this condition as follows: The upper arm appears normal until the elbow joint is reached, here an ankylosis or some unusual structure prevents the free movement of the forearm so that it remains in a flexed position and cannot be extended. A loose fold of skin extends for several centimeters between the upper arm and forearm, suggesting the patagium of a bird's wing. So far as a superficial examination can show, the forearm has only one bone, presumably the radius. The condition of the carpus bones cannot be determined though the narrowness of the wrist region would lead one to suppose that only one or two existed. One metacarpal and one two-jointed finger is all that represents the hand. This digit is probably a thumb, since two instead of three digital segments are present; it also approaches a thumb in size and possesses a wide flat nail. Thus, one of the forearm bones is absent and all of the hand except one metacarpal and the thumb. The point of particular interest is that both arms present exactly the same condition.

106. **Extirpation of the Rectum and Sigmoid.**—Noble reports four cases and emphasizes the advantages of the abdominal route over the sacral.

St. Paul Medical Journal

February

- 113 The Obstetric Forceps. F. Leavitt, St. Paul.
- 114 Etiology and Prophylaxis of Deafness. H. A. Beaudoux, St. Paul.
- 115 Circumcision. E. J. Abbott, St. Paul.
- 116 Prophylaxis of Venereal Disease. P. B. Cook, St. Paul.

University of Pennsylvania Medical Bulletin, Philadelphia

November

- 117 *The Custom of Delivering Inaugural Addresses: Discussion of Methods of Undergraduate Teaching in Different Countries. C. K. Mills, Philadelphia.
- 118 Intraperitoneal Hemorrhages From the Pelvic Organs in Women, Indistinguishable from the Hemorrhage of Extruterine Pregnancy. B. C. Hirst, Philadelphia.
- 119 *Special Features Concerning Multiple Neuritis. A. R. Allen, Philadelphia.

December.

- 120 *Relation of the Visual Field to the Investigation of Certain Psychoses and Neuroses. G. E. deSchweinitz, Philadelphia.
- 121 *Modifications in the Clinical Course of Typhoid Under the Influence of Menstruation and the Successive Menstrual Epochs; Treatment. A. Stengel, Philadelphia.
- 122 Purulent Meningitis Second to Pansinusitis: Operation; Recovery. W. G. Shields, W. G. Spiller and E. Martin, Philadelphia.
- 123 Investigations into Growth of Lymphosarcomata in Dogs. J. W. Hunter, G. M. Laws and L. Loeb, Philadelphia.

117. **Undergraduate Teachings in Different Countries.**—Mills concludes his address, which is well worth reading, as follows: In requirements for admission, Germany, France and England are still somewhat in advance of us, but this advance will be very little, if any, when our recently adopted requirements are in full action. In the matter of supervision and competition we could probably copy something from the French, in that of academic freedom, something from the Germans, especially as regards the last year or the last two years of the medical course. This should be not less than five years, a conclusion to which all thoughtful medical educators and students are coming. The fifth year, however, should be largely an elective one, although the degree could not be given until the end of this year, unless, indeed, we go back to our own original method and that which prevails to some extent at the present time in England, of first giving the degree of bachelor of medicine and after another year that of doctor of medicine. In conclusion, Mills says that good doctors and medical teachers and even great ones, have been produced by every method of medical instruction in vogue since and before the days of Stahl and Boerhaave. After all, the young man of good mentality and the right metal will find his way to the achievement of his ends under any method, although it is the duty of a school to make this the best possible.

119. **Multiple Neuritis.**—In reporting the history of seventeen cases, Allen deals with a few special features of multiple neuritis, to-wit: (a) Argyll-Robertson pupil; (b) involvement of cranial nerves; (c) involvement of the vagus; (d) changes in the upper motor neuron system; (e) involvement of the bladder and rectum; (f) muscular spasms; (g) inequality of the pupils.

In Case 1 the patient presented in life the appearance of tabes dorsalis. She had a perfectly developed Argyll-Robertson sign in both eyes. Examination of the spinal cord discovered no abnormality, but in the nerves and muscles the diagnosis of multiple neuritis was positive. This case, in Allen's opinion, makes the absence of the Argyll-Robertson symptom as a *sine qua non* in peripheral pseudotabes not tenable. In Case 10 the ophthalmologist reported a high-grade neuroretinitis without hemorrhage in both eyes. In Case 8, although there was no anesthesia in the distribution of the trifacial nerves, the points of exit of the supraorbital and infraorbital branches on each side were painful on pressure. Partial deafness was present in 3 cases.

In 3 cases the pulse varied between 110 and 140 a minute, with a temperature approximately normal. A number of the other patients had very rapid heart action, but it was either immediately before death or a high fever made it impossible for one to conclude that vagus involvement was the etiologic factor. In Case 11 there was present a moderately high fever of an irregular type—though tending to be up in the evening and down in the morning. In Cases 10, 12, 13 and 16, swollen axis cylinders were found in goodly number in the crossed pyramidal tracts of the spinal cord. In Case 14, there were found swollen axis cylinders not only in the crossed pyramidal tracts of the cord, but also in the motor pathway in the mid-olivary region of the medulla, and in the motor

cortex the large ganglion cells were involved in a pronounced axonal degeneration.

A true incontinence of bladder and rectum not due to a moribund state, apathetic or abnormal mental condition, and apparently consequent to a neuritis process, was present in two cases. The histologic examination of the cord was negative, with the exception of the axonal reaction in the anterior cornual cells, which is an effect of this neuritis and not a primary cord lesion. In one case, the incontinence came on 7 days before death; in the second case, 6 days elapsed before the end. In one case there was difficulty in starting the stream in micturition for three and a half months prior to death. Three presented incontinence of bladder and rectum for some time before death, yet the psychosis renders it unnecessary to exclude them from consideration. As to muscular spasm, or it might better be called motor irritation, in one case, twitching of muscles of the right lower limb began one month after the onset of the illness. This twitching was more than a fibrillary tremor, and looked like the jumping of entire muscles without producing the spontaneous movements of the limb spoken of by Remak and others. Very soon this muscular twitching gradually increased in extent and severity and in about 10 days from its onset had involved all 4 limbs and two abdominal recti. In another case, contractures of the lower limbs began to develop sufficient in severity to necessitate the use of splints. There was also tremor of the hands, and alcohol was the cause. In 3 cases Allen found a difference in the size of pupils. Alcohol was a factor in 2 of these cases.

120. The Visual Field and Psychoses and Neuroses.—According to de Schweinitz there is no form of visual field pathognomonic of neurasthenia, but, other things being equal, a typical fatigue field is an important member of the symptom complex of this disease. Perimetric examination, he says, has a certain value in the differential diagnosis of hysteria and neurasthenia, inasmuch as a typical fatigue field of any of the varieties already named is more likely to be found in pure neurasthenia than in hysteria, while a stable concentrically contracted and tubular field, with inversion of the color lines, is a strong indication of hysteria, but such a visual field is not diagnostic of this psychosis, as it may be produced by the other conditions already named. Fatigue phenomena of the visual field are not limited to the periphery, but may appear in its center, and are equally important from a diagnostic standpoint. Certain varieties of central exhaustion scotomas are with difficulty distinguished from other central scotomas, the result of mild or attenuated forms of retrobulbar neuritis; in both instances it is possible that the phenomena depend on an edema of the optic nerve axis near the foramen.

121. Typhoid Under Influence of Menstruation.—For a long time Stengel has recognized a modification of the course of typhoid by the menstrual periods, and has found that on this account diagnoses of various complications including perforation and relapse have been made when these conditions did not exist; and he has seen measures of treatment applied with equal vigor and futility because exceptional severity of infection was suspected and the real cause of the aggravation of symptoms was overlooked. He has found that in young women and especially in girls soon after the establishment of menstrual life, the onset of typhoid is often unusually severe when it coincides with a menstrual period. It is, perhaps most decided when the menses fail to appear owing to the onset of the fever; but in some instances very severe symptoms occur, though the flow is normally established or excessive. The onset of these cases is more abrupt than is usual in the disease, the temperature often reaching its maximum immediately and for several days the fever may maintain the grade of hyperpyrexia. Nervous symptoms are prominent. Coldness, shivering, extreme sensitiveness to cold and to hydrotherapeutic measures, pain in the lower part of the abdomen, and sometimes hysterical manifestations are among the conditions he has encountered. Attempts at controlling the fever by cold water often increase the difficulties and add enormously to the patient's suffering. In three cases referred to recurrence of temperature was observed at the time of the next period after the onset of the fever. In all

of the patients in whom active menstruation occurred at the onset of typhoid, and in whom the temperature was excessive, Stengel found that attempts at controlling temperature by cold water or other means have been only partially successful. When sponging or bathing has been used, the temperature has been uninfluenced, and, indeed, the nervous shock has sometimes caused increase of fever. The employment of cold in these cases should be carefully considered and often modified or discontinued. The nervous shock and reaction may be distinctly harmful. In some cases sponging or bathing in water of much higher temperature than that ordinarily used, may accomplish for these patients all that is obtained from colder bathing in other persons or in the same patients later when the effects of the menstrual period have passed off. If actual hyperpyrexia occurs, the fever itself may be dangerous, and in such cases, Stengel has found that the use of sedatives, followed by modified hydrotherapy, is usually satisfactory.

Cleveland Medical Journal

February

- 124 Modern Aspects of Experimental Diabetes. J. J. R. MacLeod, Cleveland.
- 125 Tests for Insanity in the Probate Court. F. Higley, Cleveland.
- 126 Id. C. H. Clark, Cleveland.
- 127 *Clinical Value of Carbon-Dioxid Snow, with Demonstration of New Ice Compression Mould. W. I. LeFevre, Cleveland.
- 128 Treatment of Labor in Contracted Pelvis. E. O. Houck, Cleveland.
- 129 *Vaccine Therapy in Chronic Otitis Media. P. A. Jacobs, Cleveland.
- 130 Suspension of the Uterus Followed by Two Normal Deliveries: Findings at a Subsequent Abdominal Section. H. Robb, Cleveland.
- 131 Coagulation of Blood (continued). W. H. Howell, Baltimore.

127. Carbon-Dioxid Snow.—The compression ice mould used by LeFevre consists of a triple-barreled screw syringe, the two inner tubes are of brass, perforated with fine holes and between the two is a layer of chamois skin. The other tube is of fiber; being a non-conductor it does not become very cold. The syringe is screwed directly to the valve of the tank and the plunger is set so as to hold as much snow as is desired. The rapid evaporation of the liquid carbon dioxide produces such an intense cold that the cylinder is soon filled with snow. This is then compressed into ice, taken out of the mould and applied directly to the part. In the compression the temperature is reduced and the ice becomes hard and dry so it can be fashioned into any shape with a penknife. A cone of the ice about one-half inch long will last about 15 minutes in the open air and for about 60 minutes if wrapped in chamois skin.

129. Vaccine Therapy in Otitis Media.—Jacobs resorted to vaccine therapy in six cases with the following results: cured, 2; improved, 4; unimproved, none; treatment discontinued, 1; still under treatment, 3. These patients had not improved under the usual treatment. The vaccines employed were prepared after the method used in Wright's laboratory.

Louisville Monthly Journal of Medicine and Surgery

February

- 132 Cancer of the Intestine. J. G. Sherrill, Louisville.
- 133 Id. L. Frank, Louisville.
- 134 Delivery of the Placenta. H. A. Cottell, Louisville.
- 135 Difficulties in Diagnosis of Mild Hookworm Infection. C. C. Bass, New Orleans.

American Journal of Urology, New York

February

- 136 Metal Drainage Tube for Continuous Bladder Irrigation after Perineal Section for Prostatectomy. Removal of Intravesical Growths or Stone. H. G. Hamer, Indianapolis.
- 137 Radical Operation for Tuberculosis of the Male Genital Organs. G. S. Whiteside, Portland, Ore.
- 138 Vesical Calculus Removed by Repeated Crushing. G. K. Swinburn, New York.
- 139 Retention of Urine. F. Weisz, Budapest.
- 140 Sexual Intercourse: A Physiologic Interpretation. L. Jacobl, New York.
- 141 *Rebellious Bacteriuria. J. T. Geraghty, Baltimore.

141. Rebellious Bacteriuria.—Bacteriuria when persistent, Geraghty claims, is always due to organisms of slight pathogenicity. Bacteriuria due to the *B. coli* produces an acid urine—when due to the *Staphylococcus albus* it may be alkaline and give rise to troublesome phosphaturia. It is secondary to some focus in the urinary tract or neighboring organs. It may persist indefinitely despite all treatment without producing any inflammatory reaction on the part of the vesical

mucosa. The results of vaccine therapy are entirely negative as far as the staphylococcus is concerned, but possibly of some value against a colon infection.

West Virginia Medical Journal, Wheeling

February

- 142 The Public and the Physician. C. S. Hoffman, Keyser.
- 143 Early Diagnosis of Gall-Stone Disease. J. E. Cannaday, Charleston.
- 144 Case of Gall-Stones. J. E. Reader, Huntington.
- 145 Differential Diagnosis of Gall-Stones. L. H. Foreman, Buckhannon.
- 146 Digitalin. H. H. Redfield, Chicago.

Albany Medical Annals

February

- 147 The Tuberculin Test as Applied to a City's Milk Supply. G. W. Goler, Rochester.
- 148 *Treatment of Puerperal Eclampsia. J. L. Archambault, Cohoes, N. Y.
- 149 Puerperal Insanity. J. M. Mosher, Albany.
- 150 Ante-partum and Post-partum Hemorrhage. H. J. Lipes, Albany.

148. **Treatment of Puerperal Eclampsia.**—Archambault favors the use of veratrum viride, which he says is far from receiving the attention and confidence it deserves. A point of prime importance in the use of veratrum viride is the dose and manner in which the drug should be given to obtain the best effects. The fluid extract should be preferred to the tincture, and the only logical way of administering it is hypodermically. It must be given in doses of from 20 to 30 minims. The dosage depends altogether on the rapidity of the heart action; with a pulse of 120 or above, nothing less than 25 minims should be given; a pulse of 100 calls for 20 drops, and with a pulse below 100 no less than 15 drops for the first dose. The maximum effect of the hypodermic injection requires about 30 minutes; this is manifested in the slowing of the pulse. If, within 30 minutes the slowing of the pulse has not been produced, the injection must be repeated in the same dose, and thereafter in gradually smaller and less frequent doses according to the effect received. To stop the convulsions the pulse must be slowed down to 60 or under, safer yet to 50, and kept there. The necessity for keeping the pulse below 60 is a point which cannot be insisted on too much. With a pulse below 60 there need be no fear of any more convulsions. Another point quite as essential is to keep the pulse below 60 for not less than 24 hours, repeating to that effect the hypodermics in doses of 5, 10 or 15 minims every time the pulse shows a tendency to rise above that rate. Except in cases of rather mild type or where the remedy yields an unusually lasting effect, the return of convulsions may have no other explanation than the too early cessation of the treatment.

Interstate Medical Journal, St. Louis

February

- 151 *Adrenal Therapy. C. E. deM. Sajous, Philadelphia.
- 152 Orchitic and Ovarian Therapy. G. Schmauch, Chicago.
- 153 *Taxis and Succussion—New Treatment for Intussusception. J. Zahorsky, St. Louis.

151. **Adrenal Therapy.**—The list of disorders in which Sajous has found adrenal preparations of great value in treatment are:

Addison's disease: In this condition adrenal preparations compensate for the deficiency of adrenal secretion, and therefore for deficient general oxidation, metabolism and nutrition. The dosage should be adjusted to the needs of each case. Beginning with 3 grains of the desiccated extract 3 times daily after meals, the dose should be gradually increased until the temperature and the blood pressure become normal, when the last dose should be maintained. Surgical heart-failure, collapse from hemorrhage, shock, asphyxia and submersion: Here the adrenal active principle (suprarenalin, adrenalin, etc.), as a catalyzer and a constituent of the hemoglobin, promotes energetically the intake of the oxygen and its utilization by the tissue cells, including the muscular elements of the cardiovascular system, and thus causes them to resume their vital activity. It should be very slowly administered intravenously, 5 minims of the 1 to 1,000 solution to the pint of warm (105 F.) saline solution. In urgent cases, 10 drops of suprarenalin or adrenalin in one dram of saline solution can be used instead, and repeated at intervals until the heart responds. Artificial respiration hastens its effects. The tox-

emias, including bacterial infections, surgical septicemias, etc., when collapse threatens, especially when a persistently low blood pressure, hypothermia and cyanosis, are present. Besides enhancing pulmonary and tissue respiration, the adrenal principle, administered in the same way, enhances the efficiency of the immunizing process.

Capillary hemorrhage from the pharyngeal, esophageal, gastric or intestinal mucous membrane: The mastication of tablets of adrenal substance in 5 grain capsules arrests the flow by causing active metabolism in the muscular elements of the arterioles of the mucosa and constriction of these vessels.

153. **Taxis and Succussion in Intussusception.**—The technic of the combined taxis and succussion method employed by Zahorsky is as follows: The patient is anesthetized with chloroform by an assistant. The abdomen is bared and a small pillow placed under the hips. The tumor is grasped through the abdominal wall and firmly compressed for a few moments in order to reduce the swelling to some extent, since it is the hyperemia and edema that prevent reduction. Then the thighs are flexed on the abdomen, the knees or legs grasped, and with a rapid up and down movement the lower part of the trunk is vigorously shaken for several seconds. Then the tumor is grasped again and compressed, then pushed against any part of the posterior abdominal wall, the fingers push, or strip, the intussusceptions out of the intussusceptum. The fingers at the same time should make a trembling motion which assists in the reduction. After a few moments of taxis the succussion is again resumed. The efforts of taxis and succussion follow each other alternately. The succussion method is very much assisted by the presence of some water in the transverse colon, which should be injected if reduction does not occur promptly. Zahorsky has successfully used this technic in two undoubted cases of intussusception.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal, London

February 19

- 1 The Cerebellum and its Affections. J. S. R. Russell.
- 2 *Effect of Bacterial Vaccines on Nutrition. L. C. Bruce.
- 3 Uses of Roentgen-Rays in Diagnosis and Treatment. J. Metcalfe.
- 4 Cases Illustrating Surgery of the Jejunum. E. R. Carling.
- 5 *Thyroidectomy. F. P. Sturm.
- 6 *Causes Determining Production and Distribution of Eruption in Typhoid. J. P. H. Greenhalgh.
- 7 Value of Ball's Operation for Pruritus Ani. P. Leighton.
- 8 *Use of Adrenalin in Acute Asthma. C. Matthews.
- 9 New Form of Mercury Sphygmometer. L. Hill.

2. **Bacterial Vaccines in Nutrition.**—The most common bodily disorder to be noticed in patients suffering from nervous diseases of the type of neurasthenia and the insanities, Bruce believes to be failure of nutrition; 90 per cent. of the sufferers from functional nervous disorders are thin and poorly nourished. Some of these patients actually die of starvation in the midst of plenty, while others linger on from year to year obstinately resistant to all forms of dietetic treatment. The subject of nutrition, therefore, is an important one for the physician. In maniacal states, Bruce found that the blood, as a rule, contains agglutinins to streptococci, which agglutinins are not often present in the blood of healthy persons. The streptococci which these patients agglutinated were obtained either from the blood, urine or feces. It occurred to him that it might be well worth while to try vaccine therapy in such cases if no improvement followed the usual methods of treatment. He made a polyvalent vaccine from 7 different varieties of streptococci and treated 11 cases of mania with injections of from 7,000,000 to 10,000,000 cocci, given at intervals of 2 weeks. Of these patients, 8 had been ill for over a year, and of the remaining 3, one was a recent admission, while the other 2 had been resident in the hospital for more than 3 months, without showing signs of improvement. Of the 8 chronic cases, 2 patients recovered, and of the 3 more recent cases, 2 patients also recovered. The fact, however, which most impressed him, was that the injections of vaccine apparently stimulated nutrition, as 8 out of these 11 individuals markedly increased in weight.

5. **Thyroidectomy.**—Sturm prolongs the ends of Kocher's "collar incision" upward for a couple of inches toward the angle of the jaw thus permitting the all-important superior thyroid vessels to be secured at an early stage. For his material he favors ordinary linen thread well boiled and stored in an alcoholic solution of phenol. Local anesthesia is employed.

6. **Causes of Eruption in Typhoid.**—Greenhalgh maintains that the inhibition of the vasoconstrictor and other nerves in the reflex zone in typhoid is due to the reflex incidence on them of specific impulses originating in the small intestine, mesenteric glands and spleen. The rose spots do not appear until the depression of the vasoconstrictor fibers has become well established and the specific agglutinins in the blood have become demonstrable by the Gruber-Widal reaction. As the arterioles relax, the blood pressure in the terminal capillaries becomes increased, and the circulation retarded. It is also possible that the endothelial cells of the capillaries being weakened by the depression in function of their intrinsic nerves, the increase in blood pressure brings about some passive dilatation. The influx of a greater volume of blood to the skin in the reflex zone brings a correspondingly greater number of bacilli to the cutaneous capillaries, where the sluggish flow of blood, and the impaired resistance of the endothelial cells, permit them to loiter in the capillary network. There they are joined by others; the agglomeration being due partly to the inherent tendency of the bacilli to compose themselves into groups whenever possible, but chiefly in the clumping power of the blood as the agglutinins come to be liberated therein. The assembly of bacilli thus formed sets up inflammation which becomes visible as the circular slightly raised rose spot, fading on pressure. Bacteriolysins continue the work begun by the agglutinins, and, in a little time, the assembled bacilli are devitalized, dispersed and disintegrated; the point of inflammation subsides and the rose spot fades.

8. **Adrenalin in Acute Asthma.**—Matthews has used adrenalin solution in thirteen cases of acute asthma; the results have been immediate relief, lasting for longer or shorter periods. In none of these patients has he observed any undesirable after-effects. The treatment consists of spraying into the nose a solution of adrenalin chlorid varying in strength from 1 to 1,000 to 1 to 4,000, according to the severity of the case.

Lancet, London

February 19

- 10 Control of Scarlet Fever. F. G. Crookshank.
- 11 *Surgical Treatment of Duodenal Ulcer. L. A. Bidwell.
- 12 *Results of Remineralization in Conditions of Faulty Metabolism such as Neurasthenia. H. Higgins.
- 13 Infantile Types of the Temporal Bone and their Surgical Importance. A. H. Cheate.
- 14 *Lymphatics of the Testicle. J. K. Jamieson and J. F. Dobson.
- 15 Perforative Peritonitis Originating in Pouches of the Large Intestine. G. Taylor and C. E. Lakin.
- 16 Spinal Meningitis Resembling Tumor of Spinal Cord; Laminectomy; Recovery. R. Roper.
- 17 Two Consecutive Perforations of a Peptic Jejunal Ulcer Following Gastrojejunostomy for a Perforated Gastric Ulcer. A. E. Maynard.
- 18 Rupture of the Uterus Treated by Suture of the Rent Through the Vagina and Drainage. H. J. Paterson.
- 19 The Circulatory System (continued). H. Campbell.

11. **Surgical Treatment of Duodenal Ulcer.**—It is explained by Bidwell that in cases of perforated ulcer the result depends almost entirely on the interval which has elapsed between the perforation and the operation. Patients operated on within six hours of perforation practically always recover, those operated on within twelve hours recover in most cases, and beyond this time the prognosis is doubtful. In cases of hemorrhage, the prognosis is always grave, as the condition is desperate, and although operation holds out a good hope of success, the mortality will always be from 10 to 15 per cent.

In operations for cicatricial contraction, the results are most successful, the mortality is practically nil, except in debilitated patients. In no class of stomach operation are the results so good, as the patients regain perfect health. In cases of ulcer without urgent symptoms, the mortality is slight and is confined to accidents such as pulmonary embolism, etc.; the permanent results are most satisfactory. Of

Bidwell's patients 85 per cent. are completely cured, and the remainder derived great benefit. In his earlier cases he had some trouble from vicious circle, but these were cured after an enteroanastomosis. He has also had two recurrences after simple gastroenterostomy; but he has not had any since he occluded the pylorus in addition to the gastroenterostomy.

12. **Remineralization in Faulty Metabolism.**—This paper is a continuation of Higgins' work on blood pressure, chlorin retention and dechlorination, hyperacidity and variations in the starch ration. He cites a number of cases in which his so-called remineralization treatment proved most effective. The study is most interesting, but too detailed for abstracting purposes.

14. **Lymphatics of the Testicle.**—Jamieson and Dobson found on dissection that the arrangement of the lymphatics of the testicle is such that the complete removal of the lymphatic area is exceedingly difficult and dangerous, if not impracticable. When the right testicle is diseased in some fortunate cases it may be feasible to secure all the primary glands if these happen to lie superficially on the vena cava to its outer side, and between it and the aorta. For this, the transperitoneal method appears to be preferable to the retroperitoneal exposure of Bland-Sutton. The operation appears to be feasible, and in a suitable case should be attempted, but it must not be regarded as a truly radical method, as in only a small proportion of cases will it be possible to secure all the primary glands. When the disease is on the left side the intimate relations of the glands to the inferior mesenteric vessels and the renal vessels, and the fact that many of them lie under the duodenum, appear to forbid even a partial operation.

Medical Press and Circular, London

February 16

- 20 Principles of Clinical Medicine. R. Lepine.
- 21 *The Leech in Medical Treatment. E. Weil.
- 22 The Science of Life. W. R. MacDermott.
- 23 Importance of Early Diagnosis of Tabes and Cerebrospinal Syphilis. T. A. Williams.

21. **Leech in Medical Treatment.**—The results of the application of leeches in human beings, according to Weil, determines fugitive, local acute hemophilia comparable, up to a certain point, with the constitutional hemophilia determined by the intravenous injection of extract of leeches in the rabbit. The bleeding after leech bites persists because the blood has been rendered locally uncoagulable. It thus differs clearly from bleeding by wet cupping, which is small in amount, and of brief duration and, therefore, has no observable effect on the coagulability. The application of leeches, determining as it does, steady, prolonged bleeding, is not associated with any constitutional disturbance. It consequently presents all the advantages of phlebotomy without its drawbacks and inconveniences. It need not be regarded askance because as a matter of fact the bites never become infected. Inasmuch as the amount of bleeding depends on the anticoagulating substance injected into the wounds, hemorrhage may occur just as readily in phlegmasia as in other patients. Like phlebotomy, the application of leeches will relieve congestion, cause dyspnea to subside, and lower the temperature. It may, therefore, take the place of phlebotomy, except in acute cases of uremia, acute edema of the lung, etc., in which the immediate withdrawal of a large quantity of blood is imperatively called for.

Clinical Journal, London

February 16

- 24 *Puerperal Eclampsia. G. E. Herman.
- 25 Etiology and General Pathology of Diseases of the Nervous System. J. S. Bury.
- 26 Treatment of Diseases of the Eye with Thyroid Extract. P. Dunn.

24. **Puerperal Eclampsia.**—At present, in cases of eclampsia seen early, Herman's opinion is that no better results have been obtained than those following the administration of morphin. For a patient with eclampsia who between the fits is restless and excitable, morphin is the best treatment. The drug should be used liberally, half a grain to begin with; if

the patient is not quiet within half an hour he gives another half grain. He gives the morphin in large doses, from half a grain up to two grains, or even more—enough to keep the patient quiet. In the Rotunda Hospital, Dublin, from 1889 to 1892 when the patients were not treated by morphin, the mortality was 35.3 per cent. From 1892 to 1905 they were treated by morphin. Seventy-one cases occurred during those years and the death rate was 16.9 per cent.—less than half what it had been before the treatment by morphin was introduced. Treatment by morphin is less troublesome than treatment by bleeding or by saline infusion.

The methods which Herman thinks are likely to give the best results are morphin with infusion of saline fluid. Bleeding should only be done if the tension of the pulse is high. If saline infusion is done, it should be by the method of Barnard, the fluid being allowed to run slowly into the cellular tissue and not quickly enough to form a painful swelling.

Journal of Obstetrics and Gynecology of British Empire, London

January

- 27 Primary Carcinoma of the Fallopian Tube. A. Doran.
- 28 Spread of Carcinoma by the Fallopian Tube. B. Glendining.
- 29 Primary Cancer of the Fallopian Tube. H. R. Spencer.
- 30 Primary Carcinoma of Fallopian Tube Associated with Acute Inflammation. W. Tate.
- 31 Carcinoma of Fallopian Tubes, Right Ovary and Appendix. W. Tate.
- 32 Malignant Papilloma of the Fallopian Tube. T. P. Legg.

Archives des Maladies du Cœur, etc., Paris

January, III, No. 1, pp. 1-64

- 33 Esophageal Pulsation in Man. (Etude critique de la pulsation oesophagienne chez l'homme.) A. Clerc and C. Esmein.
- 34 Prevailing Theories in regard to Blood Production. (L'hématopoïèse d'après les données actuelles.) J. Rieux.

Bulletin de l'Académie de Médecine, Paris

February 8, LXXIV, No. 5, pp. 113-136

- 35 *Discussion of Antityphoid Vaccination. A. Chantemesse, Landouzy and others.
- 36 Complement-Fixation Reaction a Reliable Test in Diagnosis of Tuberculosis. Marmorek and Widal.

35. This discussion of antityphoid vaccination was mentioned in the Paris Letter in THE JOURNAL, March 5, page 804.

Presse Médicale, Paris

February 9, XVIII, No. 12, pp. 97-104

- 37 Successful Vaccine Treatment of Colon Bacillus Infection of Urinary Passages. O. Wulff.
- 38 Present Accepted Division of Urinary Apparatus into Segments Incorrect. Proposed Segmentation Applicable to all Mammals. (Les segments du tube urinaire.) A. Policard.
- 39 Dosage of Epinephrin. (A quelles doses faut-il prescrire l'adrenaline?) A. Martinet.

February 12, No. 13, pp. 105-120

- 40 *Prophylaxis of Contagious Diseases: Disinfection. P. Desfosses and L. Lagane.
- 41 *Bacillus-Carriers and Prophylaxis of Typhoid Fever in the Army. (Les porteurs de germes et la prophylaxie.) G. H. Lemoine.
- 42 *Is it Safe to Drink Bottled Wine from the Inundated Wine Cellars? (Peut-on boire le vin des caves inondées?) H. Roger.
- 43 *The Seine Floods Have Had No Influence on the Frequency of Typhoid Fever in the Past. (Les crues de la Seine n'ont aucune influence sur la fréquence de la fièvre typhoïde.) J. Bertillon.

40. Prophylaxis of Transmissible Diseases.—Desfosses reviews each of the contagious diseases in turn, the mode of contagion and resistance of the virus, and then classifies them according as contagion occurs by way of the dejecta, the nasal and bronchial secretions, the skin and its secretions, the blood, or pus and soil containing spores. In discussing the preferable methods for disinfection during and after the disease, he declares that the active collaboration of the physician in charge of each case is necessary, the prophylaxis of transmissible disease being at present essentially medical.

41. Bacillus-Carriers and Prophylaxis of Typhoid in the Army.—Lemoine has had the blood examined in every case of febrile gastrointestinal disturbances and jaundice in his service at Val-de-Grâce during the last three years, and he found the typhoid bacillus in 40 per cent. of the cases although there was nothing otherwise at the time or later to suggest typhoid. This experience has convinced him that unsuspected abortive or occult forms of typhoid infection are much more common than is generally realized. This source of infection can be discovered only by systematic examination

of the blood in all febrile gastrointestinal disturbances. When the germs of typhoid or diphtheria are found in apparently healthy individuals examination will generally reveal some persisting sequels of the disease, responsible for the survival of virulent germs, and until these sequels are cured the patient should be regarded as comparatively dangerous. Lemoine is convinced that the majority of affections tending to production of gall-stones owe their inception to preceding typhoid infection. Unless healthy bacillus-carriers eliminate large numbers of typhoid bacilli he does not think that special measures need be taken against them.

42. Can Germs, etc., Penetrate Into a Corked Wine Bottle.—Roger replies to this question in the negative, relating experiments which demonstrated that germs are unable to enter a well-corked bottle. Even if the cork is defective the bactericidal action of wine promptly destroys entering germs, at least, he says, when they are not in larger numbers than in the Paris flood water.

43. No Recrudescence of Typhoid After Paris Floods in the Past.—Bertillon gives the statistics of the incidence of typhoid in the months following previous floods, showing that the proportion of cases was even less than usual. The recent flood occurred at a time when typhoid fever is fifteen times less prevalent than it was in the periods of the other floods. Another favorable factor is that in the present flood only one main sewer burst; the others bursting were merely the separate drains into the single buildings, and it is scarcely probable that the connected building contained a case of typhoid at the time. However, special measures have been taken for sterilization of buildings known to have recently harbored typhoid patients.

Semaine Médicale, Paris

February 16, XXX, No. 7, pp. 73-84

- 44 Advantages and Disadvantages of Surgical Treatment of Simple Fracture of the Long Bones. (Le traitement chirurgical des fractures diaphysaires fermées.) R. de Bovis.

Lyon Médical, Lyons

January 23, XLII, No. 4, pp. 141-196

- 45 Two Cases of Acquired Hemolytic Jaundice. (Ictères hémolytiques acquis.) A. Monisset, J. Chaliel and L. Nové-Josserand.
- 46 Impotence, Tardy Infantilism and Epilepsy, all Developing after Trauma Affecting the Testicles at the Age of 18½ Years. L. Gallavardin and J. Rebattu.

Archiv für klinische Chirurgie, Berlin

XCI, No. 2, pp. 245-542. Last indexed March 5, p. 824

- 47 *Surgical Treatment of Tuberculous Mesenteric and Bronchial Glands. H. Thiemann.
- 48 Rotation and Torsion of Spine in Reaction to Bending. (Rotation und Torsion der Wirbelsäule als Reaktion auf Verbiegung.) H. Sellheim.
- 49 Bilateral Cleft Hand and Foot with Partial Defect in the Pectoralis Muscles. (Beiderseitige Spaltfuss und Spalthand.) O. Orth.
- 50 *Operative Treatment of Injuries of the Lungs. (Lungenverletzungen.) E. v. Möller.
- 51 Malignant Granuloma. E. Fabian.
- 52 Contusions and Distorsions of the Spine and Their Consequences. (Klinische Studie über die Contusionen und Distorsionen der Wirbelsäule und ihre Folgezustände an der Hand von 56 Fällen eigener Beobachtung.) G. Müller.
- 53 *Bile Bronchus Fistula. (Gallen-Bronchus-Fistel; Laparotomie; Heilung.) O. Klauber.
- 54 Stasis Cyanosis from Compression of the Trunk. (Staseblutungen bei Compression der Brust und des Unterleibes.) A. Kock and H. Rönne.
- 55 *Peptic Ulcer of the Jejunum after Gastroenterostomy. P. H. van Roojen.
- 56 *Bacteriologic Importance for Aseptic Surgery of the Glands in the Skin and their Secretions. (Bakteriologische Bedeutung der Hautdrüsen und deren Sekrete bei der aseptischen Chirurgie.) L. C. P. Ritchie.
- 57 Surgery of the Blood Vessels. (Zur Gefässchirurgie.) Krüger. Continued.
- 58 Changes in Position of Stomach and Intestine from Anomalies in Early Embryonal Development. (Variationen der Lage des Magens und Darmes in Abhängigkeit von Abweichungen in der Entwicklung in frühester Keimperiode.) W. N. Sawin.
- 59 The Pseudodiphtheria Bacillus in Suppuration in Man. A. D. Pawlowski.
- 60 Technic for Interileo-Abdominal Exarticulation. Axhausen.
- 61 Free Fascia Flap to Close Gap in the Dura. (Zur Frage des plastischen Ersatzes der Dura mater.) M. Kirschner.

47. Operative Treatment of Glandular Tuberculosis.—Thiemann gives the particulars of 26 cases; in all but one the mesenteric glands were involved. In 9 cases the patients were adults but the syndrome was similar to that most com-

mon in children, while in 4 children the type was that of the adult form. The communication issues from Riedel's surgical service at Jena. In one case a bronchial gland was the one involved; he thinks that this is the first case on record of primary bronchial glandular tuberculosis with operative treatment. The lung was not involved and complete recovery followed. The patient was a young man and the cheesy and calcified bronchial gland was in the hilus of the lung; the fistula opened in the third intercostal space. Thiemann gives the details of 12 cases followed to date or with autopsy in 4 cases. The cures have been complete, the intervals since operation ranging from 1 to 13 years.

50. Operative Treatment of Injuries of the Lung. Möller reports 90 cases of injury of the lung including 48 gunshot wounds, 19 stab wounds and 23 contusions. Operative treatment in 64 cases saved all but 32.8 per cent. of the patients. Surgical intervention is indicated in cases of severe primary hemorrhage or persisting repeated hemorrhage, severe pneumothorax and emphysema in the cellular tissue and secondary pneumothorax.

53. Bile-Bronchus Fistula and Hydatid Disease.—Klauber reports a case in which expectoration of bile suddenly occurred ascribed to a gall-stone fistula. It ceased after cystostomy, but recurrence of obstruction in the bile ducts, two years later, led to cystectomy. The operation was nearly completed when the discovery was made of an echinococcus process in the liver which it was found had been the source of the trouble all the time, the passage of its products being responsible for the obstruction of the ducts. The soft mass which had been assumed to be a gall-stone must have been cyst-membranes, incised. In a second case the diagnosis of chronic cholecystitis from gall-stones was not confirmed by the laparotomy and recurrence of symptoms was followed by obstruction of the drain with echinococcus cyst products. In still another case a man of 52 had been treated for years on the assumption of gall-stones until the echinococcus cyst broke through into the chest. All the patients were cured by the operation, but in the first two cases chance alone disclosed the true nature of the lesion, unsuspected even when the abdomen had been opened.

55. Peptic Ulcer in the Jejunum After Gastroenterostomy.—Roojen gives the details of 12 cases of this kind that have been observed in Holland, including 4 from Rotjan's service. He also reviews 89 cases that have been published earlier. The lesion seems to be rare among the well-to-do, only one case each being known in a merchant, a physician, a lumberman and a journalist in the 27 cases in which the occupation is mentioned. In the cases with only vague local and general disturbances differentiation was impossible. Another group includes the cases in which perforation peritonitis developed sooner or later after the gastroenterostomy, but the most common form is that in which a chronic adhesive peritonitis induces the production of a tumor which in turn causes infiltration in the abdominal wall, generally in the left rectus abdominalis between the umbilicus and costal arch. The symptoms are mainly severe pain, persistent or spasmodic, generally located in the epigastrium. The attacks of pain do not coincide with the ingestion of food. The pain radiates toward the back and the region becomes tender. Sometimes the pain is relieved by moist heat and an ulcer diet. In 6 of the 41 cases in this group a fistula developed and in 3 there was merely an abscess. Sometimes the pain was more severe at night. Vomiting was a frequent symptom, as also signs of stenosis, but vomiting of blood was rare. In all these cases the ulcer developed after anterior gastroenterostomy. In 9 cases the adhesions were with the colon instead of the abdominal wall; sudden vomiting and diarrhea and sometimes colic are the first signs of trouble, and the patient rapidly loses weight. All but 10 patients were saved in the 51 cases of anterior gastroenterostomy, but 12 died in the 22 with posterior operation. All but 2 were saved of the 7 patients with perforation, while in the 8 non-operative cases the patients all died as also in 3 of the 8 cases of perforation into the colon. In the 42 cases of adhesion to the abdominal wall one patient died in the 7 non-operative cases and 4 in the 34 operative; there was recurrence in 13 in this group. Roojen

is convinced that the manipulation of the bowel during the gastroenterostomy is responsible for the ulceration later. Trauma and predisposition are undoubtedly the main factors, although hyperchlorhydria and lack of the normal moistening with bile and pancreatic juice evidently cooperate. The gastric juice has a destructive action when it reaches a raw surface, and consequently it is of the utmost importance in prophylaxis of peptic ulcer not to submit the bowel to any trauma. With extreme precautions in this line there has been no tendency to peptic ulcer in the last series of 49 gastroenterostomies. After the operation it must be borne in mind that the stomach is diseased, and antacid measures and careful dieting are imperative until the conditions are approximately normal once more.

56. The Sweat Glands and Aseptic Surgery.—Ritchie reports research which demonstrates, he thinks, that the outward current of sweat and sebum effectually prevents the penetration of bacteria into the pores and skin glands under normal conditions. Even in the hair follicles the bacteria do not penetrate so deep as to be beyond reach of ordinary mechanical sterilizing measures.

Berliner klinische Wochenschrift

January 31, XLVII, No. 5, pp 177-228

- 62 The Hufeland Centennial. (Aquea aus der Materia medica von Hufeland.) L. Brieger. (Hufeland's Anschauungen über die Scrophulose, nebst Randglossen.) O. Heubner.
- 63 *Peptic Ulcer in the Esophagus and Duodenum. C. A. Ewald.
- 64 *Pleuritic Dulness and the Paravertebral Triangle of Dulness. (Pleuritische Dämpfung und paravertebrales Dreieck.) A. Goldscheider.
- 65 *Increased Longevity. (Makrobiotik.) D. v. Hansemann.
- 66 *Appendicitis on Left Side. (Ueber Perityphilitis auf der linken Seite.) F. Karewski.
- 67 *Proposed "Black List" for Mishaps from New Drugs and Measures. (Zum "Nil nocere" in der Neurologie.) H. Oppenheim.
- 68 *Influenza and the Heart. (Grippe und Herz.) J. Ruhemann.
- 69 Idiopathic Renal Hemorrhage and Renal Hemophilia. (Ueber essentielle Nierenblutungen und renale Hämophilie.) H. Senator.
- 70 General and Clinical Importance of General Asthenia. (Ueber den Habitus asthenicus und seine klinische Bedeutung.) H. Strauss.

63. Peptic Ulcer in Esophagus and Duodenum.—Ewald reports 2 cases of peptic ulcer in the esophagus; one was before the era of esophagoscopy and gastrostomy was done to relieve stenosis above the cardia and also stenosis at the pylorus. The other patient was a man of 32 with violent pain in the lower third of the esophagus directly after eating, the pain radiating to the shoulders and down to the epigastrium. The esophagoscope revealed the extensive defect with a prominent edge and smooth red ground, the esophagus being spasmodically contracted below. There was no swelling of the glands or cachexia, or history of trauma—a trauma generally leaves a linear trace. The complete cure under treatment as for a gastric ulcer confirmed the non-malignant character of the lesion. Differentiation is more difficult with a peptic ulcer in the duodenum, but lesions outside the intestine can be excluded as the cause of the special symptoms when blood is found in the stool, especially invisible blood on a meat-free diet. Visible hemorrhage is extremely rare. His experience with Einhorn's bucket test was disappointing; it seemed as if the bucket were retained in the stomach by spasmodic closure of the pylorus. He remarks that no one yet has diagnosed a peptic ulcer in the duodenum with the Roentgen rays. In his experience duodenal ulcer is far less frequent than Moynihan and Mayo have found. In only 1 of the 662 cases of gastric or duodenal ulcer in his service at the Augusta hospital, Berlin, was the operation performed on the presumption of a duodenal ulcer. He thinks that the hunger pain which some accept as a sign of duodenal ulcer is more likely to be the result of hyperchlorhydria and traction on the duodenum from the filled stomach or from its peristaltic movements; it is merely one link in the chain of symptoms to be considered. Ewald protests further against operative intervention until after failure of internal measures, resting the diseased part as completely as possible while giving food with the largest possible proportion of calories that can be ingested without irritation. For this he gives the usual ulcer diet supplementing it with pure olive oil or frozen butter balls which the patient swallows like a pill. He gives the reports of two cases in detail.

64. **Pleuritic Dulness and Paravertebral Triangle.**—Goldscheider illustrates the findings with loud, moderate and extremely delicate percussion in pleurisy which reveals different thicknesses of the accumulation of effusion. He explains that the displacement of the whole mediastinum by the fluid is responsible for the paravertebral area of dulness.

65. **Increasing Longevity.**—This discussion of the ways and means and the social desirability of lengthening the present natural span of life concludes with a warning against the present efforts to reduce infant mortality as these efforts are directed to save all the infants possible, without regard to their future value to the race. The survival of the fittest, he declares, is promoted by the natural infantile mortality which is one of the most important factors for the longevity of the surviving individuals. Efforts, he states, should be directed in the line of fostering and aiding to the utmost all the infants who in and for themselves promise to be of use to the race later but are prevented by external circumstances from thriving as they should. The cripples and the defective in other ways are only a burdensome ballast for the human race, he declares.

66. **Appendicitis on the Left Side.**—Karewski has encountered appendicitis on the left side in 10 cases; the colon was movable and the appendix exceptionally long, reaching over to the left iliac fossa.

67. **A "Black List" for Mishaps from New Drugs and Measures.**—Oppenheim refers more especially to neurology, his proposition being to have placed before the profession the mishaps that occur with new remedies and measures so that the individual physician in the individual case may know the balance-sheet to date and know what chances he is taking when he decides to give the patient the possible chance offered by the new remedy or measure. Oppenheim cites a number of typical cases to show the possible dangers from lumbar puncture, urging that this is far from being always an insignificant intervention. In 2 cases withdrawal of 2 c.c. of cerebrospinal fluid was followed by almost total blindness. The trouble proved to be a chronic circumscribed serous meningitis which was cured by an incision into the cyst, but the amaurosis still persists to date although not quite so complete as at first. In one case paralysis developed immediately after lumbar puncture the fourth day of acute poliomyelitis. In another case a fibroma was successfully removed from the spinal canal, but, before this, lumbar puncture had been done and immediately paralysis had followed. He also reports 2 cases of facial or peroneal paralysis after deep injections of alcohol for trigeminal or sciatic neuralgia, and refers to the cases of blindness from administration of atoxyl or arsacetin. He cites 4 cases of blindness from the latter and adds one from his own experience to the list. How to be protected against such mishaps with new remedies and measures is a subject that needs most careful study, and he suggests that possibly something might be accomplished if the medical weeklies and therapeutic journals would carry a special "black list" of such occurrences, reporting them in heavy type under a special heading, publishing them as early as possible and omitting none.

68. **Influenza and the Heart.**—Ruhemann calls attention to a form of influenza in which the entire syndrome seems to be restricted to the heart; this is especially liable when the heart is already defective. In many cases the heart affection may be causing no trouble until an attack of influenza or even influenza in the environment without appreciable personal symptoms may bring on a catastrophe. In one of the cases described, an apparently mild attack of influenza affecting the stomach was followed by a toxic paralysis of the previously well-compensated heart. He is convinced that possibly unsuspected influenza is responsible for many cases of idiopathic heart disease and sudden death for which no other cause can be discovered.

Deutsche medizinische Wochenschrift, Berlin

February 10, XXXVI, No. 6, pp. 249-296

71 *Tendency to Moral Insanity in Children. (Krankhafte moralische Abartung im Kindesalter.) G. Anton.

72 *Water in Treatment of Obesity. (Ueber den Wasserhaushalt bei Entfettungskuren.) E. Reiss and M. Meyer.

73 *The Blood in Exophthalmic Goiter. (Blutuntersuchungen bei Morbus Basedowii.) N. Roth.

74 *Treatment of Laryngeal Tuberculosis with Deep Roentgen-Ray Exposures. (Behandlung der Kehlkopftuberkulose mit Röntgenstrahlen: Tiefenbestrahlung.) M. Wilms.

75 *Epicondylitis of the Humerus. (Periostitis am epicondylus humeri.) Momburg.

76 Relative Lymphocytosis as Sign of Pseudoleucemia. (Wert des Pankusschen Zeichens, ein Beitrag zur hämatologischen Diagnostik.) E. Fabian.

77 *A Few Whiffs of Chloroform plus Suggestion in Operative Gynecology. (Suggestivnarkose: eine neue Anwendungsform der Suggestion in der gynäkologischen Praxis.) B. Hallauer.

78 Optic Atrophy under Arsacetin. (Zur Beurteilung des Arsacetins—Ehrlich—und seiner Einwirkung auf den Sehnerven.) F. Hammes.

79 Tuberculous Pyopneumothorax Cured by Resection of Second to Eleventh Ribs. (Pyopneumothorax tuberculosus ambulans von vierjähriger Dauer.) P. Bull.

80 Dietetic Treatment of the "Exudative Diathesis." A. Schütz.

81 *Sun-Blindness. W. Feilchenfeld.

82 *Method of Relieving Overlapping Toe. (Redressement sieh deckender oder gekrümmter Zehen.) A. Heermann.

71. **Moral Insanity in Children.**—Anton defines this as an abnormal lack of the higher emotions and of sympathy, morbid impulsiveness with unchecked yielding to impulse, an urgent longing to do forbidden things and exaggerated susceptibility to suggestion, especially from others of the same type. There may be, however, islands of intact reasoning and sentiments. The mild forms of catatonia also present these characteristics, as a rule, and this disease often should be classed with moral insanity. It is established beyond question, he asserts, that disease processes and anomalies in development may induce aberrations in the moral sphere alone and govern behavior accordingly. The moral perversity may develop in early childhood or at puberty or as a senile change; it is generally but not invariably permanent.

72. **The Fluctuations in the Water Content of the Body During Treatment of Obesity.**—Reiss gives the metabolic findings in a woman being treated to reduce obesity. Restriction to an exclusive milk diet caused great losses of water from the body, even when the patient drank water abundantly. When she was put on the Rosenfeld potato diet, water was retained in the body, notwithstanding that the amount ingested was reduced. On the milk alone there is comparatively no intake of salt, and water is eliminated freely, but on the potato diet, with some salt, water is retained to maintain the osmotic balance. If salt is added to the milk diet and no salt given with the potato diet, the conditions are reversed. Of course the ingestion of salt is not the only factor influencing retention of water, but it is the most striking and easily influenced one.

73. **Blood Findings in Exophthalmic Goiter.**—Roth remarks that the characteristic changes in the blood early in this disease are important for differentiation of the incipient and abortive cases. The proportion of hemoglobin is abnormally low, the number of reds normal or above while the number of whites is below normal. There are also lymphocytosis and mononucleosis.

74. **Roentgen-Ray Treatment of Laryngeal and Surgical Tuberculosis.**—Wilms reports a case of this kind which confirms the effectual action of deep Roentgen exposures in treatment of laryngeal tuberculosis, as he has already demonstrated for tuberculosis of bones and joints. During the last year and a half he has found this treatment all that was necessary for tuberculous processes in the fingers, hand, elbow, foot and ankle, in adults, dispensing entirely with curetting and resections. Tuberculosis of tendon sheaths in the elderly reacts promptly to the deep exposures. No injury of the skin from the rays has been observed with 100 exposures. The deep action is obtained by interposition of aluminum. He excludes children from this treatment if there is a possibility of injury of the epiphyses. As a rule he gives one full Sabouraud dose, the sitting being an hour long, repeated every three weeks. In the case of laryngeal tuberculosis reported the lesion healed completely after two sittings.

75. **Epicondylitis of the Humerus.**—Momburg has encountered 17 cases during the last year, 9 being in women; a traumatic factor was evident in every case. He does not agree with Franke's theory that the trouble is a nervous-muscular disturbance, but thinks that localized periostitis is responsible, probably the result of direct injury or muscular traction. The affection is similar to the "overuse periostitis" in

the legs from which soldiers are liable to suffer. Complete rest for the arm after the region has been painted with iodine has given the best results in his experience.

77. General Anesthesia by Suggestion in Gynecology.—Hallauer's method of combining suggestion with a minute amount of chloroform to induce general anesthesia was mentioned in these columns May 23, 1908, page 1760. He here describes extended use of the method in minor gynecologic operations and examinations, reporting good results. The idea is to combine a sham anesthesia technic with suggestion of painlessness and muscular relaxation, the patient believing that she is under the influence of the chloroform. The muscles may relax as in profound inhalation anesthesia, and childbirth be painless. In combination with spinal or local anesthesia mere suggestion may induce drowsiness and amnesia, and it may thus be useful, he asserts, as a preliminary to ordinary anesthesia. The combined sham narcosis and suggestion allows the patient to be influenced beyond what is possible under other conditions. The organic affection cannot be influenced, but the psychic reflection of the disturbance, the effect on the appetite and sleep, the dread of loss of earning power, etc., can be influenced by the suggestion and in many cases these are the factors that cause most of the trouble. He has cured of all their symptoms a number of patients with one or three sittings after they had been treated for years by competent gynecologists by all other means for chronic inflammatory changes in the pelvic organs. In other cases marked improvement was realized. The method is particularly useful, he says, when the diagnosis wavers between an organic and hysterical affection. The principal indications for it are functional disturbances in the sexual sphere, certain cases of vomiting of pregnancy and dysmenorrhea. The by-effects in hysterical women are sometimes disturbing, but in the healthy there are merely some drowsiness, oppression in the head and, in a few cases, slight vomiting. The vomiting was observed only in women who had taken chloroform before, and may have been due to autosuggestion.

81. Air-Ships and Sun-Blindness.—Feilenfeld reports several cases of pain and scotoma in the eyes caused by the patients watching for hours the movements of an air-ship. In another case severe sun-blindness followed the application of the chemical rays from direct sunlight concentrated through a blue lens on a tooth which a dentist was trying to bleach. The exposure lasted for three hours and the patient had to center the rays from time to time himself, looking through the lens at the sun.

82. Correction of Over-lying Toes.—Heermann states that a strip of lead foil, cut to fit over the over-lapping toe and then carried around beneath and up over the outside of the toe on each side, is a simple, efficient and durable means for the purpose, causing no inconveniences. A strip of adhesive plaster may be used to hold the whole in place.

Fortschritte der Medizin, Leipsic

January 27, XXVIII, No. 4, pp. 97-128

83 Encephalitis in Children. R. Flachs.

February 3, No. 5, pp. 129-160

84 Treatment of Acute Otitis Media. (Behandlung der akuten Mittelohrentzündung.) A. Hartmann. Commenced in No. 4.

Jahrbuch für Kinderheilkunde, Berlin

February, LXXI, No. 2, pp. 123-248

85 Exanthem Elicited by Trauma in Children during Recovery from Scarlet Fever. (Erythema postscarlatinosum.) B. Schick.

86 Pernicious Anemia and Extramedullary Production of Blood in Infants. G. Koch.

87 Colles' Law and Seroreaction in Syphilis. (Das Collesche Gesetz und die neuen Syphilisforschungen.) W. Knöpfelmacher and H. Lehndorff.

88 Normal and Abnormal Development of Children. A. MacDonald (Washington, D. C.).

89 Serotherapy of Scarlet Fever. (Einfluss des Moserschen Serums auf den Verlauf und die Mortalität des Scharlachs.) S. J. Fedlinski. Commenced in No. 1.

Medizinische Klinik, Berlin

February 6, VII, No. 6, pp. 207-248

90 Pain in the Ear. (Schmerzempfindungen im Bereiche des Gehörorgans.) E. Urbantschitsch.

91 Antitryptic Substances in Syphilis. (Antitryptische Stoffe bei Syphilis.) G. Stumpke.

92 Abnormalities of the Foot of the New-Born Infant and Treatment, especially by Massage. (Der Fuss des Neugeborenen und seine Behandlung.) K. Lengsfelder.

93 Heredity from Standpoint of Modern Science. (Die Deszendenzlehre in der modernen Geologie.) F. Frech. Commenced in No. 1.

Mitteilungen aus den Grenzgebieten der Med. und Chir., Jena

XVI, No. 2, pp. 181-376. Last indexed March 5, p. 826

94 *Technic for Direct Gastroscope and Findings Therewith. (Die Untersuchung des Magens mit dem Magenspiegel.) K. Loening and A. Stieda

95 *Technic and Dangers of Physiologic Saline Infusion. (Studie über die Infusion physiologischer Salzlösungen.) A. Thies.

96 *Phloridzin Tests of Kidney Functioning. (Experimentelle Beiträge zur Phloridzinfrage in der funktionellen Nierendiagnostik.) A. Salomon.

97 *Systematic Tapping in Treatment of Hydrocephalus in Children. (Behandlung des Hydrocephalus mit konsequenter Punktion.) W. Kansch.

98 Iron Metabolism after Splenectomy. (Beitrag zur Lehre von den Funktionen der Milz.) R. Bayer

99 Migrating Thrombophlebitis of Superficial Veins with Obliterating Thromboangitis. (Thrombophlebitis migrans der oberflächlichen Venen bei Thromboangitis obliterans.) L. Buerger (New York).

94. Improved Technic for Gastroscope.—Loening and Stieda present some gastroscope pictures which they think far surpass anything of the kind yet taken. The gastroscope they use is built on the principle that the esophagus can stretch laterally, and consequently an oval tube can contain the optic part leaving plenty of room on each side for the wires, etc. The tube is made stiff half way down and flexible the rest of the way; it is introduced with the patient lying on the right side with the head horizontal, supported by a bolster under the neck. The whole procedure, they say, is scarcely more disagreeable than an ordinary lavage of the stomach, the broad, comparatively flat, scabbard-shaped tube slipping in with comparative ease. Out of their extensive research and experience with this gastroscope they give the details of a few cases of various lesions in the stomach with the pictured findings.

95. Dangers of and Improved Technic for Saline Infusion.—Thies presents an array of arguments and facts to sustain his assertion that under certain circumstances saline infusion as generally done may prove directly dangerous. The danger is the greater, the more the alkaline metals in the cell are substituted by the sodium chlorid. Potassium and calcium salts are those most directly essential for the vital functioning of the cell, and hence in infusion, he declares, it is necessary to prevent these salts being crowded out by an excessive proportion of sodium chlorid. The three salts should be given together, he says, and in proportions corresponding to those in normal tissues, that is, about 0.6 per cent. sodium chlorid, 0.02 per cent. calcium chlorid and 0.02 per cent. potassium chlorid. This solution is a little hypotonic in respect to the blood serum, but this is counterbalanced by the absence of the dangers liable with an exclusively sodium chlorid solution. If it is desired to make the solution isotonic, as may be desirable when given subcutaneously, he advises increasing each salt proportionately, that is, 0.85 per cent. sodium chlorid and 0.03 per cent. each of the calcium and the potassium chlorid. Continuous rectal infusion he regards as the best way to introduce the artificial serum. Pure sodium chlorid solution (0.9 per cent.) must not be infused indiscriminately, especially not for small children, with affections in which there is considerable elimination of salt, in inanition from stenosis or other cause, in cachexia and in affections accompanied by changes in the kidneys, heart and vascular system. It is also dangerous in conditions in which there is retention of sodium chlorid or increased elimination of other salts, hence, in all febrile affections. Pure sodium chlorid solution should also be avoided when large amounts are to be infused. When the above mixture of several salts is given, the elimination of water and salts proceeds proportionately parallel. Pure salt solution often fails to induce diuresis in cholemic conditions, probably owing to toxic injury of the kidneys from the circulating bile in the circulation.

96. Functional Kidney Tests.—Both the phloridzin and indigo-carmin tests reveal merely the momentary functional condition of the kidneys, not the actual absolute functional capacity. The former especially may lead to erroneous con-

clusions, Salomon declares, and the other is not much more reliable; its superiority lies in the fact that it indicates more exactly the special anatomic lesion. He experimented on dogs, studying conditions by means of an opening into the bladder, the bladder mucosa being sutured to the skin in a funnel-shaped fistula, exposing the mouth of the ureter. Part of the connected kidney was then resected.

97. Systematic Repeated Puncture in Hydrocephalus.—Kausch commends anew systematic, repeated puncture of the ventricles in hydrocephalus in young infants and reports 2 cases. The benefit was striking in each, he states, and no infection followed. In the first case, in a five-months infant, he withdrew 3,035 c.c. in 13 punctures in the course of 44 days, the circumference of the head being reduced from 52.5 to 45.7 cm., the exophthalmos, choked disc and the incipient atrophy of the papilla subsiding. The infant then succumbed to an intercurrent enteritis. Autopsy revealed changes in the meninges, relics of an acute meningitis at the age of two months, and responsible for the hydrocephalus, there being no communication between the spinal and cerebral fluid. He thinks that systematic tapping is more effectual and much less serious for the child than the operations that have been proposed for hydrocephalus. The pressure in the fluid before and after the puncture should always be recorded, and the puncture should be repeated whenever there is a high positive pressure, if necessary every day, until the skull returns to normal size. With negative pressure, compression should be applied, but this should be avoided when the bones of the skull are closing up. Complete recovery followed in a case of meningitis in a young man after a gunshot wound; 295 c.c. of fluid were withdrawn in four punctures in the course of sixteen days.

Monatsschrift für Kinderheilkunde, Berlin

December, VIII, No. 9, pp. 513-584

- 100 *Experimentally Induced Secretion of Milk. (Ueber experimentelle Auslösung von Milchabsonderung.) K. Basch.
- 101 Pyloric Stenosis in Infants. (Ueber spastische Pyloruskontraktur der Säuglinge und angeborene Pylorusstenose, bezw. Pylorusenge.) W. Wernstedt.
- 102 *Children's Diseases and Tuberculous Family Taint. (Ueber Kinderkrankheiten mit bes. Beziehung zur familiären Belastung durch Tuberkulose.) G. A. Dotti.

100. Experimentally Induced Secretion of Milk.—Basch reports experimental research which has shown that the specific functioning of the breasts is independent of the nervous system; lacteal glands transplanted into the back of the animal secreted colostrum when the animal east its young. With extracts of placenta and gravid ovary he has been able to elicit a secretion of milk in animals and in a few clinical cases.

102. Children's Diseases and Tuberculous Family Taint.—Dotti found a tuberculous family taint in 73 per cent. of the cases of pulmonary tuberculosis among 8,739 children at the Florence hospital: 62 per cent. in the peritoneal form and 52 per cent. in the form of chronic bronchitis. The influence of the tuberculous taint was also evident in other affections: in 50 per cent. of the tonsillitis cases; over 60 per cent. in Pott's disease and osteomyelitis and in 38.7 per cent. in the cases with adenoids. His table, he says, confirms the fact that in the morbidity of children those affections are most frequently encountered which are connected with a family tuberculous taint. He regards contagion from the environment as responsible for this, much more than heredity.

Münchener medizinische Wochenschrift

February 8, LVII, No. 6, pp. 281-336

- 103 *Tonsillectomy in Treatment of Rheumatism and other Infections. (Die tonsilläre Behandlung der sogenannten rheumatischen Erkrankungen.) P. Schichold. (Beziehungen entzündlicher Mandelaffektionen zu Infektionskrankheiten.) H. Curschmann.
- 104 *Transverse Tracheotomy. O. Franck.
- 105 Advantages of Iodin Sterilization of the Skin. (Wert der Jodpinselung zur Desinfektion der Haut vor Operationen.) F. R. Brewitt. (Erfolge mit der ausschliesslichen Alkoholdesinfektion und der Jodtinkturdesinfektion.) Nast-Kolb.
- 106 Inheritance of Biochemical Structure and its Medicolegal Importance. E. v. Dungern.
- 107 Indifferent Results with Spengler's I. K. in Treatment of Pulmonary Tuberculosis. (Mitteilung über die Behandlung der Lungentuberkulose mit "I. K." Spengler.) M. Roth.
- 108 Tuberculin Treatment of Pulmonary Tuberculosis. (Zur spezifischen Therapie der Lungentuberkulose.) G. Richter.

- 109 Behavior of Animal Charcoal in respect to Lesions Caused by *Bacillus pyocyaneus*. (Verhalten der Tierkohle zum *Bacillus pyocyaneus* im Ohreiter und zu granulierenden Knochenwunden.) O. Muck.
- 110 Technic for Instillation into the Eyes. (Augeneinträufelungen: Winke für den Nichtspezialisten.) Wolffberg.
- 111 Indications for Extraperitoneal Cesarean Section. (Zur Indikationsstellung des extraperitonealen Kaiserschnittes.) C. Knoop.
- 112 Two Cases of Gunshot Wound of the Subclavian and Brachial Arteries. (Schnssverletzungen der Art. subclavia und brachialis.) H. Luxembourg.
- 113 *Technic of Tamponing for Post-Partum Hemorrhage. E. Schwarzenbach.
- 114 Advantages of Potassium Permanganate in Treatment of Suppurating Processes. (Kalium hyperm. cryst. als gewebezerstörendes Mittel.) R. Blumm.

103. Tonsillectomy in Treatment of Acute and Chronic Rheumatism.—Gürich and Schichold have found suppuration in the tonsils almost a constant accompaniment of rheumatic affections. Gürich not only found the pus but by tonsillectomy succeeded in curing 98 out of 125 patients with articular rheumatism; the outcome is not known in 15 of the other cases. Schichold's experience has been equally decisive in a series of 70 cases; the pus was accumulated in actually measurable amounts in a number of individuals. An important point in these experiences is that in nearly every case the patients had never been aware of the tonsillitis and the discovery of pus was a surprise. The tonsils were apparently normal on casual inspection; not until the anterior pillars of the fauces were drawn aside was anything abnormal discovered, but then the pus exuded on the slightest pressure. The process in the tonsils these writers regard as responsible for the development of toxins that maintain the acute or chronic rheumatic pains. The only effectual treatment, they assert, is to remove the tonsil, leaving merely its flat base. The rapid and permanent subsidence of the pains confirms the etiologic connection of the follicular tonsillitis with the rheumatism. It is important at the same time to see that the teeth are put in good order. Schichold advises prompt tonsillectomy at the first attack of acute articular rheumatism. He has observed a number of instances in which an apparently mild attack was followed by the graver forms of heart disease. The germs responsible for many cases of articular rheumatism nest in the tonsil pus and pass thence into the blood. Canterization or slitting the tonsil does not clear out all the foei, but its removal puts an end to trouble from this source. Other diseases besides rheumatism may be amenable to the same treatment. Curschmann has been teaching for twenty years the connection between follicular tonsillitis and nephritis, the latter resulting probably from the action of toxins generated in the tonsils. He preaches that tonsillectomy is the logical treatment.

104. Transverse Tracheotomy.—Franck gives an illustrated report of several cases of tracheotomy done with a transverse incision. It has a number of advantages over the longitudinal, he asserts; the wound gapes spontaneously after the transverse incision, immediate healing is more perfect and the scar blends into the folds of the skin in the neck.

113. Treatment of Postpartum Hemorrhage.—The tamponing is done through a wide cone-shaped speculum in one piece which prevents any contact of the gauze with the vulva or the walls of the vagina. The cervix is drawn down with special forceps, each blade being in the form of a hollow square.

Virchows Archiv, Berlin

February, CXCIX, No. 2, pp. 193-384

- 115 Relation between Coronary Arteries and the Papillary Muscles in the Heart. (Beziehungen zwischen Koronararterien und Papillarmuskeln im Herzen.) R. Amenomiya. Commenced in No. 1.
- 116 Case of Arteritis Nodosa. H. Beitzke.
- 117 Changes in Rabbit Aorta under Influence of Mercury, Lead and Zinc Salts Injected into a Vein in the Ear. (Veränderungen der Aorta bei Kaninchen unter dem Einflusse der Einführung von Quecksilber-, Blei- und Zinksalzen in die Ohrvenen.) P. Philosophow.

Wiener klinische Wochenschrift, Vienna

February 10, XXIII, No. 6, pp. 191-232

- 118 *Diagnosis and Treatment of Exophthalmic Goiter. (Morbus Basedowii.) F. Chvostek.
- 119 Influencing of Elastic Fibers by Tuberculosis. (Zur Frage der Beeinflussung des elastischen Gewebes durch Tuberkulose.) M. Oppenheim.

- 120 Modified Technic for Stovain Spinal Anesthesia. (Ein neues Verfahren bei Anästhesien durch Rachistovainisierung.) A. Poenaru.
- 121 Advantages of a Little Chloroform to Attenuate Pain with Normal Delivery. (Schmerzinderung bei normalen Entbindungen.) J. Eisenberg.
- 122 *First-Aid in Electric Accidents. (Kasnistischer Beitrag zur Elektropathologie.) S. Jellinek.
- 123 Whooping during Expiration as Early Sign of Tuberculosis of Pulmonary Glands. J. K. Friedjung.

118. **Diagnosis and Treatment of Exophthalmic Goiter.** Chvostek declares that nothing explains so well the Basedow syndrome as the assumption of functional disturbance in the thyroid. He has observed an abortive Basedow syndrome accompanying chlorosis and subsiding with the latter. In other cases tachycardia, tremor, a tendency to sweating and nervous irritability accompanying the chlorosis were probably merely the expression of the effects of the anemia in a neurotic subject. Similar syndromes are observed during the menopause, being the expression of changes in the circulation and nervous system—not true exophthalmic goiter. Cardiovascular neuroses may also be mistaken for the Basedow syndrome. The difference in the pulse, standing and reclining, is abnormally great; such cases, he says, should not be confounded with true exophthalmic goiter, not even if goiter develops or a tendency to protrusion of the eyeballs is manifest. The anamnesis, the variability of the cardiac phenomena and the irritability of the heart exclude exophthalmic goiter, as also the lack of changes in the heart itself. Lead poisoning may also simulate the Basedow syndrome, and certain cases of cholelithiasis present symptoms on the part of the heart deceptively simulating functional or organic heart disease. He knows of instances in which exophthalmic goiter had been diagnosed under these conditions, but thyroid functioning had nothing to do with them. In a recent case a patient with apparently typical exophthalmic goiter showed no improvement under the usual measures. The discovery of large proportions of fat in the stools and an abnormal appetite suggested some disturbance in the pancreas, and under pancreas organotherapy the entire syndrome rapidly changed for the better, the patients soon regaining full earning capacity. The improvement continued as long as the administration of pancreas extract was continued, but the symptoms returned when it was suspended; they were again banished by resumption of the pancreas extract. It is a question in this case whether the thyroid or the pancreas is primarily affected. Patience, rest, change of environment and especially a trip to the mountains have proved the main reliance in his experience with treatment of exophthalmic goiter, supplemented by gentle hydrotherapeutic measures. He has never derived any benefit from drugs in exophthalmic goiter; heart tonics generally aggravate the symptoms. Weeks, months or more may be required before satisfactory benefit is realized, but he has always accomplished it in time, and has never had to recommend operative intervention, although he admits that this is justified when internal measures fail or there is compression of the trachea or a long course of treatment is impossible or when the patient demands strumectomy on account of the disfigurement. In the cases in which the Basedow syndrome is only indirectly induced, an operation on the thyroid would do no good. He has never observed better results from Roentgen-ray treatment than have been attained with mere galvanization alone.

122. **First Aid in Electric Accidents.**—Jellinek reports several cases of electric accidents, calling attention especially to one case in which the victim was unable to release his hands from the live wire over his head as he stood on a cellar floor. Those who came to his assistance unwittingly did the right thing as, in order to release his hands, they lifted him up, thus breaking the connection with the ground.

Zeitschrift für Urologie, Berlin

February, IV, No. 2, pp. 81-160

- 124 *Suprarenal Tumor with Punctate Pigmentation. (Zur Klinik der Nebennierengeschwülste.) C. Adrian.
- 125 Syndrome Induced by Sponge Perforating into Bladder. (Symptomatischer Nachweis eines in die Blase durchgebrochenen Gazetupfers.) K. Roerig.
- 126 Cystoscope with Adaptable Interposed Lenses. (Neue Kystoskope.) O. Klingeb.
- 127 Technic of Application of Actual Caustery during Irrigation Urethroscopy. Kroppeit.

124. **Suprarenal Carcinoma.**—Adrian has found records of punctate pigmentation, as in the case of suprarenal cancer described, in a number of cases of primary tuberculous processes in the suprarenals, cancer, simple hyperplasia, and also with hypernephroma. The punctate pigmentation may accompany diffuse brownish discoloration and be associated with other symptoms of Addison's disease. It seems reasonable, therefore, to class this punctate pigmentation with diffuse bronzing. None of the symptoms of Addison's disease is observed with kidney tumors except those of the hypernephroma type, thus confirming their connection with the suprarenal cell tissue. Some of the recent literature on suprarenal tumors is reviewed.

Zentralblatt für Chirurgie, Leipsic

February 5, XXXVII, No. 6, pp. 193-233

- 128 *Long Operations under Primary Ether Anesthesia. (Langdauernder Aetherrausch.) L. Moszkowicz.
- 129 *To Hasten Healing of Fistulas into the Bladder. (Behandlung der Blasenfistel.) R. Burmeister.

February 12, No. 7, pp. 233-272

- 130 *Intravenous General Anesthesia. (Zur Frage der intravenösen Narkose.) H. Küttner.

128. **Prolonged Primary Anesthesia.**—Moszkowicz states that he has succeeded in prolonging to an hour or more the stage of incomplete anesthesia in which sensibility is abolished but the patient is still able to respond to questions, give his name and look around, the condition resembling that of a tipsy man to such an extent that the general term for it in Germany is the "ether drunk," *Aetherrausch*. The anesthetist has to keep the patient in this befuddled condition while not allowing him to sink into the stage of actual deep anesthesia. Moszkowicz has performed major operations on the legs, abdomen, etc., with this anesthesia, the patients lying quiet, babbling unintelligibly and moving their heads, but otherwise not interfering with the progress of the operation.

129. **Treatment of Fistula into the Bladder.**—Burmeister glues up the wound in the bladder after an intravesical operation by applying soluble rubber to the spot to serve as a glue for a disc of rubber tissue. As soon as this disc has dried another is applied on top of it, continuing in this way until the cover is thick and firm enough to hold. A compressing bandage is then applied above and the patient is allowed to get up. This dressing generally holds for twenty-four hours without any oozing of urine, and the incision heals promptly under it.

130. **Thrombosis with Intravenous General Anesthesia.**—Küttner has applied the technic suggested by Burkhardt (mentioned in these columns February 26, page 750) in 23 cases. The results were good as he shows by a tabulated record of the details, but still he writes to warn against the method as thrombosis is liable to develop at the point of the injection. The obstruction to the further infusion requiring the transference of the needle to another point in 2 cases was assumed to be an insignificant matter, as such are sometimes observed with saline infusion. But in one signs of embolism suddenly developed in the course of the intravenous anesthesia but proved transient. As there seemed to be some obstruction preventing further infusion, the vein was exposed above, when it was found that a fresh thrombus had developed, entirely occluding the vein, and a small clot was found in the tip of the needle. Küttner deplors this necessity for giving up this method of general anesthesia as it proved to have so many advantages for both the patient and the operator: the patients drop asleep as if in natural slumber. The three patients mentioned presented signs of infiltration in the lungs for some time afterward, suggesting that postoperative pulmonary complications may be of an embolic nature even with other methods of anesthesia.

Zentralblatt für Gynäkologie, Leipsic

February 12, XXXIV, No. 7, pp. 223-272

- 131 Manual Separation of the Placenta. (Manuelle Placentallösung.) H. Peters.
- 132 Plastic Restoration of the Abdominal Wall. (Zur "Bauchdeckenplastik" nach Weinhold.) M. Stolz.

- 133 Intraperitoneal Shortening of the Round Ligaments. (Fixatio ligamenti rotundi retrouterina.) W. Holleman.
134 Dilatation of the Cervix Uteri with Tents. (Zur Technik der Laminariadilatation.) O. Grasser.

Zentralblatt für innere Medizin, Leipsic*January 8, XXXI, No. 2, pp. 33-64*

- 135 Inactivation of Complement by Shaking. (Ueber Schüttelinaktivierung der Komponenten des hämolytischen Systems.) A. Stühmer.

January 22, No. 4, pp. 89-112

- 136 Lipolytic Ferment. II. Pribram.

January 29, No. 5, pp. 113-152

- 137 Metabolic Findings, especially in regard to Purin Bodies, in a Case of Probable Thrombosis of the Hepatic Vein. (Verhalten der Purinkörper bei einem Falle von wahrscheinlicher Lebervenenthrombose.) E. Axisa.

February 5, No. 6, pp. 153-176

- 138 *Gastric Achylia. F. Schilling.

February 12, No. 7, pp. 177-200

- 139 Unreliability of Borchardt's Test for Levulose in the Urine. (Nachweis der Lävulose im Harn nach L. Borchardt.) F. Rosenberg.

138. **Defective Teeth as a Factor in Gastric Achylia.**—Schilling noticed that the teeth were defective in every one of his last series of 30 patients with gastric achylia, especially when there was concomitant diarrhea. The achylia follows mucous or atrophic gastritis, and this in turn is the result of irritation from imperfectly masticated food. The flora in the carious teeth, the lack of normal gastric acidity and of mastication permit an abnormal flora and irritation throughout the digestive tract.

Gazzetta degli Ospedali e delle Cliniche, Milan*February 3, XXXI, No. 15, pp. 153-160*

- 140 *Febrile Splenic Anemia in Children. (L'anemia splenica febbrile dell'infanzia.) G. de Gaetani Giunta.
141 *"Anguish Neuroses." (Note su alcuni casi di nevrosi di angoscia.) G. Calcagni.

140. **Febrile Splenic Anemia in Infants.**—Giunta has observed a number of cases of this disease; it affects mostly teething infants and may commence with gastrointestinal disturbances or the onset may resemble that of septic infection. Sometimes the striking pallor of the child is the first sign to attract attention. The disease does not seem to be contagious, although he has encountered it in brothers, and sisters, generally with an interval of years. The urine does not show any modifications. The disease may last for twelve months or more and is generally fatal, although a few infants finally recover. No drugs proved effectual in his experience, but a change of climate in some cases brought relief.

141. **Anguish Neuroses.**—Calcagni has observed several cases of what is called an "anguish neurosis," which Freud explains as overirritability from overexcitement or abnormal excitement in the sexual sphere. Calcagni was also able to discover some sexual cause in each of his cases, some interference with the unloading of the psychic tension produced by somatic sexual excitement. This anguish neurosis is liable to be erroneously ascribed to hysteria or neurasthenia, but the latter is a fatigue while this neurosis is a distress. Some regard it as merely a syndrome induced by some injurious influence acting on the sympathetic system, but Freud's conception harmonizes strikingly with the facts in Calcagni's experience. The symptoms simulate angina pectoris in some cases, the patient waking at night with extreme depression, precordial pain, palpitations, tremor and dyspnea. These attacks continued to recur frequently in two of the cases reported until the girls' fiancés left town. In other cases nausea and dizziness were the main symptoms, the dizziness persisting for twenty-four hours at a time, the patients having the sensation that the floor was swaying and giving way under them. The attacks recurred so often that the vertigo became almost continuous, but all disturbances ceased at once when the practice of coitus interruptus was abandoned.

Policlinico, Rome*February 13, XVIII, No. 7, pp. 195-226*

- 142 Encouraging Autoserotherapy in Pleurisy with Effusion. (Sull'autoseroterapia nelle pleuriti essudative.) F. Sarcinelli.

Riforma Medica, Naples*January 3, XXVI, No. 1, pp. 1-28*

- 143 Splenomegaly, Cirrhosis of the Liver and Ascites. (Casi di splenomegalia di Banti.) E. Morandi.

January 10, No. 2, pp. 29-56

- 144 Lipolysis from Effusions. (Potere lipolitico dei liquidi di versamento.) C. Carginale.

- 145 Urethral Tuberculin Reaction in the Non-tuberculous. (L'uretroreazione nei soggetti non tubercolosi.) P. Tumminia.

January 17, No. 3, pp. 57-84

- 146 Pathogenesis of Pancreatic Cysts. (Patogenesi delle cisti del pancreas.) A. Pellegrini.

- 147 Glycogen in the Normal Mammalian Kidney. (Sulla presenza di glicogeno nel rene normale dei mammiferi.) F. Addarj.

- 148 Four Cases of Typhoid-Malarial Fever. (Associazione infettiva cosiddetta tifo-malaria.) A. DeCortes and G. M. Marongiu.

January 24, No. 4, pp. 85-112

- 149 Physiopathology of the Spleen. (Fisiopatologia della Milza.) V. Patricelli.

- 150 Differentiation of Ruptured Right Tubal Pregnancy and Appendicitic Peritonitis. (È sempre possibile la diagnosi differenziale fra gravidanza tubarica destra rotta nel peritoneo e peritonite appendiciteica?) A. Gasbarrini.

- 151 Pathologic Anatomy of Progressive Paralysis. (Contributo alla diagnosi anatomopatologica della paralisi progressiva.) D. De Albertis.

Books Received

All books received are acknowledged in this column and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender. A selection will be made for review in the interests of our readers and as space permits.

HIGH-FREQUENCY ELECTRIC CURRENTS IN MEDICINE AND DENTISTRY. Their Nature and Actions and Simplified Uses in External Treatments. By S. H. Monell, M.D., Professor of Static Electricity, International Correspondence Schools, 1898-1903. Cloth. Price, \$4 net. Pp. 465, with 32 illustrations. New York: William R. Jenkins Co., 851 Sixth Avenue, 1910.

LES GREFFES OVARIENNES ENVISAGÉES AU POINT DE VUE DE LA PRATIQUE CHIRURGICALE. Etude critique, expérimentale et clinique. Par le Docteur Louis Sauvé, Procureur à la Faculté. Travail de la Clinique de M. le Professeur Quénu. Paper. Price, 3.50 francs. Pp. 96, with 4 illustrations. Paris: G. Steinheil, 2, rue Casimir-Delavigne, 1909.

SOY BEANS. By C. V. Piper, Agrostologist in Charge, and H. T. Nielsen, Scientific Assistant, Forage Crop Investigations, Bureau of Plant Industry. Farmers' Bulletin 372. U. S. Department of Agriculture. Paper. Pp. 26, with illustrations. Washington: [Superintendent of Documents] Government Printing Office, 1909.

PROCEEDINGS OF THE NATIONAL CONFEDERATION OF STATE MEDICAL EXAMINING AND LICENSING BOARDS. [Murray Galt Motter, Secretary. 1841 Summit Place, N. W., Washington, D. C.] Nineteenth Annual Convention, Atlantic City, N. J., June 7, 1909. Published by the Confederation Feb. 23, 1910. Paper. Pp. 96.

ALBUM OF THE SPAS AND MINERAL SPRINGS OWNED BY THE ROYAL PRUSSIAN BOARD OF DOMAINS. Described, by Order of the Minister of Agriculture, Domains and Forests, by Dr. Stern, Royal Inspector of Baths, Langenschwalbach. Translated by Dan. Heuser, London. Cloth. Pp. 166, with illustrations.

SOY BEAN VARIETIES. By Charles R. Ball, Agronomist, Grain Investigations. Bureau of Plant Industry Bulletin No. 98. U. S. Department of Agriculture. Issued May 27, 1907. Paper. Pp. 38, with illustrations. Washington [Superintendent of Documents]: Government Printing Office, 1907.

MANUAL ON TUBERCULOSIS. Its Cause, Prevention and Treatment. By Joseph A. Murphy, M.D., Medical Supervisor, U. S. Indian Service. Paper. Pp. 9, with illustrations. Washington: [Superintendent of Documents], Government Printing Office, 1910.

TRANSACTIONS OF THE AMERICAN ASSOCIATION OF OBSTETRICIANS AND GYNECOLOGISTS. [Dr. W. W. Potter, Secretary, 238 Delaware Ave., Buffalo, N. Y.] Vol. XXI, for Year 1908. Cloth. Price, \$5. Pp. 488, with illustrations. New York: 1909.

HÉMATOLYSE ET HÉMATOGENÈSE, BACTÉRIOLYSE ET BACTÉRIOGENÈSE. Dr. G. Froin, Ancien Interne des Hôpitaux de Paris. Paper. Pp. 272. Price, 6 francs. Paris: G. Steinheil, 2, rue Casimir-Delavigne, 1910.

KLINISCHE IMMUNITÄTSLEHRE UND SERODIAGNOSTIK. Ein Lehrbuch für Aerzte. Von Dr. A. Wolff-Elsner. Paper. Price, 3.60 marks. Pp. 186, with 5 illustrations. Jena: Verlag von Gustav Fischer, 1910.

CONTROL OF BODY AND MIND. By Frances Gulick Jewett. Book Five, Gulick Hygiene Series. Cloth. Price, 50 cents. Pp. 269, with illustrations. Boston: Ginn & Co., 1910.

THE BODY AT WORK. By Frances Gulick Jewett. Book Four, Gulick Hygiene Series. Cloth. Price, 50 cents. Pp. 247, with illustrations. Boston: Ginn & Co., 1910.

GOOD HEALTH. By Frances Gulick Jewett. Book One, Gulick Hygiene Series. Cloth. Price, 40 cents. Pp. 172, with illustrations. Boston: Ginn & Co., 1910.

EMERGENCIES. By Charlotte Vetter Gulick. Book Two, Gulick Hygiene Series. Cloth. Price, 40 cents. Pp. 173, with illustrations. Boston: Ginn & Co., 1910.

TOWN AND CITY. By Frances Gulick Jewett. Book Three, Gulick Hygiene Series. Cloth. Price, 50 cents. Pp. 271, with illustrations. Boston: Ginn & Co., 1910.

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Address

LATENT AND ACTIVE NEURASTHENIA IN ITS RELATION TO SURGERY *

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Specialists usually divide functional neurotic disorders into hysteria, neurasthenia and hypochondria.

Hysteria is a special psychic state often produced in certain individuals by suggestion, and capable of being relieved by persuasion. It is a condition of nervous instability, stigmatized by emotional storms, crises, contractures and paralyses, by a craving for sympathy, a desire for an audience, and a tendency to pose.

Neurasthenia is a fatigue neurosis due in part to malnutrition and in part to functional overexertion, occurring in persons with hereditary or acquired predisposition. It is characterized by exhaustibility of the nervous system, slight exertion causing prostration and bringing on the various distressing symptoms from which the patient suffers.

Hypochondria is a mental disease marked by obsessions, depressions and morbid fears concerning the health of the individual. It is not very common, is easily diagnosed and is usually incurable.

Hysterical patients give a great deal of trouble before an operation, but do very well after the ordeal is over. A nervous woman who describes her symptoms with hesitating vivacity, who desires to discuss every detail of her operation and subsequent treatment, and who is possessed with exaggerated fears of complications which may develop, or of the ultimate result which may follow, usually, after the operation is over, becomes a model patient. Her imagination enters on fresh fields; she becomes hopeful and courageous, and begins at once to plan a new life of activity.

Neurasthenic patients usually discuss their cases calmly and logically; they describe their symptoms systematically and employ technical terms correctly. They complain of nearly every organ in the body. The essential feature of their clinical picture is fatigue, exhaustion, and incapacity for prolonged physical or mental exertion. They suffer from general weakness, headache, backache and insomnia. Their mental condition is one of hesitation, doubt and indecision. They do not reach conclusions, and are unable to fix their attention for any period of time. They usually have digestive and sexual disorders, and often grossly exaggerate the importance of their symptoms. They frequently have psychic depressions, shown by irritability, introspection and selfishness. They are firmly convinced as to the nature of

their disease, and come to the surgeon for what they believe to be a necessary operation.

Hypochondriac patients are the victims of what is often a hopeless psychosis. The individual is possessed with the idea that she has some strange and horrible malady. She soon wears out the patience of her family and friends, and in order to secure a sympathetic listener, and to demonstrate to the community the serious nature of her disease, she goes from surgeon to surgeon, and from hospital to hospital, offering herself as a bloody sacrifice to her curious obsession, and glorying in her martyrdom.

While in theory it is easy to distinguish between hysteria, neurasthenia and hypochondria, in practice it will be found that the symptoms of two or more of them are often present in the same patient at the same time. Thus, one writer says that all hysterical patients are neurasthenic, but that not all neurasthenics are hysterical. Name and classify neuroses as you please, the trail of the serpent is over them all.

In deploring the frequency of neurasthenia, and in criticizing the occurrence of the disease in the hands of practitioners in other departments of medicine, it should be remembered that surgeons are responsible for the development of a large number of these cases. A surgical operation injudiciously performed, or carried out without proper precautions on a susceptible patient, will frequently be the beginning of a neurosis, and terminate in the condition known as traumatic or surgical neurasthenia.

It is my object, first to emphasize the importance of refusing to operate on a neurasthenic patient unless the symptoms can be clearly shown to be due to organic disease, and, second, to emphasize the necessity, if an operation is undertaken on a patient with either latent or developed neurasthenia, of protecting the nervous system from psychical and physical shock, not only by a proper preliminary preparation, but by careful and often prolonged postoperative and posthospital treatment.

A surgeon cannot be expected to be an expert neurologist, but for his own happiness, if not for his patients' welfare, he must study functional neurotic disorders, as well as organic diseases. He must learn to know his limitations, as well as to recognize his abilities, and to estimate the possible injurious effects, as well as the probable beneficial results to be expected from surgical intervention. He must remember that the patient does not come to him primarily to be cut, but to be cured; and that an operation is not a success unless the individual is restored to health, not only physically, but also psychically; not only anatomically, but also symptomatically. In surgery the main question is no longer one of mortality, but one of morbidity. In endeavoring to forecast the final results of an operation, the mental and nervous condition of the patient must be carefully con-

* Address of the president at the annual meeting of the Southern Surgical and Gynecological Association, Hot Springs, Va., Dec. 14-16, 1909.

sidered. If neuroses exist, without anatomic disease, an operation will do no good and may result in harm. If neuroses are found coincident with pathologic lesions, an operation may prove of great benefit; but in relieving the physical disease care must be taken to avoid increasing the nervous disorder. If neuroses are present, reflex in character and due to remediable causes, an operation may be undertaken with assurance of complete success. In other words, the surgeon should divide these cases into three classes: the first to be avoided; the second to be undertaken with caution, and the third to be cheerfully given the relief to which they are entitled.

Of the class to be avoided because the neurasthenia has no organic basis, Goodell says:

The sufferer may be a jilted maiden, a bereaved mother, a grieving widow, or a neglected wife, and all her uterine symptoms—yes, every one of them—may be the outcome of her sorrow, and not of her local lesions. She is suffering from a sore brain and not from a sore womb.

Here an operation will not relieve, but will aggravate, the symptoms.

In the class to be undertaken with caution because the neurasthenia is merely coincident with anatomic disease, it is often a question whether the patient had better endure the evils he has, or fly to those he knows not of. In some cases it may be deemed best to operate, not to cure the neurasthenia, but to relieve the pathologic condition. Great care must be exercised in the management of these cases to avoid increasing the nervous weakness by the very means used to cure the physical discomfort. This is especially true in patients who have been previously the subject of other operations.

Of the class in which the neurasthenia is directly due to anatomic disease, it may be said that if the diagnosis can be made and the cause removed, the patient will be cured. Often the symptoms are obscure and misleading, and much patient investigation will be necessary to reach the proper conclusion. A distinguished modern surgeon cites an instance occurring in his early professional life of a patient long treated, without improvement, for digestive disturbances. The surgeon, who had decided that the man was a neurasthenic, one day found that his patient had acute appendicitis. He operated on him, removing the appendix. Much to his disappointment, the patient, after leaving the hospital, complained as before, and the surgeon was, therefore, confirmed in his opinion that the patient was a neurasthenic. Later, the patient developed jaundice and symptoms of cholecystitis. He was operated on a second time and a number of gallstones removed. Before he left the hospital, however, he began to have his old pains, and then the surgeon said that he knew the patient was a neurasthenic. Without expectations of benefit, a skiagraph was made of the patient's abdomen, and it was found that he had a stone in his right kidney. A third operation was performed, the stone removed, and from that time the patient has been well.

This is not a unique case. All of us have had similar, if not quite such striking, experiences. The story is told to emphasize the fact that even an apparently hopeless neurasthenic should not be condemned without a trial, as some of them may be cured, provided a correct diagnosis is made.

Two separate preliminary examinations should be made of every surgical patient: the first for diagnosis—to determine the condition to be corrected; the second, for prognosis—to determine the safety of the operation and the probability of a complete cure resulting from it. To do this satisfactorily, it will usually be found neces-

sary to secure the aid of several specialists. Few surgeons have the time or skill to make the necessary physical examination of the heart and lungs, or the laboratory investigation of the urine, blood and stomach contents, to say nothing of the special work which is sometimes required of the bacteriologist, ophthalmologist, neurologist, roentgenologist and other experts. Patients will not be found to object to frequent and prolonged examinations, but will be inspired with confidence in the surgeon by the realization that nothing is taken for granted, and that every effort is being employed to ascertain the nature of their trouble and the best method to effect a cure. In fact, the laity are now so educated in medical matters that failure to give a patient a thorough preliminary examination is a cause for criticism and distrust.

An important exception to this rule, however, is in the case of a young unmarried woman who complains of pelvic symptoms. She may be of neurotic temperament, and, owing to backache and painful menstruation, has become convinced she has uterine or ovarian disease, when, in fact, she has no local trouble. On the other hand, she may have cervical stenosis, uterine displacement, or ovarian cystoma. In such a case a physical examination should be made to ascertain whether the trouble is neurologic or gynecologic. To minimize the psychical shock and to avoid physical pain, the examination should be made under a general anesthetic. If the symptoms are due to some defect of the nervous system, the patient should be positively assured that she has no local lesion, and be referred to a physician for general treatment. If, on the other hand, the symptoms are due to actual disease of the pelvis, the patient should be given the surgical relief her case demands. Noble has emphasized the fact that virgins rarely suffer from traumatism and infection of the genital organs, and when pathologic disease exists they almost invariably demand operative treatment. Repeated examinations, local applications, and other manipulations do them little good, and often convert them into chronic nervous invalids. The "pelvic woman" of the old author is the "sexual neurasthenic" of the modern writer.

The preparation of a patient for operation should be both physical and psychic. In the past much attention has been paid to the first, and but little to the second. We now recognize that we have overdone starvation, purgation and disinfection, and have neglected to study the patient's mental attitude to the operation, in order to lessen apprehension, if it is unduly present; to inspire confidence, if it is lacking; and to lay the foundation for a philosophy which will be needed during convalescence.

The first effort should be directed to relieving the patient's dread of going to the hospital. The laity is being rapidly educated to a just appreciation of the advantages afforded by such institutions, but some people still regard them as a cross between a prison and a pest-house. The easiest and most effective way to overcome this belief is to induce the patient to enter the hospital several days before the date fixed for the operation. In the environment of a well-regulated sanatorium, excitement and fear will soon be replaced by calmness and hope.

The surgeon should see the patient daily. His bearing should be kindly but not oversympathetic. The patient should be made to realize that, while her case will receive all needful attention, it is but an incident in the day's work. Care should be taken, in talking to her, not to magnify the importance of her lesions or the difficulty and danger incident to their correction. The

patient's relatives and friends should, of course, be informed of the facts in the case, but the patient should not be burdened with doubts and fears or made to assume any responsibility for the conduct of the case.

It is, however, important at this time to warn the patient against certain symptoms, complications and sequelæ which may develop after the operation, though they entail no danger and will not affect the final result. For instance, a patient to be operated on for hemorrhoids should be told that possibly she will require catheterization for a day or two; and a patient with fibromyoma of the uterus, that artificial menopause will follow, with symptoms such as usually occur at the "change of life." A word of warning before the operation will be found to be worth more than an hour's explanation afterward, to prevent discouragement from ordinary sequelæ whose significance and importance are not understood.

Finally, the patient's fear of the anesthetic should be relieved by reassurance, reason or ridicule. A badly frightened patient should never be sent to the operating-room. Psychic shock is a greater factor than traumatic shock in the production of surgical neurasthenia.

Some patients are in good nervous and physical condition and require practically nothing but the mechanical correction of a local trouble. Others are as seriously affected nervously as they are physically, and often will be more benefited by a modified form of rest-cure than by the operation itself. Most surgeons recognize this fact, but are often unable to carry out the principles of seclusion, rest, full feeding, bathing, massage and electricity, as taught by Mitchell, because of the present attitude of the public to surgery. Not many years ago an operation was considered, in the words of the marriage ceremony, as something not to be entered into unadvisedly or lightly, but discreetly, soberly, and in the fear of God. To-day it has become to be regarded as a comparatively trivial event, and the principal dread is the surgeon's fee. In the old days it was understood that a patient requiring a serious operation would have to remain two or three months in a hospital. At present, patients enter the hospital one day, are operated on the next, and before they stop vomiting begin to ask when they can go home, and usually are permitted to leave before it is wise for them to do so.

Nearly all surgeons admit the injurious results which frequently follow the premature discharge of a patient from the hospital, and many of them try to evade responsibility by attributing the evil to the unreasonable insistence of the patient to be permitted to return home. The fault, however, is not with the laity, but with the profession. Patients would consent to longer detention in the hospital if they believed it to be necessary. The fault is with a few surgeons who, for various reasons, have entered into a competition to see who can get their patients out most quickly, and have thereby set a precedent which others have followed. Some have been actuated by a desire to save the patient time and money; others by a desire to advertise themselves. The public is prone to estimate the ability of a surgeon by the apparent rapidity of the recovery of his patients, and to make comparisons between different operators on the basis of the length of time they keep their patients in the hospital. This is not surprising, as even some of the profession do not seem to realize fully that, all things being equal, a wound will not heal more quickly for one surgeon than it will for another, and that the number of days a surgeon keeps a patient in bed is not a measure of his surgical dexterity, but of his surgical judgment.

In order to appreciate the dangers to a patient of premature discharge, it is necessary to contrast the conditions of hospital and home life. The change is as decided and the influence as great to the one sex as the other, the man on returning home being confronted by financial obligations and business complications, and the woman by family cares and domestic duties.

What has been said with reference to the short stay of patients in the hospital, and the conditions which frequently exist at home which work adversely to their recovery, makes it plain that those interested in their welfare should consider thoughtfully the situation and endeavor to remove the evil. The remedy obviously consists in the patient's remaining longer under the care of the surgeon, and, on returning home, being placed under the close supervision of the family physician.

A patient should not be detained too long in the hospital, as it is not only a waste of the individual's time and money, but also tends to the creation of invalidism. On the other hand, a patient should not be dismissed too soon, as failure to secure the expected benefit from the operation may lead to discouragement, which finally results in well-established neurasthenia. Convalescence is a question of temperament, and must be psychic as well as physical. People are coming to regard surgeons as mechanics and patients as machines which are to be repaired. They must be taught that the operation is not everything, and that the after-treatment is often of equal importance. They must be made to understand that the operation merely corrects an abnormal condition and puts Nature in a position to effect a cure; that often the first effect of an operation is injurious, and that the beneficial results are experienced only after the system recovers from the shock and readjusts itself to new conditions; that sometimes it takes weeks, months or even years for this to be accomplished. They must be impressed with the fact that, when the wounds have healed, surgical patients are not well, but should remain in the hospital until they have regained to a certain extent their physical strength and nervous equilibrium, and that after returning home, for a time, they should lead a life of prudence and restraint.

The surgeon usually attempts to direct the treatment of patients after they return home by giving them instruction when they leave the hospital, and by subsequently corresponding with them; but the end desired can be more effectually and properly secured by referring the patient back to the family physician. The reason verbal instructions are not satisfactory is that they cannot cover all eventualities, are frequently not understood and are sometimes hasty and perfunctory. The reason subsequent treatment by mail is not satisfactory is that patients usually fail to give important facts, and either exaggerate or underestimate their symptoms; also that the surgeon cannot remember their idiosyncrasies and peculiarities, and, even if he prescribes correctly, his advice lacks the personal element of suggestion which is so essential to make it efficient.

It would be much better if the patient were examined before she left the hospital and told that, while the operation which had been performed had satisfactorily corrected the condition which had given rise to her symptoms she was not yet well and that it would require some months of proper living to restore her to full health and activity; and if she were directed, moreover, on returning home, to place her case in the hands of her family doctor. This would safeguard the patient's future welfare and would overcome to a large extent the

growing feeling on the part of the general practitioner that he is not always fairly treated by the surgeon.

Few surgeons are willing to turn patients over to a physician immediately after a serious operation. Complications are often so sudden and dangerous, symptoms so slight and misleading, diagnosis so difficult, and correct treatment so essential, that no one except a man who has had long and constant experience in the management of this special class of cases is competent to have charge of them. When, however, the danger of the operation is over, and the subsequent treatment consists in regulating the various functions of the body, restoring lost flesh and strength and re-establishing nervous and mental equilibrium, the family physician becomes the safer adviser.

With the rapidly increasing amount of surgery being done and the consequent number of convalescent patients under treatment, an educational move ought to be instituted for the study of the many peculiar factors involved. Papers ought to be written and discussions ought to be participated in by both surgeon and family doctor, the various details being taken up and discussed from the different standpoints, until finally there is evolved a consensus of opinion with reference to the many important points in the treatment of these patients. These should include the question of a proper dietary; of the best method of regulating the bowels; of treating bladder irritation; of the number of hours of sleep, and of the necessary periods of rest during the day; of the amount of exercise that is permissible; how soon the sewing-machine may be employed or housework taken up; the question of driving, riding horseback, dancing, swimming and athletic contests; the sort of clothing to be worn; whether corsets are injurious or an abdominal binder necessary; the question of prudence at menstrual periods and the relief of pain often experienced at that time; the treatment of headache, the administration of tonics, nervines and hypnotics; the use of baths, massage and electricity; the protection of wounds; the employment of douches; the use of tampons; the periods at which sexual relations may be resumed—these and a hundred other questions all require consideration in order that they may be settled. When surgeons appreciate the influence of neurasthenia on the result of an operation and the influence of an operation on the production of neurasthenia, when the family physician is educated in the details of posthospital treatment and given legitimate work with proper compensation, then, and not until then, will there be harmony in the profession and the greatest good accomplished to the greatest number of patients.

513 East Grace Street.

Primary Hyperplastic Tuberculosis of Stomach and Duodenum.—A woman of 33, the mother of four children, was admitted to the hospital complaining of loss of flesh, frequent vomiting and a lump in the abdomen. Pain came on a quarter of an hour after taking food. Examination showed a dilated stomach, marked peristalsis and on palpation a hard, movable, elongated tumor below the right costal margin in the position of the pylorus. The duration of the symptoms suggested non-malignancy. At operation later the stomach wall and omentum were covered with miliary tubercles and the glands in the gastro-colic omentum were enlarged. The tumor was smooth on the surface and occupied the whole circumference of the pyloric end of the stomach. The tumor was not removed but a gastrojejunostomy performed. The patient gained 20 pounds but died five months after the operation.—Nash, in *Proc. Royal Soc. Med.*, December, 1909.

Original Articles

MALIGNANT DISEASE OF THE SACRUM SIMULATING SCIATICA

(RADICULAR SCIATICA) *

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PHILADELPHIA

Localization of pain on the posterior surface of the legs may be indicative of a condition other than the classical sciatica. Although the majority of the classical signs of the latter affection may be present in a given case, nevertheless an error may be committed if a careful examination of the objective sensory disturbances is not made. The mode of distribution of a sensory diminution or exaggeration is an important matter from a diagnostic standpoint. When a peripheral nerve trunk, for example, is affected, the hypoesthesia or anesthesia accompanying the condition is distributed irregularly, in plaques, so to speak, and assumes either a longitudinal or oblique arrangement. When the root of the same nerve trunk is involved the sensory disturbance will be present in a longitudinal form regularly distributed and running parallel with the axis of the limb. We have to deal here with a radicular sensory trouble.

In order to render this subject more comprehensive, it is sufficient to mention the case of Chipault and Demoulin,¹ in which a resection of the ulnar nerve was made for a severe pain confined apparently to the area corresponding to that nerve. As the pain persisted, a second section was made above the first. No relief was obtained. When a thorough and careful examination of the objective sensory disturbances was made, it was found that the seat of the pain did not correspond exactly to the area of distribution of the ulnar nerve, as it was thought on the first superficial examination, but to the area of distribution of the eighth cervical root. Accordingly the latter was resected and recovery immediately followed.

It is, therefore, evident that while subjective disturbances, such as pain, may simulate an affection of a peripheral nerve-trunk, this fact alone is not sufficient for the localization of the lesion. It is the objective investigation that will lead to a proper recognition of the seat of the lesion.

Pain along the course of the sciatic nerve does not necessarily indicate the seat of the lesion in the trunk of the nerve, but it may be also the result of involvement of the plexus from which the sciatic nerve originates, or of the nerve roots. The importance of this knowledge in any given case presenting symptoms of sciatica is evident. Should a surgical condition, for example, in the vicinity of the sacral plexus be overlooked simply because the patient presents the habitual manifestations of sciatica, the error will lead to disastrous results. If, on the other hand, we have to deal with a usual case of neuritis or neuralgia of the sciatic trunk itself, our medical or surgical interference will be directed exclusively to the peripheral trunk of the nerve, but not to its root. The two cases which I am about to report are the best illustration of this contention. The knowledge of involvement of the nerve roots instead of the nerve trunk itself for the lower extremities is comparatively recent.

* Read before the Philadelphia County Medical Society, Dec. 8, 1909.

1. Nouvelle Iconographie de la Salpêtrière, May-June, 1895.

The first observation is that of Lortat-Jacob and Sabaréanu.² Since then about a dozen cases have been reported, and this form of sciatica is at present admitted by all writers. The discovery of the affection is due to the extreme care with which cases of sciatica have been studied, particularly from the standpoint of abnormal sensory distribution. The importance of the subject cannot be overestimated, as therapeutic indications are directly dependable on this knowledge.

DIFFERENTIAL DIAGNOSIS

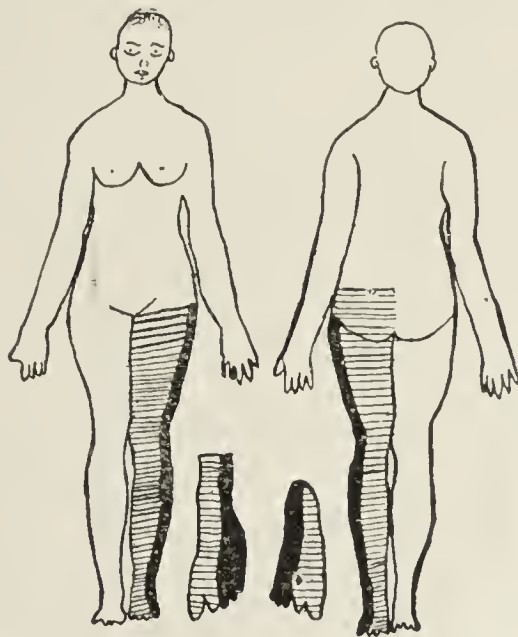
When a comparison is drawn between the classical sciatica and a radicular sciatica, we find that, while pain and other subjective sensations, such as burning, coldness, tingling, etc., the tender points of Valleix and Lasègue's sign, are all observed in both forms, the objective sensory distribution is essentially different. On the other hand, the anatomic and experimental studies show that the distribution of a sensory root in the skin does not at all correspond to the mode of distribution of a peripheral nerve-trunk. A nerve-trunk is the result of a combination of an anterior motor root and posterior sensory root. In their intraspinal course the roots are in relation with the vertebræ and dura mater. A lesion within the canal, such as tumor, pachymeningitis, disease of the bone may affect only one of the roots. Should the sensory root alone be involved, the sensory disturbance will follow a special distribution, a root—or radicular distribution. In case of the sciatic nerve we will have, therefore, a radicular sciatica in contradistinction to a neuritis or neuralgia of the nerve-trunk itself.

In the two cases I am reporting, pain along the posterior aspect of the leg was present, which was aggravated by walking. Overextension of the leg caused intense suffering. The tender spots were, however, not complete. In the first case they were observed only at the sciatic notch; in the second case at the notch and in the calf muscles; in both cases the iliac bone was painful. Shortly speaking, the majority of the symptoms of a genuine sciatic neuritis were present here. But what is important is the objective sensory disturbances. They led me to look for the morbid process not in the sciatic nerve-trunk itself, but higher up toward the sacral plexus and the roots themselves. When the involvement of the latter was revealed, the investigation was directed toward the bony canal. Affections of cauda equina and conus medullaris, also of other spinal cord diseases being excluded, the sacral vertebræ were incriminated. A careful and repeated examination led to the discovery of a slight but undoubted enlargement of the sacrum on the affected side. Operative procedures immediately instituted proved the contention to be correct. The affected bone evidently compressed and irritated the sensory branches of the posterior division of the lumbar and sacral nerves distributed over the integument of the gluteal region and sacrum. It also irritated some branches of the sacral plexus and also the common trunk of the sciatic nerve in its passage through the great sacro-sciatic foramen. It was, therefore, a complex condition, and for this reason the complete typical picture of a sciatic neuritis or neuralgia was not present. The predominance of subjective painful phenomena cannot, therefore, be relied on for exact localization.

CASE 1.—Mrs. G., of Brooklyn, had been suffering for two years from pain in the area of distribution of the left sciatic nerve. At first the pain was confined to the level of the pos-

terior superior spine of the ilium, but gradually the entire leg became painful. At the beginning the patient would be relieved by various medications and she would have more or less prolonged intervals of total freedom from pain. At the end of several months the pain became more persistent. Her physician would be obliged frequently to have recourse to morphia, so painful was her condition. Her general health began to suffer. Her sleep and digestion became disturbed and at times she would have delirious attacks. For two years she was considered as a sufferer from sciatic neuritis and treated exclusively by internal medications, particularly by large doses of morphia.

Examination.—At that time the patient came under Dr. John M. Fisher's observation. When I was asked to examine her, the following condition was found: The patient was markedly emaciated and walked with great difficulty across the room. Station was uncertain and especially with closed eyes. Further examination revealed a tenderness of the upper portion of the sciatic nerve and particularly below the posterior superior spine of the ilium. The pain extended upward toward the left iliosacral articulation. In fact, the entire posterior portion of the left iliac region with the adjoining portion of the sacrum was quite painful. In addition to the continuous pain there were also paroxysms of sharp, lancinating, spontaneous pain down along the posterior aspect of the entire left leg. The least motion, and especially extension of the leg,



Figures showing areas of complete and partial anesthesia; solid black portions showing anesthesia and shaded portions showing hypesthesia.

increased the suffering. There were also sensations of numbness, tingling and formication in the legs. As to the objective sensibility, the following phenomena were observed: There is a longitudinal band of complete anesthesia to touch, pain, pressure and temperature along the external border of the left leg (see illustration) beginning from the trochanter down to the foot and occupying the dorsal and plantar surfaces of the foot and the last three toes. The remainder of the leg presents a marked diminution of sensation, but not a complete abolition. The gluteal region is also hypesthetic. No disturbed sensation is observed in the perineal region. The left knee-jerk and the Achilles tendon reflex are markedly exaggerated. The musculature of the leg was very flabby, and although the patient's entire musculature was reduced in size, nevertheless the disturbed nutrition was more evident in the left leg than in the right. The affected leg is decidedly colder than the right. The sphincters of the patient were intact, as there was no disturbance of their function.

Diagnosis.—The symptoms thus described presented apparently a clear picture of sciatica, but the character of the pain and its extension toward the upper portion of the iliac bone and the corresponding portion of the sacrum, and, finally, the objective sensory disturbance mentioned above, altered greatly the symptom group of the classical sciatic neuritis and suggested a possibility of a larger involvement than merely that

of the sciatic nerve trunk. When the patient was placed flat on her abdomen there was at first glance nothing abnormal noticeable, but a close inspection and palpation revealed a slight but undoubted inequality of the right and left sides of the lower portion of the sacrum. The left side was somewhat larger and thicker and pressure on it caused pain. A control examination was made through the rectum and here the above difference could be felt still more readily. It was therefore evident to me that the enlarged and thickened left portion of the sacrum exercised pressure on the posterior division of the lumbar and sacral nerves and the left sacral plexus. The latter is formed by the lumbosacral cord, the anterior divisions of the three upper sacral nerves and part of the fourth. It is triangular in form, its base corresponding with the exit of the nerves through the anterior sacral foramina, its apex with the great sacrosciatic foramen. The sacral foramina are situated laterally at the end of transverse ridges seen between the separate pieces of the sacrum.

The posterior primary divisions of the lumbar and sacral nerves are distributed over the integument of the gluteal region. The branches of the sacral plexus supply the gluteal muscles, the piriformis, obturator internus and quadratus femoris. Their function is to rotate the thigh outward; the gluteus maximus extends the hip-joint, the gluteus medius and minimus are abductors also, move the thigh forward and rotate it inward and backward. All these movements were somewhat reduced in my patient. Whether the weakness of the muscles was the direct cause of the slight impotence of the limb, or else the pain interfered with motion, was difficult to determine. As to the cutaneous branches of the sacral plexus, only some of them were involved. The small sciatic was only partly affected, as the long pudendal nerve was intact. The sensibility of the perineum and of the labia majora was normal. The anesthesia of the limb corresponds to the first and second sacral nerve roots. The hypesthesia corresponds to lumbar nerve roots.

A careful analysis of the sensory distribution shows that the following nerve roots are affected: First, second, third and fourth lumbar and second sacral.

Operation.—In view of the findings in the bony tissue, which were sufficient to account for the symptoms referable to several nerve roots, operative procedures were indicated. Dr. E. G. Montgomery, who performed the operation, has kindly supplied me with the following report: "Through an excision extending across the lower end of the sacrum and coccyx from the left to the right side, the coccyx was exposed and removed, then the tissues pushed off from the inner surface of the sacrum and with the rongeur the lower portion of the bone was removed, when we opened into a pulpy mass which consisted largely of disintegrated bone. This was beneath and did not involve the periosteum covering the anterior surface of the sacrum. This tissue was worked away with a rongeur and curette until about one and one-half to two inches of the lower and middle portion of the sacrum was removed. The cavity was then packed with iodoform gauze and the greater portion of the external wound closed."

Tissue Examination.—The removed tissue was sent to the patient's former physician in Brooklyn and Dr. A. S. Wolf of the laboratory of pathology, bacteriology and chemistry sent us the following report: "The tissue is composed principally of glandular tissue lined with columnar epithelium. The acini are well enclosed by a connective tissue reticulum with the tendency of breaking down or extension. Epithelial cells and connective tissue cells show no infiltration and no degeneration. The specimen throughout gives no tubercular picture. The specimen appears to be cylindrical epithelioma originating from misplaced embryonic tissue."

Subsequent History.—The operation was followed by gradual improvement in the general condition and considerable relief from pain. The healing of the wound was very slow, but the pain became progressively less. At the end of a month there was very little complaint of pain. The former tender spots along the sciatic nerve became less sensitive. The patient was then taken back to her home in Brooklyn and placed in charge

of her family physician. His first reports were excellent. The patient was practically free from pain and she gained in weight. Unfortunately the improvement was only temporary. Gradually the pain returned and even with greater severity in the region of sacroiliac articulation. Large doses of morphia had to be used. The patient finally died in a state of complete exhaustion. No autopsy was obtained.

CASE 2.—Mrs. H. S., aged 35, has been suffering for eighteen months from pain in the areas of distribution of both sciatic nerves and in the sacral region.

Examination.—A careful examination revealed some symptoms of double sciatica, viz., pain in walking, pain on extension of both legs, tender spots between the ischium and the trochanter and in the middle of the calf muscles. She also had spontaneous pain along the posterior aspects of the legs, more on the right than on the left side, but the pain in the sacrum was of unusual severity. Both gluteal regions were highly hyperesthetic and the patient had difficulty in walking. The knee-jerks and the Achilles tendon reflex were markedly exaggerated. There was no other abnormal reflex. The sphincters were intact. The muscles of the lower limbs were much wasted and flabby, but there was also a general wasting of the musculature of the entire body.

Diagnosis.—With a singular similarity the objective sensory disturbances were those of the first case, excepting a somewhat larger band of anesthesia extending more anteriorly than posteriorly and more in the right limb than in the left. The hypesthesia covered the remainder of both limbs except the gluteal regions, which, as said above, were hyperesthetic. The difference between the two cases was only in the extent of the involvement. In the first case the affection was unilateral, in the second bilateral. Here again the symptoms pointed to some irritative process going on not in the trunk of the sciatic nerve, but above in the lumbar and sacral roots. To avoid repetition one can refer to the history of the first case as to the details of individual nerves involved. The character of the pain in the sacral region was identical with that of our first patient.

Operation.—The patient was considered for eighteen months a sufferer from sciatica and treated exclusively with internal medications. A pelvic examination made by Dr. J. M. Fisher excluded any pressure from that source. I then made the diagnosis of a disease of the sacrum and perhaps of lumbar vertebræ with secondary involvement of lumbar and sacral roots probably through irritation. I then learned that the patient had several years ago one breast removed for some malignant growth. Her general appearance was cachectic and therefore suggested a malignancy of the bony tissue of the sacrum. As in the first case, I advised an operation, which was performed by Dr. Fisher.

Tissue Examination.—The specimen removed by him was examined in the pathologic laboratory of the Jefferson Hospital, and the report is as follows: "The triangular piece of tissue measures each side 4 cm. and the base 3 cm. The tissue is hard and bone-like and on the outer aspect is a small amount of bright red soft tissue. The periosteum is intact. At the base the bone is somewhat lacerated. The medullary portion contains a small amount of rather firm, dark red tissue. The soft tissue is made up of rather loosely woven fibrosa which is wavy, intensely stained and contains numerous cells, some spindle-shaped, others round. They stain fairly well. At some points the sections are cellular, the elements being large and ovoidal. The nuclei are ovoidal, vesicular, and contain very little chromatin. The protoplasm is rather abundant, granular and transparent. Throughout the sections are small areas containing large cells which are ovoidal, vary from 15 to 25 microns in diameter, and contain more than one nucleus. The protoplasm is rather dense and hyalin. In some parts of the section is a basic staining substance containing granular bodies. The bone presents similar changes. Diagnosis: Giant-cell sarcoma."

Subsequent History.—The operation brought some relief from pain. Patient began to recuperate and progressed fairly well, when a recurrence of pain took place. This time the pain

was concentrated in the sacral region and from there gradually ascended along the spine. Her sufferings became intense. The general cachectic condition became more and more pronounced. At the end of two months the patient expired. No autopsy was obtained.

IMPORTANT FEATURES

The two cases present very important features.

1. From an etiologic standpoint the involvement of the sacrum was the direct cause of the sciatic symptom group.

2. The predominance at first of the sciatic pain over the sacral pain, but later the reversed condition.

3. The error to which the latter circumstance led, viz.: the affection was considered for an ordinary case of sciatica and therefore the sacral pain was overlooked and consequently operation delayed with disastrous results.

4. Not one of the cases presents a complete picture of the classical sciatica. While spontaneous pain was present along the limb, some of the tender spots could be brought out and overextension of the leg caused great discomfort; nevertheless, the anesthesia, the hypesthesia in the limb, and in the gluteal region all pointed to a lesion above the sciatic nerve. An exact study of the sensory disturbance led to the localization of the affection in the nerve roots of the spinal cord. The latter, in its turn, directed attention to the cause of the root irritation and a material factor was discovered in the vertebrae. We had, therefore, to deal with a root condition simulating sciatica, viz.: a radicular sciatica.

5. The two cases are instructive from this standpoint, that they show the necessity of making thorough and very careful investigations of patients who come under observation even with the most common pathologic conditions.

In connection with the latter remark I wish to mention another case seen in consultation with Dr. Wayland in Crozet, Va.

A middle-aged woman suffered severe pains in the legs, particularly in the areas of distribution of the sciatic nerves. Prior to Dr. Wayland's treatment she was considered to be a sufferer from double sciatica. Accordingly, the two nerves were stretched and other surgical manipulations performed on the nerves. When Dr. Wayland first saw her, he suspected more damage than only in the sciatic nerves. When I saw the patient, she presented all the symptoms of a spinal cord tumor, viz., very severe pain in the mid-thoracic region, radiating around the waist, total paralysis with loss of all the reflexes, total loss of sensations below the waist line, incontinence of the bladder and rectum. The outlook was most grave, as the disease had been of two years' standing. The patient died in two months.

CONCLUSIONS

The three cases related belong to the domain of surgery. No doubt, when taken in the proper time, surgery probably could have prolonged life.

The conclusion that forces itself on us is the fact that sciatica which is persistent and which is accompanied also by pain in regions other than the great ischio-sacral notch, is to be looked on with suspicion, especially when the pain is spontaneous and not exclusively on motion. Such cases should be carefully analyzed, not only as to the objective sensory and motor disturbances, but also as to the condition of the pelvic organs and the bony structure with which the nerve roots are in close touch.

FAT: A PHYSIOLOGIC APPRECIATION

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The rôle of fat in the human organism may be considered as material, esthetic, and psychic. The first may be physiologic, pathologic, or economic in its aspect; the second may mark the difference between the rounded anatomic contour, displaying at its best the human form divine, the beauteous Venus, the plump Cupid, and the haggard ugliness shown in emaciation, or in the stage of the "shrunk shank" and "the lean and slippered pantaloons."

The psychic manifests its influence over the temperament and disposition from earliest infancy throughout life, and I shall endeavor to prove that in this particular the rôle of fat has not received sufficient consideration.

Protein, that prolific source of animal energy and vigor, needs no advocate to plead its rights, for by its very nature the *protein content* will always command a liberal share of attention. Fat, however, is often unappreciated, often misunderstood, and more often unjustly blamed for sins or delinquencies of other food products, so that a general survey of this subject, possibly more discursive than scientific, commended itself to me as being of probable interest.

From 15 to 20 per cent. of each healthy body is composed of fat, though only about one-fourth of an ounce is contained in the blood. The amount of fat within normal limits varies widely, often being influenced by heredity, age and personal habit more than the quantity of food taken. Where there is a tendency to take on fat, it readily accumulates under either a slight increase of the daily diet or a decrease of regular exercise. The storage of fat is also favored by sleep, as it has been shown during periods of somnolent inactivity fatty deposits most readily find snug and convenient resting places.

The chief sources of fat are the starches and sugars, though certain fats are directly utilized. Emulsified fat is split to a considerable extent by the stomach steapsin, an enzyme which acts efficiently only when concentrated. It might be well to mention that pepsin has not been shown to possess any fat-splitting action.

As the fat is carried past the pyloric outlet, it is immediately acted on by the pancreatic juice, and, until recently, it was generally assumed that it was partly broken down by the pancreatic secretion into fatty acids and glycerin; that the former united with the alkalies of the intestines to form soaps, and that the soaps brought about an emulsification of the fat. On account of its alkalies, bile was said to play an important part. Unlike other nutritive substances, fat would then pass from the intestinal canal into the mucous membrane, not in solution, but as an emulsion. The weight of present opinion, however, would lead us to believe that fats are completely decomposed in the intestine, and that the fatty acids formed are absorbed either as soaps or in a solution brought about by the bile.

As a source of energy for the development of heat, fat may be described as quickly available, but not so lasting. Experiments of both Rubner and Atwater have demonstrated that food-stuffs generate the same quantity of heat when burned within the body as when burned outside the body, and that, while one gram of protein or one gram of carbohydrate will each generate approximately

four calories, one gram of fat is good for over nine calories. The conclusion, therefore, is obvious that by its concentrated fuel power fat preserves other tissues, especially the albuminous, from destruction by oxidation and is valuable as a reserve force, instantly available when any vital emergency requiring it arises.

Another material function of fat is that of "protein sparer," for, though its tissue-building properties are limited and incidental, by its presence the protein is permitted better to perform its manifold tasks. We might with propriety, in this connection, liken fat to the housewife, who, though not apparently earning anything, by her care and industry conserves the fruits of her husband's labor, enabling him not only to support the domestic establishment, but also to lay aside a surplus. Should an emergency arise whereby the head of the house becomes incapacitated, this housewife could at once become an active earning factor, augmenting the depleted income and possibly averting economic disaster.

As a storage of energy ready to be drawn on as needed fat is of great importance. In starvation about 90 per cent. of the body fat is consumed before death, so we can easily see how a generous physiologic supply laid up for a time of stress will aid in a battle against wasting disease or defective assimilation. Fat also, though generally burned rapidly, is used very slowly when there is little muscular activity, as shown by animals in hibernation.

The last material use of fat is to serve as a covering and protection to the body against both injury and cold; in other words, to cushion the frame. Fat babies can bear without hurt falls that would seriously injure thin ones; fat people can stand with impunity many hard knocks that would completely demoralize attenuated individuals, while a good blanket of subcutaneous adipose tissue will answer every purpose that could be expected of woolen underwear or heavy clothing.

From an esthetic standpoint, the physiologic and orderly distribution of fat in the connective tissue marks the contrast between physical beauty and gaunt ugliness. Painters, novelists and dramatists have been quick to note the difference, and in their delineations of physical charm emaciation never finds a place. On the contrary, the villain as most often described is a cadaverous-looking wretch, with peaked nose, lantern jaw and skinny limbs. Should fat be present by any chance, it is pictured in pathologic and disgusting quantities. In fact, history, literature and art are full of examples demonstrating that in the entire animal kingdom there can be no comeliness in the absence of fat.

That fat will accumulate in unused portions of the body while it disappears in regions of local activity has been utilized by directors of physical culture as well as "beauty doctors" the world over. Various forms of exercise, both systematic and scientific, have been devised, besides numerous appliances, all aiming to increase or decrease fatty deposits in different parts of the human anatomy. By exercise alone some forms of obesity may be corrected, while abdomens of aldermanic proportions can readily be abated. There are also ingenious methods by which too prominent angles, as well as unsightly hollows, may be cushioned or filled with fat, so that to the earnest seeker of physical attractiveness, in the absence of serious wasting disease, there is nearly always "balm in Gilead."

In considering the psychic rôle of fat, we should specially bear in mind its reserve function in relation to active vital processes. In the proper conduct of the

human mechanism there is just the right amount of labor for each organ to perform, but generous Nature allows sufficient latitude within physiologic limits to meet ordinary emergencies. Extraordinary conditions unless fortified against may result disastrously, and a liberal deposition of fat is one of Nature's wise precautions.

It has been commonly known from the earliest antiquity that fat people are more contented, more optimistic, than lean ones and that their viewpoint of life in general is largely governed by this prosaic attribute. Now I might compare the supply of fat to the ample bank account of a busy and provident man. That he possesses this surplus does not prevent him from diligently following his usual avocation, but the knowledge of its presence and that it can be instantly obtained lends a mental satisfaction that would be absent were he living right up to his daily income.

I believe, therefore, that my reasoning is correct when I assert that a physiologic reserve of fat by its very presence exerts a quieting and reassuring influence on the vital forces most concerned in constructive metabolism; and, if I may apply a scriptural quotation, this reserve, in language intelligible to those forces, says: "Thou hast much goods laid up for many years; take thine ease, eat, drink and be merry."

On the other hand, when the department of constructive housekeeping in the body is furnished barely enough to ward off retrograde metamorphosis; when obscure nooks and recesses have to be frequently ransacked for their scanty stores of fat in order to keep up normal oxidation; when nutrition is at par only a part of the time, while the protein content has to work overtime in order to manufacture sufficient energy and heat, then is felt the vibrations of a tiny voice of unrest and bodily discontent, which discontent and unrest sooner or later react on the disposition, developing into that pessimism and temperamental dissatisfaction so often present in lean people.

The limits of this paper will not permit a discussion of the dietetics of fat, a comparison of its vegetable and animal forms, or its adaptability to different conditions, as age, occupation or environment. Let this be considered rather a physiologic appreciation of that food element, which, lacking the strenuous qualities of protein, the versatility of the carbohydrates, or the leavening functions of the inorganic salts, fulfills a manifold mission of its own, lending to the body warmth and security, to the mind peace and good cheer.

409 Candler Building.

The Public and the Medical Profession.—The public is a self-constituted critic, prejudiced against the profession and clamoring for demonstrated achievement, but it is also like a great child needing to be led into the way of cleanliness, godliness and health. With the spirit of to-day the public is ready for education, and we owe it to ourselves to go more than half way in the effort to instruct it. When that day comes in Utopia, when the state will care for all its sick, educate, train and keep its staff of physicians, lay restrictions of community obligation to health on all citizens, provide for the prevention of disease by instruction in schools and in the communities of peoples, as well as the means to safeguard the individual, then our labors will have ceased, but until such a dream is realized, we must continue to knock at the door of the Empire of Hygeia, begging the spiritual and economic aid of all to further our cause, always humanitarian in its purpose and conservative in its results.—Isadore Dyer, in *South-ern Medical Journal*.

VACCINATION AND ITS RELATION TO
ANIMAL EXPERIMENTATION *JAY FRANK SCHAMBERG, M.D.
PHILADELPHIA

(Concluded from page 951)

THE RESULTS OF VACCINATION REQUIREMENTS IN
VARIOUS COUNTRIES

The Imperial Board of Health of the German Empire gives the frequency of smallpox in various European countries between 1893 and 1897, inclusive, a period of five years.

TABLE 11.—THE FREQUENCY OF SMALLPOX IN EUROPEAN STATES BETWEEN 1893-1897 INCLUSIVE (FIVE YEARS)

Country.	Population.	Average Yearly Mortality in Every Million Population.	Actual Number Smallpox Deaths.	Year.
Germany	52,042,282	1.1	287	5
Denmark	793,356	0.5	2	5
Sweden	4,894,790	2.1	41	4
Norway	2,045,900	0.6	5	4
England and Wales.....	30,389,524	20.2	3,066	5
Scotland	4,155,886	12.3	256	5
Ireland	4,580,555	9.9	226	5
Switzerland	3,032,901	5.1	78	5
Netherlands	4,797,249	38.7	929	5
Belgium	6,419,498	99.9	3,208	5
French States	8,253,079	90.2	3,721	5
Russian Empire, including Asiatic Russia	118,950,400	463.2	275,502	5
Austria	23,000,000	99.1	11,799	5
Italy	31,007,422	72.7	11,278	5
Spain	10,596,649	563.4	23,881	4
Hungary	18,234,916	134.3	12,241	5

The countries which during this period have the most stringent vaccination laws suffer the least smallpox, namely, Germany, Denmark, Sweden and Norway.

In well-vaccinated Germany, but one person a year in every million of population died of smallpox.

In England and Wales, where vaccination is generally but not universally practiced, 20 persons per million died of smallpox each year.

Thorough vaccination has practically banished smallpox from the huge German army. Kübler¹² says:

On only two occasions since the year 1874 (in 1884-85 and in 1889) has a death from smallpox occurred in the Prussian Army, and the first of these was in the person of a reservist who seven years before had been twice unsuccessfully vaccinated.

VACCINATION IN THE PHILIPPINE ISLANDS

Of particular interest is the recent achievement of the United States sanitary authorities in stamping out smallpox in the Philippine Islands. In 1905 and 1906 the enormous number of 3,094,635 vaccinations were performed. Dr. Victor G. Heiser, Director of Health of the Islands, in the Report of the Bureau of Health (June 30, 1907), states:

In the provinces of Cavite, Batangas, Cebu, Bataan, La Union, Rizal and La Laguna, where heretofore there have been more than 6,000 deaths annually from smallpox, it is satisfactory to report, since the completion of vaccination in the afore-said provinces more than a year ago, not a single death from smallpox has been reported.

IMMUNITY OF VACCINATED PHYSICIANS, NURSES AND
ATTENDANTS IN SMALLPOX HOSPITALS

If it can be demonstrated that physicians, nurses and attendants in smallpox hospitals can be perfectly pro-

teected by vaccination, then this must be regarded as a crucial test of its protective influence; for if these persons, living in the same atmosphere with scores or hundreds of smallpox patients, breathing their very exhalations, are enabled to escape the infection, it certainly should be possible for others much less exposed to acquire similar immunity.

Experience shows that physicians, nurses and attendants, if recently successfully vaccinated or revaccinated, may live in smallpox hospitals in perfect safety. Dr. Marson, physician to the Smallpox Hospital of London for many years, giving evidence in 1871, stated that during the preceding thirty-five years no nurse or servant at the hospital had been attacked with smallpox. Dr. Marson took the precaution of revaccinating all attendants before permitting them to go on duty. Dr. Collie, whose experience is also large, says: "During the epidemic of 1871, out of one hundred smallpox attendants at Homerton (England) all but two were revaccinated, and these two took smallpox." Dr. T. F. Ricketts, medical superintendent of the smallpox hospital ships on the Thames, states that out of 1,201 persons in attendance on board the smallpox ships, only six contracted the disease, all of them recovering. None of these six persons had been successfully revaccinated before going on duty. According to Dr. Hill, of Birmingham (England), during the epidemic of 1893, over one hundred persons were employed at the City Smallpox Hospital, all of whom had been recently revaccinated; not one of them contracted smallpox.

Dr. William M. Welch, of Philadelphia, states that in the Municipal Hospital of Philadelphia during a period of thirty-four years, in which time almost 10,000 cases of smallpox were treated, there was no instance of a physician, nurse or attendant who had been successfully vaccinated or revaccinated prior to going on duty contracting the disease.

PHYSICIANS AND NURSES NOT PROTECTED AGAINST OTHER
CONTAGIOUS DISEASES

Physicians and nurses do not exhibit immunity toward other contagious diseases as they do with respect to smallpox. According to Ernest Hart, in 1893, of 2,484 persons employed in the Metropolitan Fever Hospital of London, 130 became infected and 2 died. Four assistant medical officers, 10 nurses, 43 assistant nurses, and 16 maid servants were attacked by scarlet fever. Two assistant medical officers, 6 nurses, and 15 assistant nurses contracted diphtheria.

While the deaths from smallpox of physicians (who constitute a class particularly well vaccinated) are but 13 per million, in England, the deaths of the general population are 73 per million. In scarlet fever, on the other hand, against which physicians have no special protection, the figures are reversed: 59 medical men per million die of scarlet fever, as against 16 per million of the general population.

ALLEGED DANGERS OF VACCINATION

Every human act is accompanied by some measure of danger. When one rides in an elevator, in a railroad car, or even promenades on the sidewalk, he takes a certain definite risk which can be mathematically calculated. While in the aggregate the number of accidents and deaths from each of these causes may be considerable, yet the individual risk is so small that it may be disregarded. It is the same with reference to vaccination.

Inasmuch as vaccination necessitates the production of an abrasion or wound, it is naturally liable to infections to which wounds from other causes are subject. Such a

* This article is here considerably abbreviated. The complete article is one of a series of pamphlets issued by the Council on Defense of Medical Research of the American Medical Association for circulation among the public. Twelve of these pamphlets are now ready, taking up the relations of animal experimentation to ethics, diagnosis, cancer, vaccination, the live stock industry, tuberculosis, typhoid, dysentery, rabies, surgery, internal secretions, protozoan tropical diseases, etc.

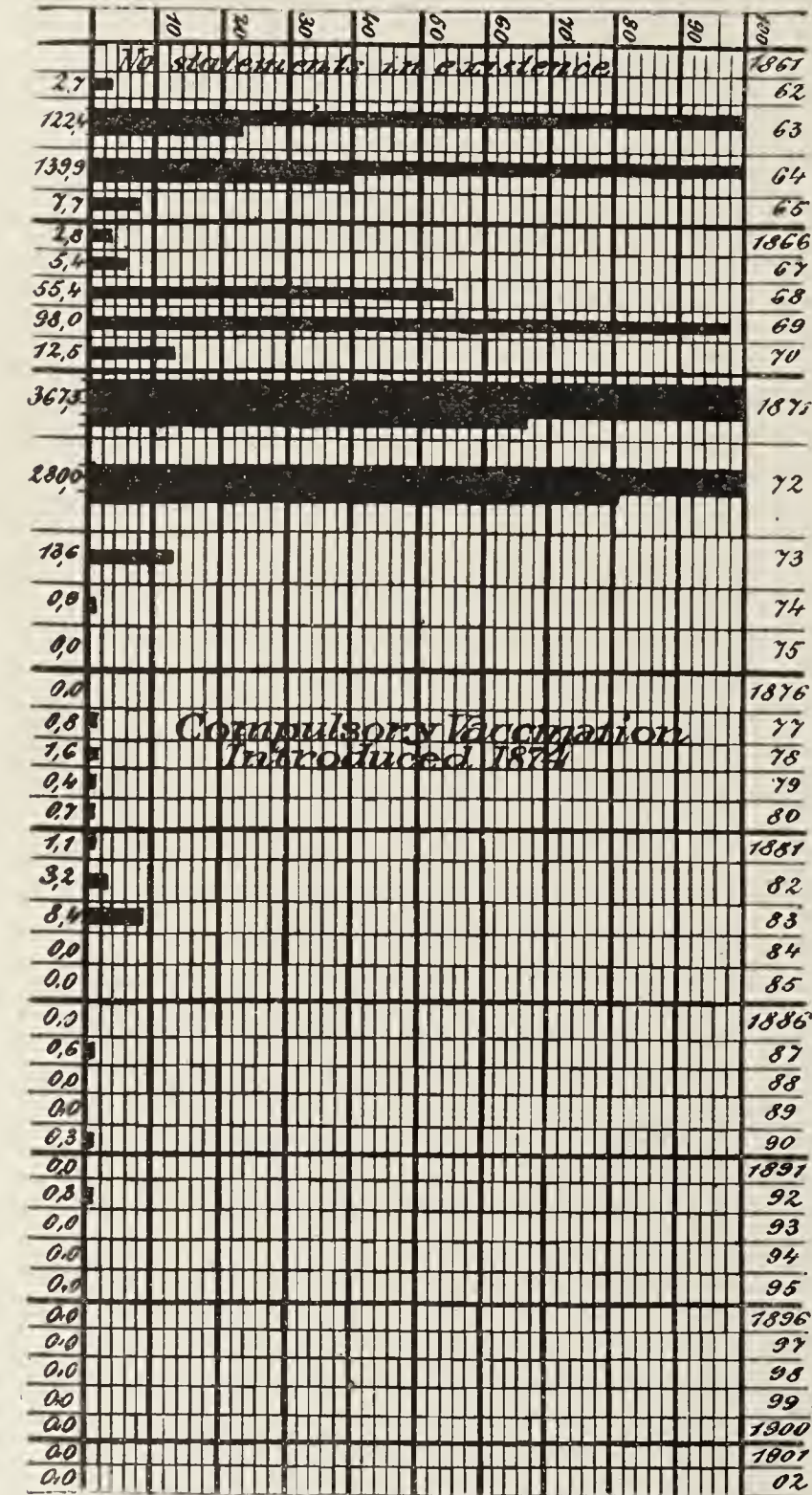
12. Kübler: Geschichte der Pocken und der Impfung, 1901, p. 383.

trivial accident as a pin-scratch or razor-cut has been known to lead to fatal termination. Most of the infections after vaccination occur in persons in whom regard for cleanliness is slight and in whom the subsequent care of the vaccination site is neglected.

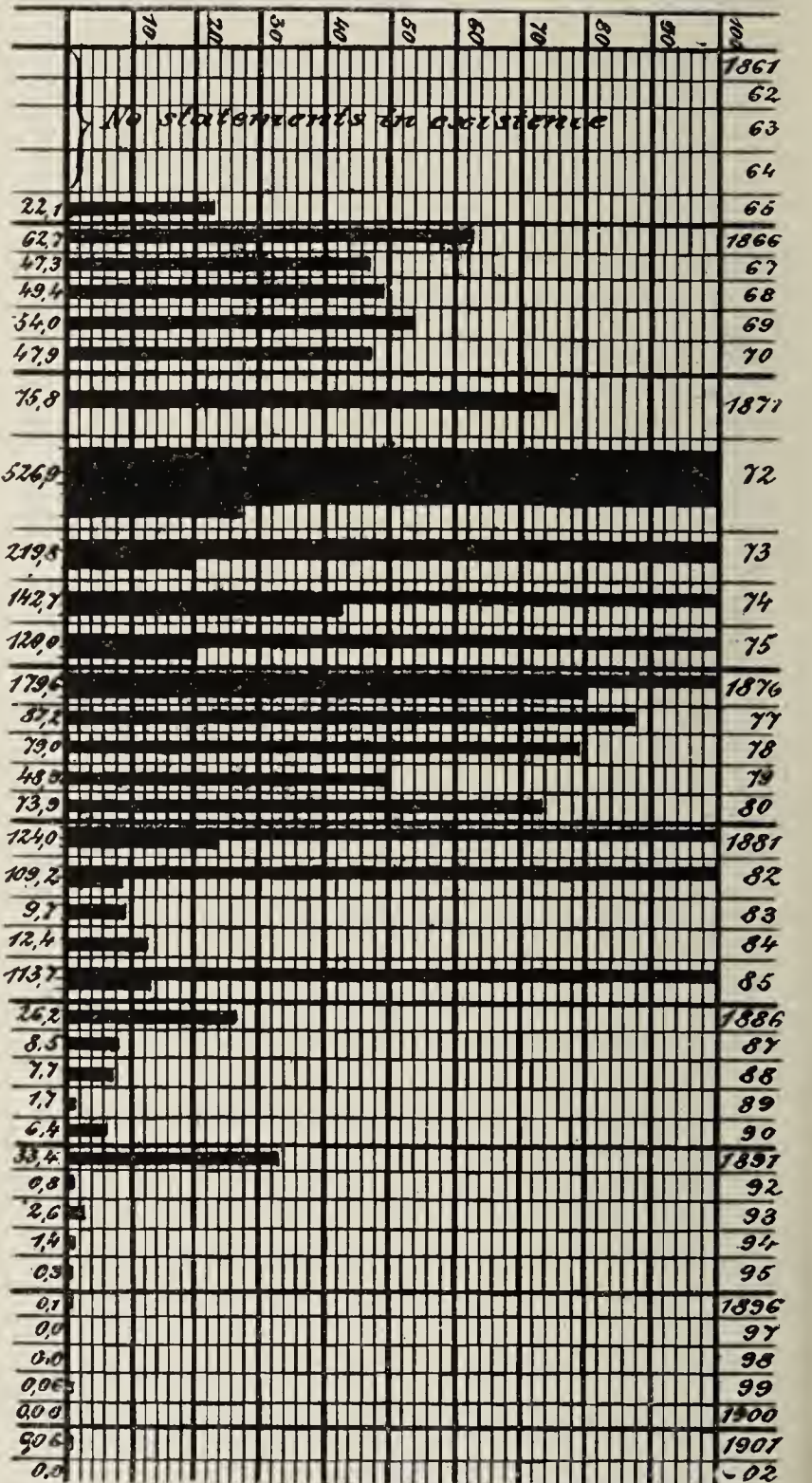
If there is any class of men in the community who should be familiar with the accidents and complications of vaccination, it should certainly be the physicians. With this knowledge in their possession, medical men regard vaccination as so safe a procedure that they almost universally employ this measure on themselves,

Practically all of the accidents of vaccination are preventable by the selection of the proper virus and care of the arm during and after vaccination. The United States Public Health and Marine-Hospital Service has supervision over the products of all vaccine establishments doing an interstate business and has the power to revoke the license of a firm placing impure virus on the market.

The dangers of vaccination have been enormously exaggerated by the opponents of this measure. In the Philippine Islands within the past few years there have



BRESLAU.—SMALLPOX MORTALITY PER 100,000 OF POPULATION.



VIENNA.—SMALLPOX MORTALITY PER 100,000 OF POPULATION.

CHARTS 5 AND 6 (BRESLAU AND VIENNA).—Comparison of mortality from smallpox per 100,000 of population. In Breslau no compulsory vaccination before 1874; since then compulsory vaccination and revaccination. In Vienna no compulsory vaccination, but since 1891 the administrative government authorities have used their best efforts in furthering vaccination.

their wives, and their children. Indeed, physicians and their families constitute the best vaccinated class in the community. As has been said, English statistics show that only 13 medical men per million die of smallpox, against 73 per million of the general population, and the contrast is all the more striking in view of the fact that physicians are more exposed to smallpox than the average citizen.

been performed by the United States sanitary authorities 3,515,000 vaccinations without a single death or any serious postvaccinal infection.¹⁶ When we consider the thousands on thousands of vaccinations performed, even on the unclean and under unfavorable circumstances, and note how rare it is for any serious complica-

16. Strong, R. P.: Combating Tropical Diseases in the Philippines by Scientific Methods, THE JOURNAL A. M. A., Feb. 15, 1909, lii, 524.

tion to develop, we are justified in concluding that the risk attending vaccination in any individual case is practically a negligible quantity. The danger connected with vaccination is infinitesimal compared with the peril of remaining unvaccinated.

ANIMAL RESEARCH IN ITS RELATION TO VACCINATION AND SMALLPOX

The tradition concerning the protective influence of cowpox against smallpox appears to have been known to dairymen in England and Germany long before the days of Edward Jenner. Dairy servants whose hands were accidentally infected with cowpox while milking cows were alleged to be immune against the ever-present and fatal smallpox.

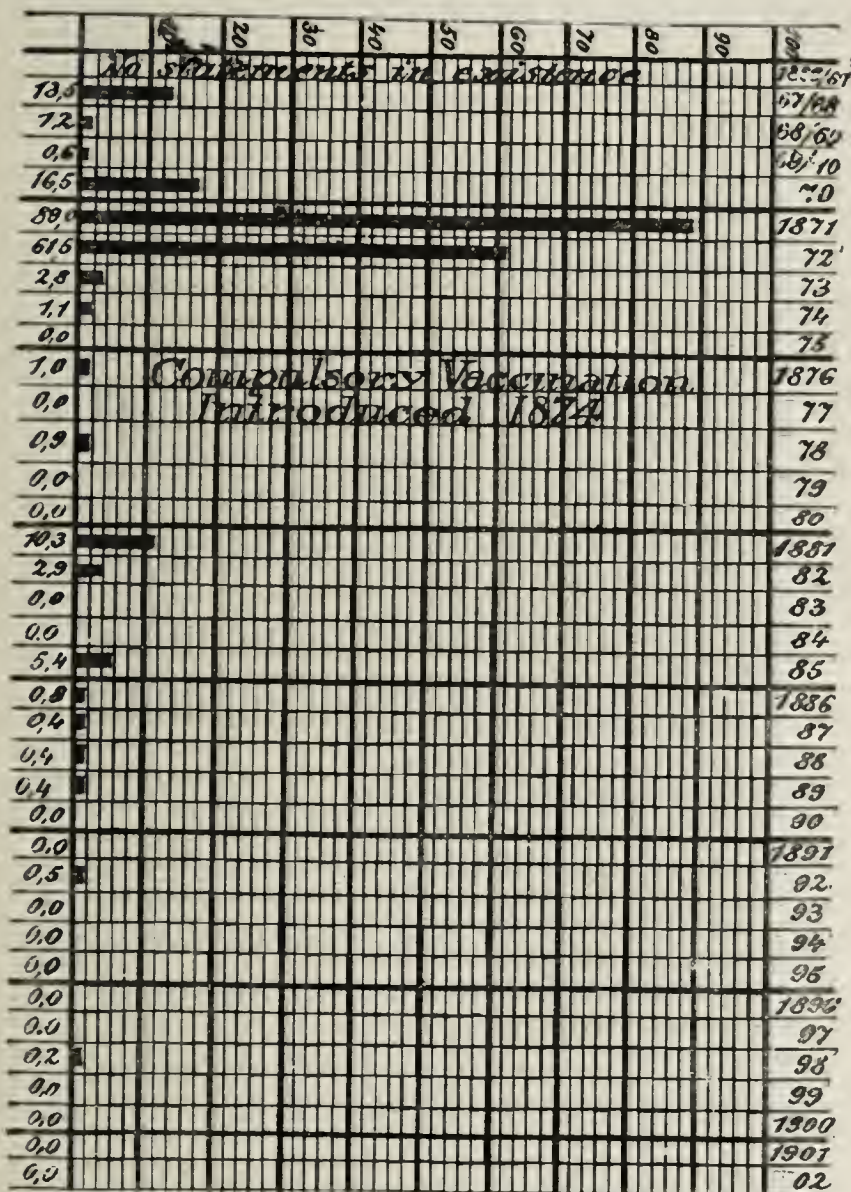
After assiduous investigation extending over many years, Jenner became convinced that there was truth in

usually through the mediation of the milker. An undesignated series of animal experiments was thus unconsciously carried out.

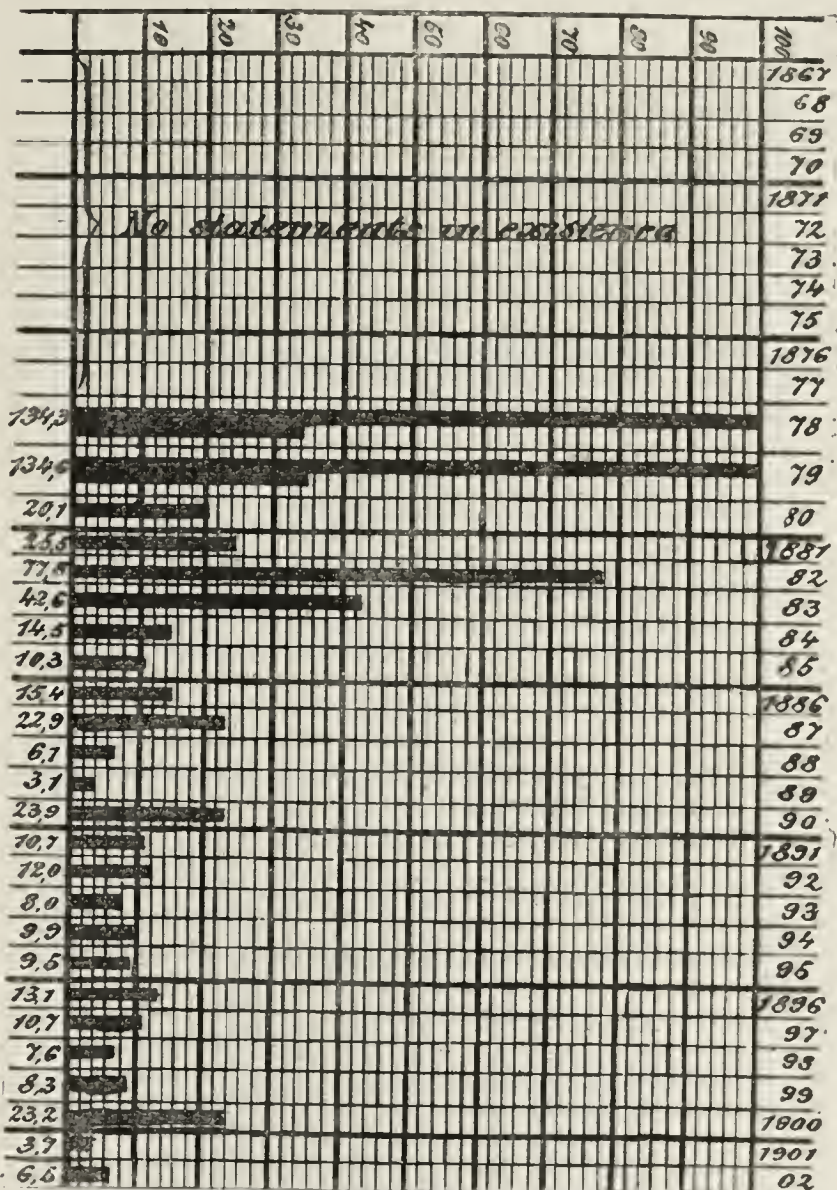
Jenner concerned himself also with some experimental research on cows in order to determine the stage at which the fluid from the equine affection was most likely to produce cowpox. In a footnote in his first publication in 1798 he says:

This [pus] I have often inserted into scratches made with a lancet on the sound nipples of cows, and have seen no other effects than simple inflammation.

The results of these experiments may have influenced the precept which, in his "golden rule of vaccination," Jenner later expressed, "never to take the virus from a vaccine pustule for the purpose of inoculation after the efflorescence is formed around it."



MUNICH.—SMALLPOX MORTALITY PER 100,000 OF POPULATION.



ST. PETERSBURG.—SMALLPOX MORTALITY PER 100,000 OF POPULATION

CHARTS 7 AND 8 (MUNICH AND ST. PETERSBURG).—Comparison of mortality from smallpox per 100,000 of population. In Munich before 1874, vaccination once for all; since then compulsory vaccination and revaccination. In St. Petersburg no compulsory vaccination.

this strange belief. He carefully studied cowpox in the bovine and in the human species, and finally, after devoting much time and thought to the subject, inoculated material from the hand of a dairymaid on the arm of a young boy with complete success.

It remained for Jenner to crystallize the half-forgotten cowpox tradition into a scientific hypothesis, and then by painstaking study and experiment to prove its truth to the world.

While Jenner's experimentation consisted largely in inoculating or rather vaccinating from one human subject to another, the material employed was primarily derived from the cow, which was, in its turn, accidentally inoculated from another cow or from the horse,

EXPERIMENTS BEARING ON THE RELATION OF VACCINATION TO SMALLPOX

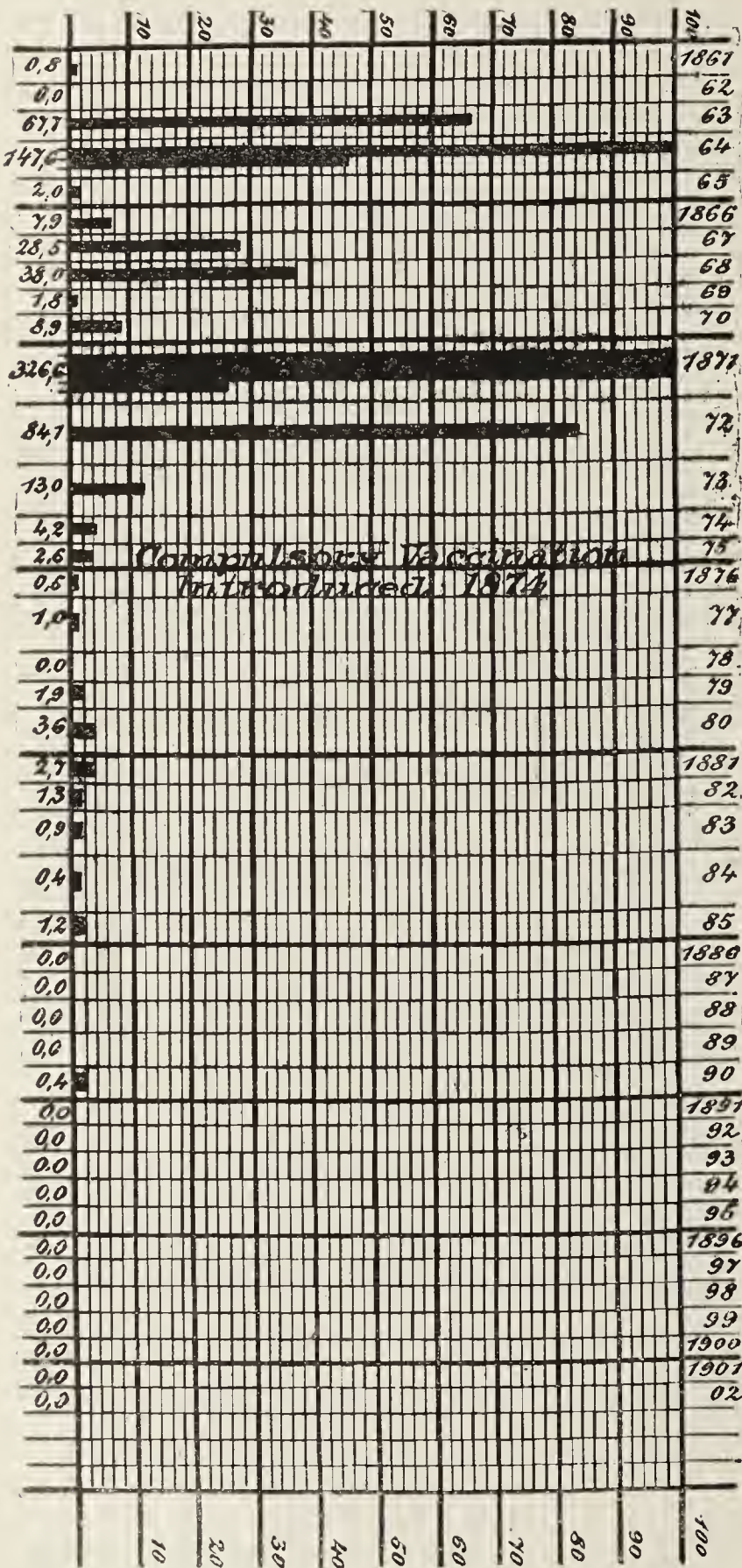
With the best qualified and most persistent opponents of vaccination, such as Prof. E. M. Crookshank and Dr. Charles Creighton, the alleged lack of relationship between cowpox or vaccinia and smallpox constituted a vital argument in support of their views. It was maintained that, vaccinia and variola being two unrelated affections, the inoculation of the virus of the one could not possibly protect against the other. Had the basic premise been proved to be true, the conclusion would have had much scientific, though theoretical, weight. The force of this argument, however, has been annihi-

lated within recent decades by the proof that a most intimate relationship exists between vaccinia and smallpox. Indeed, it has been demonstrated that the intensely contagious virus of smallpox can be transformed into the benign vaccine virus, the latter having the property of protecting against smallpox when inoculated into the human subject. Moreover, the affection produced by the vaccine virus, unlike that produced in

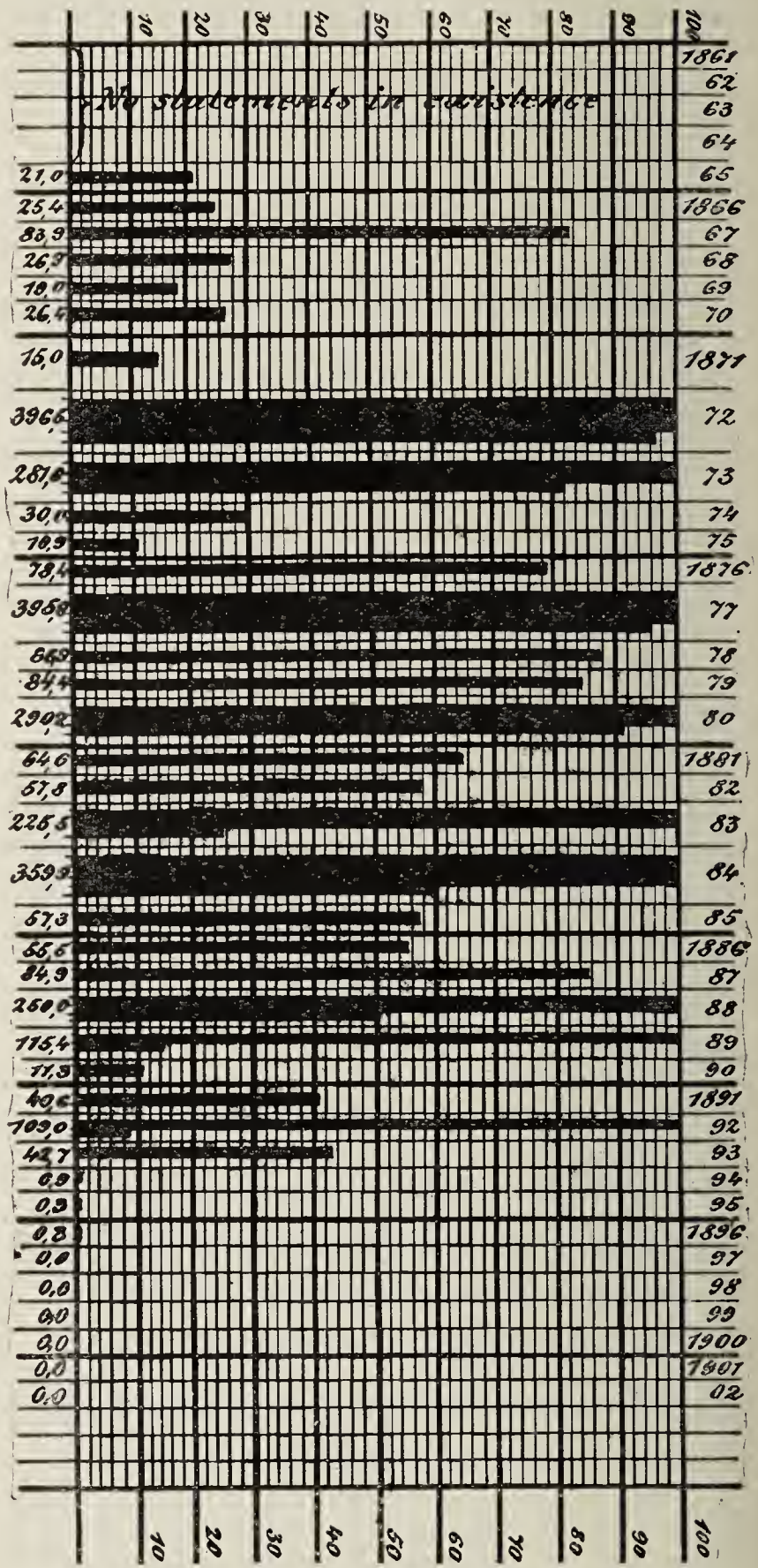
It has taken almost a century of experimentation to prove the truth of the statement made by Jenner in his first publication, that smallpox and cowpox were modifications of the same disease. What a tribute to the intuitive discernment of this great man!

THE VALUE OF THE ABOVE EXPERIMENTS

The demonstration of the proof that vaccine virus may be developed from smallpox virus is of the greatest



DRESDEN.—SMALLPOX MORTALITY PER 100,000 OF POPULATION.



PRAGUE.—SMALLPOX MORTALITY PER 100,000 OF POPULATION.

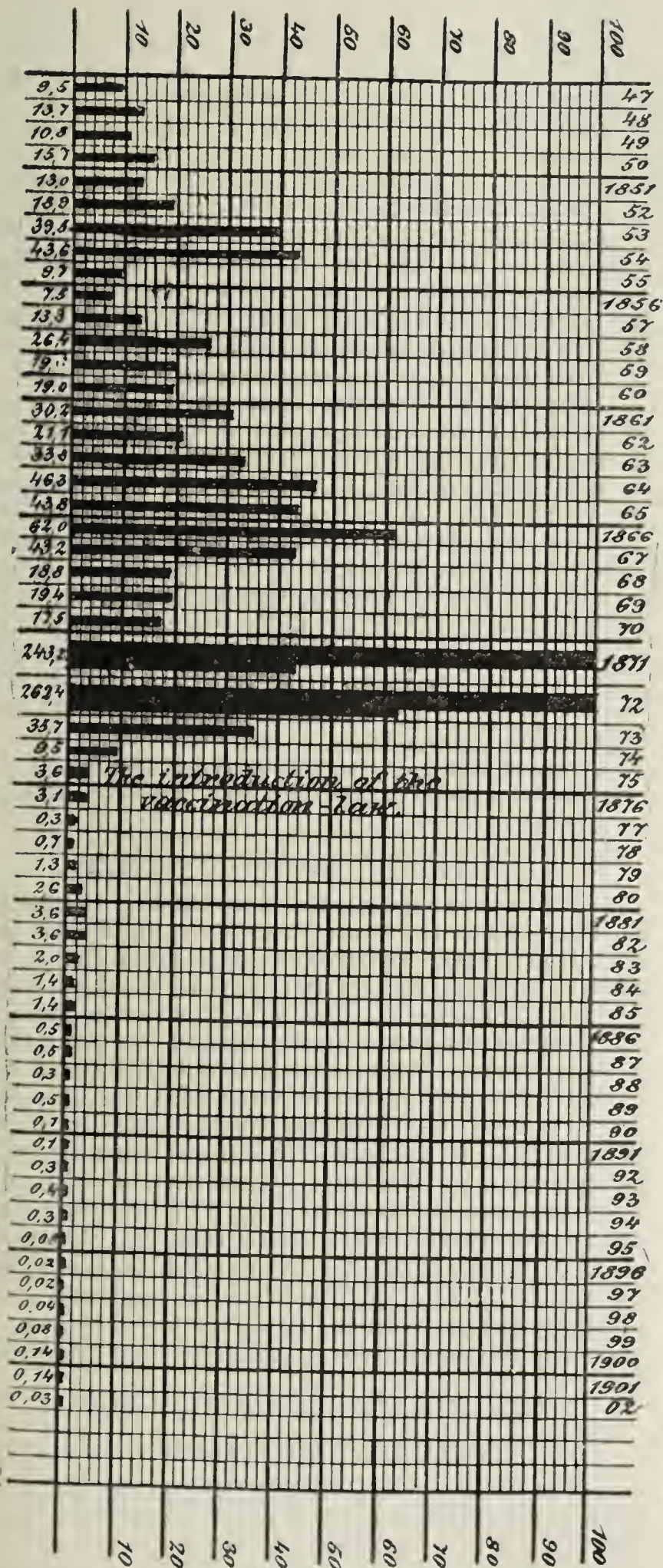
CHARTS 9 AND 10 (DRESDEN AND PRAGUE).—Comparison of mortality from smallpox per 100,000 of population. In Dresden no compulsory vaccination before 1874; since then compulsory vaccination and revaccination. In Prague no compulsory vaccination.

the last century by inoculation of smallpox virus, results in a disorder which is non-contagious. This proof of the relation between vaccinia and smallpox has been brought about through animal experimentation carried on through many years by scientific men in France, Switzerland, Germany and Great Britain.

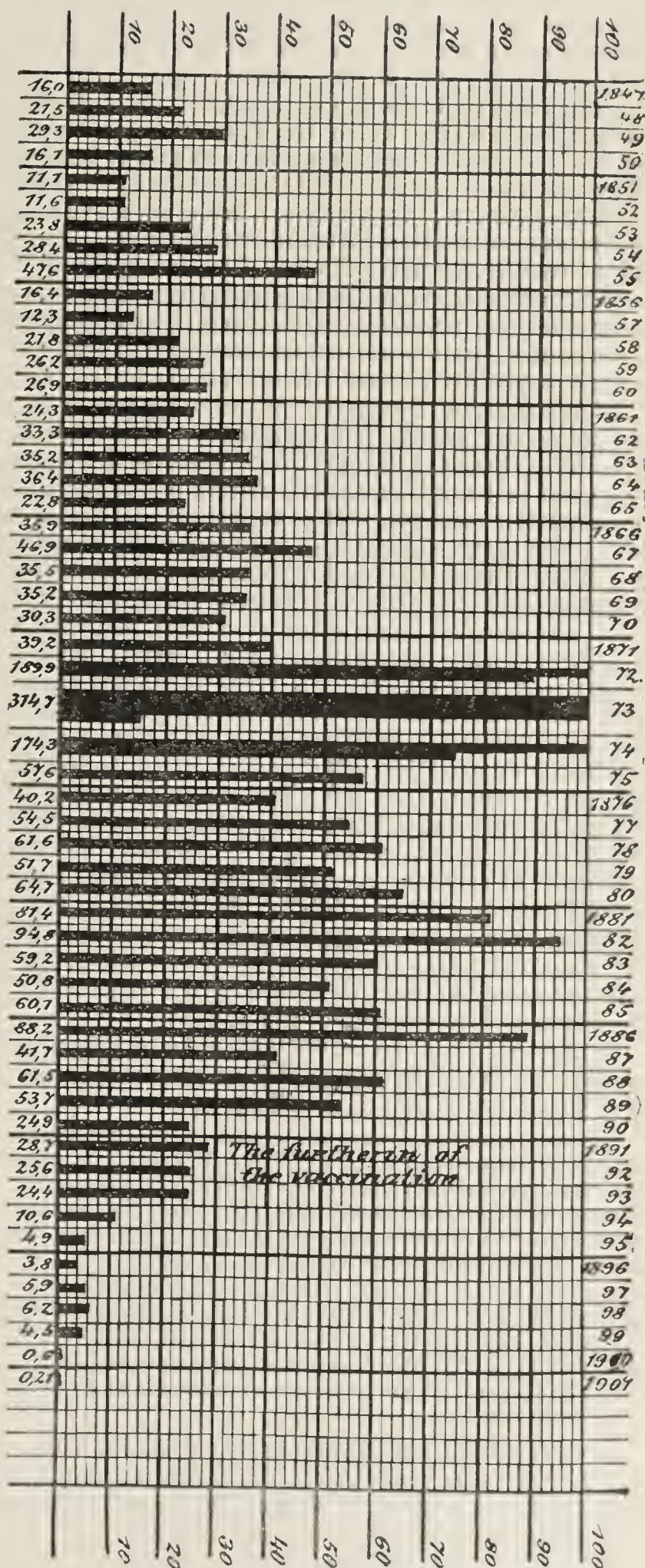
importance to mankind. Cases of spontaneous cowpox, from which most strains of vaccine lymph were originally derived, are excessively rare. In Württemberg, in 1825, a reward was offered for the discovery of cases of spontaneous cowpox. There is a reassuring sense of security, therefore, in the knowledge that in a case of the

loss or attenuation of existing strains of lymph a fresh source may be obtained by variolation of calves. It has long been known that vaccine lymph may degenerate by too prolonged transmission through the human species. In years gone by the cry was often heard, "Back to the cow."

Again, in the event of a vaccine famine such as occurred in 1871-72, or in an extensive epidemic of smallpox in some inaccessible country where vaccine material could not be secured, the ability to convert the smallpox virus into vaccine virus by inoculation of calves would offer the means of suppressing the epidemic.



PRUSSIA.—SMALLPOX MORTALITY PER 100,000 OF POPULATION.



AUSTRIA.—SMALLPOX MORTALITY PER 100,000 OF POPULATION.

CHARTS 11 AND 12 (PRUSSIA AND AUSTRIA).—Comparison of mortality from smallpox during the years 1816-1902. There was very little difference in the number of deaths from the disease in the two countries as long as compulsory vaccination had not been introduced; since the enactment of the German vaccination law in Prussia, however, the mortality there has sunk to a previously unknown figure, whereas it has remained stationary and at the same high rate in Austria for many years. Up to 1889 the mortality from smallpox in the latter country was on an average greater than it was before the epidemic in 1872, and it is only since 1890 that favorable conditions have again prevailed, although the losses from smallpox have remained greater during recent years than in Prussia.

ADVANTAGES OF BOVINE VIRUS OVER HUMANIZED VIRUS

1. About a quarter of a century ago it was the common practice to employ for vaccination the fluid or the dried crust from the vaccine lesion on a child's arm. While such vaccinations gave satisfactory results as regards protection against smallpox, they were attended with certain disadvantages which are obviated by the use of bovine lymph. The use of calf-propagated virus precludes the possibility of transmitting by vaccination diseases peculiar to the human species. One of the most weighty reasons that led to the adoption of animal vaccination and to its preference over arm-to-arm transmission was the recognition of the possibility of inducing syphilis by vaccine inoculation. To be sure, such accidents were so rare that thousands on thousands of physicians vaccinating throughout a lifetime failed to encounter any such unfortunate experience. Nevertheless, no matter how uncommon such a catastrophe might be, the remotest liability of such an occurrence constitutes a serious argument against the use of humanized virus. The opponents of vaccination bitterly attacked the procedure on the grounds just mentioned. The bovine species being totally insusceptible to syphilis, the use of lymph of calf origin is entirely devoid of the danger of transmitting syphilis. The weightiest argument of those who have antagonized vaccination is, therefore, nullified. Erysipelas appears to be a much rarer complication since the general employment of animal virus.

2. The virus of calves offers an almost inexhaustible supply of lymph, inasmuch as a much greater yield can be obtained from the calf than from the human subject, and, furthermore, the number of calves used can be multiplied according to existing needs. During extensive epidemics of smallpox when humanized virus was employed, the community was often placed in a most embarrassing and dangerous predicament owing to an insufficient supply of vaccine lymph. During the great pandemic of smallpox that spread over the entire globe in the early seventies a veritable vaccine famine existed in many countries. All kinds of sources were drawn on for virus, and much worthless lymph derived from spurious and irregular vaccinations was employed, with entirely unsatisfactory results.

3. Animal lymph appears to give a much larger percentage of successful revaccinations than long-humanized virus. Dr. Henry A. Martin says:

The number of those who in revaccination with old, long-humanized virus (not that of early human removes) experience vaccine effect may be stated at the outside at 35 per cent. The number of those revaccinated with equal care and repetition with animal virus and virus of very early human removes, I affirm to be a fraction over 80 per cent.—a difference of 45 per cent.; and this 45 per cent. I firmly believe to represent approximately the number of those insensible to the enfeebled influence of long-humanized virus, but sensible to the intense contagion of variola just in the same degree as sensible to the intense power of bovine virus and that of the early human removes from it.

4. Vaccination with bovine lymph produces a vesicle which approaches more nearly the Jennerian prototype, and reaches, therefore, a greater degree of perfection than that produced by long-humanized virus.

The cowpox accidentally produced on the hands of dairymaids was believed by Jenner to confer lasting protection against smallpox. The bovine species appears to be the natural soil of the prophylactic pock, and the view has been maintained by many that calf virus or virus derived from an early human remove creates a more complete and permanent immunity.

It has been alleged by the opponents of vaccination that tuberculosis has been and is transmitted by the use of calf virus. The precautions which are adopted in the propagation of vaccine virus make such an accident almost an impossibility. Even were this not the case, it is very doubtful whether an inoculation of virus contaminated with the tubercle bacillus would produce more than a local skin lesion which could be readily cured. The precautionary measures employed are, as has been said, an all-sufficient safeguard. The virus is obtained from very young calves, and it is pretty well established that calves are but rarely the subjects of tuberculosis. It is stated by Fürst,¹⁹ on the authority of Pfeiffer, that but one case of tuberculosis was found among 34,400 calves under four months of age. The statistics of the abattoirs of Augsburg and Munich corroborate the above figures; only one tuberculous calf was discovered at Augsburg among 22,230 slaughtered, and the percentage was much smaller at Munich.

Furthermore, in all well-regulated establishments for the propagation of vaccine virus, the calves are subjected for a number of days prior to vaccination to the tuberculin test; in the event that tuberculosis is shown to exist in the animal, it is, of course, not employed for vaccination. All calves used for vaccination are autopsied and carefully examined before the virus obtained from them is placed on the market. Finally, even though it were possible, despite these precautions for the tubercle bacillus to contaminate the lymph, it would perish if the virus were glycerinated. Nearly all of the vaccine lymph now employed is subjected to the process of glycerination. Copeman,²⁰ speaking of glycerinated lymph, says:

The tubercle bacillus is effectively destroyed even when large quantities of virulent cultures have been purposely added to the lymph.

EXPERIMENTAL RESEARCHES ON MONKEYS

A number of observers, including Zuelzer, Copeman, De Haan, Roger and Weil, Park, Ewing, and Councilman, McGrath and Brinckerhoff, have shown that it is possible to inoculate certain species of monkeys with smallpox, producing in them a mild affection similar to inoculated smallpox formerly induced for protective purposes in man. This inoculation protects the monkey against subsequent successful inoculation and likewise against vaccination. Monkeys are only slightly, if at all, susceptible to smallpox contracted in a natural way through the air. Professor Councilman, of Harvard University, and his associates allege that they have discovered the parasite which causes smallpox, the same organism somewhat modified being held to be present in the vaccine lesion. If this claim is confirmed and proved by further research, results of practical importance may be evolved from the labors of these investigators.

RECAPITULATION AND CONCLUSIONS

VACCINATION AND SMALLPOX

1. Vaccination, when properly and adequately employed, protects one against smallpox. Even those intimately exposed to the disease, as physicians and nurses in smallpox hospitals, may be rendered completely immune against smallpox by vaccination and revaccination.

19. Fürst: *Die Pathologie der Schutz-Pocken-Impfung*, Berlin, 1896, paragraph 431, p. 112; quoted by Acland: *Albutt's System of Medicine*.

20. Copeman: *Vaccination, Its Natural History and Pathology*, London, 1899, p. 181.

2. Vaccination protects against smallpox in the same manner that one attack of the smallpox protects against a second attack. Vaccination has the special advantage in that the immunity which it confers against smallpox may be renewed when it becomes impaired or exhausted.

3. Vaccination in order to confer protection must be genuine: the mere production of a "sore arm" is of itself no proof that the subject has been successfully vaccinated. The vaccination must run a definite course before a protective substance is left in the body.

4. Smallpox may develop in vaccinated persons if they permit years to elapse without revaccination.

5. Vaccination and revaccination universally applied are capable of exterminating smallpox as an epidemic disease. The experience of Germany during the past thirty-five years proves this.

6. In isolated instances individuals in a generally well-vaccinated community may develop smallpox because their protection is imperfect as a result of the use of an inert virus or some other fault of technic. These cases, however, will never appreciably influence the prevalence of the disease in such a community.

7. Smallpox was an ever-present and terrible pestilence in the days before vaccination. In most civilized centers it is to-day a relatively rare disease. This change has been effected almost exclusively by vaccination. Epidemics of smallpox prevail from time to time when the spark of infection is introduced into the community and a sufficient amount of unvaccinated combustible material exists to lead to a general conflagration. In countries where vaccination is neglected, as in Persia, Asiatic Russia, etc., etc., smallpox is still a death-dealing scourge.

8. The foes of vaccination commonly refer to the infrequency of smallpox at the present day and to the remote liability of contracting the disease. They forget that the relative security which we now enjoy is the result of vaccination. This security can be made absolute or it can be largely destroyed according as vaccination and revaccination are generally employed or generally neglected.

9. The dangers connected with vaccination have been greatly exaggerated by the opponents of this measure. Vaccination causes an abrasion of the skin and in rare instances this wound, like other wounds may become infected, especially when neglected or maltreated. With the selection of a proper virus and care of the vaccination site during and after vaccination, the risk in any individual instance is an entirely negligible quantity. The risk connected with vaccination is infinitesimal compared with the peril of remaining unvaccinated.

THE RELATION OF ANIMAL RESEARCH TO OUR KNOWLEDGE OF SMALLPOX AND VACCINATION

1. Numerous experiments on calves have proved that smallpox virus may be converted into vaccine virus by transmission through several generations of the bovine species. This discovery not only establishes vaccination as a thoroughly scientific practice, but also provides for a new source of lymph in the event of the deterioration or loss of existing strains.

2. Experiments on calves have resulted in a method of calf vaccination which permits of the production of any needed quantity of virus. This renders unnecessary the use of humanized virus with the attendant disadvantages elsewhere referred to. The use of calves for the propagation of vaccine lymph constitutes the most important improvement in vaccination since its discovery over a hundred years ago.

1922 Spruce Street.

AN EXPERIMENTAL STUDY OF CERTAIN PHASES OF CHRONIC BACKACHE

A COMBINED GYNECOLOGIC AND ORTHOPEDIC INVESTIGATION *

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AND

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BOSTON

DEFINITION OF CLASS OF CASES UNDER INVESTIGATION

For an indefinite time the medical profession has been confronted with a very common and perplexing class of cases, mostly in women, but occasionally in men, in which persistent backache is the chief subjective symptom.

These cases present the following symptomatic picture: The pain, generally dull in character, is as a rule referred to the sacral or lumbar region and is frequently felt in one or both sacro-iliac joints; rarely it is complained of in the dorsal region. It also frequently shoots down one or both legs, in which case it is generally classed as "sciatica" and is aggravated by forward bending or flexion of the thigh with the knee extended. The pain in the back and leg are aggravated by standing, and especially by prolonged standing, such as is involved in the fitting of women's dresses. It is sometimes relieved by the recumbent position, but at times is at its worst when the patient rises in the morning. The pressure of the hand in the small of the back while sitting, or the use of a cushion in the same region in sitting or lying, are instinctive means of relief which every practitioner has seen these patients use. The pain is most often aggravated during menstruation and in general is either unilateral or bilateral, but in the latter case on close questioning is usually found to be worse on one side than on the other. Local tenderness may or may not be present. If the back is exposed and the finger-tips are placed over the erector spinæ muscles, perceptible spasm may be excited in these muscles by voluntary forward or lateral bending at the waist, and perfectly normal spinal mobility is unusual in the more marked cases. Bending is frequently better performed to one side than to the other. The nervous element in these cases may be slight, or so severe as to dominate the whole picture.

The condition sometimes originates from accidents, such as falls; it begins at other times as the result of overuse or strain, as in prolonged piano-playing, after heavy lifting, or after surgical operations. At other times it is found without assignable cause. The affection is exceedingly persistent and seldom very severe, and its most striking characteristic feature is the patient's insistence on a habitual pain for which no adequate cause is apparent. A search for that cause was the purpose of this investigation.

PRESENT TERMINOLOGY

The causes of this condition have been variously assigned by specialists and the general practitioner to the pelvic organs, to the muscles and joints, and to the nervous system. The uncertainty concerning its true

* Portions of this paper were read in abstract before the American Gynecological Association in New York April 21, 1909, the American Orthopedic Association in Hartford, June 9, 1909, the Gesellschaft der ehemaligen Hoffa'schen Assistenten in Berlin, Sept. 6, 1909, and the Anglo-American Medical Association in Berlin, Sept. 11, 1909.

nature is expressed by the many names applied to the condition, of which the most common are the following:

Hysterical spine.
Neurasthenic spine.
Weak back.
Uterine backache.
Irritable spine.
Chronic lumbago.
Railroad spine.
Relaxation of the sacroiliac joints.

Among the laity the condition is often attributed to kidney disease.

Without denying the existence of cases in which this symptom is the result of diverse causes, such as actual uterine, spinal or sacro-iliac disease, we are inclined from the observations and experiments to be described to regard the term "static backache" as more truly descriptive of the majority of these cases. By which term we mean pain due to back strain incurred by an undue effort to maintain body balance under the conditions of the individual physiology.

ESTABLISHED TREATMENT

If the patient is a woman and any abnormality of her uterine system can be found, it is usually considered adequate reason for immediate treatment by the gynecologist. If some innocuous uterine peculiarity is operated on in order to cure a backache which is dependent on an overstrain of the back muscles, the results are not likely to be gratifying to the patient or to add much to the reputation of the surgeon who performs the operation. So, too, the orthopedic surgeon who devotes months of effort with apparatus and gymnastics to the relief of back strain caused by the faulty posture originated by inflamed pelvic organs is likely also to fail.

Outside of the gynecologic treatment, patients of either sex are treated by jackets, corsets, plaster strapping, splints, pads, springs, belts, massage, vibration, gymnastics, heat, electricity, etc. The application of each one of these measures is empirical and the method of action of each is in general as little understood as the etiology of the condition for which it is used. If, instead of this blind work, a serious attempt is made to investigate the causes of the condition and to study its mechanics, it is possible that much confusion and many failures will be saved.

I. EXPERIMENTAL SECTION

REASON FOR PRESENT INQUIRY

The following experimental study, which has occupied us for the past three and one-half years, was undertaken because of the frequency with which one of us in gynecologic and the other in orthopedic practice met such cases of chronic backache, especially in women, and the study was made a joint one because we concluded that a consideration of the subject from our two different points of view would be more likely to be of use than two pieces of work done by each of us separately. No sooner had we started on our joint investigation, however, than we realized that neither of us had any exact comprehension of the causes or mechanism of the condition, matters which were evidently essential to any clear comprehension or study of the subject. We therefore turned to a study of the literature of the mechanics of the erect posture and found at that time little but vague statements, founded mostly on accepted authority rather than on observation of the living individual by reliable scientific methods. We were, therefore, obliged to begin our work by formulating for ourselves methods

for the study of the mechanics of the maintenance of the upright position, and at the outset it became evident that any such study must start with a determination of the center of gravity of the body, and its relation to the supporting structures, because all lines of strain and all muscular balance depend obviously on such relations, and we desire here to express our indebtedness to Prof. Ira N. Hollis, of Harvard University, for advice generously given us on the mechanical side of our problem.

Our first two years and a half were, therefore, spent in a purely physiologic research, at the end of which time we had perfected an apparatus for determining the center of gravity in the erect living individual.¹ Up to the time of this, our contribution to physiology, there had existed, so far as could be learned from a study of literature, no reliable method of estimating the position of the center of gravity of the body in the upright position. Various loose statements as to its location are given in literature, and there are a few carefully formulated attempts to determine it by a study of the masses of the body post-mortem and their relation to each other, but scarcely any two writers agree as to what the erect normal posture should be.²

The method in previous use had been as follows: A cadaver was dismembered, the center of gravity for each arm and leg, the head and the trunk were separately obtained and, by a formula, the relation of these masses to each other in an ideal erect posture was calculated, and the center of gravity of the whole body in this posture was then located therefrom. From our observations we believe that the position of the center of gravity obtained in this way is misleading and untrustworthy for translation to the living, because the results obtained have failed so markedly to agree with the actual position of the center of gravity in the actual erect posture as obtained by us.

A study of the well-known method of Borelli for determining the center of gravity in the horizontal position suggested to us our method of determining the antero-

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2. Borellius, J. A.: *De Motu Animalium*, Lugduni Batavorum, 1679.

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posterior position of the center of gravity of the body in the standing posture; and the correlation of it to certain bony landmarks was easily added, as will be described.

AUTHORS' METHOD OF DETERMINING THE CENTER OF GRAVITY IN THE ERECT POSITION

On the platform of a dial scale registering up to 100 pounds is placed a sharp edge which supports one end of a flat board (B), the other end of which is supported by a similar sharp edge placed on a rigid block (C). The distance between the edges is 508 mm. (20 inches). A short distance behind the rigid block is placed an upright post (E) with a horizontal sliding arm (D, shown in section only), which furnishes a plane of reference from which the antero-posterior position of each of the important landmarks of the body can be determined by measuring their horizontal distance from this sliding arm.

The determination of the antero-posterior position of the center of gravity in the standing subject is made as follows:

The subject is weighted on an ordinary set of scales. He is then placed on the balance plane (B) at a known point facing the scales. (The exact point is unimportant, but after some experimentation we selected as most convenient that in which the heels are situated at one-fourth the length of the plane from the posterior sharp edge.) A removable ledge (F) against which the heels are placed is provided here.

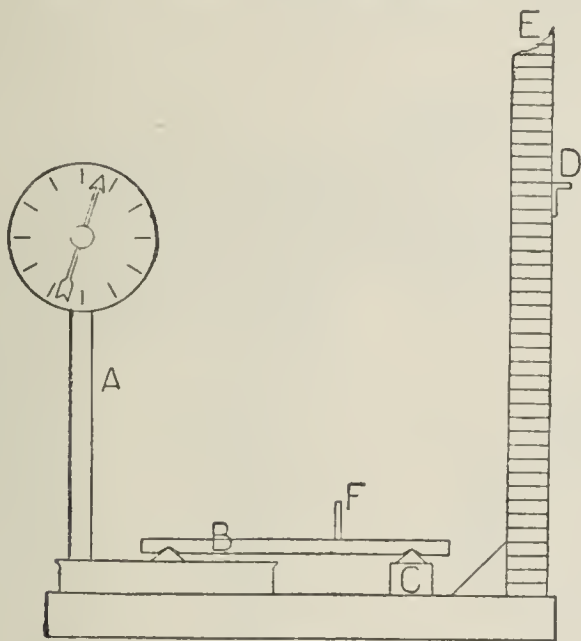


Fig. 1.—Diagram of the apparatus for estimating the center of gravity: A, scale. B, balance plane on which patient stands facing A. C, block supporting triangular edge. D, movable horizontal arm on upright for obtaining horizontal distances. E, vertical upright for standard plane. F, ledge against which heels are placed. (American Journal of Physiology.)

Since the balance plane on which the subject stands acts as a lever, in which the weight is borne between the fulcrum (the posterior sharp edge) and the supporting force (the spring which governs the scales), it is evident that the weight recorded on the dial (the balanced weight) will bear to the total weight the same proportion as that which obtains between the total length of the balance plane and the distance between the perpendicular dropped from the patient's center of gravity and the posterior end of the plane. That is: As the total weight is to the balanced weight, so is the total length of the board to the horizontal distance of the center of gravity of the patient from the posterior sharp edge (the fulcrum), or, to illustrate by a specific instance: The subject's total weight is 140 pounds; when placed on the balance plane his weight is 50 pounds, and the total length of the board is 20 inches.

The formula reads then:

$$\frac{140}{50} = \frac{20}{x}$$

This is then worked out as follows:

$$\begin{array}{r} 140 \times 1000 (7.1) \\ 980 \\ \hline 200 \end{array}$$

The center of gravity of the subject then lies perpendicularly above a point 7.1 inches forward from the posterior sharp edge.

After the determination of the position of the center of gravity, which should occupy on an average one or two min-

utes, the position of the following points which have been marked on the skin are measured and recorded.

1. The position of the back edge of the malleolus.³
2. The position of the back of the head of the fibula.
3. The position of the middle of the trochanter.

4. The position of the posterior part of the spine of the fifth lumbar vertebra.

5. The position of the posterior part of the spine of the seventh cervical vertebra.

All these points are taken under the usual conventions of somatologic measurements on the living.

The measurements having been recorded, are then easily translated into graphic form by the reproduction of the observed measurements on a sheet of paper, of which the bottom represents the balance plane, and the edge of the paper the posterior plane of measurement.

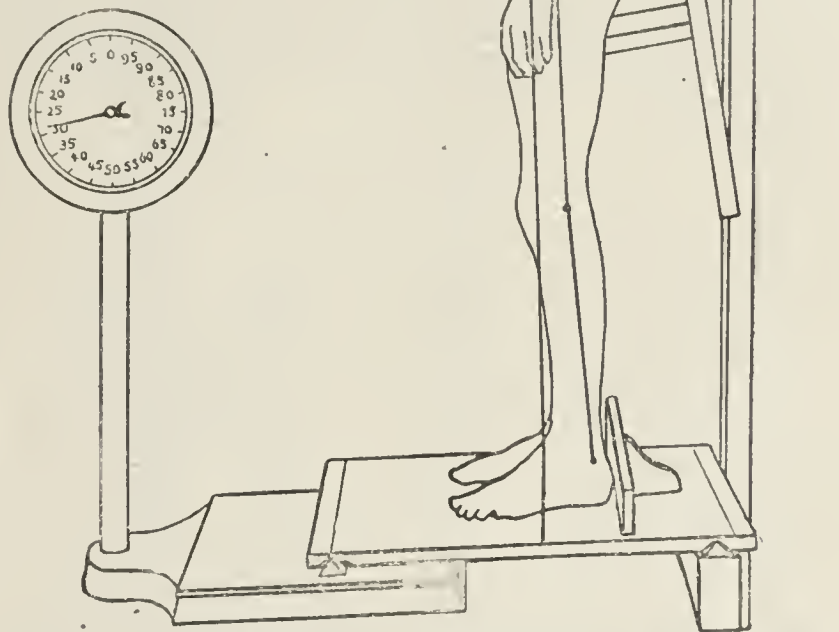


Fig. 2.—Apparatus in use. The lines drawn represent the lines shown in the record tracings. The long line running vertically is the perpendicular of the center of gravity.

These five comprise all the exact measurements which we have taken, but since the value of their graphic representation is considerably enhanced by its combination with some sort of representation of the body profile of the individual, we have completed the examination by the use of a device which obtains this with fair accuracy and which is illustrated in Fig. 2.

A series of horizontal metal arms, tipped with celluloid, slide easily through holes in the vertical wooden arm. These metal arms are shaken out to their full length, and their ends pushed rapidly and lightly against the subject's back in the median line, the point of the uppermost horizontal arm being applied to the seventh cervical vertebra. In the construction of the graphic record (Fig. 4), the position of this profile is known by its relation to the seventh cervical and fifth lumbar vertebrae; that is, these points are marked on the paper from the measurements taken, and the end of the uppermost arm of the profile instrument is laid against the mark which represents the seventh cervical, while a lower point is in contact with the mark representing the fifth lumbar vertebra. The curve is then traced on the paper containing the other measurements from the ends of the pins throughout its length.

The body curve of the ventral surface is obtained in the same way. The uppermost arm of the profile instrument is

3. In this and the following determinations the horizontal difference is obtained by a footrule, one end of which is placed against the marked point, while the body of the rule is held by the thumb against the upper surface of the sliding arm. Since this surface (and therefore necessarily the rule) is horizontal, the height of the point observed may be read at the same time, from a graduated scale which is marked on the upright post.

applied to the anterior surface of the neck at the level of the seventh cervical vertebra. The position of this curve on the chart is ascertained by using as points of reference the horizontal distances between the posterior parts of the seventh cervical and fifth lumbar vertebrae and the points horizontally opposite on the ventral surface, measured on the subject by a pelvimeter or other calipers.

It would be very desirable that this graphic record should be completed in every instance by a representation of the inclination of the brim of the pelvis, which would, of course, include its relation to the trochanter, but after much experimentation we have been unable to measure with accuracy the inclination of the pelvic brim in the living subject.

The use of the profile curves in the graphic representation involves the disadvantage that the chart must be drawn life-size, but it can be reduced later by a pantograph to any desired size. The change effected in an individual by treatment or apparatus may be most convincingly displayed by the reproduction of its record on the same chart, as in the figures shown in the clinical section later.

The sources of error incident to the method have been carefully studied. They are swaying of the subject, errors in measurement from the vertical plane, distortion of attitude during observation, inaccuracy in locating on the skin the bony landmarks selected, varying position of the feet, horizontal rotation of the pelvis and psychical influences. These errors and their prevention are dealt with at some length in the original description of the method, and therefore need not be repeated here.



Fig. 3.—Outline drawing of bad corset applied to a model.

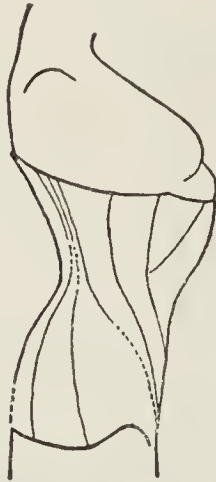


Fig. 6.—Outline drawing of good corset applied to a model.

OTHER METHODS OF STUDY USED

At the beginning of our study we experimented with various methods which proved to be worthless for exact use. These were shadowgraphs, observations with plumb lines, study of the model standing on a glass plate by means of a reflected image in a mirror placed underneath and measurements from an upright without knowing the center of gravity. Photographs were largely used, at first without success, but later, by making two exposures on the same plate with the greatest care to prevent jar of the camera, two positions of the model could be recorded with accuracy, but any such composite photograph which showed any duplication of outline of the feet was rejected. Such photographs were mainly used in checking the accuracy of our results from our final apparatus.

Out of several hundred observations made mainly by the apparatus described, we finally selected two hundred as reliable for study, which form the basis of our present communication.

MATERIAL STUDIED

The study was made for the most part on female nude professional artists' models courteously sent to us by the School of the Boston Museum of Fine Arts. In the three and a half years some six of these were under observation, our study of one model at first lasting for months, while, toward the end, two or three were under

observation during a fortnight. We selected female rather than male models because they were more easily obtained and more reliable, also because the condition under study occurs much more frequently in women.

Professional models, although clearly the only available material for our purpose, present certain disadvantages which we recognized. They are necessarily of stable types of figures, as otherwise the long-continued assumption of one position necessitated by their occupation would be intolerable, whereas we should have preferred to study women of the unstable types of figure. Another obstacle lay in their desire to help us, and we had carefully to conceal from them the purpose of our inquiry. Another difficulty lay in their ability and readiness to assume fixed unnatural positions, which in posing for artists they are, of course, compelled to do. We therefore supplemented the observations on these by such observations on patients as could be made without undue expo-

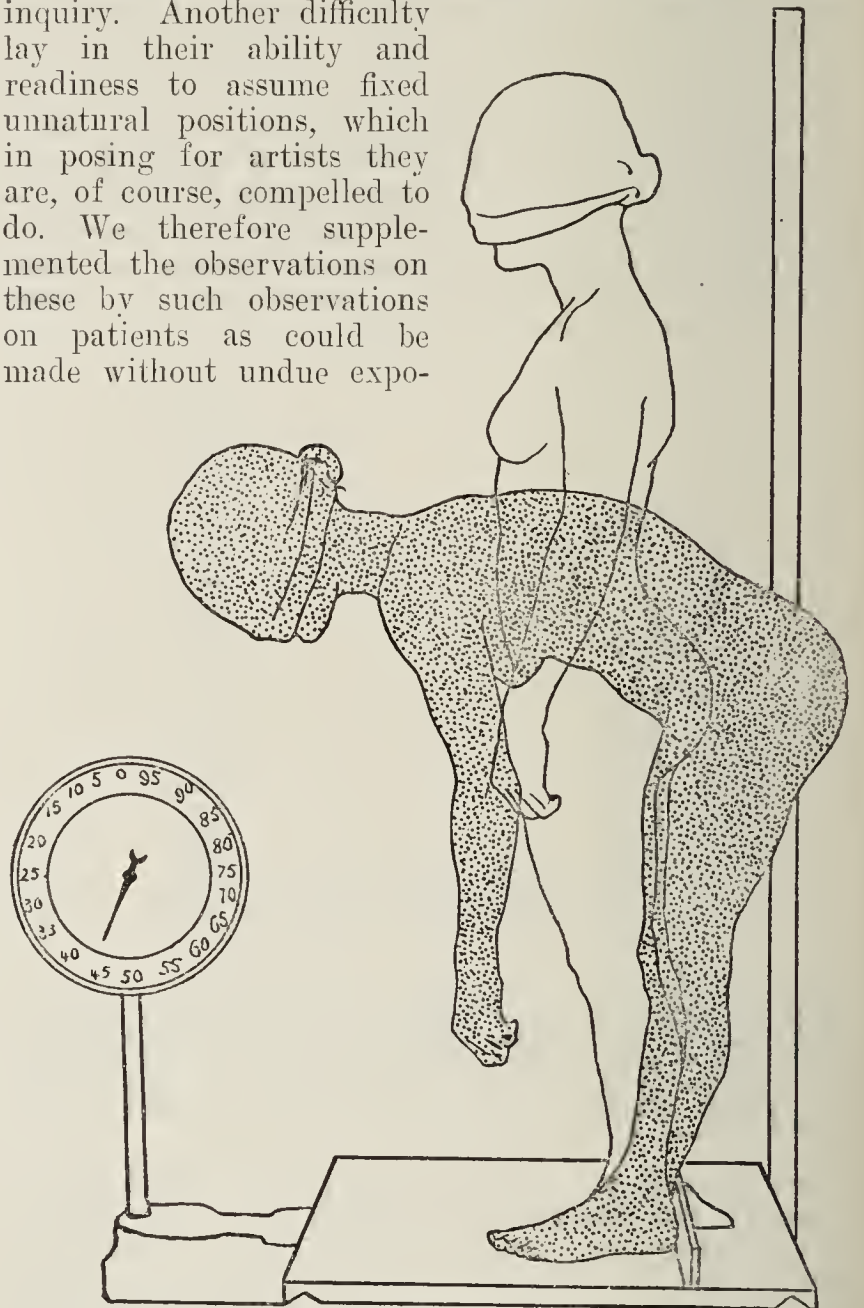


Fig. 8.—Drawing from composite photograph of model in two positions. The center of gravity is not changed in its relation to the feet.

sure, and a few such on normal persons, which have also been utilized in formulating our conclusions. These observations were then studied in detail, carefully correlated and analyzed.

DEFINITION OF FIELD OF EXPERIMENTAL STUDY

A consideration of the results of our physiologic study led us to the conclusion that antero-posterior balance in the upright position is maintained by moderate tonicity of the posterior musculature exerted against a slightly anterior position of the center of gravity. Reasoning from this led us to further experiments and observations, to be presently detailed, which seem to us to show that an important element in all static backache is to be found in back-strain, and that to assume relaxation of the sacro-iliac joints to account for the symptoms found is neither necessary nor wholly satisfactory. As soon,

however, as we began to plan a series of observations relating to the question of balance, it became evident that the field was so large that we could hope to cover for the present only some one small phase of the subject, and after a survey of the whole field of inquiry opened by our physiologic research we decided to limit ourselves for this first paper to a study of the very suggestive question of why such backache was in our clinical experience frequently improved or relieved by the use of corsets or high-heeled shoes.

No one realizes more fully than ourselves how very small a portion of the whole field we have here covered, and our present contribution is regarded by us rather as a report of progress, possibly of therapeutic value, than as a final settlement of even the management of static backache. It is our intention to pursue the lines of

it is necessary at this place to introduce certain elementary points in mechanics which are familiar to every one, for the preliminary problem under consideration resolves itself into an analysis of the mechanism of the standing position.

These points are the following:

1. The base of support of the upright human figure consists of a trapezoid formed by the outer borders of the feet and lines connecting the back of the heels and the front of the toes.

2. The center of support lies perpendicularly under the center of gravity and must always lie within this trapezoid.

3. For the purpose of studying the mechanism by which any weight is borne by a solid body in unstable equilibrium, the entire weight may be regarded as con-

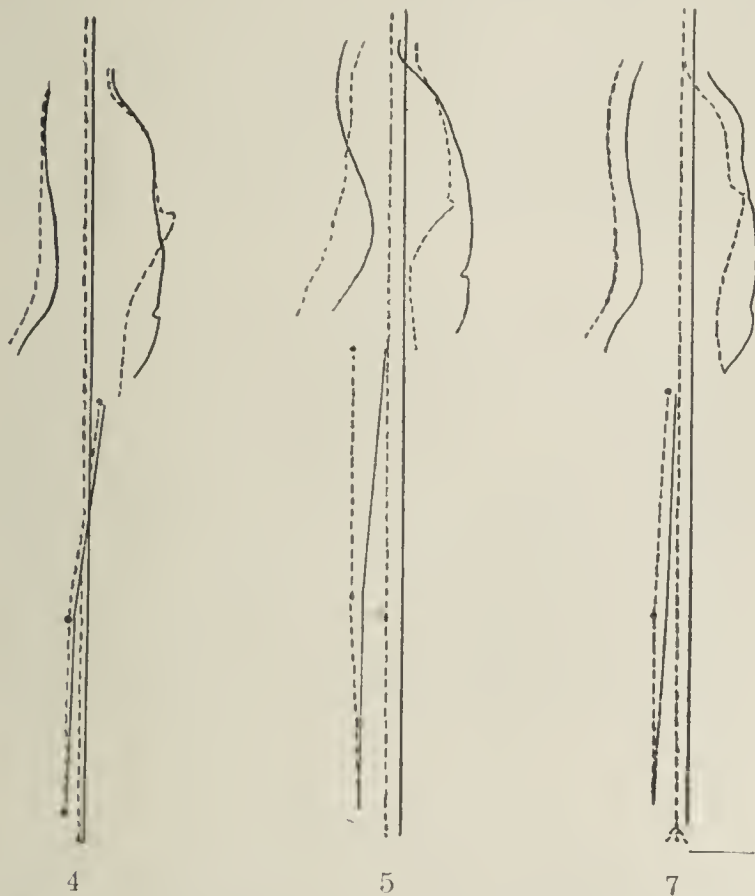


Fig. 4.—Position induced by bad corset in dotted outline; normal in solid line. In this instance the shoulders are thrown back of the normal a little, but not so much as the hips. On this and all following records, the solid vertical indicates the original position of the centre of gravity, the dotted vertical the induced position.

Fig. 5.—Position induced by bad corset in dotted outline; normal in solid line. In this instance the shoulders are thrown forward of the normal and the hips back.

Fig. 7.—Position induced by good corsets in dotted outline. Normal in solid line. The apparent flattening of the lumbar curve in the dotted line is due to the bulging of the soft tissues through the open space at the back of the corset.

investigation already undertaken further as opportunity may permit.⁴

PRELIMINARY CONSIDERATION OF PHYSICS RELATING TO BALANCE

For the proper comprehension of the practical application of our experimental work to clinical conditions,

4. Other lines of investigation at once suggest themselves as likely to prove of value, especially from the point of view of the orthopedic surgeon. (a) The establishment of a "normal" for the standing position and the formulation of the normal position of the center of gravity is possible with a sufficient number of observations. (b) The relation of the line of weight to the foot may be of much importance. It is obvious that the further forward this line falls the greater will be the strain on the tissues supporting the arch. It may in the future aid in the diagnosis and treatment of static disorders of the feet. (c) The attitude of round shoulders is a vicious position of the entire body and not of the shoulders alone, and its treatment by gymnastics would be made more exact and efficient if the attitude were analyzed. (d) Some incidental experiments showed that the effect of corrective gymnastics must be studied by some more exact apparatus than the eye if they are to be correctly and efficiently prescribed. (e) The static conditions evidently underlying the ptoses of the various abdominal viscera form a most promising field of study.

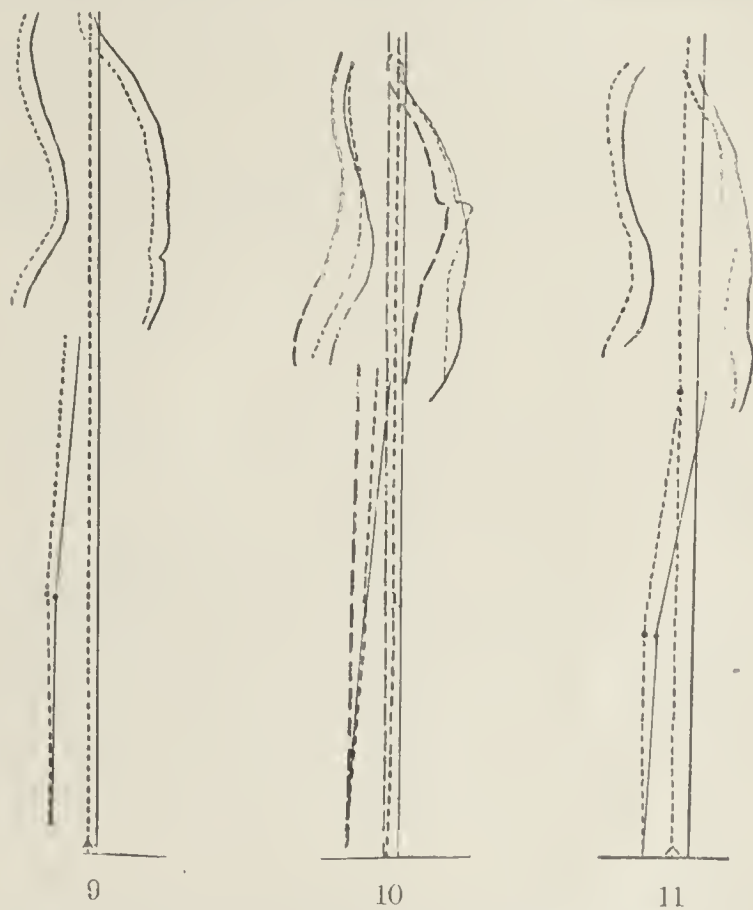


Fig. 9.—Record of the normal position and that induced by high-heeled shoes, the normal in solid line, the induced position in dotted line.

Fig. 10.—Record of normal position in solid line, corset position in dotted line and position of shoes and corsets in black line broken at longer intervals.

Fig. 11.—Record of Patient 4, whose backache was relieved by corset and Cook back splint. Original position in solid line; position of relief in dotted line.

centrated in the center of gravity, and the determination of the relation between the center of gravity and the bearing points determines the lines of stress.

Our observations show that in the erect position the center of gravity of the body lies in front of the ankle-joints, which are held from dorsal flexion in this position by the gastrocnemius muscles. The center of gravity lies also in front of the knees, which are similarly held in position by the hamstring and quadriceps extensor muscles. The center of gravity lies also anterior to the sacro-iliac joints and most of the vertebral joints. The position of the acetabula cannot be determined in the erect position in the living individual because we have no means of locating them from any available landmarks. If we were able to determine the position of the acetabula in the antero-posterior plane it would be possible to state definitely, from the relation of the center of gravity to them, whether the trunk in the erect position would tend to fall forward or backward at their level. But from the impossibility of obtaining definite

data on this point we are obliged to resort to another line of observations to determine this matter.

It has been shown by many experiments that when the cadaver is stood erect and the legs and ankles are fixed (to prevent the cadaver from collapsing on the ground), the trunk falls forward from the hips. In the erect position then the trunk is held extended on the legs by the combined and continued action of the posterior musculature, the chief factors here being the hamstrings, the glutei and the erector spinæ muscles.

If, however, for any reason the center of gravity becomes displaced forward, the strain on the posterior musculature necessarily becomes increased throughout, because the vertical stress at each level is determined by the horizontal distance of that point from a perpendicular dropped from the center of gravity, and, if this moves forward, the strain increases in proportion to the increased horizontal distances. So, too, other things being equal, the points farthest away from this perpendicular suffer the greatest stress.

Having presented these preliminary considerations in mechanics, we come next to the report of our experimental observations on the disturbances of balance.

THE EFFECTS OF CORSETS ON BALANCE

Throughout our remarks on this subject, we desire that it should be remembered that our experimental studies were concerned only with balance and the modifications produced on balance by corsets and high-heeled shoes, and that the other effects of these are not discussed.

In our experimental work it early became apparent that the assumption of any enforced position for even the short time involved in an observation left behind it an alteration of the normal, or unrestrained position which persisted for a number of minutes; also that mere maintenance of the standing position resulted in the appearance, after a surprisingly short but variable time, of a modification of the normal which we designated as a "fatigue position."

For these reasons it was necessary in our corset work to take a fresh observation of the normal attitude before each corset observation, to insist that each corset observation should be followed by at least fifteen minutes' complete muscular relaxation in a recumbent posture, and to limit the number of corset observations in any one sitting to two at most.

In their effects on the antero-posterior position of the body, corsets may be divided into three classes and each class must be studied separately if clear results are to be obtained. After much unsuccessful search for a satisfactory nomenclature for these three classes we have adopted the brief and comprehensible, though somewhat unscientific terms: the neutral, the bad, and the good corset.

A. Neutral Corsets

The indifferent or neutral class includes the great majority of all corsets worn by women, but it must be remembered of this statement that it applies only to the effects of corsets on balance, posture and static backache. Many of the posturally indifferent corsets may be harmful in other ways. Few of them are beneficial. At the present time practically all ready-made corsets belong to the posturally indifferent class. Indeed, we found it necessary to have good and bad corsets specially made for each of the models with whom we experimented. Until we did this, our results were confusing, but after this precaution was taken the results of observations on

all forms of corset became uniform, consistent, and sufficiently evident to permit of clear record and definite deductions. Neutral corsets produced no appreciable effect on body balance.

B. Bad Corsets

We use the term "bad corset" to designate that whole class of corsets the use of which we have learned to associate clinically, and to some extent experimentally, with the existence and production of static backache. All corsets of this class have definite common characteristics. All produce the same effect on posture when submitted to exact observation, varying only in the degree of their results. All tend to increase or produce static backache if persistently worn.

The common characteristics of this class of (bad) corsets are as follows: 1. They are long behind (especially at the top) and short in front (especially at the bottom). 2. They are cut to exert their greatest pressure at the waist and at the top and bottom are capable of exerting pressure only against the wearer's back. 3. They have strongly marked sacral curves, but are otherwise straight in the back, and are highly incurved at the waist in front.

Figure 3 is an outline of a representative specimen of the bad corset made from life by a very competent artist. The bad corsets uniformly moved the center of gravity back and effected an important alteration of posture. To the unaided eye this usually appeared as a simple movement of the shoulders forward, but this effect, though very constant, was in fact an illusion. When their action was measured and recorded it proved that they really threw the shoulders slightly backward, but always much less than the hips, which were thrown far behind the normal, thus inclining the line of the back forward and giving the illusion of forward shoulders.⁵

Figure 4 and Figure 5 show the effect of the bad corset.⁶

C. Good Corsets

The forms which we class together as the good corset have equally definite common characteristics and effects on posture. They are all in greater or less degree beneficial to those who suffer from static backache.

The common characteristics of all the forms which we class as good corsets are (1) that they are short behind (especially at the top) and relatively long in front (especially at the bottom); (2) they fit the wearer tightly around the pelvis (especially in the space between the iliac crests and the trochanters) and decrease regularly in pressure to their upper edge where they are very loose (especially behind); (3) they are considerably incurved at the waist line at the back and sides, but show no waist curve in front. Figure 6 is a life sketch of such a corset. The good corsets invariably moved the center of gravity back, and in all our experiments they threw the shoulders back of the normal, but under their effect the hips never moved further backward than did the shoulders and sometimes less. Figure 7 shows the actual effects of the good corsets as recorded.

It will be seen that, though both the bad and good forms of corset move the center of gravity backward in its relation to the base of support (the feet), they affect its relation to the more important bearing points of the body in directly opposite ways, a fact which explains

5. In a few instances, the shoulders were unmoved or thrown very slightly forward, but always with strong backward displacement of the hips.

6. The bad effect of a corset is not necessarily dependent on stiffness and we have seen the posture described as characteristic of bad corsets induced by badly cut "hygienic" waists.

their bad and good effects on back-strain and static backache.

In connection with the effect of the bad corset Figure 8 possesses illustrative interest. This is an accurate outline reproduction of a composite photograph. The model was first told to stand at ease on the balance plane, then to bend forward, and exposures were made of each position on the same plate. The dial of the scale was included in the plate and was found to rest at the same point in both attitudes. The model (who was entirely ignorant of the purpose of the experiment) had instinctively preserved her normal balance, and the relation of the center of gravity to the base of support was unaltered, but its relation to back-strain is seen at a glance to have been utterly different. The stippled position in Figure 8 is, in fact, only an exaggeration of the position induced by bad corsets (compare Fig. 5) as contrasted with the normal, the inclined position of the back subjecting the posterior musculature to increased strain in the dorsal and gluteal regions. No one will doubt that the erect position is one of comparative ease to the posterior musculature, nor that the forward bent position would produce backache if long persisted in.

SELECTION AND MANUFACTURE OF PROPER THERAPEUTIC CORSETS

The recommendation of any specific make of corsets is impossible, even if for no other reason, because there is no make of corsets appropriate to all figures; and there is no make of corsets which remains stable under the changing fashions. There have been times in the past when most of the ready-made corsets belonged distinctly to the bad type. There have been periods in the past when the ready-made corset frequently tended toward the good effect. At the present time, as has been said, most ready-made corsets are inefficient or neutral. A ready-made corset of more or less neutral type can often be so altered by taking up its seams that it produces a fairly good effect, and this can be increased when necessary by the use of a Cook's back splint,⁷ but the manufacture of a good corset by a skilful corsetière to fit the individual wearer is preferable when practicable.

In the production of the desired effect which should be produced by a "good" corset three points are important: 1. It is essential that the more important seams run diagonally forward and downward in order to secure the proper lines of strain in the cloth. 2. The bones which serve to keep the corset from wrinkling should run in such directions as not to interfere with these strains. 3. The patient should be taught to apply it properly after it has been properly made. These points seem to us so important that they are presented somewhat in detail.

1. In having corsets made for patients the easiest method of obtaining therapeutic results is to have the corset brought to the office after it has been cut and stitched together, but before it has been boned. It should then be somewhat large for the patient, and, after being placed on her, should be made to fit her by pinching up the seams one by one and securing them with pins. In Figure 6 the seams which are especially likely to need tightening in this way are marked with a broken line. The corset when completed should fit very tightly in the space between the trochanters and the iliac crests. This anchors the corset and in many figures prevents its riding up without the use of the objectionable

front garter. It should merely fit the patient over the iliac crests and immediately above them, as tightness at this point is uncomfortable and makes the corset ride up. In the back it should fit the hollow of the waist snugly, being hollowed in at the back, but not at the front, and above the waist it should be left as loose as the patient will wear it. In the front it should be straight, without constriction at the waist.

2. The anterior bones should run from above downward and strongly forward.

3. To be properly applied a corset must be laced in three sections, sacral, lumbar, and dorsal. Before it is put on, all the lacings must be widely loosened. The corset must then be settled into place as low as it can be worn, and clasped. The patient should then pass the hand inside it and lift the abdomen into it, settling the front of the corset as low as possible. The lumbar lacing should be pulled comfortably snug. The sacral lacing should then be made as tight as can be borne, and if the corset is so made as to spare the iliac crests, and properly cut out for the thighs in front, very tight lacing around the solid pelvis is comfortable to the patient. The dorsal lacing should be left as loose as is comfortable.

The clinical tests of the completed corset are that it should be comfortable to the wearer and that it should produce to the eye of the observer the effect illustrated in Figure 6.

THE EFFECT ON BALANCE OF HIGH-HEELED SHOES

The question of body balance as affected by shoes of different kinds has been ably discussed by Cook of Hartford, and our results by measurement correspond closely to those reached clinically by him.⁸

In speaking of high-heeled shoes, it should again be particularly noted that we are speaking only of the effect of such shoes on balance and not of their effect on the foot. Our observations dealt with the effect on balance of shoes with heels varying from $1\frac{1}{2}$ to $2\frac{1}{4}$ inches in height.

Preliminary experiments with composite photographs and the balance apparatus led us to the belief that raising the heel of the unshod foot by means of a book placed underneath tipped the body forward, and that compressing the front of the bare foot by a bandage without raising the heel tipped the body balance back, and we inferred that the effect of the high-heeled shoe was merely the resultant of these two opposed elements. But with the perfection of our apparatus we found that neither of these two component effects was constant, whereas the effect of the high-heeled shoe was constant. After a long series of experiments it became evident that high-heeled shoes tip the body back as a whole without making any appreciable change in the lumbar curve. Figure 9 is an instance of these records. There was but one exception to this effect in our observations on high-heeled shoes. This was in a rather degenerate type of girl whose center of gravity was naturally abnormally far back, and it is probable that her inability to tip further back without falling, forced her to compensate by forward muscular effort against the shoes. This was, at all events, the only exception among many observations.

One possible source of experimental error must be mentioned, for the sake of possible future observers, in connection with this conclusion that the body is tipped back by high-heeled shoes. In overlaying the tracings for comparison the malleoli must correspond rather than

7. A leather support reinforced by light steels bent to fit the back and support the lumbar curve where the corset lacings fail to give the support afforded by the rest of the corset.

8. Cook, Ansel G.: The Question of Balance, *Am. Jour. Orthop. Surg.*, July, 1907, and May, 1909.

the toes or heels. Without this precaution the mechanical distortion due to the oblique position of the foot in high-heeled shoes would lead to evident error.

THE EFFECT ON BALANCE OF HIGH-HEELED SHOES AND CORSETS COMBINED

Our observations on the combined effect of high-heeled shoes and corsets opened up a very complicated question that we have not yet been able to solve satisfactorily, although it is a more important question clinically than the others, because the combination of high-heeled shoes and corsets is what one meets clinically. In all of our experiments, moreover, we found that models in corsets, and most markedly in bad corsets, were much more comfortable standing in high-heeled shoes than without them—a fact confirmed by clinical experience. In our work on this point each observation was taken of the model without shoes or corsets, then with corsets of one of the various types, and then with both the corsets and shoes. The three tracings were then overlaid for study. The mechanical complications involved were so many that at present we are not prepared to make a more definite statement than that the use of high-heeled shoes seems to modify, toward the individual's normal, the position induced by corsets and particularly the position induced by bad corsets, already described. Figure 10 shows a record of this combination.

Finally, in this connection, we would protest against the indiscriminate advice so generally given to patients with backache to avoid high-heeled shoes. In many instances coming under our observation, such a change has been followed by most uncomfortable results.

DEDUCTIONS FROM OBSERVATIONS

Our conclusions from the experimental part of our paper are: that the center of gravity can be determined in the living erect individual; that this center of gravity is so located in relation to the supporting structures that the erect position is maintained by the tonicity of the posterior musculature; that forward displacement of the center of gravity leads to increased demand on the posterior musculature to maintain the erect position.

In the position induced by what we have designated as the good corset, the strain on the posterior musculature is lessened by displacing the center of gravity backward, and more especially by the fact that the shoulders are moved back at least as far as are the hips.

Though the bad corset also displaces the center of gravity backward, the relief to the posterior musculature which would be expected from this is neutralized in the position which they induce, by the fact that the pelvis is moved much further backward than the shoulders, thus inducing an inclined position of the back in which the weight of the trunk, considered by itself, is thrown so far forward as to place undue strain on the posterior musculature of the lumbar and pelvic regions.

In the position induced by the wearing of high-heeled shoes, without any other modifying apparatus, the strain on the posterior musculature is relieved by motion of the center of gravity backward, through movement of the body backward as a whole, chiefly from the ankle-joint.

The study of two forms of modifying apparatus applied to the subject at the same time introduces so much complication of conditions that conclusions therefrom must be drawn up with great caution. When high-heeled shoes are observed in conjunction with either form of corset we conclude that the attitude characteristic of either form of corset is modified slightly toward

the normal of the individual by the addition of high-heeled shoes, but the analysis of the effect so produced involves so complicated a mechanical study that we are not yet prepared to publish conclusions as to why this effect is produced.

II. CLINICAL SECTION

The clinical section of our paper is best introduced by the presentation of a few personal illustrative cases selected from many similar ones and reported in abstract for economy of space.

ILLUSTRATIVE CASES

CASE 1.—Patient, single, 53 years old, was sent to E. R. by a prominent orthopedic surgeon for backache and sense of weight in the abdomen which in spite of evident static faults had been uncorrected by his treatment, and which he was acute enough to believe must be traceable to some pelvic condition. On examination it was evident that her forward posture was due to an unconscious attempt to lessen pressure on a fibroid which nearly filled the true pelvis, and that the orthopedic apparatus had been ineffective in correcting the attitude or in relieving symptoms because it had been applied in the face of the determining cause, the fibroid. The patient made a prompt convalescence from a hysterectomy, but on rising from bed was extremely discouraged to find that the backache, which had led her to seek treatment, was, if anything, worse than before; but when she returned to the orthopedic surgeon who had originally treated her he found that the same apparatus which had before been ineffective now gave prompt relief, and after a few months she was able to drop it gradually. When last heard from, some time afterward, she was entirely well without treatment.

In this case orthopedic treatment was unsuccessful till the primary cause was removed. Hysterectomy alone might ultimately have relieved the backache without orthopedic treatment. Backache was, however, immediately and permanently cured by orthopedic treatment following the operation.

CASE 2.—Patient of E. R., married, aged 35, had undergone three major operations and prolonged local treatment without relief at the hands of three very prominent gynecologists, the chief symptoms being renal pain and sacral backache. The operations were nephrorrhaphy, anatomic success, with therapeutic failure, and two suspensions, both of them anatomic and therapeutic failures. Prolonged trials of pessaries had been made by two of the gynecologists, always ineffective, and always increasing pain and backache. Evident static faults, too complicated for the gynecologist to treat, were present and the patient was referred to the orthopedic surgeon of her choice after she had positively declined to allow replacement of the uterus and the insertion of a pessary on the ground of her previous experience. After considerable orthopedic treatment she was relieved of all her symptoms except sacral backache, which continued distressing. She then allowed E. R. to insert a pessary, which for the first time in her history she wore not only without pain but with immediate relief of the backache, and after wearing it for several months became able to maintain a forward position of the uterus without the pessary. She is still under orthopedic treatment but is relieved of her symptoms. Orthopedic treatment should have preceded an operation.

The names of the other medical men connected with these cases are omitted for obvious reasons.

CASE 3.—Patient, sent to E. R. by Dr. Chandler of Medford in January, 1908, 40 years old, married; no children; dysmenorrhea always; dyspareunia always; indigestion with intestinal gas three years; frequent frontal headache; occasional not very severe neuralgia in left sacrosciatic region, along the distribution of the left sciatic nerve and over the inner surface of the left thigh, always increased by walking and standing, but almost constant before and during catamenia. Pains and aches in all portions of the body. Patient did not seem in very bad condition, but was very self-centered, running from one specialist to another. On examination pelvic organs were normal. Diagnosis, orthopedic disability. Patient was

told that she should consult an orthopedic surgeon but that her many specialists should be under the control of a neurologist whom she should see frequently and persistently; referred to Dr. J. J. Putnam with consent of Dr. Chandler with written opinion to this effect; referred by Dr. Putnam to R. W. L.

Examination by R. W. L. showed that the patient stood with a slight left lateral curve and in a general "slumped" attitude. The lumbar region was flat, the dorsal region rounded and the knees were inclined to be held slightly flexed. She complained that she felt as if her back were not hollow enough; and to get relief she assumed a position with more lumbar curve in which the knees straightened. She showed marked tenderness over the left sacroiliac joint and felt some pain in the left leg. A radiograph showed that the sacroiliac joints were normal.

She was provided with properly fitted therapeutic corsets giving marked support in the lumbar region and which were tight around the pelvis, and was started on exercises. She was not markedly improved by this treatment at the end of a month.

Orthopedic treatment having failed to afford relief, Dr. Putnam put the patient under general rest-cure methods in a hospital. His observation there convincing him that the left-sided pain was genuine and persistent, and its catamenial exacerbation pronounced, he requested another examination from E. R. Examination without anesthesia was again negative, but under anesthesia the presence of a slightly enlarged, hard, non-tender left Fallopian tube was demonstrated, and a few days later the abdomen was opened. The left tube proved to be straight and patent, but with much thickened and indurated walls; the corresponding ovary slightly enlarged, sclerotic, and containing a very large number of small tense cysts scattered through it like a charge of birdshot. The left ovary and tube were removed, and abdomen closed. Normal convalescence. Patient declared that all abnormal sensations in left side had disappeared. On getting up there was, however, some left-sided sacroiliac backache, relieved by a therapeutic corset. Patient returned to Dr. Putnam's care. When last heard from, one year after operation, she considered herself well.

In this case the essential factor was at first missed and the case considered orthopedic. After longer observation the detection and cure of the abdominal lesion resulted in spontaneous relief of the apparently static symptoms.

CASE 4.—Patient of R. W. L., a healthy and well-developed young woman, a professional teacher of gymnastics, at the end of a very hard year developed severe sacral backache for which advice was sought. She was at the time wearing a small girdle. She was treated by corsets and one of Cook's back splints. The pain disappeared immediately and an observation was made showing that the center of gravity had been moved back $1\frac{1}{2}$ inches. This change was so great that a second observation was taken a week later for purposes of verification with identical results (Fig. 11).

The relief was permanent and the ease was evidently one of pure back-strain induced by overexertion and therefore relieved by the change of balance and consequent relief to the posterior musculature without further treatment.

CASE 5.—Patient of R. W. L., a married woman, 34 years old, of rather less than average physique, had been fairly well until her confinement a year and a half previous. Shortly after getting about she began to have pain in the back and in one leg, and standing was accompanied by great discomfort. She had lost flesh and was very nervous and apprehensive. Examination indicated that the backache was apparently static. She had been treated by osteopathy without success, and later the diagnosis of a relaxed sacroiliac joint had been made. For this a plaster-of-Paris jacket had been applied and worn without any relief of the pain. When she was seen she wore a steel back-brace and a neutral corset. An attempt was made to throw the center of gravity backward by means of a properly made corset reinforced by a light tempered steel back brace to throw her balance back; this gave immediate comfort, and gentle exercises were begun. In three weeks she was practically free from pain, had gained in flesh and was improving as to her nervous instability.

In this case of evident back-strain the use of the ordinary appliances to splint the back did not give relief, which was obtained by changing the body balance by corsets.

APPLICATION OF EXPERIMENTAL DEDUCTIONS TO CLINICAL CONDITIONS

It becomes evident from the most casual consideration that in this class of cases there exist two elements, the gynecologic and the orthopedic, and an analysis of the probable primary cause of the pain, therefore, becomes necessary.

That forward displacement of the center of gravity induces increased effort of the posterior musculature (back-strain) has been demonstrated in our experimental section. That such excessive or prolonged muscular effort may be translated into pain, spasm and irritability is not only more or less a matter of common information, but may be supported by quotation of certain well-known analogous instances. If the arm is held out horizontally, after two or three minutes the muscular effort is translated into an ache. The spasm and irritability of the ciliary muscle which is overstrained to accommodate for astigmatism is well known. The pain and dragging in pronated and flat feet is generally admitted to be due to muscular and ligamentous strain.

That back-strain sufficiently long continued, induced by an unduly forward position of the center of gravity may be translated into backache seems evident. The unduly forward position of the center of gravity which induces backache we believe to be usually caused by one of three factors:

1. Peculiarities in the form and proportions of the skeleton (not necessarily outside of normal limits) resulting in a type of figure with a center of gravity markedly far forward.

2. General muscular relaxation leading to a "slumped," relaxed attitude.

3. Tenderness of intra-abdominal or intrapelvic organs inducing the patient to assume a stooping or other strained position to relieve intra-abdominal or intrapelvic pressure.

The gynecologic cases described above belong in the latter class and, though it is evident that the field of intra-abdominal or other visceral lesions which may cause such attitudes is wider than that covered by any merely gynecologic cases, yet they are presented as the most frequent representatives of a large class for the purposes of this paper.

It is further evident from the anatomy that in the case of the comparatively unprotected sacro-iliac joints even the painful spasms of the dorsal musculature may, and probably do, fail to prevent painful tension on the connective tissue (ligaments and fasciæ) placed there to regulate extremes of motion. Without denying the occasional existence of abnormally movable sacro-iliac articulations (mostly puerperal) we believe that undue tension on connective tissue from overstrain is sufficient to explain the symptomatology of most cases of apparent functional derangement of the sacro-iliac joints without invoking the possible existence of an abnormal mobility to explain it further.⁹

DIFFERENTIATION OF CASES AND TREATMENT

Our observations would be of little value to ourselves or to others were we not prepared to formulate certain

9. It has been a matter of common observation that pain in the back, of the character described, may be induced by lateral inequalities of the skeleton producing lateral strain, e. g., a short leg; and during this series of observations we have been confronted by numerous instances of it. We feel sure that such lateral inequalities predispose to the unilateral (one-sided) localization of pain induced primarily by bilateral strain, but we have thought it necessary in this series of observations to limit ourselves to the one point of antero-posterior strain and have therefore recorded no observations on this issue.

conclusions governing the treatment of these cases. It is evident that a determination whether the original cause of the backache is primarily intra-abdominal or originally static is a necessary preliminary to intelligent or effective treatment. In practice, in the comparatively limited field selected by us for discussion here, the cases would seem to fall schematically into three classes:

1. The gynecologic, of intrapelvic origin.
2. The orthopedic, of mechanical or static origin.
3. The borderland cases in which both elements are present, or in which the differentiation between the two is at first impossible.

The recognition of a borderland class is necessary on account of the frequency of its appearance in clinical work, but the line between this and the other classes is so indefinite that it can be described only by implication under the other headings.

1. Treatment of Cases of Intrapelvic Origin

Static backache is frequently a prominent symptom of the intrapelvic neoplasms. It is then due to an alteration of attitude caused either by an instinctive effort to lessen pathologic pressure within the pelvis, or by disturbance of balance from the actual weight of the larger growths. In these cases no improvement in the static condition can be expected until after the removal of the neoplasm, and here an immediate operative removal should be promptly followed by proper orthopedic treatment if necessary.

On the other hand, many of the ptoses are merely secondary results of static abnormalities. In these cases especially, gynecologists should be careful not to adopt treatment without first making a study of the static causes which so often have produced, or are perpetuating them, since some previously unmanageable retroverted uteri, prolapsed ovaries, etc., can be promptly relieved by minor intrapelvic treatment after the static faults which caused them have been corrected. Ptoses of the kidneys and other upper abdominal viscera are equally important and should be considered. Under these conditions, also, those cases which still demand major measures will more surely become symptomatic as well as anatomic successes, and many anatomic failures will be avoided.

In the inflammatory affections of the pelvic organs the instinctive efforts of the patient to protect the tender structures from the pressures and jars which are always incident to locomotion in the erect posture, lead usually to so persistent a maintenance of a constrained attitude that the prominence of static backache in these cases is easily understood in the light of what has been said in our experimental section.

The relative value of static or intrapelvic treatment as an initial step in the management of these cases depends largely on the stage of acuteness at the time at which treatment is undertaken. It is generally conceded that during the presence of an acute symptomatology the inflammatory affections of the pelvic organs should have depletive and soothing rather than radical treatment. In the more acute cases the muscles of the back are almost invariably in a state of irritation and spasm, and no part of the initial palliative treatment is more important or more promptly grateful to the patient than rest in bed, support to the irritated muscles, hot packs, the local electric light bath, etc., for their relief. On the other hand, even in the chronic cases, too early attempts at mechanical correction of the faulty posture are apt to do harm rather than good so long as the pelvic tender-nesses are unrelieved, since if successful they again

expose the tender organs to the pressures from which the faulty attitude has partially relieved them.

The complication of ptoses with inflammatory conditions demands evidently the weighing of relative indications in the individual case.

It is manifestly impossible to cover within the length of such a paper as this, even in outline, the whole field of gynecologic practice in its relation to static backache (even without the equally important lesions of general abdominal surgery), but we hope that what has been here said may serve to illustrate the principles involved.

The gynecologist may, of course, readily examine the backs of his patients and may with practice acquire some facility in the differential diagnosis of back-strains into those of primarily intra-abdominal or primarily static origin, but he should never forget that in the static cases the abnormality which is the original cause of the symptom may often be found in a distant part of the skeleton (e. g., the feet), and that its detection may require special knowledge.

Throughout the field of gynecologic practice the estimation of static conditions is of importance whenever backache is a symptom.

2. Treatment of Cases of Mechanical or Static Origin

The orthopedic surgeon will be wise to refer to the gynecologist for a preliminary examination and opinion by which to guide treatment, those cases in which the history, or the replies to the usual questions, are suggestive of uterine disease. This is especially important when the symptoms suggest the possible presence of inflammatory disease of the intrapelvic organs, since in these cases, as has been said above, alteration of attitude, such as would be indicated by the back-strain alone, may be distinctly harmful.

The accepted orthopedic treatment of back-strain as it exists to-day has been already spoken of in the beginning of the paper. It is a matter of common information that it is on the whole unsatisfactory. The treatment which from our point of view should be in theory the most satisfactory, and which in practice in our hands has proved the most successful, is as follows:

A defect of balance exists which in the end must be cured by remedying that defect of balance, a matter only to be brought about by substituting a correct for an incorrect attitude. Massage and gymnastic exercises to induce this correct attitude would seem to be the obvious method to follow. But practically this alone at the outset is generally unsatisfactory for the following reasons: One is dealing in most instances not with athletes with well-developed muscles, but with men, or more often women of less than average physique as a whole, whose back muscles in particular are overstrained, weak and irritated. These patients are recumbent not over ten out of the twenty-four hours as a rule, and for the rest of the time are generally sitting, standing, or walking. To begin by gymnastics on muscular development under these conditions is to exercise still further for perhaps half an hour daily, muscles already overused, and for the remaining fourteen hours of the twenty-four the irritation induced by the malposition goes on, for a correct position cannot at once be substituted for an incorrect position. It is a frequent experience to find the backache made immediately worse by such treatment, even when given by skilled persons. It is as if the oculist ordered his patients suffering from eye-strain due to astigmatism to use the eyes a little more each day to strengthen them before he corrected the visual error. The best results in back-strain are to be obtained, not by attempting to

strengthen irritated muscles at the outset by further use, but by temporarily putting them at rest by relieving the strain of the posterior musculature.

A properly fitting corset with a tight pelvic hold not only improves balance, but incidentally serves as a splint and support. The blacksmith who is to do heavy work with his arm puts a leather strap around his wrist to enable his muscles to work to better advantage. He gains thereby an extra annular ligament.

Proper corsets, then, accomplish three things in the relief of this condition:

1. They tend to correct vicious balance by carrying the center of gravity backward, thus relieving muscular strain.

2. They partially splint the lower back.

3. They furnish an artificial annular ligament to the glutei muscles.

High-heeled shoes are also to be recommended temporarily, when comfortable to the patient, because experimental observation has shown that they carry back the center of gravity, and clinical experience is generally confirmatory of their good effect.

If lateral deviation of the spine exists, it is to be improved by an extra lift on the shoe of the side to which the body leans.

In the more severe cases the active day should be a short one and recumbency for some hours during the day should be insisted on. It is only necessary to allude to the fact that the general condition of the patient must, of course, be attended to from the outset. After a week or two of such treatment, aimed at resting tired and irritated muscles, the patient is generally ready for the second stage of the treatment, muscular development as a means to the attainment of a permanently correct attitude. In irritable cases the exercises should be given at first in the recumbent position and later only in the erect position. The whole tendency of most medical gymnasts is to overdo both the massage and exercise at first. It must be remembered that the maximum muscular stimulation from massage is reached at the end of five minutes¹⁰ and that, after that, deterioration of muscular strength follows. Increase of backache following the exercises is a sign of too active exercises or too long a period of them. They are best taken once a day, the length of the period being gradually increased.

It must be admitted that, irrational as it is, many cases of backache are relieved by the use of corsets and high-heeled shoes alone. In a larger number this is a most useful preliminary to further attempts at radical cure, and we must remember that we shall be really curing such patients only when we have found and removed the condition which caused the disturbance of balance inducing the back-strain.

CONCLUSIONS

We believe that static backache is essentially a mechanical disorder; that is, that it is the result of a loss of balance producing local strain on the tissues in the lumbosacral region and elsewhere in the posterior musculature. We further believe, and regard as our most essential point, that whatever the local mechanism which produces the symptoms may be, such backache is in a large proportion of all cases not a disease in itself (as suggested by such terms as "hysterical spine," "relaxation of the sacro-iliac joints," etc.), but is a mere symp-

tom-complex due to an abnormal attitude induced by peculiarities of the skeleton, lack of proper muscular balance, or abnormal conditions in the abdomen or elsewhere. We believe that in diagnosis the local condition should be regarded as primary only after every cause elsewhere has been excluded.

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THE EFFECT OF ETHER ON CERTAIN PROCESSES OF IMMUNITY*

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The following study was undertaken as a part of a more general problem on postoperative lung complications suggested to me by Dr. Arthur Dean Bevan. An attempt was made to investigate the effect of ether on the phenomena of bacteriolysis, agglutination and phagocytosis. The clinical cases studied have been chosen from the surgical services of the Presbyterian Hospital. Squibb's anesthetic ether was used.

Because of the ease with which marked fluctuations of the bactericidal and agglutinating powers of a serum may be determined with the use of the typhoid bacillus, the work to be described concerning the effect of ether on bacteriolysis and agglutination was carried out with this organism. In each case experiments were conducted *in vitro* by adding ether in varying amounts to both normal and immune typhoid serums and also *in vivo* by observing the effect of ether anesthesia on these properties of the serums of practically normal human individuals, normal rabbits, and rabbits which were immune to the typhoid bacillus. The experiments on bacteriolysis were conducted in the usual manner by counting the number of colonies on agar plates after incubating the mixtures of serum and bacteria for variable periods. Sterile corks were used in the tubes instead of cotton plugs in order to minimize the evaporation of the ether while in the incubator. Varying amounts of ether up to 1 per cent. were used in different experiments. In none of the work was there observed any appreciable effect of the drug on bacteriolysis. The observations of the effect of the drug on agglutination were made with both the macroscopic and microscopic methods. Here also no alteration of the phenomenon was produced when ether was present in any amount from 0.1 per cent. to 2 per cent., or after an ordinary ether anesthesia.

In the work on phagocytosis it was found that ether, when added to both normal human and rabbit serum *in vitro* in varying amounts of from 1 per cent. to 2.5 per cent., reduces markedly the phagocytosis of streptococci. Similarly a reduction of phagocytosis was observed to occur after an ordinary ether anesthesia both in the human and rabbit. This reduction *in vivo* was demonstrated with *Streptococcus*, *Pneumococcus*, *Staphylococcus aureus*, *B. coli* and *B. typhosus*. For the study of the effects of the anesthesia on human individuals, cases were taken which involved fairly simple operative procedures on comparatively healthy young adults. Precautions were used to rule out factors which might complicate the results, such as infection, hemorrhage, shock.

10. McKenzie: Exercise in Education and Medicine, Philadelphia, 1909, p. 47.

*This work was carried out in the Surgical Service of the Presbyterian Hospital and in the Memorial Institute for Infectious Diseases. A report of the work was given before the Section on Pathology and Physiology of the American Medical Association, at Atlantic City, June, 1909.

etc. The experiments on normal rabbits were carried out by subjecting them only to an ether anesthesia without operative measures of any kind. In this work the usual opsonic technic was employed. The reduction of the phagocytic power of blood after an ordinary ether anesthesia continued in different experiments over periods of two days' to several weeks' duration. This depression apparently was due to a direct effect of the ether on both leucocytes and serum, not to any effect on the bacteria themselves. The effect on the leucocytes was determined (1) by noting a greater decrease in phagocytosis when the patient's leucocytes were used in the experiments than when normal leucocytes were employed, and (2) by observing on a warm stage a diminished amount of ameboid motion and less phagocytosis of carmine particles by leucocytes subjected to the action of ether. The direct effect on serum was made evident by experiments to determine the comparative opsonic sensitizing power of normal serum and of a mixture of normal serum and ether. Streptococci were added to both the normal serum and the mixture containing ether, and after thirty minutes' incubation the bacteria were washed free from the serum by centrifuging in three changes of 0.85 sodium chlorid solution. They were then added to normal leucocytes. Much greater phagocytosis occurred when normal serum had been used for sensitizing than when the serum and ether mixture had been employed.

In seeking for an explanation of these phenomena the interesting hypotheses of Meyer¹ and Overton,² that the anesthetic action of the fat-solvent drugs depends on their "mechanical affinity" for the fat-like substances of the body, seemed to afford a possible means of making clearer the mechanism by which ether reduces the phagocytic power of blood. Particularly did this theory seem to furnish at least a working hypothesis in the light of results, very similar to those described here, which have been obtained by other workers with the use of alcohol and chloroform, drugs which have a pharmacologic action very similar to that of ether and are also fat-solvents.

Of particular interest in this connection is the work of Rubin,³ who showed that hypodermic injections of alcohol, ether and chloroform render rabbits much more susceptible to systemic infections with streptococci and pneumococci, and that *in vitro* alcohol and chloroform diminish phagocytosis of pneumococci, streptococci and staphylococci.

Stewart⁴ has shown that in normal human beings the ingestion of only a small amount of alcohol markedly lowers the opsonic index to the streptococcus and tubercle bacillus. Other observers have obtained results which to some extent agree with these just mentioned by showing that animals to which alcohol and ether have been given succumb much more readily to experimental infections than controls; particularly is this the case with those infections of which the immunity is chiefly phagocytic. Moreover, the clinical fact has long been recognized that alcoholism predisposes to such diseases

as pneumonia, erysipelas, etc., in which phagocytosis plays a part.

Accordingly experiments were conducted to determine whether or not the fat-solvent power of the ether is the property by means of which it is capable of inhibiting phagocytosis. The problem was attacked by noting (1) the effect *in vitro* of the addition of a fat to blood, the phagocytic power of which had been reduced by the admixture of ether; (2) the effect *in vitro* of the addition to normal blood of ether previously saturated with a fat; and (3) the effect *in vivo* of injecting a fat into an animal subjected to an ether anesthesia. At first, lecithin was used because it is a fat-like substance which is almost universally present in the body. It was found that when lecithin was added in small amounts to the blood which had been subjected to the action of ether a prompt restoration of phagocytosis occurred. When ether was previously saturated with lecithin and then added to normal blood no diminution of phagocytosis was evident. Finally, when 0.1 gm. of lecithin was injected subcutaneously into etherized rabbits the phagocytic power of the animals' blood was restored to its preanesthetic condition in a few hours, whereas control rabbits which received a similar amount of physiologic salt solution showed a depression of phagocytosis which extended over a period of many hours. With the idea in mind that these results were not necessarily specific for lecithin, and that they might be obtained by the use of other ether-soluble substances, similar experiments were performed with olive-oil, a fat of widely different nature. Similar results were obtained, but it was found that in general more of the olive-oil was required to produce the effect. Moreover, it was observed that the injection of suitable amounts of the oil into the rectum was followed after three to six hours by a restoration of phagocytic powers, while, on the contrary, the injection of the same amount of physiologic salt solution had no appreciable effect in shortening the period of phagocytic depression. In the human experiments 5 ounces (160 c.c.) of warm olive-oil were passed slowly into the rectum through a tube immediately after the patient had returned from the operating-room.

The question has been raised why the injection of so small an amount of lecithin as 0.1 gm. should have an effect in restoring phagocytic power. A rabbit of 1,300 gm. weight may be assumed to have 100 gm. of blood, of which the plasma amounts to 52 gm. Hoppe-Seyler's analyses show that for 1,000 parts of plasma there are but 1.2 parts of fat. Therefore, in 50 gm. of plasma there would be 0.06 gm. of fat. Accordingly I have injected into each of my rabbits an amount of lecithin practically equal to twice the total amount of fat in his plasma. Of course, by a subcutaneous injection I do not get this amount into the circulation immediately, because fats are absorbed slowly from subcutaneous injections. However, I place something in the animal to which the circulating blood comes, and it is reasonable to assume that fat, when thus added in an amount equal to twice that normally in the plasma, may be capable of extracting from the blood a considerable amount of ether. I think the action of olive-oil per rectum may be explained in a manner similar to this, although since by the work of H. J. Hamburger and Edsall and Miller it has been shown that the large intestine can absorb a considerable amount of fat within a few hours, we might assume that at least a certain amount of the oil which we inject actually enters the blood-stream.

Another factor which concerns us here is that in all probability a certain amount of ether is present in the

1. Meyer, Hans: Zur Theorie der Alkohalnarkose. Erste Mittheilung: Welche Eigenschaft der Anaesthetica bedingt ihre narcotische Wirkung? Arch. f. exper. Path. u. Pharmacol., 1899, xlii, 109. Baum, Fritz, and Meyer, Hans: Zweite Mittheilung: Ein physikalisch-chemischer Beitrag zur Theorie der Narcotica, *ibid.*, 1899, xlii, 119.

2. Overton: Studien über die Narkose, Jena, 1901.

3. Rubin, George: The Influence of Alcohol, Ether and Chloroform on Natural Immunity in Its Relation to Leucocytosis and Phagocytosis, Jour. Infect. Dis., 1904, i, 425; The Influence of Alcohol and Chloroform on Phagocytosis *in Vitro*; THE JOURNAL A. M. A., 1907, xlviii, 1432.

4. Stewart: The Influence of Alcohol on the Opsonic Power of the Blood, Jour. Inebr., 1907, xxiv, 197.

intestinal tract which may be held by the fat and thus prevented from becoming reabsorbed. Bongers has shown that chloroform is excreted into the stomach, and other workers have shown that it may be found in the alimentary tract after anesthesia. Although I am unaware that any investigation on this point has been carried out as regards ether, nevertheless, it seems reasonable to suppose that ether, too, gains access to the alimentary tract.

These results cannot be interpreted as proving beyond a doubt that ether inhibits phagocytosis by means of its fat-solvent power, but they are extremely suggestive that such is the case. The important rôle of fat-like substances in the phenomena of one of the other immune reactions, viz., hemolysis, has been shown by many investigators, and when it is considered that a disturbance of the lipoids of the cell may involve marked changes in its surface tension it seems not unreasonable to assume that such may be the explanation of the action of the fat-solvent drugs on the phagocytic system, at least as regards the leucocytes. The question then arises: Is the serum element of the system dependent on or identical with the lipoid content of the plasma? Is either opsonin itself, or opsonic complement, a fat-like body? This seems to be answered in the negative by two series of experiments which show (1) that when lecithin is added to a mixture of salt solution, washed corpuscles and bacteria, no more phagocytosis occurs than without lecithin; and (2) that the addition of lecithin fails to reactivate serum, the complement of which has been destroyed by heating at 56 C.

To what extent these results may have a practical bearing on the explanation and prophylaxis of post-operative infections it is impossible to say with certainty at this time. It is realized that from a limited number of observations no far-reaching conclusions bearing on a practical application can be made.

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A CYSTO-URETHROSCOPE *

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The great impetus given to the study of the posterior urethra by the invention of the Goldschmidt irrigation urethroscope has aroused hopes that still further improvements in the method of seeing the neck of the bladder and the posterior urethra could be expected. About one year and a half ago I attempted to overcome some of the shortcomings of the Goldschmidt and of other instruments by the employment of the Nitze type of indirect or right-angled telescope. By the adoption of an appropriate optical system and a new type of illumination I succeeded recently in constructing an instrument which gives a practically "normal" view of the trigone, neck of the bladder and posterior urethra. The shortcomings of the Goldschmidt instrument are well known. They are, briefly, a partial field, a distorted image and a large fenestra with its tendency to cause traumatism.

These have all been overcome in the new instrument, which consists of a sheath, obturator and telescope. The sheath is provided with a detachable beak, a small fenestra and two irrigating-cocks. The source of illumination in the original models was a lamp fitting into a globe which partly occluded the distal end of the window. In

the new model (Figs. 1 and 2) an illuminating prism is employed. It is the same type of prism (Wappler) used in the telescope, but it is much larger. Its roof is backed like a mirror, and it doubly reflects the rays from the lamp, transplanting the source of illumination to the roof of the sheath, and bringing it in juxtaposition with the "eye" of the telescope. The telescope is furnished with the same type of prism which, however, is a "lens prism," one end being ground into a convex lens. The roof and the greater part of its floor, with the exception of the entrance pupil at the apex, are mirror surfaces. Figure 3, A and B, illustrates the difference in action of the Nitze-Otis and the new prism. In the latter we obtain



Fig. 1.—Sheath and telescope of cysto-urethroscope.

upright images. The telescope is fitted eccentrically in the sheath and hugs the roof so as to carry the entrance pupil far away from the fenestra and, therefore, from the parts to be seen. With this telescope it is possible to reduce the size of approaching objects to such an extent that a perfect view of near objects can be obtained.

TECHNIC

The sheath with the obturator *in situ* is introduced into the bladder. Irrigation through the sheath, if the contents are cloudy, is next in order and then the telescope is inserted. The introduction of fluid from now on is carried on through one of the lateral cocks either with a Janet syringe or an irrigator. If the trigone and ureters are to be inspected I inject about 200 c.c. of boric acid. If the examination is limited to the neck of the bladder and posterior urethra, about 50 c.c. will suffice. The instrument is withdrawn and rotated, so as to gain a view of the whole of the sphincter. Then the floor of the posterior urethra can be seen, rotation of the instrument permitting observation of the lateral walls. By distending the urethra the images become smaller and magnification is produced at will by allowing the walls of the urethra to collapse. The roof and lateral walls are then brought into view by the same maneuver, the fenestra having been pushed into the bladder and turned upward. Throughout this process no traumatism is inflicted because of the small size of the fenestra. Practically every structure in the posterior

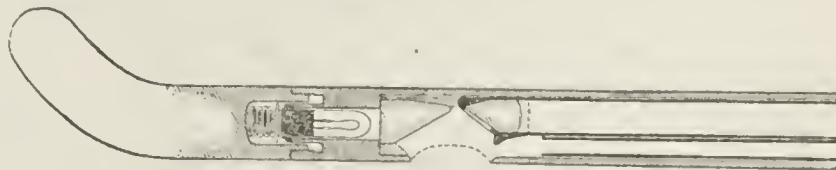


Fig. 2.—Diagram of sheath with telescope inserted

urethra can be recognized; the colliculus, prostatic ducts and orifice of the ntrculus can be seen in all cases. After a little practice the ejaculatory ducts can be recognized.

Further uses of the instrument are the following:

1. The substitution of a long beak will permit of the examination of a very long posterior urethra, and the replacement of the curved beak by a blunt tip will allow its use for the anterior urethra.

2. Supplied with a short beak, or even as it is, the instrument could be used for inspecting the trigone and

* Presented at the Section of Genito-Urinary Diseases, New York Academy of Medicine.

ureters of bladders that hold but very small amounts of fluid. 30 to 60 c.c.

3. Topical applications can be made after removing the telescope and drying out the sheath.

4. Double ureteral catheterization can be easily done, and a delicate filiform bougie can be passed into the utriculus or ejaculatory ducts under the direct control of the eye.

5. Treatment can be also carried out under direct control of the eye; a fine forceps or a galvano-cautery electrode be passed through the space below the telescope.

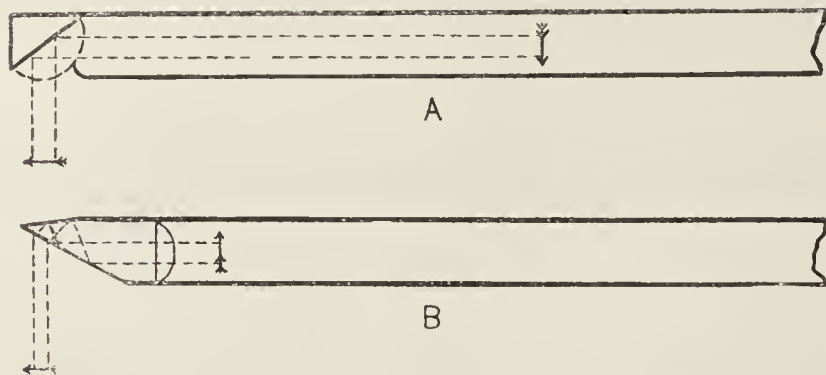


Fig. 3.—Action of Nitze-Otis (A) and new prism (B).

The advantages of the instrument are the following:

1. A perfectly normal view of the ureters, trigone, neck of bladder and posterior urethra can be obtained.

2. The amount of irrigation is reduced to a minimum; constant irrigation is unnecessary; intermittent injection of a little fluid suffices.

3. The small window makes rotation of the instrument possible and injury of the urethra is avoided.

4. By means of a new type of prism perfect illumination is provided and upright images are produced.

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EAR, NOSE AND THROAT SYMPTOMS IN DIABETES *

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In discussing ear, nose and throat symptoms in diabetes, it is assumed that all physicians are sufficiently conversant with a knowledge of the general pathology and symptomatology of the disease to render unnecessary any further reference to them. Furthermore, it is understood that what follows relative to this subject appertains to that variety of diabetes commonly understood as diabetes mellitus, and, although cognizant of other varieties of diabetes, erroneously designated as such, but which, in fact, are transitory glycosurias, produced by a multiplicity of causes, they have no special interest in this connection and at this time. In order to epitomize the subject, I will restrict this article to a discussion of the symptomatology of the ear, nose and throat.

Of the many manifestations of diabetes mellitus, it is a matter of surprise that the changes occurring in the mucous cavities of the head and neck should pass unrecognized, or, at least, without suspicion. This may be attributed to their seemingly trivial or unimportant character, but at the same time the fact that the cavities of the nose, throat and ear are easily accessible to examination furnishes sufficient reason for a more thorough

interpretation of the changes that occur there, for by this means we may be led to early recognition of the disease. The participation of these cavities in this disease is by no means uncommon, although it is difficult to trace an unassailable array of signs and symptoms characteristic of the disorder. Nevertheless, one can catalogue a list of symptoms built on a knowledge of the general pathology, as we now understand it, that are of practical value.

In the mouth, evidences of perverted nutrition are frequently found about the teeth. Pyorrhea alveolaris and delayed healing after extraction are often associates of diabetes mellitus. The secretions of the mouth become distinctly acid in reaction, so that they act on the necks of the teeth, exposing the deeper and more sensitive parts to the ever-present infection within the mouth. The saliva itself, according to a number of observers, contains no sugar, but the sugar in the blood tends to increase the local infection, so that excessive deposits of lime salts, spongy and bleeding gums and carious teeth, causing aching teeth, are symptoms of importance in diabetes. These facts are now recognized by progressive dentists to the extent that the presence of diabetes in many cases can be diagnosed by them.

Aphthous stomatitis, thrush, a large red tongue, at times covered along the center by a black fur, hyperemia of the mucous membrane of the mouth, which at the same time looks glazed and feels dry, are frequent symptoms. When acetone is present in quantities, a distinct characteristic odor is imparted to the breath, which has the scent of acetic ether. The patient may even be aware of a sweetish taste. In a few cases sialorrhea, or excessive saliva, in place of the usual dry mouth, has been noted present in pancreatic disease, and hence may be suggestive of diabetes. A blunted sense of smell and taste have, in some instances, been recorded in this connection, and this is altogether possible as a sequence of the perverted metabolism.

In the throat, we are frequently confronted with the symptom of dryness, and when this is of a persistent nature it constitutes the leading symptom of this disease in this locality. This pharyngitis sicca is not to be interpreted as analogous to pharyngitis atrophica, for in the former the dryness is most likely "due to a modification of the chemical constituents of the glandular secretions," as Kyle says, and not to a true atrophy of the mucous glands and interstitial contractures, as in the latter. In the dry pharyngitis of diabetes the mucous membrane usually appears red and the secretions, in place of flowing, adhere, giving the surface a glazed appearance, like varnish. So important is this symptom to some observers that Moritz Schmidt says that in his experience a pharyngitis sicca, associated with such symptoms as mental hebetude, lassitude, furunculosis and cramps in the calves of the legs, is positive of the diagnosis of diabetes mellitus.

Although in a large number of cases it seems as if few structural changes take place in the tissues of the throat, exceptionally ulcers develop which bear a resemblance to those of tuberculosis. It is not an uncommon observation to find pulmonary tuberculosis complicating a diabetes mellitus, but few references are made to such an association in the throat. Hence it may be that when ulcers are present, especially with pharyngitis sicca, they may be tuberculous in character, although, to theorize, one might suggest that the altered secretion that dries may abrade the membrane, and thus precipitate infection, which is favored by the saccharine character of the

* Read in a symposium on Diabetes before the Chicago Medical Society, Jan. 19, 1910

fluid of the tissues. These ulcers, according to Freudenthal, may occur on tonsils, pillars and the posterior wall of the pharynx. They are painful, but heal readily, and for this reason he concludes that they cannot be tuberculous.

Of external signs about the nose, it is of interest to note that von Neusser says, in reference to cyanosis in diabetes: "There are some cases of chronic diabetes with a slight cyanotic reddening of the ears and nose, resembling an alcoholic with a weak heart."

As to intranasal symptoms, nothing characteristic has been noted. Most writers on rhinology make scant mention of the subject. It is my belief that there are a number of cases presenting symptoms of intranasal irritation, such as hyperemia, hypersecretion, itching, sneezing and paresthesias, that, if carefully worked out, would show a relationship to diabetes mellitus. Kyle refers to two cases of diabetes mellitus in which there was acute coryza, which diminished as the amount of sugar lessened, and returned with its increase. An interesting case of nasal hydrorrhea in a case of glycosuria has recently been related to me by Dr. Brawley, which lends color to the possibility of such symptoms in diabetes. Kyle refers to ulcerations of the nasal mucous membrane occurring in diabetes, especially around the nasal orifice, where the itching causes rubbing and picking, the amount of sugar seeming to influence their growth.

The manifold variety of ear symptoms in the presence of diabetes often comes as a surprise to the casual observer. A manifestation often shown about the external ear is the presence within the canal of one or more furuncles. Here, as in furunculosis of different association, the essential cause is the *Staphylococcus pyogenes aureus*. In diabetes the sugar in the body tissues is peculiarly favorable to the growth of the micro-organisms, and, as the meatus of the ear is a constant habitat of the staphylococcus, the pruritus present in this disease gives occasion to frequent abrasion, with consequent infection. In cases presenting the history of recurrent furunculosis, it is well to investigate the composition of the urine.

Otitis externa diffusa chronica may be present, particularly the desquamative variety. Eczema auris is not an uncommon ear complication, and when present is prone to be very extensive; besides involving the auditory meatus, it may present itself in the various fossæ on the anterior aspect of the auricle; on the posterior surface of the auricle, particularly in the deep fold where it is attached to the head, and at times on the adjacent skin of the neck and scalp.

In all cases of extensive eczema auris other than those traceable to middle-ear discharges, I routinely subject the patient to an examination for diabetes, and thus frequently find the causative factor. Gangrene of the auricle occurs on rare occasions, and may be due to a peripheral neuritis, as taught by Auché.

Suppurative ear disease in the presence of diabetes is always a serious complication, but not necessarily an alarming one. The question as to a pathologic entity ascribed to diabetic otitis media and mastoiditis is still debatable. Kuhn, Kerner and MacCuen Smith are of the opinion that primary mastoiditis in diabetes is a fact, while Eulenstein, in an analysis of almost seventy cases, fails to find sufficient corroborative evidence to warrant the foundation of a special pathology in these cases. No doubt the mucous surfaces of the ears, like those of the nose and throat, are subjected to the likelihood of

congestion by the elimination of toxins, and their secretions may also become perverted and easily infected. The mucous membrane of the Eustachian tube, tympanic cavity, mastoid antrum and cells, when affected by this congestion, secretes an excess of mucus that is highly susceptible to bacterial contamination, which consequently means a mucopurulent and sanguinolent product. Besides the congestion, there is a tendency to hemorrhage and extravasation in the submucosa and deeper tissues. Serous effusions and hemorrhage in the drum membrane may occur similar to that seen in Bright's disease. In such cases the pain is of short duration, but the acuity of hearing, being blunted, is the symptom complained of. A bleb of varying size, usually that of a millet seed, and of a dusky purple hue can be seen on the surface of the drum membrane. If it is ruptured, it may be mistaken for a perforated drum membrane of acute middle-ear origin. An otitis media that appears suddenly without apparent cause should lead to an investigation for diabetes. It has been my observation that in such cases little or no pain precedes a spontaneous rupture of the drum membrane, followed by a profuse discharge. The mastoid seems to be almost invariably involved. Kuhn, one of the earliest writers on this disease, speaks of the frequent occurrence of middle-ear suppuration in diabetes, and says that the discharge is profusely purulent, with a tendency to a sanguinolent character, and that the mastoid becomes extensively involved, as well as rapid involvement of the labyrinth. Bönninghaus says that in diabetics, in a very short time, extensive disintegration of the mastoid process takes place; often the first blow of the chisel through a brownish discolored cortex exposes a large granulating cavity, involving the entire process from tip to antrum, and even to the inner table. Both ears may become simultaneously involved, and extensive involvement of neighboring parts may occur.

Numerous instances are cited wherein, owing to the liability of bone caries and necrosis in these cases, the suppurative process creates a meningitis, phlebitis, thrombosis and brain abscess. Suppuration of the labyrinth is usually secondary to a suppurative process in the middle ear, and is not uncommon in the presence of diabetes. Friedrich, in his monograph, "*Die Eiterung des Ohrlabyrinths*," concludes that about one suppurative labyrinthitis results in about every hundred cases of suppurative otitis media, and Bezold places diabetes mellitus as second in the list of chronic systemic causes of suppurative labyrinthitis. The cardinal symptoms of labyrinthine disease, namely, profound deafness, tinnitus and disturbances of equilibrium, both static and dynamic, may furnish the clue to some variety of labyrinthine involvement in diabetes, be this involvement due to hyperemia, hemorrhage or suppuration.

To reiterate, suppurative otitis media and suppurative labyrinthitis are commonly associated in diabetes, and hence we should be alert in all diabetics with otitic involvement for symptoms of panotitis.

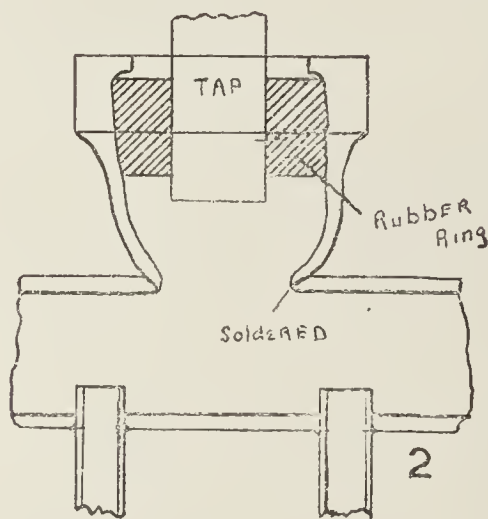
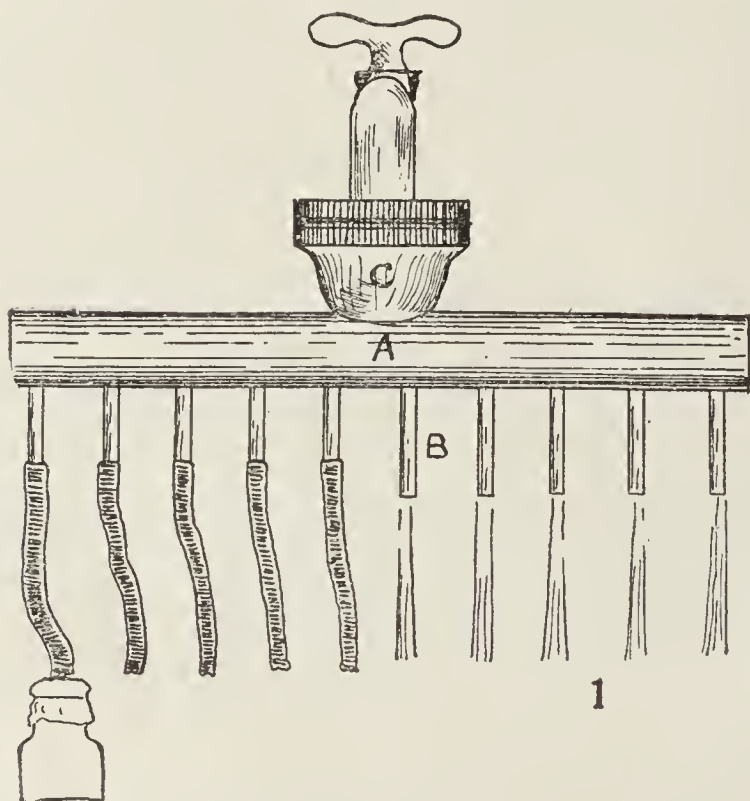
In closing, I wish to refer to the neuritis of the acoustic in diabetes. Of the many well-known causes of neuritis causing deafness, such as loud noises, drugs, toxemias, rheumatism and constitutional diseases, among which may be mentioned diabetes, syphilis, malaria and typhoid fever, the former, namely, diabetes mellitus, is mentioned by Bönninghaus as the most frequent of all causes of such neuritis.

SEVERAL USEFUL LABORATORY DEVICES

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Rapidity in laboratory technic depends to a great extent on the simplicity and efficiency of the apparatus; a minimum of time and inconvenience being always an important factor in any method. The following two pieces of apparatus are exceedingly simple and are recommended for their comparative inexpensiveness as well as their general efficiency. They were devised to fill a need in certain work, and were so satisfactory that I have taken the liberty to report them.

The first is a method for multiplying the water connection in order that a large number of tissues may be washed from a single tap. For instance, in a laboratory



Figs. 1 and 2.—Device for multiplying water connection and longitudinal section of same.

where only a few taps are available, unless some multiplying device is employed, it becomes almost impossible to wash a series of tissues satisfactorily at one time. The result is overfixation with all its attendant evils, a circumstance occurring only too frequently in microscopic work. In carrying tissues through a large number of fixatives the need for such a device is equally apparent. The device (Fig. 1) fulfills all indications. It consists of $\frac{3}{4}$ inch bore brass tube about 12 inches long, closed at each end by brass plugs finished flush with the surface. Below on the tube, holes were drilled $1\frac{1}{4}$ inches apart. Into these holes brass tubing of $\frac{3}{16}$ inch bore and $1\frac{1}{2}$ inches in length are inserted and firmly soldered in place. Directly opposite and in the

center of tube A the connection C is attached. It consists of an outer brass collar (see section, Fig. 2) with an inner rubber ring or washer by which the multiplier can be attached to the tap. It is essentially the same as the connection found on filters, except that the filter connection is cut in half and the upper portion soldered to the tube into which a hole of corresponding size is drilled. The device may then be nickel plated and makes an excellent piece of apparatus. Dr. Allen J. Smith suggested that the ends of the small tubes B be made bulbous, so that rubber tubing may be firmly tied on and then closed with a clamp when not in use, or instead of that, the use of stop cocks in place of tubes B.

A more convenient and elaborate modification of the above may be made as in Figure 3. In this form both A and C are cast in one piece, and the tube A is closed at the ends by milled screws, which can be removed to facilitate cleaning of the instrument. Through the holes drilled in tube A a number of brass stop cocks can be screwed—each cock possessing a flange below for the purpose of holding the rubber tubing as mentioned above. This apparatus gives perfect control over the distribution of the water supply.

Either form of device is merely inserted on the tap and may be removed or applied instantly. Bottles covered with gauze can be connected directly with tubes B, or rubber tubes may be attached to the latter to lead anywhere. With even slight pressure no difficulty is experi-

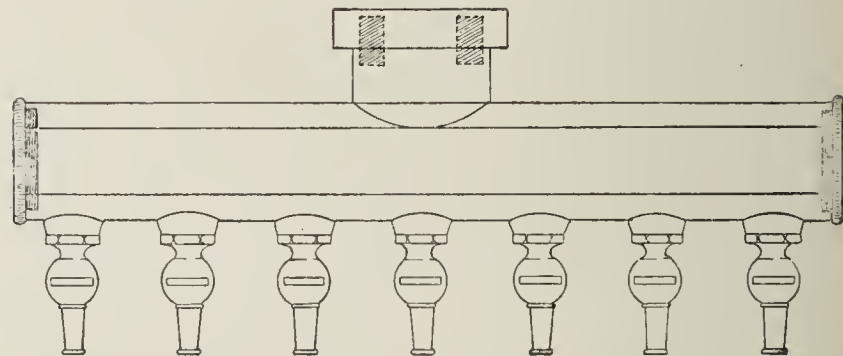


Fig. 3.—Another form of above device.

enced in making the water emerge from all the tubes at once. An apparatus of this kind has been used in the histologic laboratory of the University of Pennsylvania and has given entire satisfaction.

The next apparatus is a simple device for staining a large number of cover glasses at one time. Any one who has stained a series of one hundred or two hundred cover glasses knows how time-consuming such a procedure is. Having tried wire holders, perforated plates, etc., I have found none so convenient or so easily handled as the following (Figs. 4, 5 and 6): two metal (bronze or brass) strips (B) $\frac{7}{8} \times 2\frac{1}{2} \times \frac{1}{8}$ inches, connected by the middle bar (C) $\frac{3}{4}$ inch in length, are soldered together. Each metal strip has a number of parallel grooves $\frac{1}{16}$ inch wide and $\frac{1}{16}$ inch deep. Twenty such grooves are made in this instrument so that twenty cover glasses can be accommodated singly or forty back to back. Along the edge of each strip an extra strip of brass is soldered to act as a ledge (D). Then in the center of the connecting strip C a brass handle is screwed.

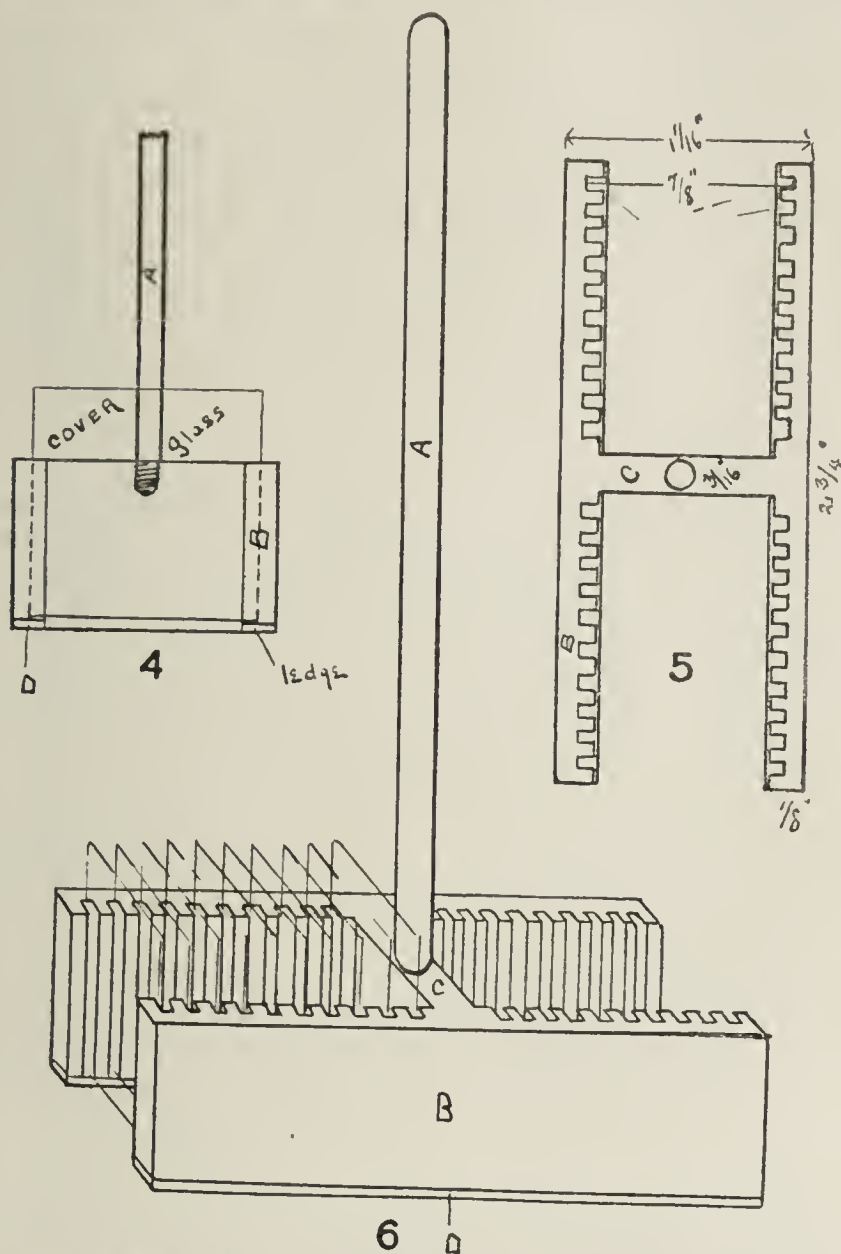
The above are the dimensions for an instrument which will take $\frac{7}{8}$ inch or 22 mm. cover slips; of course, these can be modified to fit any sized cover glasses. In this way films, smears, or even sections may be carried through various solutions. Its advantages are:

1. A uniform and complete covering of the cover glass is insured.
2. The metal strips B are $\frac{5}{8}$ inch in height, allowing the $\frac{7}{8}$ inch cover glasses to project $\frac{1}{4}$ inch, thus per-

mitting them to be more easily handled and manipulated.

3. Being $2\frac{1}{2}$ inches long, it is easily introduced into a 3 inch reagent dish.

4. On the principle of the above any number of compartments can be made. By widening grooves and



Figs. 4, 5 and 6.—Apparatus to be used in staining a number of sections at one time.

increasing the length of cross bar (C) the same instrument can be used to carry slides. Recently I have stained sections on cover glasses and find that the use of the above apparatus leaves nothing to be desired.

In using stains such as blood stains, it is well to determine beforehand the exact time necessary to stain and differentiate with a few single specimens in order that the entire series may be correct.



Fig. 7.—Section lifter bent in the form of a spring clamp for handling single specimens on cover slips.

In manipulating single specimens on cover slips in various stains, etc., especially in small flat staining dishes where it is impossible to introduce the ordinary cover glass forceps, it is frequently of considerable service to turn up the edge of the section lifter (Fig. 7) so as to form a spring clamp, in which the cover glass may be inserted. This gives good control over the specimen and will serve many useful purposes.

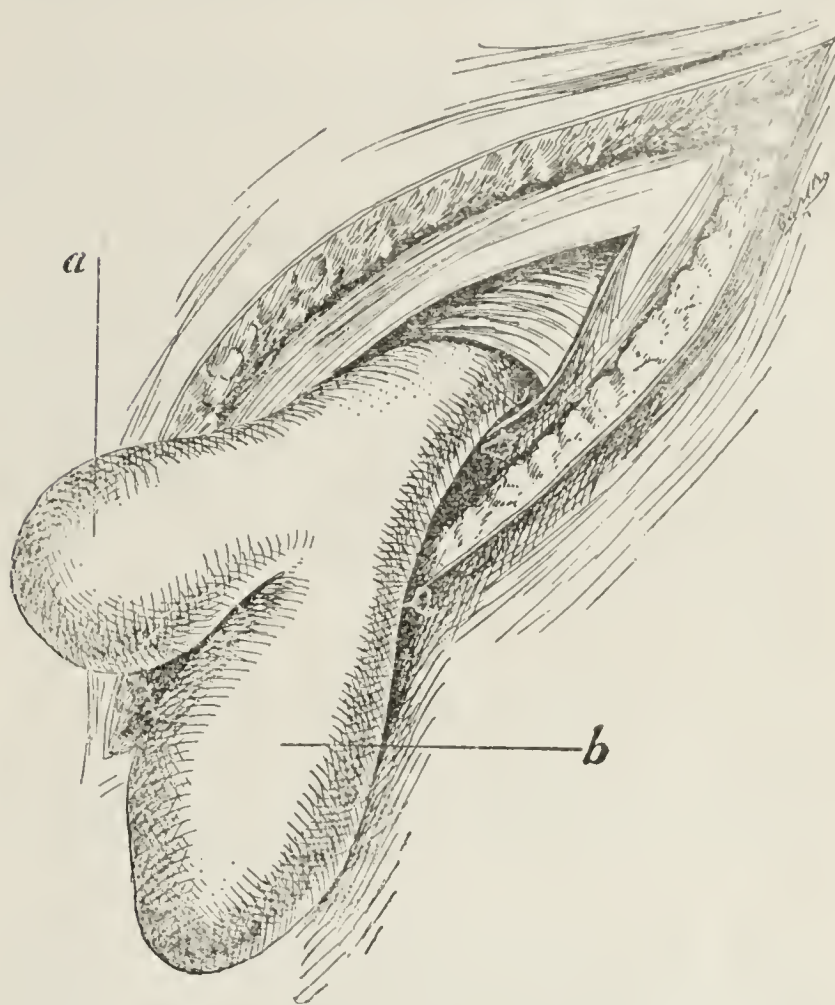
1417 South Broad Street.

RARE VARIETY OF HERNIAL SAC

DANIEL N. EISENDRATH, M.D.

CHICAGO

The accompanying illustration shows a variety of hernial sac, the existence of which is but little known, and which does not seem to be referred to in the text-books and other literature. I have encountered this form of double or "pantaloons" sac four times in my last one hundred cases of inguinal hernia. It is a bifid sac, the two limbs having a common sac where they unite, close to the internal ring. In some cases, the two sacs



Pantaloons or double hernial sac; a, secondary sac often covered by fat; b, main sac.

(a and b) are of almost equal length, resembling a man's trousers, so the name "pantaloons" seems to describe the anatomic condition accurately. I do not know by whom the term "pantaloons sac" was first employed to designate this double sac. In other cases the second sac is a mere diverticulum which leaves the main sac close to its neck and is usually so covered with fat as to be mistaken for a subserous lipoma. No doubt many recurrences following inguinal herniotomy are due to the fact that a diverticulum or second sac has been overlooked. My present practice is to separate the sac from the spermatic cord as high up as possible and to insert the finger into the sac to determine the presence or absence of diverticular sacs before proceeding to ligate the neck of the hernial sac, close to the internal ring.

103 State Street.

Diagnosis of Chronic Pancreatitis.—No single symptom can alone be relied on as diagnostic of chronic pancreatitis, but on considering all the available evidence there is not usually much difficulty in forming an opinion. Special stress can be laid on the progressive wasting, the usual presence of jaundice, the dyspeptic disturbances, the pancreatic reaction in the urine, and the results of the chemical examination of the urine and feces.—A. W. Mayo Robson, in *Annals of Medical Practice*.

AN IMPROVED NEEDLE-HOLDER

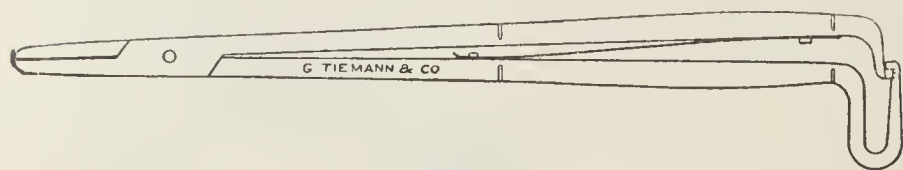
B. F. JENNESS, M.D.

Passed Assistant Surgeon, U. S. Navy, Assigned to the U. S. Naval Hospital

PUGET SOUND, WASH.

This instrument was devised to facilitate the suture operation for hemorrhoids, and to accompany the hemorrhoidal clamp, a description of which was published in 1909.*

The object of the design is to do away with the width of handle seen in other holders, which obstructs the view when working in deep or small cavities. The instrument illustrated measures 13/16 of an inch at the



Needle-holder for rectal, vaginal and deep abdominal work.

widest point on the handle. With the drop ratchet, which is below the level of the shank, forming a pistol grip, the instrument can be grasped in such a manner as to leave an unobstructed view of the needle along the upper surface of the handle and shank. The instrument is particularly adapted to rectal, vaginal and deep abdominal work. The length over all is 8½ inches. The ratchet, which is dropped at right angles to the handle, measures 1¾ inches.

NOTE ON STROPHANTHIN

ROBERT A. HATCHER, M.D.

Professor of Pharmacology in Cornell University Medical School;
Member of the Council on Pharmacy and Chemistry
of the American Medical Association

NEW YORK

It has been my intention for some time past to discuss the literature of strophanthin exhaustively. I have not yet been able to perform this task, but certain conditions have arisen which, unless counteracted by a word of warning, will entail accidents, thereby bringing this drug into disrepute at the very time when it gives the greatest promise of usefulness.

I have stated¹ that the tincture of strophanthus generally sold in the United States is of fairly uniform potency, and that the strophanthin of Merck and that of Boehringer and Sons are of practically the same activity, being about half as active as the crystalline ouabain, or so-called crystalline strophanthin of Thoms made by Merck.²

We have examined many specimens of strophanthus seed and tincture of strophanthus in the laboratory of the Department of Pharmacology and Materia Medica of Cornell University Medical College during the past three years, and have found them to be practically uniform in potency; but the government now excludes *Strophanthus hispidus*, admitting only the *Strophanthus kombé*, and we have found a specimen of the *Strophanthus kombé* just half as active as the *Strophanthus hispidus*. Recently we obtained a specimen of

tincture of strophanthus from Bellevue Hospital which was also just half as active as those tinctures previously examined. This tincture was being used in the hospital without the slightest suspicion that it was not of exactly the same potency as that which had been used previously and which we had found to be twice as active as the later specimen.

The intravenous, as well as the intramuscular, use of strophanthin is based largely on the experience of Fraenkel,³ who stated expressly that he used the amorphous strophanthin of Boehringer and Sons, the activity of this amorphous strophanthin being given as 15 frog units for each milligram of strophanthin. The frog unit conveys little idea to the mind of the average clinician, even if it were not true that various standards have been proposed for the frog unit, and if it were not also true that the therapeutic dose of strophanthus is not the same in frog units for strophanthus that it is for digitalis.

In this connection I wish to call attention again to the very simple and accurate standard which I have proposed for strophanthus preparations, viz., the cat unit, or that amount of strophanthin, or strophanthus, which is just fatal to 1 kg. of cat when it is slowly injected in about an hour and a half into the femoral vein.

Working with solutions of unknown strength we have repeatedly found that the limits of error do not exceed 5 per cent., and often they fall within 2 per cent.

Edmunds and Hale⁴ have objected to this method on the ground that the action on the central nervous system cannot be excluded, but I have good reason for believing that this test is a far better index of the cardiac action on man than the frog test is.

Boehringer and Sons have put strophanthin on the market labeled "Strophanthin Boehringer for intravenous injections based on the investigations of Dr. Albert Fraenkel, Badenweiler. Twelve tubes, each containing 1 c.c. of sterilized 1/100 solution of strophanthin Boehringer."

The clinician might suppose that each tube actually contained just 1 c.c. of the solution, but several of these tubes were examined and found to contain 1.4, 1.2, and 1.4 c.c., respectively.

Hatcher and Bailey⁵ reported that amorphous strophanthin was about half as active as the crystalline, and that the strophanthins of Merck and of Boehringer and Sons (amorphous) were of about equal potency.

This statement was based on a much larger number of experiments than had been performed by any other experimenter, so far as I am aware. Owing to the nature of the work, some of the tests had to be limited to a few animals, and with the greater precision of our present method we have found a slightly different ratio in some cases, and a greater difference in others. By subcutaneous injection, the amorphous strophanthin is, as stated, about half as active as the crystalline, but by intravenous injection some specimens at least approach the crystalline in toxicity for cats as will be seen by the accompanying table.

We have recently confirmed the statement made by Hatcher and Bailey⁵ that the crystalline is twice as toxic as the amorphous for dogs by the vein.

It must be borne in mind that the amorphous strophanthin varies somewhat in activity, but so far we have found no variation in the activity of the crystalline.

* Jenness, B. F.: A New Hemorrhoidal Clamp and Speculum, THE JOURNAL A. M. A., June 26, 1909, III, 1210.

1. Hatcher, R. A.: Tincture of Strophanthus, THE JOURNAL A. M. A., 1907, XLVIII, 1177.

2. This crystalline strophanthin is not sold when Merck's strophanthin, or even Merck's crystalline strophanthin, is called for, since the official strophanthin is sometimes described as crystalline though it is really amorphous. The so-called crystalline strophanthin Thoms should be called crystalline ouabain.

3. Fraenkel and Schwartz: Arch. exper. Path. u. Pharmacol., 1907, LVII, 79.

4. Edmunds and Hale: Bull. 48, Hyg. Lab., U. S. P. H. and M.-H. S., 1908.

5. Hatcher, R. A., and Bailey, H. C.: Tincture of Strophanthus and Strophanthin, THE JOURNAL A. M. A., Jan. 2, 1909, III, 5.

There is no apparent reason why this disadvantage of the amorphous, as well as of the tincture, may not be obviated by the use of a simple standard on which alone the therapeutic dose should be based.

Several accidents have been reported to me orally, following the subcutaneous injection of the tincture, and with the increasing use of strophanthin by the intramuscular and intravenous methods other accidents are very likely to occur unless care is taken to use only standardized preparations and to know the value of the standard employed.

The therapeutic dose of strophanthin by the vein should be approximately equal to five cat units; the daily dose by the mouth is probably about fifty cat units, though, as I have stated,⁶ the use of strophanthus by the mouth is irrational in the present state of our knowledge concerning its absorption from the alimentary canal and its excretion and destruction in the body.

It has been stated that the oil contained in strophanthus seed is the cause of nausea, but we have found enormous doses of this oil to be without effect on cats; the emesis, on the other hand, results from the action of strophanthin on the medullary centers.

From the table it will be seen that the average therapeutic dose would be about 0.5 mg. (1/130 grain) of crystalline or amorphous strophanthin, or a little more of the latter, by vein; the intramuscular dose of the more active tincture should not exceed two minims daily.

It is a curious fact that, while the fatal dose of crystalline strophanthin by subcutaneous injection is only about 20 per cent. larger than the fatal intravenous dose for the cat, in the case of the amorphous more than twice as much is required by subcutaneous injection as by intravenous. Whether man shows the same difference or not we are unable to say. Intramuscular injections usually approach the intravenous in effectiveness.

TABLE GIVING THE SEVERAL AMOUNTS OF THE VARIOUS SUBSTANCES WHICH EQUAL ONE CAT UNIT

	Mg.	
A.....	0.1	Crystalline ouabain. (So-called cryst. strophanthin Thoms.)
B.....	0.135	Amorph. strophanthin. B. & S. in sealed tubes.
C.....	0.140	Amorph. strophanthin. B. & S. sold in powder. Sample A.
D.....	0.170	Amorph. strophanthin. B. & S. sold in powder. Sample B.
E.....	0.171	Amorph. strophanthin. Merck's, sold in powder.
F.....	3.5	Strophanthus seeds. (Many different samples.)
G.....	7.0	Strophanthus seeds. Kombé.
H.....	35.0	Tinct. strophanthus seeds. (Many different samples.)
I.....	70.0	Tinct. strophanthus seeds. (Recently obtained from Bellevue.)

414 East Twenty-sixth Street.

Exophthalmic Goiter and Acute Articular Rheumatism.—

Souques reports a case in which acute articular rheumatism was followed almost at once by development of symptoms of exophthalmic goiter. There was no history of alcoholism in the family. In two other cases acute articular rheumatism preceded the exophthalmic goiter in one case and in the other the mother and brother had had acute articular rheumatism. It is not long since Vincent found enlargement of the thyroid in two-thirds of all his cases of acute rheumatism, but it generally disappeared with it, leaving no traces. In other cases hyperfunctioning of the thyroid was evident in the tachycardia and nervous symptoms, and in 4 out of 6 such cases the exophthalmic goiter followed without transition; 3 similar cases have been reported by others. In a later series of 14 cases Vincent found a history of one or more attacks of acute articular rheumatism preceding the exophthalmic goiter. Souques' article was published in the *Bull. de la Soc. méd. des Hôp.*, 1910, xxvii, 26.

SCOPOLAMIN AND MORPHIN AS A PRELIMINARY TO GENERAL ANESTHESIA

A REPORT BASED ON AN EXPERIENCE OF ELEVEN HUNDRED CASES *

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Surgeon to St. Francis Hospital

PEORIA, ILL.

To one who studies medical literature, the large number of articles on anesthesia seem to indicate that the ideal anesthetic has not been discovered or the ideal method of administration has not been invented. When anesthesia was first discovered, the only demand was that it relieve the patient of the knowledge of all pain during an operation. Additional demands have been made from time to time, however, until now the patient asks that he not only be relieved from the knowledge of pain, but that the anesthesia will be free from danger and discomfort to him. The surgeon insists that the anesthesia shall be free from danger and that the patient shall be quiet and passive, with the muscles relaxed, during the entire time of the operation.

Practically all the dangers can be avoided by an expert anesthetist in the judicious choice of the anesthetic and a skilful method of administration. This is evidenced by the reports of a large number of anesthetics given without a fatality in different parts of the country.^{1,2} Very much of the discomfort experienced by the patient while "going under" may be avoided by expertness on the part of the anesthetist, and a first-class anesthetist will give a smooth, uniform anesthesia that will keep the patient asleep and relaxed throughout the operation in response to the surgeon's requirements. These demands on the anesthetist are fast making the administration of anesthetics a special line of work, and the day seems not far distant when patients will insist that the anesthetist be trained and experienced in that particular part of the operative procedure.

With all the improvements in the choice of anesthetics and the method of their administration, there still remains with the patient a strong disinclination toward being put to sleep and passing through unknown dangers while utterly powerless to help himself in any way. This decided antipathy to being made unconscious amounts at times to a positive terror, and has been advanced as a cause of some of the sudden deaths reported under anesthesia. It was a desire to overcome this unpleasant feature that led me to use the combination of scopolamin and morphin as a preliminary to general anesthesia on myself at one time when I changed places and became, for the time being, patient instead of surgeon. The action of the preliminary was so satisfactory that I adopted its use in my work, and the following report, based on 1,120 cases in which it was used, is made so that the truth concerning this much abused combination may be ascertained.

My attention was first called to the use of the combination of 1/100 grain of scopolamin and 1/6 grain of morphin as a preliminary to a general anesthetic by an article by Dr. M. G. Seelig.³ Since then, the combination has occupied a prominent place in the literature on

* Read before the Western Surgical and Gynecological Association at Omaha, Dec. 21, 1909.

1. Magaw, Alice: A Review of Over Fourteen Thousand Surgical Anesthetics. *Surg., Gynec. and Obst.*, December, 1906, p. 795.

2. Teter, C. K.: Thirteen Thousand Administrations of Nitrous Oxide and Oxygen as an Anesthetic. *The Journal A. M. A.*, Aug. 7, 1909, p. 448.

3. Seelig, M. G.: Scopolamin-Morphin as an Adjuvant in the Administration of General Anesthesia. *Ann. Surg.*, August, 1905, p. 185.

anesthesia and much has been written for and against its use. My experience seems to prove that some of the things written are erroneous. Much of the misinformation has come from a failure to differentiate the use of the combination as a general anesthetic, in which a large dose is given, from its use as a preliminary to some other general anesthetic, in which the dose is comparatively small. The experience related in this article is based on its use as a preliminary. As many things have been written that are contrary to my experience, a brief reference to some of them may not be out of place.

In 1905 Dr. Felix Terrier,⁴ of Paris, wrote in relation to the scopolamin and morphin combination: "It should be noted that when we wish or are obliged to employ another anesthetic, as well, we must never use ether, but always chloroform." In another place he says again: "We call attention once more to the fact that scopolamin should never be combined with ether, whose dangers it increases." In a large majority of the patients here referred to, the scopolamin-morphin combination was given as a preliminary to ether anesthesia, and no harmful effects were noticed.

In December, 1908, Dr. J. C. Bloodgood,⁵ in abstracting a German article on the scopolamin and morphin combination, says: "It is contraindicated in exophthalmic goiter." I use more of the combination in exophthalmic goiter cases, because, in the effort to "steal the gland," as Crile recommends, I give a dose the night before in addition to the dose given preliminary to the general anesthetic. I have seen no harmful results in the exophthalmic goiter cases. In the same abstract Dr. Bloodgood says: "It is difficult, however, in an active clinic to know in all cases when the hour before the operation will be." This is true, but it can be managed. I have frequently had a series of eight and ten cases on an operating morning, and each patient had the preliminary dose of scopolamin and morphin at approximately the proper time.

It has been urged that the scopolamin and morphin combination produces a contraction of the abdominal muscles that makes operating more difficult. I have not found this to be true. I have noticed, however, that it is difficult sometimes for the anesthetist to tell just when the patient is properly under the general anesthetic. He lies so quietly under the influence of the scopolamin and morphin that the anesthetist is apt to think that he is ready and properly relaxed when he is not. In those cases some contraction of the abdominal muscles will be noticed. A little more of the general anesthetic quickly remedies it.

In reply to the question of a correspondent *THE JOURNAL of the American Medical Association*⁶ says: "It [referring to scopolamin] is used for local anesthesia in connection with morphin." I have never seen any local anesthetic effects produced by the combination and have not heard of it being used in that way. Dr. H. C. Wood, Jr.,⁷ of Philadelphia, condemns the use of the combination strongly as a preliminary, although giving no personal experience on which to base his disapproval of its use.

The foregoing extracts are quoted to show what a large amount of misinformation has crept into the literature. On the other hand, since Dr. Seelig's report of

sixty-five cases in 1905, other reports are coming in telling of the beneficent effects of this combination when used as a preliminary to general anesthesia, and these reports are based on a large experience. Dr. C. M. Nicholson⁸ reported to this association, at its last meeting, 650 cases in which the combination had been used with no unfavorable results. He also reported the results of experiments on animals which seemed to contradict the conclusions of Whitacre,⁹ who claimed that the scopolamin-morphin combination produced fatty degeneration of the kidneys and liver when injected into animals.

It looks very much as if the prophecy made by Dr. James Taylor Gwathmey¹⁰ was coming true. He said: "But the administration of grain 1/100 scopolamin and grain 1/6 morphin one-half hour before the operation and supplementing this by as much of any general pulmonary anesthetic as may be necessary is theoretically correct and clinically safe. . . . The combination of scopolamin and morphin or ehloretone or cocain locally, plus a small amount of some pulmonary anesthetic, will undoubtedly be the anesthetic of the future." My experience corroborates fully the experience of Dr. Gwathmey as related in the article from which the above was quoted.

TECHNIC OF ADMINISTRATION

Tablets are obtained containing a combination of scopolamin, 1/100 grain, and morphin, 1/6 grain, and the solution is made just before it is administered hypodermically, which is done one and one-half hours before the operation is begun. Relatives or friends are not allowed to see the patient after the hypodermic has been given. Sometimes an exception is made in the case of a husband and wife, but imperative instructions are given that the patient is not to be talked to and roused.

All necessary manipulations and handling of the patient in the preparation are completed before the hypodermic is administered. The room is darkened and everything kept quiet, and he falls into a tranquil slumber. About twenty minutes before the operation a layer of damp cotton is placed over the eyes and the patient is taken to the operating room and placed on the operating table. The preliminary cleansing of the skin over the site of the operation is gently done while the general anesthetic is being administered. The preparation and the anesthetization are usually completed about the same time and the operation proceeds.

The preliminary hypodermic injection of the combination is given to all patients from eight years of age up. If an elderly patient is considered strong enough to undergo an operation, he is considered strong enough to have the beneficial effects of the combination and it has not been withheld from any elderly patient on account of his age. Children are more apt to be nervous and apprehensive immediately prior to the operation than adults; therefore the preliminary is given to all children who are eight years old and older. There is a strong nervous factor in exophthalmic goiter cases, and it has been claimed that nervous excitement increases the secretion of the gland which is already overactive. For this reason I give the preliminary the night before the operation in these cases and again one and one-half hours before.

4. Terrier, Felix: Use of Scopolamin as a General Anesthetic in Surgery, *Internat. Clin.*, Series 15, ii, 228.

5. Bloodgood, J. C.: Scopolamin-Morphin Narcosis, *Prog. Med.*, December, 1908, p. 128.

6. Scopolamin-Morphin Anesthesia, *THE JOURNAL A. M. A.*, Dec. 9, 1905, p. 1817.

7. Wood, H. C., Jr.: Status of Scopolamin-Morphin Anesthesia, *THE JOURNAL A. M. A.*, Jan. 12, 1907, p. 159.

8. Nicholson, C. M.: A Study of the Action of Scopolamin-Morphin on the Heart, Liver and Kidneys. Report of Six Hundred and Fifty Cases of Scopolamin-Morphin Administrations Preliminary to General Anesthesia, *THE JOURNAL A. M. A.*, April 3, 1909, p. 1096.

9. Whitacre, H. J.: Scopolamin-Morphin-Chloroform Anesthesia, *New York Med. Jour.*, March 31, 1906, p. 637.

10. Gwathmey, James Taylor: A Plea for the Scientific Administration of Anesthetics, *THE JOURNAL A. M. A.*, Oct. 27, 1903, p. 1361.

I have not found any contraindication to the combination. If a patient's condition is sufficiently good to make an operation justifiable it is sufficiently good to permit the use of the preliminary injection of scopolamin and morphin. Very ill patients do better when very little general anesthetic is given them, and the preliminary of scopolamin and morphin permits the minimum amount of the general anesthetic to produce the desired amount of anesthesia.

When I first began to use the combination I used some chloroform as a general anesthetic, but I quit using chloroform after a time and began using ether almost exclusively. In the majority of the cases embodied in this report the combination was used as a preliminary to ether as a general anesthetic. Lately I have been using nitrous-oxid gas to a considerable extent and find that the scopolamin and morphin combination acts equally well as a preliminary to that general anesthetic. There is a great deal less of the convulsive movement of the muscles as the patient is going under the influence of the gas when the preliminary is used.

I used the much advertised hyoscine-morphin-cactin combination in about seventy cases, but could see no advantage in its use and went back to the scopolamin and morphin. I used the morphin and atropin combination in a few cases, but could see no reason for continuing its use when the scopolamin and morphin combination will do all that the morphin and atropin combination will do and give, in addition, the added hypnotic influence of the scopolamin.

There have been no deaths that could be in any way attributed to the preliminary use of scopolamin and morphin. There were unpleasant symptoms in only one case. In 1907, among the early cases reported in this series, one patient had some symptoms which seemed dangerous at the time. The patient was a woman, aged 23, and the following is the record of the case:

She was given the usual dose of scopolamin and morphin at 2:30 p. m. and the operation was started at 4 p. m. She came into the operating room drowsy and in the usual condition after the preliminary injection of scopolamin and morphin. The appendix was removed and the uterus suspended. The length of the operation was twenty-four minutes. She was put to bed and normal salt solution given by rectum with the foot of the bed elevated. At 5:45 p. m. the nurse found her face blue and that she was breathing very slowly. It looked to the sister in charge as if the respirations had almost stopped. The sister pulled out the tongue with forceps, performed artificial respiration, and dilated the rectum. I saw the patient at 6:15 p. m. Her face was then a reddish blue, the pupils partially contracted and insensible to light, respirations 8 to the minute and a full pulse 96 to the minute. I ordered an enema of hot coffee which was given. In fifteen minutes the woman began to improve and at 7:15 p. m. she was breathing naturally, her face was a normal color, and she was talking and complaining of feeling thirsty. The general condition and symptoms seemed to be that of morphin poisoning. It was surprising that the bad symptoms came on so late, more than three hours after the preliminary injection. Her further recovery was uneventful.

Either the patient had an idiosyncrasy for one of the drugs, or the tablets did not contain a uniform dosage and the tablet given her contained more than the usual dose. I am inclined to the latter explanation because I have seen no bad effects since. For the past year the anesthetizers have noticed a more uniform effect of the combination on the patients and we are inclined to attribute it to a better tablet with a correct dose.

About thirty minutes after receiving the hypodermic the patient becomes drowsy and is an eligible candidate for the "Don't Worry Club." All apprehension and fear

regarding the operation is gone. He can be easily aroused, but should not be disturbed. He is partially asleep when taken to the operating room and in a tranquil condition of mind. The transition from a partial sleep to complete anesthesia is not so sudden as from complete wakefulness to complete anesthesia and is easily accomplished. A much less quantity of the general anesthetic is required to keep him completely anesthetized. After the operation he usually sleeps from three to five hours, and may partially awake and go to sleep again two or three times before becoming completely awake. The sleep after the operation saves him from the smarting pain of the recently incised skin and injured tissues.

There is much less postoperative vomiting, about nine patients out of ten having practically none at all. The secretion of mucus in the throat is markedly checked and in most of the cases is completely stopped. This prevents the danger of aspirating mucus into the respiratory passages and makes a quiet anesthesia.

The above experience based on eleven hundred cases seems to show that scopolamin and morphin as a preliminary to general anesthesia is a rational procedure, adding greatly to the comfort of the patient by relieving him of all nervous apprehension prior to the administration of the general anesthetic, by permitting him to sleep some hours after the operation is completed, and by greatly decreasing the postoperative vomiting, and mitigating the dangers of the general anesthetic by lessening the amount necessary to produce the desired effect and by checking the secretion of mucus in the throat.

402 Observatory Building.

A CASE OF SYPHILIS OF THE LIVER, PROBABLY LATE CONGENITAL SYPHILIS *

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SAN FRANCISCO

The art of diagnosis has not yet become so easy that it has altogether lost its charm, and now and then we meet a problem that, like the plot of a well-constructed novel, baffles solution until the last chapter. Such a diagnostic problem was the one about to be recorded, and, though its solution seems to have been satisfactorily reached, the fact remains that the last chapter has not yet been read and a degree of uncertainty must, therefore, still exist.

Patient.—There came to the clinic of Cooper Medical College last September (1909) a young man aged 18 who complained of a swollen abdomen. cursory examination showed that he had an ascites and he was therefore sent to the ward in Lane Hospital for further investigation. As his case proved to be an unusual one, where every scrap of available evidence was essential, his history will be given in detail, so far as we were able to obtain it.

Family History.—The father had been drowned at sea some years before; he had no disease at the time so far as known. The mother was living and in fair health; she had had but one miscarriage; and this subsequent to the birth of this patient; she said her hair had fallen out at the time of the birth of this child and subsequently; she had had no ulcers or soreness of the nipples while nursing him; recently she had had some slight pulmonary symptoms—cough and expectoration. There were three sisters living and well, no children

* Read before the Cooper College Science Club, Jan. 10, 1910

dead. There had never been any disease in the family similar to his own.

Past History.—The boy had whooping cough and mumps in childhood, but no measles, scarlet fever or diphtheria. At 8 years of age he had a prolonged cough, but with no blood in the sputum. He never had typhoid, pneumonia or malaria. He never had gonorrhea or a venereal sore, and denied all exposure. There had been no skin eruption at any time, and no sore throat. He took a couple of glasses of beer each evening but no other alcoholic drink. He did not use tobacco in any form. He worked as a boiler maker and his habits of life were regular.

Recent History.—Six months previous to coming to the clinic he had been operated on for inguinal hernia. Following that operation he developed pleurisy on both sides, with considerable pain but not enough fluid to require aspiration. He apparently recovered from that entirely and remained well and at work for several months afterward.

Present Illness.—About three weeks before presenting himself at the clinic he noticed that his abdomen began to swell. At that time he had been eating freely of fruit and drinking large quantities of water, to which he attributed the swelling. He had no pain at all in the abdomen when the swelling began, and only slight pain at times since then. His bowels had been constipated rather than loose. There had been no vomiting or disturbance of digestion. He had no cough and no pain in the chest; but felt that he had fever each afternoon, and every night recently he had a sweat. He did not think he had lost in weight, but felt weak and unable to work.

Physical Examination.—The patient was poorly developed, moderately emaciated, pale and slightly icteric. Ears appeared normal; eyes showed no corneal scars, pupils reacted equally; nose was normal in contour; mouth showed teeth in good condition, tongue slightly coated on dorsum and bright red along sides. Throat showed no ulcerations, plaques, unusual redness, nor tonsil hypertrophy. Cervical glands were not enlarged.

Chest.—Clavicles were prominent, musculature poor, ribs all plainly visible; expansion limited. On percussion, with patient lying on the back, on the right side dullness began at the fourth rib, and traced downward was continuous over the base of the lung with that of the liver below; on the left side dullness began at the level of the nipple and was continuous downward for 19 cm. in the anterior axillary line. Examining the back with patient erect, dullness was found over the right base as high as the fifth dorsal spine and over the left as high as the seventh. Below the line of dullness vocal fremitus was everywhere absent. The breath sounds over both upper lobes, front and back, were loud and free from râles but harsh and bronchovesicular; below the line of dullness they gradually diminished and then disappeared entirely.

Heart.—The cardiac impulse lay high in the chest, visible in the second, third and fourth left intercostal spaces, with the maximum in the fourth space 4 cm. internal to the nipple line. The area of cardiac dullness merged with that over the lungs. The heart sounds were all clear except for a soft systolic murmur over the pulmonic area.

Abdomen.—On inspection this was symmetrically distended; over its surface and that of the lower thorax many dilated veins were visible; in the left inguinal region was the scar of the old hernia operation. Palpation gave a distinct fluctuation wave across the abdomen; in the upper abdomen, on the right side a hard, smooth, rounded mass could be felt on deep inspiration, resembling the lower border of the liver; on the left side on deep inspiration, the edge of the spleen could easily be made out below the costal margin; but no other masses could be palpated elsewhere in the abdomen, and there were no enlarged inguinal glands. On percussion the liver dullness extended 6 cm. below the costal margin in the nipple line; dullness was found in each flank and in the lower abdomen with the patient on the back, rising 4 cm. higher toward the navel, as the patient sat erect; over the rest of the abdomen the percussion note was tympanitic.

Genitalia.—The penis showed no scar; there was no edema of the scrotum; no palpable masses were found in the testicles.

Lower Extremities.—These were poorly developed and emaciated, but showed no scars nor irregularities along the tibiae; there was no swelling of the ankles or feet; the patellar and plantar reflexes were intact and there was no disturbance of sensation.

I. EVIDENCE FOR TUBERCULOSIS

With such a history and status the first thought was of tuberculosis as a cause. The evidence in favor of this explanation was as follows:

1. *The History of Onset.*—A young man previously in good health had a fibrinous pleurisy involving both sides of his chest; this subsided, but a few months later he developed insidiously and without pain an enlargement of his abdomen; such a story certainly created a strong suspicion of tubercular pleura and peritoneum.

2. *The Physical Findings.*—The patient had an ascites; there was no disease of heart or kidneys to account for it; there was no dropsy elsewhere except in both pleural cavities; and coincident fluid in abdomen and pleura has long been looked on as a clinical combination suggesting tuberculosis. Speaking of ascites in the diagnosis of tuberculous peritonitis, Osler says: "A most important point is the simultaneous presence of a pleurisy." The dilated veins in the abdominal wall were interpreted to mean portal obstruction; and this was explained by the supposition of enlarged tubercular glands compressing the vein at the portal fissure. Cirrhosis of the liver as a cause of the ascites and of the portal obstruction was improbable in the light of the previous history and did not explain the coincident pleuritic effusion.

3. *The Temperature.*—The patient was found to have a remittent type of fever, normal each morning, 101 or 101.5 each evening; characteristic of chronic tuberculosis of serous membranes.

II. EVIDENCE AGAINST TUBERCULOSIS

But in spite of these clinical data speaking for tuberculosis, there were other findings that did not fit such an explanation of the case. These were as follows:

1. *The Absence of Tuberculin Reactions.*—The first of these to be tried was the Calmette ocular tuberculin test; it was entirely negative. Later the Moro cutaneous test was employed, likewise without the slightest reaction. The von Pirquet test was not used, because it was realized that even if a reaction was obtained it might be due to sensitization caused by the previous tests. Tuberculin subcutaneously was contraindicated by the patient's daily evening temperature.

2. *The Character of the Ascitic Fluid.*—This was found to be clear, amber yellow, alkaline, specific gravity 1010, with a moderate amount of coagulum on heating; and the centrifugalized sediment showing microscopically a few red blood corpuscles, but no polymorphonuclear leucocytes, no lymphocytes, no cellular masses and no tubercle bacilli. Such a finding was not the one expected in tubercular peritonitis, corresponding rather to a transudate from portal obstruction than to an exudate from chronic inflammation.

3. *The Character of the Pleuritic Fluid.*—This was likewise a clear amber fluid; it showed microscopically many red blood corpuscles, numerous leucocytes with relatively many lymphocytes, a moderate number of endothelial cells, but no tubercle bacilli and no other micro-organisms. A guinea-pig injected intraperitoneally with this fluid and killed after one month showed no lesions of tuberculosis.

4. *The Blood Examination.*—This showed the hemoglobin, 58 per cent.; red corpuscles, 5,064,000; white corpuscles, 13,400; polymorphonuclears 80 per cent.,

large lymphocytes 11 per cent., small lymphocytes 8 per cent., eosinophiles 1 per cent. The normal number of red cells found was attributed to the concentration of the blood caused by the withdrawal of water into the pleural and abdominal cavities; for such a result is common with any large exudate or transudate. The low hemoglobin percentage showed, however, that in reality a considerable anemia was present. The leucocytosis found, though moderate, was the point particularly against tuberculous peritonitis; for in the latter condition the white count is usually either normal or subnormal; and tuberculosis in general does not cause leucocytosis, excepting when a secondary infection has occurred.

5. *The Findings at Exploratory Operation.*—Dock¹ makes a plea for laparotomy rather than paracentesis in ascites. When the cause of the ascites is obscure and other means of diagnosis have failed to determine it, there is no doubt that the plan urged by Dock is a wise one. I have employed it a number of times since Dock's article appeared and always with satisfaction. In this particular case exploratory laparotomy was done by Dr. Stanley Stillman and gave the clue to ultimate diagnosis. It showed no miliary tubercles scattered over parietal or visceral peritoneum, such as one expects to find in tuberculous peritonitis; and no enlarged glands in the mesentery or in the portal fissure; in other words, the findings were not those of tuberculosis. What was found spoke rather for syphilis of the liver as a cause of the ascites—a diagnosis that previously had no evidence whatever to make it worthy of consideration.

III. EVIDENCE FOR SYPHILIS

1. *The Findings at Exploratory Operation.*—The liver was found enlarged, its capsule thickened, its tissue hardened; and scattered through all parts of its substance were numerous nodules varying in size from a pea to a walnut, such as one sees in syphilitic gumma or in malignant disease of the liver. The spleen was visibly and palpably enlarged, its capsule thickened, its substance firmer and harder than normal. No other abnormality of abdominal organs was found on gross inspection.

2. *The Findings on Tissue Examination.*—At the time of operation a portion of the liver substance extending from the superior surface down through a nodule was excised for microscopic examination. The following report was rendered by the pathologist, Dr. William Ophuls, to whom the specimen was submitted:

Sections show very marked increase in the periportal connective tissue, in some places being so marked as to practically obliterate the liver lobules; there is marked cellular infiltration; one section shows a large caseous area, surrounded by dense fibrous tissue; there are some epithelioid cells but no giant cells; no definite tubercles made out; no tubercle bacilli found. Diagnosis: Syphiloma of liver with marked cirrhosis of liver.

3. *Positive Wassermann Reaction.*—Subsequent to the findings at operation, the Wassermann test was made by Dr. H. R. Oliver. A positive reaction was obtained with blood drawn from the arm, and later was again obtained with the ascitic fluid.

4. *Effects of Treatment.*—As soon as the diagnosis of syphilis seemed fairly established the patient was at once placed on specific treatment, which has been continued

ever since. He slowly but gradually improved and is now in better health than he has been for months previous. His pleuritic fluid has entirely disappeared from both sides; and his ascites is so small in amount that it gives him no annoyance and is steadily growing less.

IV. EVIDENCE AGAINST SYPHILIS

1. *Absence of History.*—While but little reliance can be placed on a patient's statements regarding venereal disease, nevertheless the testimony on this point cannot be entirely ignored. This boy not only denied ever having had a sore on his penis, but also ever having had sexual intercourse. Furthermore, carefully questioned, he had no history of the symptoms of early syphilis: no skin eruptions, no sore throat or mouth, no enlarged glands.

2. *Absence of Other Lesions.*—Syphilis of the liver is a late manifestation; before it occurs others have preceded and many of these leave their marks behind them. Over this boy's body there were no enlarged glands found; none of the round, depressed scars over the skin of the legs, so characteristic of destructive syphilitic skin lesions; no irregularities along the crests of the tibiae; no deformity of the palate or fauces or tongue or nose; and, finally, no scar on the penis.

3. *The Improbability of Syphilis of the Liver.*—In the first place, tertiary syphilis of the liver is comparatively rare and, therefore, not to be accepted as a diagnosis without abundant proof. Keyes² quotes Fournier as saying that he found liver syphilis only 9 times among 4,400 tertiary lesions. Rolleston³ says that in 11,629 autopsies at St. George's Hospital during a period of forty-two years only 37 cases of hepatic gumma were found and 27 cases of hepatic cicatrices. Flexner,⁴ in reviewing 5,088 autopsies at the Philadelphia Hospital during thirty-five years, found that hepatic gumma were present in only 23 cases, hepatic cicatrices in 38, and in all there were only 88 cases of hepatic syphilis. In the second place, syphilis of the liver is a late manifestation, one of the so-called tertiary lesions. This means that the primary infection must have occurred at least five years, and more likely ten or even twenty years, before the hepatic manifestation. As this patient was only 18 when he came under observation, the improbability of liver syphilis was manifest and led in the early investigation to the rejection of such a diagnosis.

Nevertheless, in spite of the absence of history, of marks of the disease and of the improbability of syphilis, the findings at the exploratory operation and at the tissue examination, taken in connection with the positive Wassermann reaction, compelled a revision of diagnosis. All of the clinical evidence was against acquired syphilis, yet the pathologist and the laboratory worker found conclusive evidence that syphilis was present; the only possible explanation remaining was that the case was one of late congenital syphilis. A review of the evidence for and against this diagnosis was therefore made.

V. EVIDENCE FOR LATE CONGENITAL SYPHILIS

1. *Frequency of Hepatic Lesions in Congenital Syphilis.*—The liver is found to be affected in a high proportion of cases of congenital syphilis, according to all authorities, contrasting strongly with acquired syphilis, where hepatic lesions are so rare. This is true not only

1. Dock: A Plea for Laparotomy Rather than Paracentesis in Ascites, *Internat. Clin.*, II, Series 17.

2. Text-Book on Syphilis, p. 469.

3. Text-Book on Diseases of the Liver, p. 357.

4. New York Med. Jour., 1902, p. 101.

in infants dying of the disease, but in the cases of late congenital syphilis, occurring anywhere in the first, second or third decades of life. In 1902 Forbes⁵ collected 132 cases showing the lesions of late congenital syphilis in one form or another, and in 34 per cent. of these the liver was affected.

2. *The Clinical Findings.*—The clinical features described as occurring in late congenital syphilis of the liver are those found in this case—enlargement of liver and spleen, with ascites as a very common manifestation.

3. *The Mother's Condition.*—After a diagnosis of late congenital syphilis had been reached, it seemed wise to investigate the surviving parent for proof as to whether the disease existed there. A test of the mother's blood by means of the Wassermann technic was, therefore, made for us by Dr. H. R. Oliver and the blood showed a positive reaction.

VI. EVIDENCE AGAINST LATE CONGENITAL SYPHILIS

In the face of all the facts so far presented the diagnosis seems fairly certain; and yet there are missing links in the chain of evidence, whose absence cannot be overlooked.

1. *Absence of Stigmata.*—These are the so-called stigmata of congenital syphilis, such as the Hutchinson's teeth; interstitial keratitis or its scars; deafness; bone deformities, such as asymmetry of the skull, saddle nose, saber tibia; and constitutional marks, such as physical and mental backwardness of development, amounting to infantilism or even idiocy. Not one of these stigmata could be found present in this case. The absence of these is at least very unusual and cannot fail to cast doubt on the situation.

There is, however, one remaining possibility not yet mentioned—an early acquired syphilis—acquired by some other than the venereal route. On this point of stigmata Rolleston says:

In order to be sure that the case is one of delayed congenital syphilis there must be some other evidence of congenital syphilis, such as interstitial keratitis, otherwise the disease might have been acquired in early life; for example, from a wet nurse.

And again in another place he says:

The diagnosis rests on the evidence of congenital syphilis, as shown by interstitial keratitis, Hutchinson's teeth, deafness and infantilism, together with hepatic enlargement. If evidence of syphilis common to the congenital and the acquired forms, such as gummata are present and none of the stigmata of the congenital variety are obvious, the infection may have been acquired in early life.

Finally, no explanation of this case so far offered accounts for the double pleuritic effusion, which is not a common feature either of late congenital syphilis or of tertiary acquired syphilis. The only supposition possible seems to be that of a coincident gummatus condition existing in both pulmonary bases as well as in the liver, perhaps having gained access by extension through the diaphragm. But this must remain a theory until such time as the last chapter in our fascinating problem lies open before us—a chapter which as clinicians we are bound to postpone as long as we possibly can.

Shreve Building.

FATAL LEAD POISONING FROM THE USE OF BUROW'S SOLUTION

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NEW YORK

Several years ago the following case of lead poisoning with fatal termination occurred in one of my hospital services. For obvious reasons its publication has been delayed.

History.—A young man was admitted to hospital suffering from an electric burn received a month before. A cold chisel had fallen out of his hand onto the third rail of the electric railway where he was working, and the resulting flash had burned both hands and his face, neck and the upper chest (it being summer his shirt was open), but had not set his clothing on fire. There was moderately extensive burn of the face, neck and chest, much of it eroded and with some necrotic areas. His left hand showed on the dorsum merely a large raw area; but the right, in addition to the second degree burn that covered most of the surface, showed beginning necrosis of the last phalanx of the thumb and of the tips of the middle and index fingers; and the extensor ossis metacarpi pollicis was exposed, as also was one tendon on the anterior surface of the forearm. In spite of his severe lesions, the patient's general condition was not bad; the temperature rose only a degree in the evening, the kidney functions were perfect, the gastrointestinal tract was in good condition and the appetite was good. The chest and abdomen were negative. The erythema of the more lightly burned areas was passing off; granulation was beginning; but there were still some necrotic masses. He had been under medical care, but it was impossible to ascertain what had been used, save that it was a moist dressing.

Treatment of the Burns.—Of general treatment the patient required hardly anything; the local treatment given was wet dressings of Burow's solution of the usual formula (a mixture of aluminum acetate and lead sulphate), 1 to 8 parts of distilled water. The lesions did exceedingly well; the sloughs were cast off, granulation progressed, the exposed tendons began to be covered, and a line of demarcation appeared and deepened behind the necrosed finger tips.

Result.—The man's general condition, however, became unsatisfactory. After being some three weeks in the hospital constipation set in; the record shows almost daily administration of calomel, rhubarb and soda, etc. In the fourth week he began to complain of pain in the stomach, and examination revealed a point of epigastric tenderness; he vomited once or twice, voiding stomach contents only; his tongue was coated and his breath was foul. A gastric ulcer was suspected; but examination by the internist on duty revealed no positive evidence of it. One week later, the epigastric pain and vomiting having continued, and moderate emaciation having set in, the presence of slight tremor of the hands and a faint but appreciable blue line on the gums enabled the diagnosis of lead poisoning to be made.

Treatment of the Lead Poisoning.—The use of the Burow's solution was immediately stopped and replaced by 10 per cent. balsam of Peru in oil. Steady improvement in the local conditions continued; but the lead intoxication increased, in spite of all that could be done. Purgatives, magnesium sulphate, potassic iodid, and varied measures to promote the elimination of the poisonous metal and to sustain the patient's resistance did indeed relieve the epigastric pain and the vomiting, but the man's condition in general became steadily worse. Weakness became more marked; wrist drop appeared; and the patient became delirious at intervals. In the seventh week after his admission to the hospital he was continuously delirious, being so violent that he had to be restrained; ecchymoses appeared on backs of the hands and arms, and on the legs, and the tremors of the limbs, tongue, etc., became very marked. He died at the beginning of the eighth week.

Undoubtedly systemic lead poisoning occurred from absorption by the granulating wound surfaces. Though

5. St. Bartholomew: Hosp. Rep. xxxviii, 37.

wet compresses of the dilute Burow's solution were used on the face, none were used around the mouth, as the lips had not been burnt; and, the hands being in an impervious (rubber tissue) outer dressing, the patient was fed, and there was little chance of any direct introduction of the metal as a contamination of the food. Besides, the intensity and severity of the intoxication is proof that the metal must have been introduced and absorbed in comparatively large quantities in a short time.

The entire time of application of the lead solution was five weeks. Symptoms of plumbism appeared at three weeks; they were severe by the fifth week; and the patient succumbed in the eighth week. It is not reasonable to suppose that the accidental absorption through the gastrointestinal tract of small quantities of the lead solution could be responsible for so acute and profound intoxication.

Examination of the ward solution used for the dressings when suspicion was directed to it showed a fairly abundant snow white deposit on the bottom of the jar, with a clear supernatant fluid. It was applied, according to the druggist's directions, after being well shaken. Investigation of the various formulas for the preparation of Burow's solution showed that they differed regarding the filtration of the mixture. Some direct this to be done, only the clear filtrate being used; while others omit it, saying the mixture is to be well shaken before application.

Lead salts in solution or suspension are generally recommended in many dermatoses, the supposition being that absorption does not occur, at all events when the epidermis is intact. Lewin¹ found that even the frequent, persistent and extensive use of a 10 per cent. lead acetate spray could not force the metal through the skin; though he did note absorption when there was inflammation or destruction of the corneous layer. Practically all authorities, from Cazenave and Schedel, in 1862, to Audry, Durand, and Nicolas, in 1909, recommend lead salts in solution, ointment, or plaster for various dermatoses, including inflammations and infections, and without any mention of danger of absorption. Nor is its use confined to affections in which the corneous layer is preserved. Crocker² uses subacetate of lead lotions in excoriations, and Paschke³ recommends lead water for erosions and ulcerations of all kinds, stating that when the epidermis has been destroyed the lead combines with the exudation and forms a protecting cover.

Furthermore, lead applications are advised in burns by many surgical and dermatologic authorities, and usually without any special reference to danger. Gross⁴ and Wyeth⁵ recommend ordinary white lead paint; Wood⁶ uses carbonate of lead in linseed oil or as an ointment; Veiel⁷ and Bum⁸ employ lead lotions, and von Notthaft⁹ and Theimann¹⁰ use lead water. Witherstine,¹¹ Ringer¹² and Wood,⁶ while recommending the

treatment, do refer to the possibilities of absorption if employed on large surfaces.

Liquor aluminii acetici crudus or Burow's solution, diluted, is so universally employed, especially in Germany, for the treatment of burn that quotation of authorities is unnecessary. There is, however, a radical difference in the formulas recommended, so that the preparation may be a clear solution of aluminum acetate or a turbid fluid containing an abundant precipitate of sulphate of lead.

Liquor aluminii acetici crudus, Burow's solution,¹³ is made as follows: 95 parts of potassic alum are dissolved in 700 parts of distilled water, to which, when cooled, is added 151 parts of powdered "raw" lead acetate. This is filtered; 100 parts of the clear fluid contain 5 parts of aluminium acetate, with a little potassic acetate. No lead or other heavy metal is in the filtrate, as shown by the absence of precipitation on passing sulphuretted hydrogen through the fluid.¹⁴ This is the formula of a number of authors; and von Notthaft¹⁵ refers to liquor aluminii acetici as a clear, colorless fluid containing from 7.5 to 8 per cent. of basic aluminum acetate without either precipitated lead sulphate or any excess of soluble lead acetate.

Nevertheless this same writer,¹⁵ in giving the formula of Burow's solution, directs that 5 parts of crude alum and 25 parts of basic acetate of lead are to be dissolved in 500 parts of water, and then, saying nothing of filtration or decantation, adds the direction, "to be well shaken before using." This is proof positive that the precipitate is to be used. In this he is followed by a number of authorities, of whom I need mention only two as typical. Lang¹⁶ expressly prefers von Notthaft's formula, using the freshly prepared solution as a wet dressing. Luithlen¹⁷ rejects the new, i. e., filtration, methods for the preparation of Burow's solution, and states explicitly, "and the preparation is best used unfiltered, being well shaken before it is employed." Inquiry as to the practice in the medical institutions of this city reveals a similar difference. In some of them Burow's solution is always decanted or filtered or both before use; in others, including some of the largest, the sediment is carefully preserved as part of the lotion. The sediment, of course, is practically pure sulphate of lead.

In spite of the extensive use of lead in various forms as an external application, serious plumbism from this source seems to be very rare; hardly any cases reported. I have been able to find but two. J. O'Carroll¹⁸ reports a fatal case from the use of a hair dye containing lead. Pässler¹⁹ saw the use of diachylon ointment in an eczematous infant cause a violent attack of lead poisoning, with a hemorrhagic nephritis, but ending in recovery. Idiosyncrasy is evidently a factor of prime importance in these cases; and very probably milder and unreported cases of lead poisoning through the integument are not so rare. Since the occurrence of the case here reported I no longer use Burow's solution, filtered or unfiltered, for cases of burn. The results in the cases suited for wet dressings are just as good with boric acid solution.

144 West Forty-eighth Street.

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2. Diseases of the Skin, 1893.

3. Encyklopädie der Haut- und Geschlechts Krankheiten, Lesser, p. 18.

4. Manual of the Practice of Surgery, Bryant, 1881, p. 129.

5. Text-Book on Surgery, 1881, p. 91.

6. Treatise on Therapeutics, 1880, p. 40.

7. Handbuch der Hautkrankheiten, Ziemssen, 1883, p. 345.

8. Therapeutisches Lexicon, 1891, p. 1665.

9. Taschenbuch, 1903, p. 77.

10. Therapie der Haut- und Geschlechts Krankheiten, 1901, p. 155.

11. Annual Cyclopaedia of Practical Medicine, Sajous, 1899, p. 367.

12. Handbook of Therapeutics, 1889, p. 234.

13. The latest German Pharmacopoeia does not use lead acetate in the preparation of liquor aluminii acetate; but the older formula is the one still in common use here.

14. Hager, Handbuch der Pharmaceutischen Praxis, 1903.

15. Taschenbuch, 1903, pp. 157, 168.

16. Therap. für venerische u. Hautkranke, 1899, p. 108.

17. Therap. der Hautkrankheiten, 1902, p. 16.

18. Dublin Jour. Med. Sc., January, 1904.

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THE TREATMENT OF EMPYEMA, PLEURITIC EFFUSION AND HYDROCELE WITH SODIUM BIBORATE SOLUTION

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So much has been said recently about the treatment of empyema and pleurisy with effusion that I venture to give a method which I first employed in 1883 and have since used, whenever opportunity offered, with complete success in pleuritic effusion, empyema and hydrocele.

History.—The first case in which I used the treatment was that of C. S., a boy about 10 years old, who became ill with pleurisy, followed by an effusion filling the right side of the chest. I deferred withdrawing the fluid as long as I could and empyema followed. I then aspirated, withdrawing about a pint and a half of creamy pus, but the chest soon filled up again, and again I aspirated, withdrawing nearly the same amount of pus. This was repeated seven times and the amount of pus withdrawn was about the same each time. I had been experimenting with a solution of biborate of soda in patients with hydrocele, and as that had checked the effusion in each instance I concluded to try it in this patient. After withdrawing the pus I injected about a pint of a 2 per cent. solution of biborate of soda at a temperature of 100, allowing the solution to remain in the cavity for about ten minutes, moving the patient gently so as to bring the solution in contact with every part of the cavity. I then withdrew all the solution, and that was the end of the empyema, for the patient made a rapid recovery.

My next patient had simple pleurisy with effusion. I aspirated but did not wash the cavity out with the biborate solution, as these patients often recover after aspiration; but the chest soon filled up again and I aspirated again, this time washing out the cavity with the biborate solution. This ended the trouble.

My next patient was a man of about 70 with hydrocele. The effusion had been aspirated three times, and the sac had refilled each time. I aspirated, and washed out the sac with the biborate solution, left it in about fifteen minutes, then withdrew it, strapped the scrotum, and sent the patient home. Although he lived for ten years after that he never had a recurrence.

Since that time I have used the biborate solution in nearly every case, and always with success. One great point in its favor is the fact that it is quite painless, and any one who has seen a patient writhe under an injection of iodine or carbolic acid will appreciate this.

Therapeutics

WHOOPIING COUGH

Although whooping cough, or pertussis, has long been recognized as one of the most conspicuous examples of an infectious disease, and that it is also directly contagious, still, the agent of the infection has not been definitely determined. Some have believed that it was a protozoon, to which class belong the plasmodium, the infecting agent of the malarial diseases. Others have found a bacillus resembling the bacillus of influenza, which they believe is the cause of whooping cough. At present the opinion of the majority of those who have personally investigated the subject seems to be in favor of accepting this bacillus as the cause of the infection.

As the disease is exceedingly contagious, and its complications and sequelæ (pneumonia, phthisis, heart strain, cerebral hemorrhage, ocular hemorrhage) are often exceedingly dangerous, it is not at all necessary to present any argument in favor of the isolation of

those who are suffering with it. This isolation should be put into effect as soon as the disease is recognized. But it commences so insidiously, its early symptoms are usually so closely identical with those of an ordinary "cold" commencing "in the head" or nose, and affecting later the bronchi, and causing a cough, and the characteristic whoop is so late in appearing, that two or three weeks often elapse before a positive diagnosis is made. Here the scientific precision of the laboratory comes most usefully to the aid of the physician, for it has been found that in whooping cough, even early in the disease, there is a pronounced leucocytosis. If, when the symptoms seem to point to the possible presence of whooping cough, a pronounced leucocytosis is found, it is strong confirmatory evidence that that disease is actually present. But if, on the other hand, there is no leucocytosis, it is probable that it is not the early stage of that disease.

The necessity of giving children with the disease abundance of fresh air is now generally recognized. This rule, however, has not always been carried into effect with as much common sense as is desirable. By many persons the direction by the physician to give the patient plenty of fresh air is interpreted as a command to expose him to out-of-door air without regard to its temperature or the direction and force of the wind. It is hardly necessary to present any argument to the practitioner of experience that the exposure of any individual to air of extremely low temperature or to cold winds and drafts is exceedingly likely to be followed by inflammatory affections of the respiratory organs. Much more are such unfortunate results likely to follow, and their incidence likely to be more severe, when the victim of the exposure is already suffering from whooping cough. If the patient comes under treatment in the summer he may be kept out of doors most of the time, if he is not severely affected by the disease. This does not mean that he should be allowed to play hard and become overheated or exhausted. In mild spring and autumn weather, quiet enjoyment of outdoor air is advisable, but in winter when the temperature is low, and especially if damp, and when there are cold winds, it should be emphasized that exposure during whooping cough is dangerous. But not all patients can be allowed to go out of doors. If there is fever, or if the paroxysms are severe or frequent, rest in bed is essential, or in warm weather rest on a veranda. If in the intervals between the paroxysms the child shows signs of being sick, his temperature should be accurately taken, and if it is 100 F. or over he should be kept in bed until it returns to normal.

Food should be of an easily digestible character and given at regular intervals. If vomiting is of frequent occurrence, the food should be given in small quantities, and at more frequent intervals, which should usually be three hours.

Concerning medicinal treatment, opinion and practice vary greatly. Most of the drugs which have been extensively used may be classed as antiseptics or antispasmodics, and either of these classes is favored in proportion as the individual practitioner is inclined to consider the infection or the spasmodic element as furnishing in the first case a more rational, or in the second case a more imperative indication for treatment.

Forty years ago Binz claimed that sulphate of quinin was a specific in whooping cough if given in solution so as to come in contact with the mucous membrane of the mouth and throat, believing that in this way it destroyed the micro-organisms which caused the disease.

The antispasmodics which have been used with the idea that the neurotic element of the disease was the most important, and could be most satisfactorily influenced by treatment, are too numerous to permit even of their enumeration.

Many years ago French clinicians advised the administration of belladonna, but it has never come into very general use. Its best effects are seen only when it is pushed until its physiologic effects are apparent, and these are so disagreeable, not to say terrifying, that most persons would rather endure, or have their children endure, the paroxysms of the disease than the dryness of the throat, the hyperemia of the skin, the impairment of vision, and the cerebral disturbances which are likely to follow the use of large doses of belladonna.

The bromids have been recommended, but rarely are the phenomena of whooping cough of so purely reflex character that these salts alone prove of much avail, although they may be useful in quieting the general restlessness and nervousness sometimes seen in these patients.

Antipyrin has been highly praised and extensively used, and assists greatly in palliating the paroxysms, but many hesitate to use, in a disease which lasts usually for several weeks, a drug which has been reputed to have very deleterious effects on the blood and the heart. If properly used, however, antipyrin is one of the most successful treatments in whooping cough. It should be given in 0.05 gram ($\frac{5}{6}$ of a grain) doses for every year and a half of age of the child, i. e., 0.05 gram for a child up to one and one-half years of age; 0.10 gram for one and one-half to three years of age; 0.15 gram from three to four and one-half years; 0.20 gram (3 grains) from four and one-half to six years of age, and so on, and this dose administered three or four times in twenty-four hours. The little patient should be given coincidentally one drop of the tincture of digitalis three times a day for every one and one-half years of age. The antipyrin may be prescribed as follows:

R.	gm. or c.c.	
Antipyrini	3	gr. xv
Syrupi	50	or fl. ℥iiss
Aque menthæ piperitæ, ad.	100	ad. fl. ℥iiss

M. et Sig.: A teaspoonful, in water, three or four times a day.

[This would be the dose of antipyrin for a child from three to four and one-half years of age.]

The digitalis should be ordered separately, so that its dose may be increased or diminished according to the rate of the pulse. The digitalis not only prevents the antipyrin from having any weakening action on the heart, but also helps the heart to withstand the strain on it from the cough.

Whatever the treatment may be, its success may be determined by the frequency of the paroxysms of coughing, and the mother or nurse should keep a careful record of these day by day, so that the record of yesterday may be compared with that of to-day, and the medicine increased, diminished or continued according to the results.

If there is much bronchitis, it may be necessary to give an ammonium chlorid expectorant mixture, with or without opium in some form. Also, if the child is very weak, it may be necessary to reduce the intensity and frequency of the paroxysms by some form of opium. With the rest and antipyrin treatment, however, it is rarely necessary. The best form in which to administer opium to a young child is small doses of codein sulphate

or the tincture of deodorated opium. The latter should be ordered separately, and a drop administered to a child two years old or more, every two, three or four hours, depending on its action. If the child is drowsy, the mother or nurse should be told to stop its administration.

After the paroxysms have practically ceased, some form of tonic is needed, and perhaps nothing is better than an *eisenzucker* (saccharated oxid of iron), three-grain tablet, three times a day, or syrup of hypophosphites may be ordered, or cod-liver oil in small doses may be administered, or some emulsion of fats or cod-liver oil. Be the tonic treatment what it may, it should be persisted in, with plenty of outdoor air and perhaps change of climate, until the child has ceased to cough, has regained its weight, and has recovered or attained a normal healthy color; in other words, until its general condition and blood condition are all that could be desired. Until the child has reached this condition of health there is danger of tuberculosis becoming a sequel of the whooping cough.

Some practitioners think that the cough is less intense, the vomiting less frequent, and the general condition of the patient improved by either an elastic band worn about the abdomen, or adhesive straps, or a firmly applied abdominal bandage. Such mechanical measures can certainly do no harm, and may often do good.

The administration of chloroform to do necessary operations on children who have had whooping cough has in many instances seemed to abort the disease. It has, therefore, been suggested that chloroform be administered once or twice early in the disease to see if it would kill or prevent the growth of the whooping cough germ. Not sufficient statistics have yet been offered to show its value, however, and its use for this purpose is, therefore, purely experimental.

The old treatment of taking children with whooping cough to the gasometers for the purpose of subjecting them to the inhalation of coal gas fumes is now probably rarely tried. If the inhalation of this kind of coal gas was valuable in killing the disease, the toxic gases occurring in the new methods of making illuminating gas would seem to render the subjection of a child to these gases very inadvisable.

The various antiseptic sprays recommended do not seem to reach the seat of the disease or to do very much good, and probably boric acid sprays and boric acid gargles are as antiseptic and as safe and cleansing as any local treatment that could be safely advised.

The treatment of whooping cough may be summed up as:

1. Rest.
2. Fresh air.
3. Food every three hours in not too large quantities. (If a meal is lost by a paroxysm and vomiting, the child should be given another meal immediately, as it is likely another paroxysm will not quickly occur.)
4. Warm baths.
5. Boric acid mouth wash and gargle.
6. The bowels should be moved daily with cascara, if needed.
7. Iron in some pleasant form.
8. Antipyrin, if the paroxysms are at all severe, in the dose above described, and with the coincident administration of tincture digitalis.
9. If antipyrin is inadvisable or not successful, codein or tincture of deodorated opium should be given.
10. Later tonics, food, and hygiene best suited to each individual patient.

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THE AMERICAN MEDICAL ASSOCIATION—ITS POLICIES AND ITS WORK

IV. THE REORGANIZATION OF THE STATE AND COUNTY SOCIETIES

BEFORE REORGANIZATION

Two weeks ago we called attention to the necessities and results of organization, so far as the American Medical Association was concerned. Much that was said then will also apply to the state societies. Previous to 1901 they were practically isolated organizations, with little actual connection between them and the local societies. In some instances their relation to the American Medical Association was not even nominal, and in no case was it close and vital. They were entitled to send delegates to the American Medical Association, but the smallest local body had the same right. There was no uniformity as to plan of organization or requirements for membership.

The state society was in no sense representative, and it usually comprised but a minor fraction of the physicians of the state. The annual meetings were merely voluntary gatherings of men for scientific and social purposes; and anything outside of scientific work was seldom attempted. Little time was given to the discussion of business or to constructive work, unless the passing of resolutions might be so regarded. Little, if any, effort was made to build up local societies, and so far as accomplishing anything during the interval between the annual meetings was concerned, for all practical purposes there might as well have been no state society. In other words, the state societies before reorganization, with four or five exceptions,¹ were simply independent

bodies, with no close or uniform relationship to each other,² meeting annually for scientific purposes, and in no way so constituted as to represent the profession of the whole state, or to do constructive work.

The conditions regarding local societies were as bad, if not worse. Previous to reorganization, there were few, if any, strictly "county" societies, except in a few states.¹ Local organizations were to be found only in the larger towns. District societies had no definite territory and were voluntary organizations, usually meeting but once a year. The membership of the local bodies generally comprised an extremely small fraction of the physicians in the locality, and often was limited to friends of certain individuals, to the staffs of certain hospitals, or to members of the faculty of a certain college; often rival societies were organized by rival cliques and circles in the same town; in a few instances these were actually detrimental—breeders of jealousy and strife, and tending more to disorganization than to organization.³ They were, in short, isolated units with nothing in common, and had slight connection with the state society.

Most important of all was the fact that the existing local societies did not afford opportunity for membership to physicians in small towns or rural districts. Consequently, such men were practically barred from attendance at medical societies, except at great sacrifice of time and money, such as the majority were neither able nor willing to make. The results of these conditions were that thousands of physicians were beyond the reach of medical societies, while many thousands more did not hold membership because the existing societies did not appeal to them.

Such, in brief, were the general conditions prevailing, previous to 1901. These unsatisfactory conditions had long been realized by progressive members of the profession and, as shown by the annual transactions of many state societies, had been frequently discussed and numerous suggestions made for their betterment. Thus when—in 1901—the American Medical Associa-

1. The statements made in this editorial must be regarded as a general summary of the conditions of the country as a whole. Exceptions must be made as to certain states. For instance, Massachusetts had for a long time been organized on a very effective and practical "district" plan. Alabama, in the early seventies, adopted an excellent scheme of organization which, in fact, was the ideal before the committee in working up the proposed plan. The Medical Society of the State of New York and the New York State Medical Association each had a county society system, but the existence of these two rival bodies largely counteracted the good results which might have been secured. Besides these, Connecticut, Indiana, New Jersey and Pennsylvania were organized on some variation of the county plan.

2. Said the Committee on Reorganization in their report in 1901: "It is not necessary to use arguments to prove that there is at present no close relationship among the state societies; that each is acting as an independent body, recognizing no other; that no concert of action among them regarding measures that are of mutual importance is possible under present circumstances, and that a federation of the state societies is desirable and absolutely necessary for the accomplishment of their full measure of usefulness."

3. "One of the great obstacles to systematic organization is the large number of existing medical societies. Of these there are between 1,300 and 1,400, although with new ones continually starting and with many in that condition of innocuous desuetude which makes it hard to decide whether they are alive or dead, it is impossible to even pretend to any correctness as to the number. For the reason that most of these are organized without any common plan and without relationship one to the other, they are a source of weakness and an obstacle to systematic organization." From the Report of the Committee on Reorganization, 1901.

tion proposed a definite and uniform plan of organization, the time was ripe for action, and the opportunity was immediately grasped. Several of the state societies did not even wait for the adoption of the report by the American Medical Association, but actually modified their organic laws to conform to the proposed plan, while it was still a tentative one. Following the adoption of the report, a large number of state societies undertook the work of reorganization. So eagerly was the plan taken up, that in 1902 requests were made that a model constitution for state organizations be prepared so that all could conform to a uniform plan. The next year a similar request was made for a model constitution for county societies, and this also was ordered prepared.

REORGANIZATION

And what, after all, were the changes which have produced such marvelous results in so short a time? Like those made in the American Medical Association, they were apparently very slight and yet so fundamental as practically to revolutionize existing conditions and to make possible a systematic, practical organization of the profession.

The first and basic principle of reorganization was the recognition of the importance of the local or county society. It was realized that only through it could the individual physician be reached. "Such societies would furnish to every physician the opportunity of membership with the professional, social and material stimulus and betterment incident thereto." So the local society was made the unit or foundation of the whole superstructure. This unit also was made to cover a definite area—a county. The county society was made the "portal of entry" to all above it. To be a member of, or to retain membership in, the state or national associations, one must be a member of this unit—his county society. Before the reorganization, a physician might be a member of either the state or the national body, and yet not be a member of any subordinate society.

The second principle relates to representation. A state legislative or business body was created—the House of Delegates—in which are federated the county societies and to which each county society is entitled to send delegates, in proportion to its membership. These delegates are the representatives of their society; before reorganization, those who attended the state society represented themselves only. As was shown in the preceding editorial, the reorganization restricted to the state societies the right to send delegates to the American

Medical Association; here that right of representation in the national body is restored.

Thus the reorganization means that the individual physicians of a county form the county society; that the county societies, through a delegate system, are federated in and form the House of Delegates of the state association; that the state associations, through a delegate system, are federated in and form the House of Delegates of the American Medical Association.

The third principle is that membership in the county society carries with it membership in the state society. This means the right to attend the annual meetings and to take part in the scientific work and in the social functions; it does not mean the right to vote or to take part in the legislative or business affairs. This right belongs to those selected for that purpose by the county societies—the delegates.

The above, in brief, are the general principles of the plan of organization of the profession adopted in 1901—the plan which now exists in every state and territory except one. Let it be emphasized that this plan was not originated in 1901; it had been suggested and discussed long before that time.⁴

RESULTS

What are the results? The first and most noticeable has been the increase in membership. The prediction that the change would result in enormous increase in membership in county, state and national bodies has been realized. It is impossible to show by actual figures the increase in membership, since, in 1901, there was no way of ascertaining even the names of existing societies, much less the membership. The same applies, to a certain extent, to the increase in membership in state societies. Some idea can be obtained, however, from the report of the general secretary made to the House of Delegates in 1901, in which the increase for ten years is shown. In 1899, for instance, the Illinois State Medical Society had a total nominal membership of a little over 500, but, according to the *Transactions*, only approximately 300 members paid dues for that year. At present, this society has an actual membership of

4. The following from the report of the Committee on Organization, of which Dr. N. S. Davis was chairman, is interesting in this connection: "By making membership in a local [county] society a necessary qualification for membership in the state and national societies, the strongest possible inducement is presented for organizing and maintaining these primary and essential bodies by all intelligent members of the profession. By providing for delegates from the local and state societies on a uniform ratio of representation, and placing the whole business management of the Association in the hands of such delegates by restricting to them the right of voting, the most reliable check is put upon the tendency to centralization or local control, or any form of class supremacy, while the door to permanent membership is opened to all who are willing to support the interests of the profession in their own districts." (See THE JOURNAL A. M. A., June 25, 1887.)

about 5,300. The State Medical Association of Texas in 1899 had a membership of 297; to-day it has over 3,100. Previous to reorganization, there were estimated to be between 1,100 and 1,200 local societies, largely confined to the more populous areas, uncorrelated, disorganized, overlapping in territory, and often conflicting in purpose and object. Now there are 2,287 county societies, uniform in organization, each having jurisdiction over its own allotted territory, united for mutual improvement and helpfulness and gaining each year in strength and influence. The total membership of these societies is a little over 70,000. To-day a medical society is within the reach of practically every physician in the country.

The establishment of the councilor system, providing for a board of trustees or directors, and the appointment of numerous standing and special committees, have made the state society an organization in continuous existence, ready at any time to take up matters of interest to the profession and to the public, instead of being simply an annual mass-meeting, practically non-existent during the interval. The work now being done by committees of state associations, such as those on medical legislation, public health, medical and public education, and on other important matters, would have been utterly impossible under the old conditions. The affiliation of all county societies with the state society has made possible the appointment of committees containing representatives from each county society, thus giving the county societies a part in the work of state associations, and an opportunity to cooperate with each other.

Some one has observed that every proposition is ultimately one of finance. Medical organization is no exception. The enlarged membership has made for financial strength. Under the old order the state society dues varied from \$2.00 to \$5.00, but a comparatively few contributed, the dues being paid chiefly by those who were able to attend the annual meetings. Now each contributes a smaller amount, but from the many this makes a larger total income—and the enlarged possibilities for work and usefulness due to increased income are obvious.

Under the old plan, state societies published "transactions," which usually appeared many months after the meeting, and the publication of which in many states practically absorbed the annual income. Ten years ago not a single state society owned and published a journal; to-day there are twenty-two state society journals, representing twenty-four state societies.

Twelve states have adopted the mutual defense plan in malpractice cases, and are able, at a purely nominal cost, to protect their members against malpractice suits. Many other states are considering the question, and it is probable that ultimately most of the state associations will have added this feature to their membership privileges.

The best result of all, however, is the newer, better feeling now prevailing among physicians themselves, brought about by meeting and knowing each other. There is now a more fraternal feeling than formerly, and as a result less of the old-time jealousy and bickering—long the curse of the profession. There has developed a spirit of true fraternal professional cooperation and mutual helpfulness, which has in many places practically revolutionized conditions in the profession, and wonderfully increased its influence. It was formerly impossible to unite physicians of a state on questions of public policy or to present a united front. To-day it is entirely different. Like the bundle of sticks in the old fable, the profession is now bound together in a compact and coherent body which cannot be affected from without and can be broken only by disunion from within.

The value of a harmonious and united profession earnestly striving for the uplifting of its own standards, is evident; untold good has already resulted, both to the public and to physicians themselves; and yet we are only just beginning to realize the power and possibilities for usefulness of a united profession.

In a future issue we shall discuss in more detail certain other phases of organization.

THE ANTIVIVISECTION AGITATION IN NEW YORK

Again this year an antivivisection bill has been introduced into the New York legislature, and, after a hearing, the committee of the assembly has again refused a favorable report. Eager to obtain some sort of advantage, however, the agitators for legislation have just succeeded in presenting a second bill, providing for a commission to investigate "into the practice of vivisection or experimentation on living animals and the amount of suffering involved therein." The bill authorizes the commission to send for persons or papers, to administer oaths, and to examine witnesses and papers regarding the subject. The proposed commission would consist of seven persons, two physicians or scientific men, two active members of "an organization for the prevention of cruelty in vivisection," two practicing lawyers, and a seventh member appointed at large. A sum of \$5,000 is provided for expenses.

The agitation in New York is mainly due to the activity of one newspaper. The New York *Herald*, stung by the success of the county medical society in forcing from its columns advertising matter subversive of public health and morality, retaliated by taking sides with the opponents of medical research. In an apparently malicious spirit the paper has published day after day most misleading accounts of laboratory procedures, topped by large headlines referring to the "tortures," the "torments," the "prolonged agonies," suffered by experimental animals. The falsity of these statements and inferences has been repeatedly made clear in public letters, but the appeal to prejudice and suspicion has not been checked. As a result a state of extreme feeling has been aroused in some worthy persons, a condition remarkably like that in Great Britain in 1875, when the first Royal Commission on Vivisection was appointed.

That commission thoroughly investigated the conditions in the laboratories, found no material abuses, and on reporting made certain recommendations. As a writer in *Nature* put it at the time, "The evidence on the strength of which legislation was recommended went beyond the facts, the report went beyond the evidence, the recommendations beyond the report, and the bill can hardly be said to have gone beyond the recommendations, but rather to have contradicted them." It was a drastic bill passed in the heat of the agitation. For thirty-four years this law has been enforced, seriously interfering with medical research in Great Britain. What has been the effect? Antivivisection societies have multiplied—fifteen societies in Great Britain are energetically striving for the absolute abolition of animal experimentation. In 1906 these societies obtained the appointment of another commission; the voluminous testimony before it proved overwhelmingly how baseless were the insinuations of the agitators!

The Council on Defense of Medical Research has made a careful investigation of all American medical schools and laboratories in which animal experimentation is carried on, and has obtained detailed reports. The investigation has shown that every care is taken to avoid the infliction of pain. Practically all of the laboratories engaged in active research have voluntarily adopted regulations which state the conditions and express the spirit in which animals are used for experimentation. The responsibility to public interest in the importance of the problems studied and in the propriety of the methods used in studying them is placed by these regulations definitely on the person most concerned and most trustworthy, the person most likely to know at all times what is being done—the director of the laboratory. Any procedure involving greater distress than that accompanying anesthetization can be used only with the director's sanction. In several instances such regulations have been enforced for many years.

As the British experience indicates, the discovery of satisfactory conditions in the medical laboratories will have no effect in allaying the antivivisection agitation,

for, quite apart from the fanatical element in the movement, there is money, which, bequeathed to antivivisection societies, must be used. In response to the present excitement, New York may, indeed, spend \$5,000 of public funds for an investigation. That investigation, however, has already been made by a Council of this Association, and reliable safeguards against the careless use of animals are already in existence. The immediate situation, therefore, is one which, if the bill passes, the medical profession may face with equanimity.

Cause for anxiety, however, may later arise, if, as in Great Britain, clamor forces legislation hostile to the laboratories. For the sake of public health the medical profession should urge that medical research be controlled within professional lines, and not by hampering and entangling conditions expressed in short-sighted legislation.

THE EFFECTS OF ALCOHOL AND CHANGES IN TEMPERATURE ON ANTIBODY FORMATION

When it was shown experimentally that the natural resistance of animals to infection with various bacteria may be influenced by hunger, thirst, overexertion, abnormal heat and cold, poisons and a number of other factors, the question quickly arose as to just how modifications of resistance are produced. At first this question was approached from different and for a time mutually exclusive points of view, namely, that provided by the phagocytic and that provided by the humoral theories of antibacterial immunity. At first the advantage seemed to be with the phagocytic theory because it dealt with dynamic reactions, whereas the humoral theory was concerned with substances that then were looked on as altogether preformed and more or less stationary. However, when it became apparent that the antibodies of the humoral theory were subject not only to fluctuation, but also to new formation under the stimulus of infecting agents and, in consequence of cellular reactions, the question whether means that modify resistance have any influence on the course of formation of antibodies soon suggested itself. A number of investigations have been carried out with this thought in mind to determine the effect of various factors on antibody formation.

According to Trommsdorff,¹ severe physical exhaustion, prolonged hunger, and great chilling of the body, as well as certain other factors that are known to lower resistance, all lessen the production of antibodies in immunized animals. With respect to the effects of alcohol in rabbits, the results of Müller,² Wirgin³ and others indicate that alcohol in mildly intoxicating quantities for several days after the injection of the antigen restrains the formation of antibodies. Wirgin found

1. Arch. f. Hyg., 1908, lviii, 1.

2. Arch. f. Hyg., 1904, ii, 368.

3. Centralbl. f. Bakt., 1905, I, xxxviii, 200.

that the longer after the injection before he gave the alcohol the less its depressive effect. Some of the results appear to point to a favorable influence on antibody formation by alcohol in a single mildly toxic dose at or near the time the antigen is introduced, but Wirgin's results rather indicate the contrary effect.

The influence of changes in the body temperature on the formation of antibodies has been studied also. Rolly and Meltzer⁴ find that typhoid agglutinins and lysins are produced more rapidly and abundantly in rabbits that are kept overheated than in those which are kept cool. Lüdke⁵ reports similar results; he finds stimulation of the heat center by puncture to cause not merely an increase in the output of agglutinin, but also so to modify the agglutinin that an unusually firm sort of agglutination results. Torri,⁶ on the other hand, who also studied the effect of puncture of the thermic center on the development of typhoid antibodies in rabbits, was unable to determine whether the hyperthermia had any effect one way or the other. Graziani⁷ found that of rabbits injected in the same way with filtrates of typhoid cultures, but kept at different temperatures, viz.: + 38, + 37, + 2, and - 4° C., those kept at the low temperature developed the most agglutinin. In another experiment he kept all the animals at + 32° C., bathing one-half of them in water at + 20° for 30 minutes, morning and evening, and in this case the bathed animals produced more agglutinin. All these experiments might have given more convincing results if the agglutinin content had been measured at more frequent intervals.

The experiments mentioned deal mostly with the earlier phases of antibody production. The course is said to be influenced in the later stages also. Lüdke, being immunized with typhoid and with dysentery bacilli, found that hot baths during the stage of decline were followed by a distinct rise in the agglutinins. And in rabbits in the declining phase after being injected with typhoid bacilli, Fukuhara⁸ found various influences to cause a temporary rise in the agglutinin and lysin, such as chilling and warming the surface of the body, the giving of a single dose of alcohol, and the introduction of certain organ extracts.

It is unfortunate that in many of the experiments bearing on the influence of various factors on antibody formation the methods commonly used are not satisfactory because too few determinations of the antibody content in the blood have been made. Often the outcome of the experiment has been settled by only one or two determinations; while the day or days selected were those on which the antibody content in the particular case was most likely to be at its height, yet there are individual variations in this respect. For this reason

the results must be regarded as more suggestive than decisive. Future experiments should be based on a more comprehensive scale.

SYPHILIS AND PARESIS

Now that it is practically admitted that the Wassermann reaction is, when positive, an incontestable evidence of active syphilis somewhere in the system, and that it has been found by recent observers to be practically constant in paresis and in a large proportion of cases of tabes, the old notion that these disorders are parasymphilitic, or not syphilitic at all in many cases, will apparently have to be given up. The fact that many writers, and, indeed, most text-book authors on insanity, have pointed out diagnostic symptoms of alleged value in distinguishing syphilitic insanity resembling paresis from paresis is of interest as showing a considerable waste of labor on their part. Undoubtedly a desire to avoid recognition of the specific etiology of paresis accounts for much of this. As the case stands at present, it appears that most, if not all, the objections to the syphilitic nature of paresis will have to go by the board, and this disease will have to be classed as a tertiary or quartan manifestation of syphilis.

Medical News

ALABAMA

Personal.—Dr. Joseph B. Green, Birmingham, has removed to Asheville, N. C., where he will continue to practice his specialty, diseases of the eye, ear, nose and throat.—Dr. T. O. Stewart, New Lexington, who accidentally shot himself recently, is reported to be convalescent.

Staff for Hillman Hospital.—The following staff is announced for Hillman Hospital, Birmingham, from April 1 to October 1: Job Going, president of the board of control; Dr. Edgar P. Hogan, secretary; surgery—Drs. Charles E. Dowman, William T. Berry, William M. Jordan, George A. Hogan, Charles Whelan and Robert B. Harkness; gynecology—Drs. James E. Dedman, James E. Seay, Pratt City, Earle Drennen, Elisha M. Robinson, Gaston Torrance and James M. Mason; medicine—Drs. John Douglass, Joseph D. Heacock, Frank E. Nabers, Henry S. Ward, Hardee Johnston and Eugene E. May; diseases of children—Drs. Robert V. Mobley, Jacob R. Snyder and Alfred A. Walker; obstetrics—Drs. Robert Nelson, Norborne P. Cocke, Joseph T. Coulbourne, Henry E. Mitchell and William J. Love; diseases of the eye—Drs. S. F. Nabers and Kosciusko W. Constantine; diseases of the ear, nose and throat—Drs. Samuel L. Ledbetter, William G. Harrison, Edmund W. Rucker, Jr., Barney D. Sibley, Arthur B. Harris and Charles H. Drake; genitourinary diseases—Drs. Courtney W. Shropshire, Robert F. Ashworth and Albert G. Douglass.

ILLINOIS

Work for a New Hospital.—The directors of the Mack A. Montgomery Memorial Sanitarium, Charleston, have elected officers and have plans for the institution under consideration. The stock has been subscribed and work will be initiated in a short time.

Personal.—Dr. Ralph M. Carter, Decatur, has been appointed house physician in the Hinton, W. Va., Hospital.—The case of the State of Illinois against Dr. Jessie F. Buckley Ogden, Waukegan, charged with the murder of Mrs. Joseph Conner, by criminal operation, was dismissed by the state's attorney, March 14.—Dr. Harry Lyan, Vermilion, was seriously injured in a runaway accident, March 12.—Dr. John W. D. Mays, Illiopolis, has been appointed physician of Sangamon county, vice Dr. Hamilton R. Riddle, Mechanicsburg.—Dr. Clyde C. Rayburn, Kewanee, who has been a patient in the Agnes Memorial Sanatorium, Denver,

4. Deutsch. Arch. f. klin. Med., 1909, xciv, 385.

5. Deutsch. Arch. f. klin. Med., 1909, xciv, 424.

6. La clin. med. Ital., 1909, xlvii, 609.

7. Centralbl. f. Bakt., 1907, I, xlii, 633.

8. Arch. f. Hyg., 1908, lxxv, 275.

for nearly a year, reports great improvement.—Dr. William A. Crooks, for eleven years assistant superintendent at Watertown State Hospital, was appointed superintendent by the State Board of Administration, March 21, vice Dr. Warren E. Taylor, resigned.

Chicago

Relief of Consumptives.—The Young Woman's Auxiliary of the Jewish Consumptive Relief Society netted \$3,000 for the work in an entertainment given at Mount Sinai Temple, March 13.

Red Cross Endowment Committee.—The president has made the following Chicago appointments to the membership of the endowment committee of the American Red Cross: Cyrus Hall McCormick, John V. Farwell, Edward B. Butler, W. G. Shedd, Charles G. Dawes and John J. Mitchell.

Children's Isolation Hospital.—Dr. Anna Dwyer proposes to erect a hospital for the treatment of contagious diseases of children, to be paid for by the money donated by school children of the city, and suggests the erection of the building on land adjoining the Mary Thompson Hospital.

Unlicensed Practitioners Fined.—Municipal Judge Scovill imposed fines of \$100 and costs on each of six individuals who had been found guilty of practicing medicine without a license, had pleaded guilty and agreed to accept the maximum fine. The prosecutions were undertaken by the State Board of Health.

Hospital Day Association.—The Chicago Hospital Day Association, chartered in February to promote organized and systematic charity giving for the support of hospitals in Cook county working under church patronage, will hold its first collections on May 1 and 2. The hospitals of the Methodist, Roman Catholic, Baptist and Presbyterian denominations have taken out active membership.

Personal.—Dr. Strother J. Beeson has returned from a trip around the world.—Dr. and Mrs. Mathias J. Seifert left March 15 for the Gulf Coast and Mexico.—Dr. and Mrs. E. Fletcher Ingals have returned from the South.—Mr. Elbert Clark, associate in anatomy in the University of Chicago and Rush Medical College, who has been appointed assistant professor of anatomy in the University of Manila, the Philippine Medical School, left Chicago March 19 to take up the duties of his new position.—Dr. Daniel W. Rogers has been appointed chief sanitary officer and medical inspector The Division, Illinois National Guard, with the rank of major.

IOWA

Antitoxin to be Sold at Cost.—The State Board of Health announces that it will supply antitoxin for diphtheria for the people of the state at cost.

New Building for Hospital.—A contract for the erection of the new Drake University Medical School Hospital, Des Moines, has been awarded. A three-story residence is to be remodeled and a three-story addition built.

Supreme Court Sustains State Board.—The Supreme Court, on February 10, decided that practitioners of "vital science" must be licensed by the State Board of Medical Examiners, and sustained the conviction of L. M. Adkins, Grinnell, convicted of practicing medicine without a license.

Practically Acquitted.—The Supreme Court has handed down a decision in the case of Dr. Franklin W. Sells, Osceola, who was found guilty of an attempt at criminal assault. The opinion granting him a new trial, suggests that unless the state is able to offer additional and further proof in support of the indictment, it will be advisable for the prosecution to enter dismissal.

Crofford Pardoned.—Dr. J. W. Crofford, Lamoni, sentenced to twelve years' imprisonment in the penitentiary on the ground that he had performed a criminal operation which resulted in the death of a young girl, was pardoned by the governor on the recommendation of the pardon board, February 26. The pardon is based on the affidavit of Dr. Artemas Brown of Des Moines, formerly of Leon, who testified that the girl came to him stating that she had had a criminal operation performed on her before she consulted Dr. Crofford.

Society Meetings.—The sixth annual meeting of the Southwestern Iowa Medical Association was held in Albia, February 17. Dr. Samuel L. Hauck, Ottumwa, was elected president; Dr. Frank E. Sampson, Creston, vice-president; Dr. Enos Mitchell, Osceola, secretary-treasurer. The next meeting of the society will be held in Creston.—At the annual meeting of the Waterloo Medical Association, March 2, Dr. DeWitt C. Huntoon was elected president; Dr. John O. A. Scroggy, vice-president, and Dr. Wayne M. Shirley, secretary.

Campaign Against Quacks.—The legislative committee of Page county and the county attorney have been mulling in their efforts to rid that part of the state of fraudulent and unlicensed healers. H. B. Yates, a so-called "magnetic healer" is said to have been recently convicted and fined a second time for illegal practice. The case was taken to the Supreme Court and remanded for new trial, and the defendant was again convicted. Another indictment is still pending, covering the period of practice since the first indictment.—A cancer cure specialist, with headquarters at St. Joseph, Mo., is said to have been convicted of illegal practice and a \$300 fine imposed.

Personal.—Dr. Joseph J. Flannery, Des Moines, who has been seriously ill, was discharged from Mercy Hospital, March 4, recovered.—Dr. William R. Wall, Folsom, celebrated his eighty-eighth birthday anniversary, February 28.—Dr. Lee Weber, Davenport, lost the middle finger of his right hand on account of septicemia, due to a needle wound.—Dr. Fred P. Bellinger, Council Bluffs, has returned from Europe.—Dr. Harry Francis Rubel, Waverly, is in a hospital in Waterloo, on account of septicemia due to an operation wound.—Dr. Mathew A. Tinley has recovered from his recent attack of appendicitis and resumed practice.—Dr. Mary M. Nelson, Marshalltown, sustained severe injury in a runaway accident recently.—Dr. Mark E. Brown, Clinton, who has been seriously ill with heart disease, is slightly improved.—Dr. Samuel W. Moorehead has been reappointed postmaster of Keokuk.—Dr. Forest G. Weber, Cherokee, has been seriously ill with typhoid fever.—The office of Dr. Ervin W. Warner, Delhi, was destroyed by fire, February 9.—Several hundred dollars damage was done by fire to the residence of Dr. Ira D. Kauffman, State Center, February 9.—Dr. George W. Greaves, Spencer, who has been critically ill with cerebral hemorrhage, is reported to be improving.—Dr. Elijah W. Jay, Marshalltown, coroner of Marshall county, while going to a train in an ambulance to meet the wounded from the train wreck which occurred near Green Mountain, March 21, was thrown to the pavement and sustained severe injuries to the spine.

KENTUCKY

Personal.—Dr. Bernard McEuen, St. Charles, has been appointed house physician for the State Insane Hospital, Chattahoochee, Fla.

Bring Pressure to Bear on Governor.—The council of the Kentucky State Medical Association met in Frankfort, March 12, to urge the governor to approve the appropriation bill granting \$30,000 to the Kentucky State Board of Health, the vital statistics bill, and the anti-abortion bill. The governor is said to have made no promises, but is reported to have signed the appropriation bill for the State Board of Health, March 16.

New Medical Association Formed.—The Louisville Society of Medicine was organized March 15 without capital stock, for the purpose of medical research and to promote good will and fellowship. The membership is limited to thirty and each year one honorary member is to be chosen. The following physicians are the incorporators: Drs. Waller O. Green, Richard T. Yoc, Thomas K. Van Zandt, John D. Trawick, Alphons R. Bizot, Claude G. Hoffman, Curran Pope, William J. Young, R. Alexander Bate, Edward C. Redmon, Vernon Robins, Thomas A. Hays, Herbert M. McConathy and John D. Hamilton.

Follow-Up System in School Inspection.—A follow-up system has been inaugurated between school inspectors of the Louisville Health Department and the Associated Charities. The school inspection has resulted in great good, but much work has gone for naught either through neglect or ignorance. Slips are given children found abnormal, defective or diseased, describing the defect, and these slips are meant to be taken to the parents by the children, but in many instances no attention is paid to them. By the cooperation inaugurated, workers from the Associated Charities, follow-up those cases in which operation or special treatment has been advised and see that this is carried out. If it should prove to be the case that the family has no regular physician the child is looked after at clinics and if anemia and evidence of malnutrition are present, the home life and surroundings are investigated and any defects remedied.

The Babies' Milk Fund.—The Jefferson County Fiscal Court, on March 15, appropriated \$500 to the Louisville Babies' Milk Fund Association for its work during the coming summer. The general council appropriated \$1,500 in February for this purpose and the balance of the \$5,000 said to be needed for the work is to be raised by voluntary contributions of citizens.

It is proposed to reopen on May 1 the six milk distributing stations which were opened last year, with a trained nurse and station physician in each, and later to open additional stations in other thickly populated parts of the city. One station is to be located in a room of the new shelter house erected on one of the interior squares, especially provided for the commission by the park board. This is said to be the first time that a private philanthropy has been officially recognized in this way. The death rate in Louisville among the infant population for the last five years was 23 per cent., while that of the milk station babies, many of whom were very ill when application was made for milk, was only 6 per cent. The work of the association is a most important factor in lowering the death rate of children under 5 years of age.

MARYLAND

County Commissioners as Board of Health.—A bill has been introduced in the legislature, making the board of county commissioners of Howard county, the board of health of the county.

Physical Education for Women.—The Woman's Physical Education Association has been organized at Baltimore with Dr. Lillian Welsh as president, with the object of awakening a wider and more intelligent interest in physical education for women, and of laboring for the improvement and extension of gymnastic games and athletics among women and girls.

Maryland Alumni Meet.—At the annual reunion of the Maryland Alumni of the University of Pennsylvania, held in Baltimore, March 17, the following officers were elected: President, Dr. Joseph C. Bloodgood, Baltimore; vice-presidents, Drs. Howard A. Kelly, Baltimore, Clotworthy Birnie, Taneytown, J. McPherson Scott, Hagerstown, and Charles M. Ellis, Elkton; secretary, Dr. Daniel Z. Dunott, Baltimore, and treasurer, Dr. Wilbur M. Pearce, Baltimore.

Pleas for Hospital.—Dr. George W. Todd, Salisbury, and others, came before the Senate Finance Committee, March 10, and asked state aid to the extent of \$3,000 for the Pine Bluff Sanatorium for Tuberculosis, near Salisbury. Mercy Hospital, Baltimore, through two of the sisters of the institution, explained to the Committee on Ways and Means of the legislature, the work, the plans and hopes of the institution. They ask \$15,000 a year for maintenance of the hospital, and \$50,000 for new buildings.

County Society Endorses State Care of Insane.—The Baltimore County Medical Association, on the recommendation of Dr. Edward N. Brush of the Shepherd and Enoch Pratt Hospital, has formally endorsed the bills at present before the legislature for the state care of the insane, especially insisting on the right of the Commission in Lunacy of unimpeded inspection of all institutions for the insane or mentally defective at any time, and the power of inquiring into the method of commitment, the authority for detention of such persons, and inquiry, furthermore, into any and all allegations of improper commitment or detention or unjust or harsh treatment, and putting into operation the legal means for correction thereof. The resolution of endorsement further asserts that powers of inquiry into dietary, methods of restraint, kind of treatment, and all other questions relating to the care, detention and treatment of the insane or mentally defective, are universally recognized as proper functions of state commissions in lunacy, and that possession of such powers, clearly defined and specified by law, has in the past, in other communities, resulted in material improvement in the care of the insane, and in an increased and increasing confidence on the part of the public in the institutions for the care of the insane in these communities.

MINNESOTA

Typhoid Inoculation.—Lieut. Col. William D. Bannister, chief surgeon at Fort Snelling, Minn., is to inoculate with typhoid serum sixty-five soldiers at Fort Snelling, who have volunteered for the purpose.

Illegal Practitioner Sentenced.—William Schieman, who holds what purports to be a diploma from the New York Institute of Science, giving him the right to practice medicine, charged with practicing medicine without a license in St. Paul, is said to have been found guilty, March 10, and sentenced to imprisonment for fifteen days in the workhouse.

New Hospital for Minneapolis.—Hill Crest Surgical Hospital was opened recently in Minneapolis. It is a private hospital, with accommodation for 35 patients, and is intended to give special service in surgery, gynecology and diseases of the eye, ear, nose and throat. The constitution forbids payment of dividends, all earnings being employed for better-

ment of the service. The staff is composed of Drs. J. Warren Little and Archibald E. Wilcox, surgery; Dr. Charles G. Weston, gynecology, and Dr. Frank C. Todd, eye, ear, nose and throat.

The New University Hospital.—Ground will be broken for the first permanent building of the University Hospital as soon as the weather permits. The building will be completed about January 1 next, and will have accommodation for about 130 patients. The University Hospital service is being conducted for the time being in temporary hospital buildings having 42 beds and accommodations for the hospital nurses and helpers. The board of regents has authorized the employment of a medical superintendent for the hospital for the fiscal year, beginning August 1. The Committee on Hospital is open to receive applications from available candidates. Communications may be addressed to the secretary of the Committee on Hospital, University of Minnesota, Minneapolis.

MISSOURI

Medical Societies Merge.—At the March 8 meeting of the St. Joseph-Buchanan County Medical Society, held in St. Joseph, the Andrew County Medical Society was merged with the local and county organization.

Arrangements for State Association Meeting.—Marion County Medical Association has appointed a committee composed of Drs. Robert H. Goodier, Edward T. Hornback, Clifton R. Dudley, Isaac E. Hill and William H. Hays, all of Hannibal, to complete arrangements for the convention of the Missouri State Medical Association at Hannibal, May 3-5.

Personal.—Dr. R. R. Price, Slater, has been elected assistant physician of State Hospital No. 3, Nevada, vice Dr. Enoch C. Haile, Cartersville, resigned.—Dr. C. D. Heflin, at one time a practitioner of Bolekow, and sentenced to the penitentiary in 1904 under a sentence of fifty years' imprisonment for assault, has been pardoned by the governor.—Dr. A. C. Pettijohn, Brookfield, was elected superintendent of the State Hospital for the Insane, No. 2, St. Joseph, March 14.—Dr. Charles A. Hinson, Revere, fell while attempting to board a freight train at Madison, March 15, and was seriously injured.—Dr. George N. Newman, Mount Vernon, was injured in a Rock Island train wreck near Green Mountain, Iowa, March 21.

St. Louis

Personal.—Dr. John B. Logan is reported to be seriously ill with cerebral hemorrhage.—Dr. Richard L. Barrington has been appointed a member of the local pension board.

Donation to Hospital.—A donation of \$20,000 has been made to St. Louis University Medical School by Ambassador Richard C. Kerens, to be used as an endowment fund for beds for charity patients in the Rebekah Hospital.

New Hospital Bills.—The hospital bills at present before the legislature to reorganize the hospital system of St. Louis, provide for a hospital commission to be appointed by the mayor, a hospital commissioner similar to the present health commissioner, to be appointed by the hospital board, a resident staff and a supplementary visiting staff.

Site for Sanatorium Bought.—Will H. Young has transferred to the St. Louis Society for the Relief and Prevention of Tuberculosis ten acres of land about five miles from Kirkwood, near the Meramec River, on which the society expects to establish a sanatorium and day-camp for the use of patients. There is a six-room house on the property, which will be remodeled, and several tents have been donated to the society.

NEW YORK

Change at Cornell.—The trustees of Cornell University have decided to limit the work in the medical department at Ithaca to one year in the future instead of two as has been the custom hitherto. The remainder of the course may be taken in New York City. Since a four years' course was provided in New York City the registration at Ithaca has been lighter.

Tuberculosis Conference.—About 500 delegates attended the opening session of the tuberculosis conference at Albany, March 18. Dr. George W. Goler, health officer of Rochester, declared that tuberculosis was a school problem. More than 70 per cent. of school children were physically incompetent. He advocated open air school rooms and suggested leaving the top sash out of all windows. Dr. Oscar H. Rogers of Yonkers urged that children of the public schools be taught the dangers of tuberculosis since 50 per cent. of the adult population among the working classes died of it. He believed that especially the children of the lower grades should be taught its dangers.

Bills Before the Legislature.—A bill providing that the real estate owned by any hospital located in the City of New York, as now constituted, actually dedicated and used by such hospital exclusively for hospital purposes shall be exempt from the assessments for public improvements which are now levied against such real estate or which may hereafter be levied and assessed therefor in said city.—A bill to amend the education law by adding a section relative to the establishment of a State School of Sanitary Science and Public Health at Cornell University.—A bill amending the liquor tax law by providing that liquors shall not be sold to any patient affected with tuberculosis in a camp, colony or hospital established by the state, county or municipal authority, and under the management and control thereof, except on the written prescription from a physician to such colony, camp or hospital.—A bill amending the agricultural law relative to the definition of adulterated milk providing that milk containing less than 11½ per cent. of milk solids shall be accounted adulterated.—A bill amending the penal law by adding a new section relative to sepultures and the burial of the dead on the canal lands of the state.—A bill prohibiting the discharge of the effluent of sewage disposal plants, of the effluent from any plant for the treatment and disposal of any wastes from industrial or manufacturing establishments and refuse from any sewer or drainage system in addition to the garbage offal and other decaying matter referred to in the present law. It provides a procedure before the Commissioner of Health on the question of pollution by municipalities and provides that orders of the commissioner shall be approved of by the governor and the attorney-general and be enforced by the attorney-general.—A bill creating a Department of Public Hospitals for the City of New York. There is to be a board of trustees of nine members, three of whom shall be women. Provision is also made for a medical board, composed of attending and consulting physicians and surgeons of hospitals. The head of the department is to be known as the Commissioner of Hospitals. There is also a provision for a public ambulance system and training school for nurses.

New York City

To Enlarge Bellevue Insane Pavilion.—Plans have been filed for the enlargement of Bellevue Hospital by the addition of a two-story annex which will be connected with the present insane pavilion by a covered corridor and staircase. This annex will cost \$16,000.

Transportation of the Insane.—Temporary care of the insane and their transportation from their places of residence to hospitals will be henceforth in the hands of the officials of Bellevue and the Allied Hospitals. The Bellevue trustees have asked authority to issue special revenue bonds to an amount not exceeding \$8,000 for the purpose of meeting this additional expense.

Society Secures Convictions.—Kings County Medical Society is said to have secured two convictions in the court of special session, March 7. Maurice T. Schachter is said to have pleaded guilty of selling improper medicine to a woman, and to have been sentenced to the New York Penitentiary for three months; S. T. Silverman, who pleaded guilty to prescribing without proper license, was found guilty, but sentence was suspended.

Medical Chair Endowed.—Mrs. Helen Hartley Jenkins has offered to New York University a gift of \$100,000 for the endowment of a chair of medicine in the University and Bellevue Hospital Medical College. The gift was made through Dr. A. Alexander Smith. The foundation will be named the Marcellus Hartley chair of medicine after Mrs. Jenkins' father, who was a member of the university corporation, and was also a member of the committee on the medical college from the time of the consolidation of the medical schools.

Personal.—Dr. M. Allen Starr has sailed for Italy.—Dr. S. J. Kopetzky has accepted an invitation from the Detroit Medical College to hold an otologic clinic during the alumni meeting in May.—Dr. Moses D. Lederman has been elected clinical professor of laryngology and rhinology in the New York Polyclinic Medical School and Hospital.—It is reported that the officials of the town of Brighton, on account of opposition to the action of Dr. William B. Cochran, health officer of the town, regarding the construction of a tuberculosis hospital on the county farm, voted to remove him from office.—The appellate division of the supreme court has ordered Dr. Allan McLane Hamilton, who obtained judgment for \$7,000 for professional services in the Thaw case, to prove his claim at a new trial of the case.—Dr. H. A. Bray has been appointed first assistant physician at the Raybrook State Hospital for Incipient Pulmonary Tuberculosis.—Dr. Amasa

M. Brown has been appointed junior physician at the St. Lawrence State Hospital.—Dr. Lee W. Thomas has been appointed junior physician at the Central Islip State Hospital.

NORTH CAROLINA

Emergency Hospital to Open.—The Charity Aid Society of Greenville announces that the Emergency Hospital at the Salvation Army Citadel will be opened April 1. The hospital will have the use of five rooms, and members of the county medical society have agreed to give their services free to patients.

Addition to Watts Hospital.—George W. Watts, who gave Watts Hospital to the Durham County Medical Society and the city of Durham, at a cost of \$400,000, has decided to add thirty more rooms at an additional cost of \$60,000. Work will begin on the annex at once and it is expected to be ready to receive patients June 30.

Case Goes Against Physician.—In the case in the superior court of Charlotte, Mecklenburg county, in which Miss Daisy Long sued Dr. James A. Austin for \$10,000 for malpractice for alleged failure to recognize and properly reduce a dislocated shoulder, the jury awarded the plaintiff \$1,000 damages. Dr. Austin has appealed the case to the supreme court. The defendant's witnesses brought out the fact that a sufferer from an epileptic attack was not mentally responsible at the time, and the fall in which the injury is alleged to have been received followed an epileptic seizure.

OKLAHOMA

Antivaccination Bill Killed.—The effect of the Stafford Vaccination Bill was nullified by the action of the Senate March 12. The bill originally provided for compulsory vaccination, but Senator Davis put through an amendment providing that there should be no compulsory vaccination, which left the law self-contradictory. The bill finally failed to pass by a vote been received followed an epileptic seizure.

Medical Society Meeting.—At the annual meeting of the Cleveland County Medical Society at Norman, March 16, the following officers were elected: President, Dr. John D. McLaren, Norman; vice-president, Dr. James A. Davis, Norman; secretary-treasurer, Dr. A. C. Hirschfield, Norman; alternate-delegate to the state association, Dr. David W. Griffin, Norman, and censor, Dr. Robert E. Thacker, Lexington.

PENNSYLVANIA

State Board Appointment.—Dr. Robert E. Holmes, Harrisburg, has been appointed a member of the eclectic medical examining board, vice Dr. William H. Blake, Philadelphia, term expired.

Sanatorium Report.—At the annual meeting of the Free Hospital for Poor Consumptives, White Haven, March 14, the institution was shown to be in a better condition than at any previous time in its history, despite the absence of state aid. The secretary's report showed that 1,717 patients were treated during the year, 212 of whom were held over from the previous year. Of these 24 died and 562 were discharged cured, 131 remaining. The results of treatment showed disease arrest in 68 cases, much improvement in 103, and improvement in 276. The cost per patient per week was \$9.05. The cost for the entire year was \$103,433.61. The resources were \$114,693. The following officers were elected at this meeting: President, Dr. Lawrence F. Flick, and managers, Drs. Talcott Williams, Charles J. Hatfield, Daniel J. McCarthy, Joseph Walsh, Richard H. Harte, Frank A. Craig, Henry R. M. Landis and Ward Brinton.

Philadelphia

Jewelry Bequest.—The will of the late Elizabeth P. Hopple provides that the testatrix's jewelry be sold and the proceeds applied to the establishment of a free bed in the children's ward of the Presbyterian Hospital at a cost of \$2,000.

Fresh Air Magazine Resumes.—After a suspension of nearly a year, the Pennsylvania Society for the Study and Prevention of Tuberculosis has resumed the publication of its official organ, the *Fresh Air Magazine*, March 17. With assured financial support the society now feels confident that the permanency of this adjunct to its educational work is made certain.

Deaths Deplored by Medical Board.—March 17, at a meeting of the Philadelphia General Hospital's Medical Board, resolutions were adopted deploring the deaths of Dr. Wharton Sinkler and the Rev. Eugene McElhone. Dr. Sinkler was neurologist at the institution from 1888 to 1896. Father McElhone was a priest, who, for 33 years had attended the wants of Catholics in the institution, where he was chaplain. The

resolutions were signed by Drs. Frederick P. Henry, Theo. H. Weisenburg and J. Hendrie Lloyd.

Personal.—Dr. G. Betton Massey sailed for Europe March 19.—Dr. James H. Closson, of Germantown, was seriously injured March 14, in a collision between his automobile and a trolley car.—Dr. Alexander C. Abbott has been selected as a delegate to the International Congress of Hygiene and Medicine, which meets in Buenos Ayres, Argentine Republic, next month. He will exhibit statistics and photographs showing the work of inspection of school children as conducted by the Bureau of Health, of which he was formerly chief.

Plans for Home Coming Week.—The Medical Alumni of the University of Pennsylvania will hold their annual reunion in Philadelphia during the Home Coming week, March 28-April 3. The program for the week includes symposia on serum diagnosis and therapy and cardiovascular diseases. The alumni dinner will be held on March 30. On March 29, the celebration of the centenary of the founding of the chair of obstetrics will be celebrated, Dr. Barton C. Hirst being the orator of the occasion. A smoker will be held on the evening of March 28.

WASHINGTON

Hospital Notes.—The Burlington Hospital, three stories in height, is practically completed at a cost of about \$20,000. Dr. Orville R. Allen, formerly of Stanwood, will have charge of the hospital.—The new Sacred Heart Hospital, Spokane, which has been under construction for five years, will be opened this month. The building is six stories high, has 240 rooms, of which 100 are for private patients, and will have cost, when completed, about \$800,000.

Personal.—Dr. Marion F. Setters, Spokane, charged with conducting the Spokane Cooperative Hospital Association, a one-dollar-a-month-fee institution, and found guilty, is said to have been unanimously expelled from membership from the Spokane County Medical Society at its regular meeting, March 3, for continued violation of the by-laws.—Mrs. Anna Chapman, Woodland, has been elected school director.—Dr. Spencer S. Howe, Lynden, is reported to be seriously ill with diphtheria.—Drs. William D. Kirkpatrick and Frank J. Van Kirk, Bellingham, sailed for Hawaii, March 5.

GENERAL NEWS AND COMMENT

Congress on School Hygiene.—The third International Congress on School Hygiene will be held in Paris August 2-7. The object of the congress is to afford educators and hygienists and persons interested in the health and vigor of coming generations, an opportunity to become personally acquainted and exchange ideas with those who are doing similar work in other countries. The work of the congress is divided into eleven sections, namely: educational buildings and furnishings; hygiene of residential schools; medical inspection of schools and individual health records; practical measures for actual application; education and physical training; the prevention of contagious diseases in schools—diseases caused by school attendance; out of school hygiene, open air schools; holiday colonies; the teaching staff, their hygiene, their relation with homes and with the school doctors; teaching of hygiene to teachers, scholars and parents; teaching methods and syllabuses in relation to school hygiene; special schools for abnormal children, and hygiene of the eye, ear, mouth and throat. During the congress, excursions and visits to French schools will be organized, and an exhibit of school hygiene will be placed at the disposal of the committee. Dr. L. Dufestel, medical inspector of the public schools of Paris, 10 Boulevard Magenta, is secretary-general of the congress, and Dr. Thomas A. Storey, College of the City of New York, Convent avenue and 139th street, has copies of the circulars relating to the congress, which he will be glad to forward to any who desire.

FOREIGN

Recent Deaths in the Profession Abroad.—Among the members of the profession abroad who have recently died, besides those mentioned elsewhere, are Dr. J. Krannhals of Riga, Russia, for twenty years one of the editors of the *St. Petersburg. medizinische Wochenschrift*, who died from exanthematous typhus at Riga, aged 56. Krannhals was a frequent contributor to medical literature, especially on pseudomeningitis and the tuberculin reactions, and on his deathbed he dictated the conclusion of another article on this last-named subject.—Prof. S. S. Botkin, of St. Petersburg, body physician to the czar.—Dr. S. Rona, professor of dermatology at Budapest, author of several works on his specialty.

Recent Medical Congresses in Russia.—A letter from Moscow in the last *Medizinische Klinik* states that six medical congresses have been held in Russia since the beginning of the

year; the authorities have previously refused to consent to the summoning of medical congresses since their experience with the congress of the national medical association, the Pirogoff Society, whose annual meeting in 1904 started the revolution by its resolutions demanding political freedom for the Russian people as indispensable for physical, mental and moral welfare. The series of congresses this year opened with the first congress for internal medicine. This had a strictly academic character, discussing among other topics, thyroid treatment of obesity, Wagner reporting 160 cases with brilliant results. The tuberculin reactions were also discussed, most of the speakers remarking that the cutaneous technique was instructive only so far as children were concerned; the majority commended the ocular test as useful and harmless. Gastric ulcer was discussed at a joint meeting with the surgical congress. The twelfth congress of physicians and physicists, similar to the German *Naturforscher* congresses, was attended by 5,000 members. No hall could be found in Moscow large enough to accommodate all the members at one time. A veterinary congress followed; one of the resolutions adopted urged that women be admitted to the veterinary colleges. The congress of alienists was held at St. Petersburg, with 275 members in attendance, and this was followed by the antialcohol congress which drew up some drastic resolutions, one condemning the present system of state liquor monopoly which is breeding drunkards and undermining the peasantry, while the amount of liquor consumed is constantly increasing. The authorities here interfered in the proceedings and a few censored resolutions were finally adopted by the few members left in the hall. All of the speakers from the labor groups and two correspondents of "liberal" lay journals were arrested the next day. Some of the labor members were soon released, but all the others are still locked up.

LONDON LETTER

(From Our Regular Correspondent)

LONDON, March 12, 1910.

The Polyclinic

The annual report of the Medical Graduates College and Polyclinic shows that the financial difficulties which, as stated in a previous letter to THE JOURNAL, threatened to bring this useful and unique institution to an end are being surmounted. Both in its educational and financial relations, the Polyclinic has had a distinctly successful year. This is evidenced not only by the balance sheet showing a moderate sum on the credit side but by an increase in the number of subscribers from 359 to 470 in spite of the fact that in consequence of the uncertain condition of affairs in the early part of the year many of the subscribers withdrew. The attendance at the clinical demonstrations and lectures has also been large. The number of patients shown during the year was 893. As most of these were cases which had been selected in consequence of their exceptional interest the importance of this figure is greater than might at first appear. The success which the college is able to record has been rendered possible only by the continued support and practical generosity of Sir Jonathan Hutchinson. A legacy of \$1,500 from Mr. Alfred Phillips, the late honorary librarian, has also proved of great assistance. In all departments of the college work—clinics, lectures, practical classes, tutorial classes and laboratory investigation—there has been increased activity. New classes have been instituted in the practical use of the cystoscope and sigmoidoscope, the administration of anesthetics, and the medical application of massage and electricity. In connection with the laboratory there has been established a department for preparation of vaccines. It differs from other postgraduate schools in that it does not draw its teachers from only one hospital but from the entire United Kingdom. The Hutchinson Museum of portraits of disease, collected by Sir Jonathan Hutchinson, offers an opportunity for study comparable only to that of the famous St. Louis Hospital of Paris. Though the skin diseases are principally illustrated, unlike the latter institution, every department of medicine which lends itself to pictorial illustration is represented. Its founder has during his long career ever been the great apostle of the pictorial representation of disease and of clinical museums, both for purposes of teaching and investigation, and his life-work shows their great value.

The Institution of a Diploma in Psychiatry

The institution of a diploma in psychiatry is under the consideration of the Royal College of Physicians and other examining bodies to whom it has been suggested by the committee of the Medico-Psychological Association of Great Britain and Ireland. It has long been felt that there is no adequate systematic instruction in psychiatry in Great Britain. Young

physicians on their appointment as medical officers to asylums have to face work and problems of which they have had no previous knowledge and in preparation for which they can obtain no training. Lectures on psychologic medicine and pathologic laboratories have been established here and there, and in one or two universities chairs of experimental psychology have been founded but there is no systematic course of instruction and no recognized diploma. The Medico-Psychological Association considers that the time has arrived when such a course and diploma should be established in the principal medical schools, and that the institution of a diploma would impose a high standard of acquirement on the officers of asylums, stimulate the scientific study of insanity, and have an effect in widening and deepening our knowledge of the subject comparable with the effect produced in tropical diseases by the institution of a diploma in this subject. The association also considers that the minimum period of post-graduate work to obtain the diploma should be one year; that the subjects should be divided into (a) compulsory (b) optional; that in the former should be included (1) the anatomy, psychology, and pathology of the nervous system; (2) psychology, normal and morbid; (3) clinical pathology; (4) clinical neurology; (5) psychiatry—systematic, clinical and medicolegal. The optional subjects suggested are: (1) experimental psychology, (2) biochemistry, (3) bacteriology, (4) comparative anatomy and physiology of the nervous system, (5) eugenics. It is suggested that only one optional subject should be required. At a meeting of a comitia of the Royal College of Physicians these proposals were discussed, and Dr. C. A. Mercier, president of the Medico-Psychological Association, moved a resolution that a committee be appointed to settle the conditions under which a postgraduate diploma in psychiatry shall be granted. He said that it was an undoubted deplorable fact that psychiatry was lagging behind other departments of medicine, and had not participated as much as they had in the striking advances of the last few decades. He admitted that this was in part due to the inherent difficulty of the subject, but he also attributed it largely to the fact that the junior staff of asylums with abundant leisure and opportunities for research were deterred from undertaking it by lack of incentive. No scientific work that they might do in any way bettered their position, increased their reputation with their employers or assisted them to promotion. The institution of a diploma could scarcely fail to have the effect that it had in the case of public health of educating public bodies into appreciating that special knowledge was necessary for these responsible posts. The resolution was supported by other eminent psychiatrists. It was opposed by Dr. Norman Moore on the grounds that if it is in the interests of the public that physicians should know something of psychiatry, that knowledge should be obtained by adding to the medical curriculum, and not by depriving any of one of the ways for earning a living. An amendment appointing a committee to consider the subject was adopted. The struggle for psychiatry to obtain recognition is only a repetition of what has happened in the case of the other specialties. The more conservative minds in the profession will no doubt obstruct the reform, but with success only for a time.

The Sleeping Sickness Commission

Col. Sir David Bruce, the head of the commission despatched in September, 1908, by the government under the direction of the Royal Society to investigate sleeping sickness in Africa has returned on the termination of his mission. The headquarters of the mission was at a place called Mpunu, a desolate and remote spot six miles from the northern shore of Lake Victoria Nyanza, and about the same distance from a great concentration and isolation camp where hundreds of the victims of sleeping sickness were taken to end their days. The ravages of the disease are shown by the fact that on the peninsula on which the laboratory was erected there were formerly 50 churches, but all except one have now been closed. The discovery made by Dr. Klein in German East Africa that the tsetse fly can remain infective for several months or even much longer has vitiated the theory that infected zones cleared of their inhabitants can after a brief period be repopulated by healthy persons. In the fly area, the most energetic steps have been taken to remove all the inhabitants. One island which formerly had a population of 22,000 was cleared of 4,000 natives—all that were left by the ravages of the disease. The population of the lake shores had been reduced to one-fifth, and all these have been moved. Strips of land in the neighborhood of the landing places have also been cleared and all the native canoes destroyed. In consequence, no fresh cases of sleeping sickness are occurring, and it may thus be inferred that the epidemic has been stamped out. Further investigation is being made to see how long the fly remains infective.

PARIS LETTER

(From Our Regular Correspondent)

PARIS, March 11, 1910.

A Manifesto in Regard to the Approaching Concours de l'Agrégation

After the *concours de l'agrégation* of 1908, a committee formed by various professional organizations (*l'Union des syndicats médicaux de France*, *Comité de vigilance du Congrès des praticiens*, etc.) presented to the authorities a memoir summing up the protest of the medical profession (*THE JOURNAL*, March 27, 1909, lii, 1046). This memoir having received no reply and the same system being maintained for the *concours* which is soon to be held, the committee has appealed to medical opinion and has published a manifesto in which the defects of the present system of the *concours de l'agrégation* are reviewed. Pedagogically, the *agrégation* is the consecration of the supremacy of theoretical over practical instruction, for the *concours* is based on theory. Scientifically, according to the manifesto, the *agrégation* is not merely useless but injurious; useless because the preparation for it is merely bookish; injurious because such preparation discourages scientific research. The *agrégation*, moreover, tends toward the division of the medical profession by putting all instruction in the hands of a closed caste.

The French League for Physical Education

Under the honorary presidency of Prof. Charles Richet and the acting presidency of Professor Gilbert there has just been founded in Paris a League for Physical Education, which proposes, among other things, to make scientific researches into the methods to be employed in gymnastics and in sports, so that movements which, for lack of precise rules, are at present either unused or abused may be prescribed with definite precision. The league proposes also to give instruction by lectures, by practical courses, by the organization of festivals, contests, walks and excursions, by the establishment of gymnasiums, etc. It will give particular attention to the physical education of women and girls, which has been so much neglected up to the present. For this purpose it will have sections devoted to feminine sports. A scientific committee composed of all well-known persons concerned with physical education will ultimately be formed. The league has opened a competition the object of which is to obtain a simple, short and practical book on physical education, suitable for every one, children and adults, men and women.

The Society for the Protection of Infancy

During the recent general assembly of the Society for the Protection of Infancy, Dr. Porak, who presided, related the history of the society since its foundation in 1865. The object of the society is to encourage and to protect maternal breast-feeding, to preserve infants at the breast from the dangers which threaten them, to protect children against abandonment, neglect, and bad treatment, and, in short, to popularize in families the principles of the hygiene of infancy. Since its foundation, the society has expended 1,566,710 francs (about \$300,000); more than 53,000 families have received about 1,092,000 francs (about \$200,000).

Jubilee of Dr. Gellé Senior

Germany and Austria having recently honored the deans of otology, Politzer, Lucæ and Schwartz, the pupils and friends of Dr. Gellé senior, one of the pioneers of otologic science, believed that the moment had come to celebrate his jubilee and to give sympathetic recognition to the merit and the usefulness of his long and fruitful labors. A committee composed of Professors Bouchard, Dastre, S. Duplay, Gley, Laveran, F. Raymond, and otologists like Professor Moure, and Drs. Bonnier, Castex, Lermoyez and Sébileau, decided to open a subscription for a medal for Dr. Gellé.

A Triumph of Empiricism

The minister of labor has just submitted for examination by the commission on secret remedies of the Academy of Medicine a treatment for anthrax recommended by an empiric. This treatment, which would seem to consist simply of canterization by caustic potash, is much in favor among workmen in Mazamet, department of the Tarn, who are much exposed to anthrax because they handle wool. These workmen refuse to consult physicians or to submit to any other treatment.

Discontent Among Private Nurses

Much discontent has been felt for some time among private nurses and massenrs. They complain that they are exploited by the employment agencies which supply nurses. According to them, these establishments ask from 200 to 300 francs

(\$40 to \$60) a month from families, which employ the nurses, and pay their employees only 50 to 60 francs (\$10 to \$12). When they employ outside nurses they demand 50 to 60 per cent. of the salaries paid.

Unwarranted Use of the Name of Dr. Huchard in a Pharmaceutical Advertisement

In the last number of the *Journal des Praticiens*, Dr. Huchard protests energetically against the unwarranted use of his name by manufacturers in Mexico who have put out pharmaceutical preparations to which they have given the name of "Dr. Huchard's Pills." In advertisements in the Mexican lay press, praising this preparation under the title of "Radical Cure of Maladies of the Digestive Organs," one reads that "the learned Dr. Huchard of Paris, inspired by the studies of his colleagues and his own experiences in hospitals and laboratories, has finally solved this complicated problem by inventing the celebrated pills which bear his name, and which, although they have been used by thousands of patients, have never once disappointed expectations. . . . Dr. Huchard, who can never be sufficiently praised, has composed two formulas; gilded pills for cases with diarrhea; silvered pills for cases without diarrhea."

Dr. Huchard intends to write to the French minister in Mexico about the matter.

Election of Two National Associates to the Academy of Medicine

In its session of March 8, the Academy of Medicine elected as national associates Dr. Poncet, professor of clinical surgery at the Lyons college of medicine and M. Balland, former head pharmacist of the army, well known by his work on alimentary substances.

VIENNA LETTER

(From Our Regular Correspondent)

VIENNA, March 4, 1910.

Investigation on the Dwellings of Tuberculous Patients

Dr. Burkhard has recently been investigating the condition of 250 dwellings inhabited by tuberculous laborers in an Austrian city. The 250 lodgings had only 487 sleeping-rooms. The number occupying each lodging varied between 2 and 13. Sometimes 6 to 8 persons lived in a lodging consisting of one room only. The dangerous conditions are vividly illustrated by the fact that of the 292 positively tuberculous persons, 93 slept with other persons in one bed; among those thus exposed to infection were especially children. Bedridden patients were often found accommodated in the kitchen (in 25 per cent.) or in a dark corner of the room (18 per cent.). There was no knowledge how to deal with tuberculous sputum. Children were found playing with sawdust from a spittoon used by tuberculous persons.

The publication of this painstaking exact investigation has caused much excitement, but it shows where the fight against phthisis has to be pressed hardest. Similar conditions prevail in all cities where tuberculous laborers live. The primary source of infection consists of overcrowding and slums.

Unveiling of a Statue of Professor Jaeger

The famous ophthalmologist, Professor Jaeger von Jaxthal, who died in 1884 and who for eighteen years was the foremost eye surgeon of Europe, was honored a few days ago by the erection of a life-sized statue in the aula or hall of the University of Vienna. Professor Fuchs delivered the customary speech on this occasion. Jaeger was the son of a famous ophthalmologist; was the grandson, on his mother's side, of the famous ophthalmologist Beer, who had been the first (and only) eye surgeon of Europe of his time, and was married to the daughter of Arlt, who was considered the best eye diagnostician in the seventies of the last century. One of the best works of Jaeger was the "Atlas of the Fundus Oculi," which has not been surpassed yet as regards its lifelike depictions of the conditions of the retina.

Sale of Radium Permitted in Austria

The sale of radium salt has been now authorized in this country, but the government has taken the trade into its own hands. The price of 1 mg. (1/60 of a grain) has been placed at 400 kronen, or \$80, but smaller quantities may be purchased. Only the barium chlorid of radium can be had, in a strength of 5, 10 and 25 per cent. It is put up in small brass capsules, one wall of which consists of lead; here the salt is deposited and an opening covered by a mica plate permits the use of the radium for therapeutic applications, without opening the cell. A hall-mark certifies the strength and weight of the substance. Already many physicians have availed themselves of the opportunity of obtaining radium cells.

Pharmacology

[CONTRIBUTION FROM THE CHEMICAL LABORATORY OF THE AMERICAN MEDICAL ASSOCIATION.]

MICAJAH'S MEDICATED UTERINE WAFERS

W. A. Puckner and W. S. Hilpert

Evidently touched by the generosity of the manufacturer in sending him a sample and literature, but not too favorably impressed by the claims made for the preparation referred to, a correspondent writes:

I enclose a valuable sample and literature just received. Such a palpable humbug as Micajah's Uterine Wafers would hardly seem to need notice were it not probably true that many practitioners habituated to the use of samples are still influenced by the glowing accounts of cures wrought; especially when attested by such a name and title as "Elmore Palmer, M.D., Ex-President Western New York Medical Society." This secret gynecologic medicament is recommended for anything from "Pruritis Vulvæ," "Enlargement of the Womb," "Displacements," "Cystocele and Rectocele," to the "Menopause."

Following the definition that by her "stomach" a woman means anything from her chin to her knees, the ex-president with truly noble impartiality has with the wonderful Micajah wafers wrought lightning cures all the way from "stone-bruise" of the heel to nasal polyp and influenza, and some of them are male patients, too.

With the foregoing as an impetus to investigate the nature of this much advertised nostrum, the wafers were submitted to analysis by the Association laboratory. The report follows:

LABORATORY FINDINGS

Trade packages of the wafers purchased on the open market bear the name of the preparation and that of the manufacturers, Micajah & Co., Warren, Pa. The label states that the nostrum is a:

"Disinfectant, astringent and local alterative of the greatest virtue. A remedy for the local treatment of the diseases of women. Inflammation, engorgement and prolapse of the womb, vaginitis, leucorrhea, menstrual derangements and the disturbances incidental to the menopause. Also highly recommended for affections of the mucous membranes in general, particularly those of the nose, the throat, the rectum, and for gonorrhea, cystitis, etc."

"This box contains wafers for three months' treatment."
"Price per box \$1.00."

The box contained 25 tablets, and a circular entitled, "Hints on the treatment of diseases of women," in which directions for the treatment of many diseases are given. It ends with a paragraph which contains the following statement:

"There is no doubt that the field of usefulness of Micajah's Wafers can be indefinitely enlarged by the ingenuity and therapeutic skill of the physician."

Much of the advertising "literature" is in the form of leaflets, brochures and small pamphlets full of testimonials by physicians.

Micajah's uterine wafers as found on the market are white, hexagonal tablets, odorless and possessing an astringent taste. The wafers are soluble in water with extreme difficulty. Hot hydrochloric acid and alkali hydroxids dissolve the powdered tablets readily, leaving a slight residue which under the microscope and by physical tests was identified as lycopodium.

The acid solution of the wafers responded to qualitative tests which indicated the presence of potassium, sodium, aluminum, sulphate, borate and a mere trace of a fatty material. Quantitative estimation of boric acid, aluminum, sulphate, sodium and potassium were made, which indicated that Micajah's Uterine Wafers consist of alum more or less anhydrous or "burnt," boric acid and borax in approximately the following proportions:¹

Alum, dried	59.86 per cent.
Borax, dried	15.62 per cent.
Boric acid	5.67 per cent.
Water of hydration	18.85 per cent.

The average weight of the tablets is 0.7791 gm. (11.8 grains) and allowing for the fact that the quantity of water present in commercial exsiccated alum varies, each tablet would contain approximately 0.4986 gm. (7.8 grains) burnt alum; 0.2337 gm. (3.6 grains) crystallized borax, and 0.0467 gm. (0.7 grain) boric acid.

COMMENT

Judging from the "literature" that goes with the packages of this nostrum, one might imagine that it was put up absolutely for the layman, but this is not the case. It is advertised

1. The details of the analysis will be published in the annual report of the laboratory.

only in medical journals and not directly to the public; it is not necessary, for every physician who prescribes it at the same time places in the hands of his patient advertising matter intended to influence that patient—and it usually does. As a result this preparation is being bought by the public direct; to what extent we do not know, but physicians are responsible for it. Probably if physicians realized that the same interests that control Piso's Consumption Cure also control Micajah's Medicated Uterine Wafers they would not be so ready to act as the unpaid agents for the concern.

That such simple astringents and feeble antiseptics as alum, borax and boric acid could have such remarkable emmenagogue effects on uterine diseases is absurd. The serious aspect of the matter is, that, by the encouragement given them in the advertising literature to treat themselves, women may neglect proper surgical or medical attention in the early stages of serious diseases such as cancer or dangerous pelvic infections, until they get beyond the hope of proper management. But when nostrum promoters urge the use of such inefficient remedies in the treatment of gonorrhea, it is time to look at the matter seriously. Considering the vital social significance of the venereal diseases, the employment of useless remedies can only favor the spread of these infections, which cause such a large proportion of the diseases which afflict women particularly.

The medical profession for the most part has become mentally calloused to the exaggerated claims of the nostrum makers and does not make sufficient effort to condemn them. There may be some physicians, however, who use such preparations as these wafers in their practice, as is indicated by the circulars, wherein the manufacturers suggest that their "usefulness can be indefinitely enlarged by the ingenuity and therapeutic skill of the physician." It is only occasionally that a physician voices his indignation as to these humbugs, as in the case of the physician whose letter is quoted above.

SAL HEPATICA

This wonderful mixture, according to the advertisements, is "a combination of the tonic, alterative and laxative salts similar to the celebrated 'bitter waters' of Europe, as determined by actual chemical analysis of these waters, and fortified by the addition of lithia and sodium phosphate"—a description, by the way, that is used *verbatim et literatim* by the A. D. S. in describing its "Hepatic Salts."

As usual, in inflicting this remedy on the public, the manufacturer makes use of cast-off medical theories and unwarranted claims. The marked absurdity of some of the statements indicates that they are intended for the lay public. Surely no nostrum-maker would suppose that he could delude even the most credulous portion of the medical profession into believing the statements made in the advertisements concerning sal hepatica, namely, that the same remedy is a uric-acid eliminant, hepatic stimulant, a specific for gout, rheumatism, cirrhosis of the liver, Bright's disease, gravel, tuberculosis, struma, marasmus, dyspepsia, infantile fluxes, etc.

The following analysis of "Sal Hepatica" was published in the *Druggists Circular*, February, 1909, p. 78:

Sodium chlorid	13.05 parts
Sodium sulphate	26.27 parts
Sodium phosphate	29.80 parts
Sodium bicarbonate	18.00 parts
Lithium phosphate	0.04 part
Citric and tartaric acids, to make.....	100.00 parts

Our old friend lithium is added, undoubtedly, to influence the few physicians who still accept the discarded theory regarding the solvent effect of lithium salts on uric acid. Such physicians must be easily influenced if they can believe that 4/10,000 parts of lithium would have any therapeutic effect!

Thus once more the medical profession is asked to indorse a nostrum consisting of a mixture of simple saline laxatives such as any physician can prescribe and any druggist prepare, and to sanction the blatant advertising of the mixture as a specific in such grave maladies as cirrhosis of the liver and Bright's disease. This advertising has already

made the drug known to the laity, who see in the shrewdly chosen name an indication of the use of the nostrum in liver disease and that undefined but favorite malady of the public, "biliousness."

The abuse of saline cathartics by the public is an evil deserving of serious attention. Rightly or wrongly, the laity fear constipation, and naturally take what they are taught to believe is the cheapest and simplest course for its relief, self-drugging by means of saline cathartics or the extensively advertised purgative mineral waters. This habit is responsible for much of the distressing spastic constipation that exists, and its accompanying neurasthenia. The advertisement and sale to the laity of such a nostrum as "Sal Hepatica" can only increase these evil results and the physician who aids and abets the evil by using the preparation should reflect whether he is thereby not only encouraging a fraud on the public, but also, what is even worse, helping to impair the public health.

Correspondence

Cecostomy vs. Appendicostomy

To the Editor:—The very interesting and instructive article on "A New Method of Appendicostomy," by Dr. Pettyjohn, in *THE JOURNAL*, March 12, 1910, carries with it some incidental confirmation of my contention (*THE JOURNAL*, March 5, 1910), that in certain cases cecostomy is to be preferred to appendicostomy. Thus Dr. Pettyjohn speaks of "cases in which the mesoappendix is too short or too narrow to permit the appendix to be drawn out of the abdomen;" he likewise very properly urges precaution "not to interfere with the blood supply of that portion of it which is to form the canal;" he tells us furthermore that "considerable swelling always occurs in the walls of the appendix;" that "it is much easier to open the appendix and introduce the catheter at once than to wait;" he alludes to conditions "requiring considerable stretching of the appendix to bring it to the surface" and admonishes us that "such a result is most reprehensible and may cause stopping of the blood supply with a resultant sloughing of the appendix."

My observations and the recorded experience of many other operators in these particulars are in entire accord with those of Dr. Pettyjohn. They have indeed so impressed me that, in the absence of special indications, I have been induced to adopt cecostomy rather than appendicostomy as the operation of choice. The mere fact that the presenting pouch of the cecum lies against the abdominal wall to which it can be attached practically *in situ naturalis* without present or subsequent traction and consequent pain is an additional reason of great weight in determining my operative policy in these cases. Too much weight has, I am sure, been given to the argument that we need a tube, the appendix is a tube, therefore use the appendix. In no case is it a good tube to begin with and in the majority of these cases it is no tube at all to end with.

CHARLES A. L. REED, Cincinnati.

The Davis Memorial

To the Members of the American Medical Association:—It is desired that every reader of this appeal consider himself a self-appointed member of the committee to procure funds for the Davis Memorial. The Association itself has set the example by appropriating \$5,000, provided a total of \$25,000 be raised for this worthy object. Each state is represented by an appointee on the committee for this purpose. A considerable sum of money has already been raised and one or two states have contributed more than their apportionment.

Of course the completion of this work is not due to a lack of appreciation of the services and character of the founder of our great Association. Perplexed in the busy routine of daily demand the privilege of the recognition has simply been forgotten. Your committee would have every member of the medical profession of America interested and represented in this memorial. A little work done in each district and state

society and the service is completed. Let the money be forwarded through your representatives directly to the treasurer of the Association, Dr. Frank Billings, 100 State street, Chicago. Let us join hands and hearts in the completion of a work already too long delayed.

HENRY O. MARCY, M.D., Boston, Chairman.

A Department of Public Health

CINCINNATI, March 19, 1910.

To the Editor:—In THE JOURNAL, March 19, just received, appears some correspondence between myself and Hon. Robert L. Owen of the United States Senate, regarding proposed legislation looking toward the establishment of a Department of Public Health. In the second paragraph of my letter, on page 985 of THE JOURNAL, appears a reference to the action taken by the Legislative Conference held at Chicago, March 2, 1910. My letter was written to Senator Owen on March 10, at which time I had not seen the official minutes of the Conference. The minutes which have reached me only to-day show that two references were made to this subject.

1. The report of the Committee on Federal and State Regulation of Public Health reads as follows: "We suggest that a bill be passed that will give recognition of the health interests of the country in the title of a department, and that within that department there be organized an efficient bureau of health to consist of all present public national health agencies." This report was adopted.

2. The Committee on Conclusions and Plans of Action presented, as its fifth resolution, the following:

Resolved, That the Conference heartily endorses the position taken by the President in his message to Congress in regard to national health legislation, and urges on Congress the passage of legislation looking toward such ends.

This resolution was also adopted.

I have written to Senator Owen, correcting my letter of March 10, in this respect. In the interests of accuracy, I ask that you will kindly give this letter space in the Correspondence Department of THE JOURNAL.

CHARLES A. L. REED.

The Late Dr. James Sykes and a Cholera Epidemic

To the Editor:—Mention of the name of James Sykes in the list of medical dead printed in THE JOURNAL, March 19, recalls the fact that the deceased physician had near relations to a tragedy which, perhaps, has no equal in modern medico-military history—one, possibly unique in somberness—and, as Dr. Sykes aided me in getting together facts pertinent thereto, space is asked for a statement of this event in order that his memory may be honored, and that a younger generation of physicians may know of the power of Asiatic cholera to destroy when opportunity is afforded.

My attention was called to this occurrence in 1894 by seeing a monument, in the burying-ground of the St. Louis Quarantine Hospital, just below Jefferson Barracks, erected in memory of one hundred and seventy-five non-commissioned officers and soldiers of the Fifty-sixth United States Colored Infantry who died of cholera in 1866. The inscription seemed so startling as to invite inquiry; this was undertaken, and the collected facts were read before a local medical society and published in the *New York Medical Journal*, March 30, 1895.

The surgeon-general of the Army was appealed to for such information as was on record and this, though scanty and of non-medical character, was promptly supplied. Through this and other means, it was found possible to get in touch with some of the surviving officers; Dr. Sykes was the assistant surgeon of the regiment.

An outline of this tragical event is given in the following:

Early in August, 1866, the regiment in question was on duty in Arkansas, five companies being stationed at Duvall's Bluff, and the remainder of the command, with regimental headquarters, was at Helena.

Being ordered to proceed to Omaha via St. Louis, the command, seven hundred and eight strong, assembled at Helena, and the five companies that had been at Duvall's Bluff embarked on board the steamer *Continental* on the evening of August 9. The remainder followed on the *Platte Valley* the next morning.

The colonel states that the command had been unusually healthy during the summer, and the surgeon confirms this, saying that the regiment was in the best of health at the time of embarking.

No medical officer accompanied the command on this fatal journey, which has but one known parallel in American military-medical history, and perhaps few anywhere else.

Within a few hours after the boats swung out into the current of the Mississippi River mischief began (the first patient was left dying on the wharf at Memphis), and by the time the *Continental* reached Cairo she had on board thirteen corpses and between fifty and sixty cases of cholera, all belonging to this regiment. More than fifty men of this command died on this boat before St. Louis was reached, the second boat not suffering so severely, but hardly a soldier in the entire regiment escaped an attack of the disease.

About a week after these troops left Helena the commander reported the deaths to that time among his men as one hundred and thirty-nine, but the end was not reached until the number recorded on the monument had perished, if, indeed, that number is correct, as it appears from the War Department records and information from other trustworthy sources, that the mortality in this body of men from this one cause was nearer one hundred and ninety than one hundred and seventy-five—a loss of more than one in every four in the command.

In a personal letter dated April 2, 1894, Dr. Sykes commented on certain features of this outbreak, as follows:

I was informed at the time that the most infected boat had a quantity of raw sugar going to the refineries, and that the soldiers, being on the boiler deck, burst open several hogsheads of it, and ate as only colored men can. My own theory is that the soldiers either took the cholera microbes from Helena or else these were already on the boat, and then, gorging themselves with raw sugar, allowed the pestilence to get in its deadly work. The fact that but very few officers took the disease at all, and they in a light form, would seem to indicate that it was something in the diet, rather than the water, as all used river water alike. But one officer died (Lieutenant Brooks), and he from a relapse occurring after he had recovered so far as to take a leave of absence to visit his family living in St. Louis. After the troops arrived at St. Louis they were removed to quarantine, and the cholera became general among all the companies. The above is from memory, and while I doubtless have forgotten some facts, the narrative is substantially correct.

GEORGE HOMAN, M.D.

Miscellany

The Effects of X-Ray Treatment on Leucemia.—In myelogenous leucemia and in chronic lymphatic leucemia H. Pribram and H. Rotky (*Ztschr. f. exper. Path. u. Therap.*, 1909, vi, 75) found that the x-ray treatment was followed by an improvement in both the general systemic condition and in the clinical condition of the blood. In 4 cases of myelogenous leucemia, in which the spleen was subjected to intensive treatment with the x-ray (the remainder of the abdomen being protected by the Jakseh silver plate) a marked improvement in the general condition as well as in the blood-picture, with little or no damage to the skin, was the result. In 2 of these cases the total number of leucocytes quickly diminished, while in the other 2 the reduction of the number of leucocytes was more gradual and less complete. In all the percentage of mononuclear leucocytes decreased while that of the polynuclear neutrophils rose. In 1 of these cases, through a reduction in the eosinophiles and basophiles and a marked reduction in the lymphocytes, the blood-picture soon approximated normal. Moderate intermittent exposures of the surface and exposure of the bones to x-ray were followed by less beneficial results. In 1 case of chronic lymphatic leucemia intensive treatment of the region of the affected glands soon reduced the total leucocyte count to normal, but did not affect the percentage of the different types of leucocytes. The total number of red blood corpuscles, of nucleated red blood corpuscles and the total hemoglobin content of the blood were not affected by the treatment in either of the 5 cases. In the myelogenous leucemia, during the reduction of the number of leucocytes, there was observed an increase in the total output of nitrogen, uric acid and phosphoric acid, which persisted for some time after the leucocyte count reached the minimum. In 1 case of advanced acute lymphemia x-ray treatment gave no beneficial results.

Treatment of Rupture of the Uterus.—E. Seipiadis reports a series of 97 cases of rupture of the uterus all treated according to the same principles during the last 25 years at the Budapest clinic, the only unbroken series of the kind on record, he remarks. His communication on the subject is published as No. 553 of the *Sammlung klinischer Vorträge*. In 66 cases of complete rupture, 34.92 per cent. of the women recovered, including 40.38 per cent. treated by what he calls "exact tamponing," while 44.95 per cent. recovered in the cases without complicating injury of the bladder. The propor-

tion of recoveries was 87.5 per cent. in the 8 women with complete rupture, free from complications, tamponed and removed to the clinic two days after delivery. These figures, he asserts, confirm assertions in favor of conservative measures. After the urine has been drawn, the child is delivered by the vaginal route, with the operative technique deemed advisable. As soon as delivery is complete, the assistant holds the uterus firm in its normal position by pressure from without, while the ruptured wall and, in case of atony, the uterine cavity itself, are packed loosely with iodoform gauze, the vagina is also packed tight and a compressing bandage applied to the abdomen. This is what he calls "exact tamponing." Then saline infusion, ergot and analeptics are used as indicated and the woman is left quiet, to rest, with an ice-bag applied to the abdomen. All this has to be done on the spot, with no attempt to remove the patient. Any attempt at removal just before or after delivery is liable to influence the course of events most unfavorably. The woman is left undisturbed for two days at least, and if possible for a week, the tamponing being undisturbed during this interval unless interference is compelled by increasing or constantly high temperature. She is then removed to some institution for further care. The tampon is here removed and a glass drain introduced, replaced by a rubber drain after six or eight days. Cautious vaginal douches with an antiseptic solution and the necessary local and general measures are continued until the rupture has entirely healed. In case operative interference becomes necessary, partial or total hysterectomy is the rule.

Syphilis and Insanity.—A. J. Rosanoff and John I. Wiseman have tested the Wassermann and Noguchi reactions in a number of patients suffering from the different forms of insanity and report their results in the January issue of the *American Journal of Insanity*. They summarize on the basis of their results the relationship existing between syphilis and insanity as follows: "1. The regular absence of lymphocytosis, of the Wassermann reaction, and of the butyric acid reaction in psychoses with a basis of arteriosclerotic disease known to be the result of old syphilitic infection indicates that these conditions are to be regarded as sequelæ of syphilis, and that the syphilitic process itself is in cases of these conditions already extinct. 2. In general paresis either the Wassermann reaction or Noguchi's butyric-acid reaction is invariably found—and most frequently together; any doubt of the essential dependence of general paresis on syphilitic infection can no longer be entertained. 3. Inasmuch as the Wassermann reaction and the butyric-acid reaction seem to indicate syphilis only when it exists in an active or potentially active form, their regular occurrence in general paresis would tend to prove that that disease is a manifestation of active syphilis, of activity of the *Spirochæta pallida*; while the evidence for this view is not yet complete, it is sufficient to justify its being used as a basis of therapeutic essay. 4. In no other common psychosis does either the Wassermann reaction or the butyric-acid reaction occur with any regularity or even with special frequency; the relation of syphilis to these psychoses is that of a complication by accidental coincidence. 5. From the standpoint of diagnosis, cytologic examination of the cerebrospinal fluid is an indispensable aid in the practice of psychiatry; with the further aid of the Wassermann reaction and of Noguchi's butyric-acid reaction, the diagnosis of general paresis can be either established or excluded with practical certainty." The authors admit that the view that paresis is a manifestation of active syphilis cannot yet be considered as absolutely established, though the constant reactions to the Wassermann and Noguchi tests strongly point that way. The essential link in the chain of evidence—the finding of the spirochete—appears to be still lacking, and until that is supplied we shall still have to speak of parasyphilitic infection, whatever that may mean.

Peculiar Hereditary Anomaly of the Hair and Nails.—In 1894, C. Nicolle and A. Halipré described a peculiar condition of the hair and nails in a large number of the members of a certain family at Rouen. In the *Bulletin of the Society of Medicine of Rouen* for 1908, recently issued, A. Hebert and A. Halipré describe the case of a girl belonging to this family and

give some details of the prevalence of the anomaly. The patient, who was a girl of 12, had always enjoyed good health and entered the hospital for impetigo of the face. In general, the examination revealed normal conditions except with reference to the hair and nails. The hairs of the eyebrow were very scanty and entirely colorless. The lashes were scanty and blond; the iris was blue. The skin of the forehead presented scanty downy hairs; the cheeks were absolutely smooth, but on the chin and upper lip were a few downy hairs. The hairs of the head were scanty, short, about 2 cm. (0.8 inch), very small and white; they pulled out very easily, even in tufts, without breaking. It was quite difficult to determine the line of implantation of the hair on the forehead where they could scarcely be differentiated from the down. On the temples the line of demarcation was plain. The hairs on the vertex and the part adjoining the forehead were thinner than on the rest of the scalp. The nucha and the parts above and behind the ear presented only scanty down. The scalp was white and of a uniform pigmentation. There was no development of hair on the rest of the body except some down on the pubis and the lower abdominal region. The terminal phalanges of the hands and feet were enlarged so as to appear clubbed; the nails were hypertrophied, much thicker than normal, smooth and friable at the end, where they were irregularly broken. Their free border was dark, irregularly striated and about 2 mm. thick. The rest of the nail was normally colored and the cutaneous fold around the nail. The occurrence of this peculiarity has been traced backward to the sixth generation and the anomaly appears to have originated at Rouen. Altogether among 80 known descendants 52 have been affected, 28 males and 24 females. So far the affection has never skipped a generation to appear in the following. In certain families all the members were attacked; in others the boys are exclusively the victims, the girls being normal; in still others one child of two or three was affected independent of sex. The heredity appears to be governed by no law. It is hard to say whether the lesion tends to disappear, for if it spares certain children of one branch of the family it attacks all of those of a neighboring branch. There is no ground for incriminating syphilis or leprosy and the etiology of the anomaly remains entirely unknown.

Industrial Diseases: "Let Us Open Our Eyes."—The second international congress for industrial diseases, which is to be held at Brussels, September 10 to 14 this year, is rousing the profession in Belgium to pay greater attention to occupational diseases. The *Gazette Médicale Belge*, in a recent editorial with the above title, *Ouvrons l'Œil*, urges physicians to begin to collect data for this new science, especially those who have anything to do with patients suffering from industrial diseases. The physician is the expert and should be the leader in this phase of sociology; it is incumbent on him in particular, as his material interests are so directly involved. The social legislation in Belgium, as in Germany, was conceived and wrought out without the aid of the profession, although almost all the burdens of it is borne by medical men. It is for their direct material interests to make their influence felt in such questions, not to mention their scientific interest. Professional inertia and clinging to old routine have wrought dire trouble for the profession where this social legislation has been introduced. In this new science of industrial diseases physicians must take the lead in every line. "Zealous cooperation, careful study of individual cases, in local, state and international associations, and of all the questions involved in industrial diseases will not only serve the interests of the public, but will prevent physicians being made packhorses for the social legislation which seems to be looming up in every land."

Humbug Medicines.—With this title R. von Post publishes in a Swedish medical journal an appeal to all to refrain from prescribing or giving other countenance to the unnecessary and more or less fraudulent remedies which the manufacturers present for the approval of the profession. Even if it happens that one or the other of these proprietaries may possibly have some value, their price is generally out of all proportion to their usefulness or value; the harm they do outweighs any good. He pleads that the physician should not lend his name and his authority to support these com-

cial undertakings. The *Nordiskt medicinskt Arkiv* comments approvingly on his words, saying that it is the rare exception when a testimonial or other support from the individual physician of these proprietaries is useful or ethically correct. The really valuable remedies scarcely ever obtain recognition by way of display advertisements with testimonials from mostly obscure men. The physician, the editorial adds, acts best for his own reputation and for that of the profession at large and for the interests of the public by making it a principle to refrain from writing testimonials, and thus he will avoid being mixed up in this display advertisement business. Really good remedies do not need this advertising, and the bad and unnecessary ones should not get the support of the profession.

Society Proceedings

COMING MEETINGS

Alabama, Medical Association of State of, Mobile, April 19-22.
Am. Laryn., Rhin. and Otol. Society, Washington, D. C., April 28-30.
Arizona, Medical Association of, Phoenix, April 20-21.
California, Medical Society of State of, Sacramento, April 19-21.
Conf. State and Prov. Bds. of Health, Washington, April 28-29.
District of Columbia, Medical Association of, Washington, April 26.
Florida, Medical Association of, Jacksonville, April 6-8.
Georgia, Medical Association of, Athens, April 20-23.
Maryland, Med. and Chirurgical Faculty of, Baltimore, April 26-28.
Mississippi State Medical Association, Oxford, April 12.
South Carolina Medical Association, Laurens, April 19-21.
Tennessee State Medical Association, Memphis, April 12-14.

MEDICAL SOCIETY OF THE MISSOURI VALLEY

Twenty-second Semi-Annual Meeting, held at Omaha, March 17-18, 1910

The President, DR. A. B. SOMERS, Omaha, in the Chair

Psychotherapy in Relation to the General Practice of Medicine and Surgery

DR. HENRY S. MUNRO, Omaha, discussed psychotherapy in the field of preventive medicine; in the domain of psychophysiologic therapeutics; as an adjunct in the treatment of acute diseases; as an aid to surgery in the treatment of chronic diseases, and in relation to the prevalent professional psychasthenia.

DISCUSSION

DR. C. R. WOODSON, St. Joseph, Mo.: The physician who possesses the power to entertain, to divert, and to inspire confidence, who can honestly set forth facts and take an individual's mind off of an object of worry, or who can influence him along these lines, is the best psychotherapist.

DR. A. S. VON MANSFELDE, Ashland, Neb.: I do not believe that a man can be educated to become a successful psychotherapist. The successful psychotherapist is born, not made.

DR. R. WILLMAN, St. Joseph, Mo.: Instruction and investigation, if properly given and carried out, will do much toward mitigating and annihilating false mind-healing. Psychotherapy is not new, but physicians have not practiced it to the extent they should have done.

DR. S. GROVER BURNETT, Kansas City, Mo.: Before attempting to administer psychotherapy, the physician ought to make a diagnosis. Without a diagnosis, he had better not say or do anything. If a physician has not diagnosed correctly the ailment of a patient, he is just as likely to give pathologic suggestions as he is to give physiologic ones. Babinski says that functional conditions, such as so-called hysteria, are caused by suggestion and relieved by persuasion. While all members of the profession are not ready to accept that statement, the more one studies it the more clearly he sees the basis for it.

DR. O. BEVERLY CAMPBELL, St. Joseph, Mo.: I do not believe that 75 per cent. of the people are neurasthenics. I have observed that as I am becoming a better diagnostician from day to day I am able to find pathologic conditions as causes in more cases of neurasthenia than I ever did before. I believe that confirmed neurasthenics need suggestion. They

need to be told some things they do not know. If they are in fear of a great calamity, if they believe they are in a serious condition, and the physician can diagnose their cases correctly and say to them, you are not in a serious condition, then psychotherapy is of advantage.

DR. F. B. DORSEY, Keokuk, Iowa: There is not a practitioner of medicine to-day who is not using psychotherapy to a greater or less degree, but there is a limitation to it. A short time ago I had a case of confirmed neurasthenia. A diagnosis of gall-bladder trouble was made, and the operation disclosed a gall-bladder full of stones. After these were removed the neurasthenia disappeared.

DR. C. C. GODDARD, Leavenworth, Kan.: The general practitioner chases dollars too hard to make accurate diagnoses. I find that when patients with neurasthenia are admitted into private institutions they have not been properly examined by the family physician. If they had been, the patients never would have been sent to such institutions, but treated at home. I think that pathologic conditions are at the bottom of the majority of cases of neurasthenia.

DR. W. O. HENRY, Omaha: The value of this paper lies in the fact that I emphasize the point that all physicians should employ psychotherapy. They should cultivate it as a means of diagnosis, but not to the exclusion of other things. Psychotherapy should be taught in medical schools. I believe that more attention will be given to it in the future than there has been in the past.

The Errors of Mind Healing

DR. R. WILLMAN, St. Joseph, Mo.: The various healing cults are a danger to the human family. The dangers that follow in the trail of the pernicious practices of the healing cults may be summed up as follows: 1. The mind-healer being a non-believer in the existence of disease, its contagion, infection, etc., does not appreciate the necessity of knowing disease, and because of his unmindfulness of the danger of contaminating others, he leaves all gates open to the spread of disease. 2. The mind-healer has no idea of early diagnosis and proper treatment of disease when it is in its incipency. Thus the patient is deprived of all opportunity to protect himself from danger and loss of life—things which early diagnosis and proper treatment could easily prevent.

Hemiplegia

DR. F. E. COULTER, Omaha, read a paper in which he reported a case of hemiplegia with acute onset. He also exhibited the patient. He called attention to the salient points of practical importance in the management of such cases.

DISCUSSION

DR. R. C. WOODSON, St. Joseph, Mo.: The mode of onset of lesions of the central nervous system is of more importance to the physician in making a diagnosis than anything else.

The Non-Surgical Treatment of Tuberculous Arthritis

DR. H. WINNETT ORR, Lincoln, Neb.: Many patients who have old tuberculous sinuses would recover without operation in from six months to a year if carefully treated mechanically. Operative interference, even under the best conditions, prepares the way for mixed infection later.

DISCUSSION

DR. H. P. HAMILTON, Omaha: Methods of extension and fixation are to be commended. If the disease begins in the epiphysis a different method of treatment than extension and fixation will be required. The important thing is to make the diagnosis early while the disease is in the epiphysis only. Usually, when the orthopedic surgeon gets the case, rupture has taken place into the joint, the ligaments and synovial membranes having already become involved in the inflammatory process, and then it is, and then only, the orthopedic surgeon should come in with fixation.

DR. A. S. VON MANSFELDE, Ashland, Nebr.: In order to be successful in these cases the surgeon should be a master in the use of plaster of Paris. He should also have a thorough knowledge of the action of the muscles.

The Neglect of the Sacroiliac Joint by the General Practitioner

DR. EDWARD EVANS, LaCrosse, Wis., emphasized the anatomic importance of the sacroiliac joint, saying that its neglect in the diagnosis of painful and disabling conditions about the back and pelvis leads to improper treatment. He cited illustrative cases, and described the symptoms of strain of this joint, and then discussed the diagnosis and treatment.

DISCUSSION

DR. A. S. VON MANSFELDE, Ashland, Nebr.: Men in throwing sacks of grain over their shoulders sometimes produce a partial dislocation of the sacroiliac joint which continues for years and is referred to as chronic nephritis, lumbago, or chronic rheumatism, when in reality nothing more than the dislocation of this joint, complete or partial, is the cause of the trouble.

DR. H. WINNETT ORR, Lincoln: I have seen two cases in which the sacroiliac joint has been strained in the manner described by Dr. Evans.

DR. S. GROVER BURNETT: A lawyer sustained an injury in leaping from a street car. The hip-joint seemed normal, but when any force was brought to bear on the pelvis, pain was intense along the sacroiliac joint.

DR. F. B. DORSEY: A pregnant woman sustained a complete disarticulation at the symphysis and the right sacroiliac synchondrosis. Treatment consisted in placing her in the dorsal position and applying a plaster cast from a little above the waist-line down to and below the knee, immobilizing the knee and the hip. She made a perfect recovery.

DR. MARY STRONG, Omaha: Is the Walcher position, which is frequently used in cases of slight degree of contraction of the pelvic inlet, likely to injure the sacroiliac joint?

DR. EDWARD EVANS, LaCrosse, Wis.: If a patient be put in the Walcher position, high forceps applied, and the sacroiliac joint strained, one takes care of it afterward, but these slight strains, as a rule, are not cared for by practitioners.

Facts in Ophthalmology of Practical Importance to the General Practitioner

DR. JOHN MONROE BANISTER, Omaha: It would be most advantageous to the busy medical practitioner in general practice to possess sufficient ophthalmologic knowledge to recognize the ocular conditions demanding immediate attention, and to acquire the small amount of skill necessary to give palliative treatment of such urgent affections until the services of a specialist can be secured.

DISCUSSION

DR. A. S. VON MANSFELDE, Ashland, Nebr.: Eyes have been lost because the general practitioner has not realized the importance of an injury to the eye at the time the case was seen, and more knowledge on his part would have enabled him to deal with such cases successfully.

DR. B. W. CHRISTIE, Omaha: Medical colleges should not graduate students without giving them an intelligent idea of the use of the ophthalmoscope. They also should be taught how to refract.

Antitetanic Serum in Tetanus

DR. F. B. DORSEY, Keokuk, Iowa, emphasized the necessity of giving repeated doses of this serum at stated intervals as a prophylactic. Large and repeated doses do not always counteract tetanus when it is once established. He reported five cases.

DISCUSSION

DR. C. C. GODDARD: If there is any virtue in antitetanic serum, it must be used early or not at all. One remedy I am going to try and use it to the limit is apomorphin, as I believe we will get more benefit from it than from chloral.

DR. R. WILLMAN mentioned a case of tetanus in which he used apomorphin, as well as sulphate of magnesia and sulphate of soda combined, with gratifying results.

DR. O. BEVERLY CAMPBELL said that sulphate of magnesia and sulphate of soda are good in their place, but when tetanus is fully developed he would just as soon use Missouri River water. He has never seen a case of true tetanus cured by any method of treatment.

(To be continued)

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

DIVISION OF FEES

To the Editor:—Please tell me where I can obtain literature on the subject of division of fees. D. A. WEBB, Scranton, Pa.

ANSWER.—A list of literature on this subject was published in this department, Dec. 18, 1909, p. 2117.

WEIGHT OF ASHES AFTER CREMATION OF BODY

To the Editor:—Can you inform me what percentage of the weight should remain after cremation of a human body in one of the up-to-date crematories? CORTLANDT D. FIELD, New York.

ANSWER.—It is learned from the superintendent of a crematory in Chicago that the average weight of ashes from a human body is five pounds. This would be between three and four per cent. of the body weight.

The Public Service**Medical Department of the Army**

Changes for the week ended March 19, 1910:

Wadhams, Sanford H., major, ordered on expiration of leave of absence to proceed to Fort Slocum, N. Y., for duty.

Howell, Walter O., 1st Lieut., M. R. C., ordered to proceed to Presidio of San Francisco, for duty.

McAndrew, P. H., major, relieved from duty at Fort Mackenzie, Wyo., and ordered to Fort Terry, N. Y., for duty.

Robbins, Chandler P., major, relieved from duty at Fort Terry, N. Y., and ordered to Fort McHenry, Md., for duty.

Shaw, Herbert G., capt., ordered to report on April 25, to Lieut. Col. James G. Glennan, Medical Corps, President of examining board, Army General Hospital, San Francisco, for examination for promotion.

Hall, James F., capt., relieved from duty at Fort Brady, Mich., at expiration of his present leave of absence, and will proceed to Chicago, for duty as attending surgeon in that city.

Humphreys, Harry G., capt., granted 30 days' leave of absence about April 1, 1910.

Mills, Raymond W., 1st Lieut., M. R. C., ordered to Fort Ethan Allen, Vt., for duty.

Kerr, James D., 1st Lieut., M. R. C., ordered to Fort Howard, Md., for duty.

Winter, Francis A., major, ordered to proceed to New York City, on official business pertaining to the Medical Department.

McMillan, C. W., 1st Lieut., M. R. C., leave of absence extended 1 month.

The following named officers of the Medical Corps will report in person on the dates set opposite their respective names to Lieut. Col. Henry P. Birmingham, Medical Corps, president examining board, at the Army Medical Museum Building, Washington, D. C., for examination to determine their fitness for promotion: Captain Paul S. Halloran, June 6, 1910; Captain Peter C. Field, June 6, 1910; 1st Lieut. Henry C. Pillsbury, May 16, 1910; 1st Lieut. Ray W. Bryan, May 16, 1910; 1st Lieut. Bernard S. Gostin, May 16, 1910; 1st Lieut. William H. Richardson, May 16, 1910; 1st Lieut. Howard H. Johnson, May 16, 1910; 1st Lieut. William H. Richardson, May 16, 1910.

The following named officers of the Medical Corps will report in person on the dates set opposite their respective names to Lieut. Col. James D. Glennan, Medical Corps, president of the examining board, at the Army General Hospital, San Francisco, for examination to determine their fitness for promotion: Captain Louis Brechemin, Jr., June 6, 1910; 1st Lieut. Frederick S. Macy, May 16, 1910; 1st Lieut. Gny V. Rukke, May 16, 1910; 1st Lieut. Edgar King, May 16, 1910; 1st Lieut. Howard H. Johnson, May 16, 1910; 1st Lieut. William H. Richardson, May 16, 1910.

Robinson, James L., 1st Lieut., M. R. C., ordered to report to the commanding officer, Fort Worden, Wash., for duty.

DeNancrede, Charles B. G., 1st Lieut., M. R. C., ordered to active duty and will repair to this city to deliver lectures to the class at the Army Medical School on Monday, April 11 and 14, 1910; on the completion of this duty will return to his home, Ann Arbor, Mich.

Medical Corps of the Navy

Changes for the week ended March 19, 1910:

Wise, J. C., med. director, detached from duty as president and member of the naval examining and naval medical examining boards, Washington, D. C., and ordered to continue other duties.

Ames, H. E., med. director, ordered to command the Naval Hospital, Puget Sound, Wash.

Anderson, F., med. director, detached from command of the Naval Hospital, Annapolis, Md., and ordered to duty as a member of the Naval examining and naval medical examining boards, Washington, D. C.

Beyer, H. G., med. inspector, detached from the Bureau of Medicine and Surgery, and ordered to continue other duties.

McDonald, P. E., P. A. surgeon, placed on the retired list March 9.

Eaton, W. E., acting asst.-surgeon, ordered to duty at the Naval Hospital, Boston.

Langhorne, C. D., surgeon, detached from the Naval Station, Hawaii, and ordered home to wait orders.

Brownell, C. D. W., surgeon, ordered to the *New Jersey*.

Stuart, A. P., P. A. surgeon, detached from the *New Jersey*, and ordered to the Naval Medical School, Washington, D. C., for course of instruction.

Hermesch, H. R., asst.-surgeon, detached from the Naval Training Station, San Francisco, and ordered to the *South Dakota*.

Bacon, S., asst.-surgeon, detached from the *South Dakota*, and ordered to the Naval Training Station, San Francisco.

Rossiter, P. S., surgeon, detached from the Naval Station, Tutuila, Samoa, and ordered home to wait orders.

Cottle, C. F., asst.-surgeon, detached from the Naval Hospital, Annapolis, Md., and ordered to duty at the Naval Station, Tutuila, Samoa.

Strite, C. E., P. A. surgeon, detached from the *Franklin*, and ordered to the Naval Hospital, Las Animas, for treatment.

Public Health and Marine-Hospital Service

Changes for the week ended March 16, 1910:

Trask, J. W., asst. surgeon-general, granted 1 month's leave of absence from March 16, 1910.

Carter, H. R., surgeon, granted 1 month's leave of absence from March 11, 1910, on account of sickness.

Lavinder, C. H., P. A. surgeon, directed to proceed to certain places in Germany, for inspection of antitoxin establishments, and on completion of said duty to proceed to Milan and other places in Italy, for investigation of pellagra.

King, W. W., P. A. surgeon, granted 7 days' leave of absence en route to station.

Warren, B. S., P. A. surgeon, detailed to represent the Service at the National Conference on the Education of Dependent, Backward, Truant and Delinquent Children, to be held in St. Louis, May 16-19, 1910.

Stimson, A. M., P. A. surgeon, granted 6 days' leave of absence from March 14, 1910, under paragraph 191, Service Regulations.

Creel, R. H., P. A. surgeon, granted 5 days' leave of absence from March 18, 1910.

Spratt, R. D., P. A. surgeon, granted 15 days' leave of absence en route to station.

Turnipseed, David C., asst.-surgeon, directed to proceed to Baltimore, and report to the Medical Officer in Command for duty and assignment to quarters.

Stiles, C. W., chief, Division of Zoology, Hygienic Laboratory, detailed to represent the Service at the annual conference of state health officers, to be held in Nashville, Tenn., April 6-7, 1910, and the annual meeting of the Tennessee State Medical Association, to be held in Memphis, April 12-14, 1910.

Pean, L. C., acting asst.-surgeon, granted 5 days' leave of absence from March 14, 1910.

DeForest, C. M., acting asst.-surgeon, granted 20 days' leave of absence from April 13, 1910.

Marsh, W. H., acting asst.-surgeon, granted 4 days' leave of absence from March 19, 1910.

Turnipseed, David C., commissioned as Assistant Surgeon in the Public Health and Marine-Hospital Service.

Marriages

JAMES C. BLAIR, M.D., to Miss Vivian Losse, both of San Jose, Cal., March 8.

OSCAR J. MAYER, M.D., Mexico, to Miss Lucy Keller, at San Antonio, Tex., March 5.

PHILIP AUGUST BILL, M.D., to Miss Mary Aileen Ross, both of San Francisco, March 9.

ARTHUR A. O'NEILL, M.D., to Miss Stella L. Montague, both of San Francisco, March 3.

SAMUEL SCHIFFMAN, M.D., to Miss Charlotte Kleinberg, both of New York City, March 6.

JAMES THOMAS NICHOLS, M.D., Muskogee, Okla., to Miss Louise Salisbury, at Baltimore, March 9.

ALBERT SEWARD TENNEY, M.D., Cambridge, Mass., to Miss Helen L. Fargo Schulte, of South Orange, N. J., January 8.

WILLIAM JOHN JUDY, M.D., Kerens, W. Va., to Miss Jessie Harper Wamsley, of Mill Creek, W. Va., at Cumberland, Md., March 8.

Deaths

Wharton Sinkler, M.D., died at his home in Philadelphia, March 16, aged 64. He was born in Philadelphia, Aug. 7, 1845, received his early education in Gambier, Ohio, and Aiken, S. C., and entered the South Carolina college, but left in his Freshman year, at the outbreak of the Civil War and enlisted in the Second South Carolina Cavalry, C. S. A. At the conclusion of the war he attended lectures in Philadelphia, was graduated in medicine from the University of Pennsylvania in 1868, and continued to practice in Philadelphia until his death. He was a member of the American Medical Association, chairman of the Section on Nervous and Mental Diseases in 1905, and chairman of the executive committee of the section in 1908 and 1909. He was also a member and formerly president of the American Neurological Association, and the Philadelphia Neurological Society; treasurer of the Society of Tropical Medicine; a fellow of the College of Physicians of Philadelphia, the Association of American Physicians, and American Philosophical Society; a member of the National Association for the Study

and Care of Epileptics and many other scientific societies. He was trustee of the University of Pennsylvania, manager of the Episcopal Hospital, manager of the University of Pennsylvania Hospital, and attending physician to the Philadelphia Orthopedic Hospital and Infirmary for Nervous Diseases. In 1895 he was one of those responsible for the creation of the Pennsylvania Epileptic Colony Farm, which, on May 2, 1896, was merged with the St. Clement's Hospital for Epileptics, under the title of the Pennsylvania Epileptic Hospital and Colony Farm. Since that time he has served as president of the institution, and as a result of his solicitation a large part of the building fund and endowment was secured. This was the first colony for epileptics to be founded in the state of Pennsylvania and the third in the United States. It is felt by Dr. Sinkler's family and friends that no more fitting memorial could exist for him than this institution which gives noble relief to those unfortunates who cannot be cared for in other institutions or in their homes. He was a frequent contributor to the literature of his specialty.

Frank V. Cantwell, M.D. University of Pennsylvania, 1884; a member of the American Medical Association; chief of the surgical staff of St. Francis Hospital, Trenton, N. J.; a member of the Trenton Board of Health and a common councilor of Trenton; local pension examiner; consulting physician at the State Prison; sometime president of the Mercer County Society, Trenton Medical Association, and Trenton Medical Library Association; at one time physician of Mercer county; one of the leaders in the antituberculosis agitation which resulted in the establishment of the State Sanatorium for Tuberculosis, Glen Gardener; died at his home March 11, from tuberculosis, aged 48.

Mathias Cook, M.D. Starling Medical College, Columbus, 1864; a member of the Medical Society of the State of New York; acting assistant surgeon U. S. Army and afterward surgeon of the Second Ohio Volunteer Cavalry during the Civil War, and volunteer surgeon in the German service during the Franco-German War; a ward physician of Utica for 25 years; one of the original members of the staff of St. Elizabeth's Hospital; for more than ten years local pension examiner, and for most of that time president of the board; in 1889, one of the coroners of Oneida county; a philatelist of national repute; died at his home, March 7, from heart disease, aged 69.

Homer Orman Bates, M.D. College of Physicians and Surgeons, Keokuk, Iowa, 1878; of Chicago; a member of the American Medical Association; formerly an instructor in Rush Medical College; professor of obstetrics in the Playfair-Lying-In Hospital; attending physician at Grace Hospital; and a lecturer in the Presbyterian Hospital School for Nurses; surgeon for the Metropolitan Elevated Railroad; formerly president and councilor of the Long Beach Branch of the Los Angeles County Medical Society; died at his home in Sierra Madre, March 10, from cerebral hemorrhage, aged 63.

Nelson Barrere Van Winkle, M.D. Miami Medical College, Cincinnati, 1878; a member of the American Medical Association; for many years a member of the board of pension examiners of Blanchester, Ohio; local surgeon for the Baltimore and Ohio Railroad; and a member of the Baltimore and Ohio Surgeons' Association since its organization; died at his home in Blanchester, March 13, from cerebral hemorrhage, aged 57.

Harrison Tyler Witman, M.D. Jefferson Medical College, 1864; assistant surgeon of the Forty-second Pennsylvania Volunteer Infantry and brevetted major and surgeon for conspicuous bravery on the field; and later surgeon of the One Hundred and Ninety-fifth Pennsylvania Volunteer Infantry; a member of the common council of Reading, Pa.; died at his home, March 6, from pneumonia, aged 72.

William Merrick Gray, M.D. University of Pennsylvania, 1882; pathologist to the Army Medical Museum, and to the Providence Hospital, Washington; an expert in x-ray photography; during the Spanish-American War, a member of the staff of the Hospital Ship *Relief*; died March 9 in the laboratory of the Army Medical Museum, from acute dilatation of the heart, aged 51.

Rollin Carolus Olin, M.D. University of Michigan Homeopathic College, Ann Arbor, 1877; professor of practice of medicine in Detroit Homeopathic College; and a member of the medical board of Grace Hospital; a veteran of the Civil War; died at his home, March 8, from cerebral hemorrhage, aged 70.

Charles Auville Board, M.D. University of Virginia, Charlottesville; for more than fifty years a practitioner of Virginia; surgeon in the Confederate Army during the Civil War; for several terms mayor and school trustee of Bedford City; died at his home, February 26, from senile debility, aged 77.

Robert George English, M.D. Northwestern University Medical School, Chicago, 1871; a veteran of the Sabine Indian War; and a pioneer resident of Des Moines, Iowa; for nearly sixty years a practitioner; died at the home of his daughter in Osawatomie, Kan., March 4, from senile debility, aged 92.

John J. Saville, M.D. University of Pennsylvania, 1862; of Chicago; a pioneer practitioner of Sioux City, Iowa; in 1874 made agent of the Rosebud Indian Reservation, S. D.; surgeon of volunteers during the Civil War; and at one time health officer in Omaha; died in that city, March 8, aged 76.

Victor Hugo Sturm, of Traverse City, Mich., a member of the local medical society; president of the Grand Traverse Hospital Association; for many years a practitioner of Cincinnati; died suddenly in Mason City, Iowa, Dec. 8, 1909; from acute dilatation of the heart, aged 76.

Charles Coleman Benson, M.D. University of Maryland, Baltimore, 1883; formerly of Baltimore and Santa Cruz, Cal.; died in his rooms in Philadelphia, March 12, from the effects of poison, believed to have been self-administered with suicidal intent, while despondent, aged 73.

Charles Seaton, M.D. Kentucky School of Medicine, Louisville, 1860; a veteran of the Civil War; from 1882 to 1886, treasurer of Morgan county, Ind.; for several years, manager of sanatoria in Martinsville; died in his office in that city, March 11, from heart disease, aged 74.

John Nevins, M.D. New York University, New York City, 1883; a member and for several terms secretary and treasurer of the Jersey Shore (Pa.) School Board; a member of the Lyeoming County Medical Society; died at his home, March 2, from pneumonia, aged 56.

Hallie Thomas Willis, M.D. University Medical College of Kansas City, Mo., 1898; a member of the Missouri State Medical Association; and for many years secretary of the Shelby County Medical Society; died at his home in Shelbyna, February 25, from nephritis, aged 46.

Joseph H. Green, M.D. Southern Medical College, Atlanta, Ga., 1881; for several years a member of the faculty of a medical school of Atlanta; and formerly physician of DeKalb county, Ga.; died at his home in Decatur, March 11, from pneumonia, aged 50.

Daniel B. D. Beaver, M.D. University of Pennsylvania, 1871; a member of the American Medical Association; of Reading, Pa.; for several years chief of the surgical staff of St. Joseph's Hospital; died in Okahumpka, Fla., March 6, from tuberculosis, aged 63.

John Frederick Brown, M.D. University of Arkansas, Little Rock, 1891; a member of the Arkansas Medical Society; once president of the Faulkner County Medical Society; died at his home in Conway, March 5, from pneumonia, aged 39.

Daniel Townsend Pope, M.D. Medical College of the State of South Carolina, 1860; surgeon in the Confederate Service during the Civil War; died at his home in Edisto Island, S. C., Dec. 8, 1909, from cerebral hemorrhage, aged 72.

Thomas Milsom, M.D. Harvard Medical School, 1870; for several years surgeon on the Inman Line; a member of the Nova Scotia Medical Association; died at his home in Dartmouth, July 25, 1909, from pneumonia, aged 66.

Isaac Watson Inlow (license, Ind., 1897); a member of the Indiana State Medical Association; for forty years a practitioner of Shelby county; died at his home in Blue Ridge, March 7, from cerebral hemorrhage, aged 70.

Martin Amador, M.D. New York University, New York City, 1878; a member of the Medical Society of the State of New York and Associated Physicians of Long Island; died at his home in Brooklyn, March 15, aged 53.

Samuel Clark Way, M.D. Ohio Eclectic Medical College, Cincinnati, 1866; a veteran of the Civil War; of Johnson City, Tenn.; died in the National Soldiers' Home in that city, February 4, from senile debility, aged 79.

Charles B. Richards, M.D. Western Reserve University, Cleveland, 1852; of Binghamton, N. Y.; surgeon of volunteers during the Civil War; died in St. Petersburg, Fla., March 6, from bronchitis, aged 78.

Bernard Sheridan Kerr, M.D. Victoria College, Coburg, Ont., 1867; a member of the College of Physicians and Surgeons of Ontario, 1869; died at his home in Toronto, March 12, from bronchopneumonia, aged 73.

Thomas Joseph Broderick, M.D. Harvard Medical School, 1882; formerly a member of the Massachusetts Medical Society; died at his home in Charlestown, Boston, March 5, from cerebral hemorrhage.

Henry B. Day, M.D. University of Oregon, Portland, 1905; formerly of Dayton, Wash.; died at his home in Tacoma, Wash., Dec. 6, 1909, from the effects of an overdose of chloroform, aged 25.

Daniel Edmond Barry, M.D. College of Physicians and Surgeons, New York City, 1871; a member of the American Medical Association; died at his home in New York City, March 12, aged 60.

Ulysses S. Ingram, M.D. Hospital College of Medicine, Louisville, 1896; of Pineville, Ky.; died in a sanitarium in Louisville, March 11, from typhoid fever, following pneumonia, aged 35.

William Frederick Knapp, M.D. University of Michigan, Ann Arbor, 1878; of Monroe, Mich.; died in St. Joseph's Retreat, Dearborn, Mich., March 10, from cerebral hemorrhage, aged 60.

Benjamin H. Leslie, M.D. University of Pennsylvania, 1868; a member of the Kansas Medical Society; died at his home in Lawrence, Kan., March 15, from chronic nephritis, aged 66.

Alfred Augustus Stocker, M.D. Harvard Medical School, Boston, 1853; a surgeon of volunteers during the Civil War; died at his home in Cambridge, Mass., March 10, aged 90.

Frank W. Nelson, M.D. Jefferson Medical College, 1880; a member of the Medical Society of Virginia; died at his home in Forest Depot, March 8, from heart disease, aged 54.

Charles W. Hayes, M.D. Cleveland University of Medicine and Surgery, 1871; of Omaha; died in a hospital in Los Angeles, Cal., March 7, from heart disease, aged 63.

Henry H. Bartlett, M.D. Cleveland Homeopathic Medical College, 1869; formerly of Ashtabula, Ohio, and Los Alamitos, Cal.; died suddenly in Pasadena, May 3, 1909.

Samuel Holman, M.D. Bellevue Medical College, 1866; a member of the Medical Society of the State of New York; died at his home in Hilton, March 4, aged 68.

Robert L. Thompson, M.D. College of Physicians and Surgeons, Baltimore, 1891; died at his home in Traphill, N. C., February 20, from pneumonia, aged 50.

William N. Cronin, M.D. Starling Medical College, Columbus, Ohio, 1887; died at his home in Hartford City, Ind., March 9, from heart disease, aged 47.

Jesse Snowden, M.D. Central College of Physicians and Surgeons, Indianapolis, 1883; died at his home in Indianapolis, March 8, from heart disease, aged 75.

Oliver Richardson King, M.D. College of Physicians and Surgeons, New York City, 1852; died at his home in Plainfield, N. J., March 13, from heart disease.

William Hawtry Bredin, M.D. Trinity Medical College, Toronto, 1869; formerly of Picton, Ont.; died at his home in Toronto, Nov. 11, 1909, aged 81.

William Penn Dicks, M.D. Washington University, Baltimore, 1875; died at his home in Walkertown, N. C., February 18, from neurasthenia, aged 71.

D. W. Cooper, M.D. Physio-Medical College, Cincinnati, 1879; died at the home of his daughter in Oakdale, Tenn., March 7, from paralysis, aged 60.

Edward Louis Menager, M.D. University of Rennes, France, 1869; died at his home in Spokane, Wash., March 9, from tuberculosis, aged 57.

John S. Marshall, M.D. Medical College of Virginia, Richmond, 1888; died recently at his home in Smithfield, Va., and was buried March 7.

William Diehl, M.D. New York Homeopathic Medical College, New York City, 1891; died at his home in Brooklyn, March 7, aged 47.

Pleasant W. McKeel, M.D. Vanderbilt University, Nashville, 1878; died at his home in Mayfield, Ky., March 9, from pneumonia, aged 57.

Nathan J. Langston, M.D. Southern Medical College, Atlanta, Ga., 1894; died at his home in McDonough, Ga., March 6, aged 65.

W. T. Stone, M.D. Memphis (Tenn.) Medical College, 1858; died at his home in Milan, Tenn., February 28, from influenza, aged 81.

Mikhail Farag, M.D. College of Physicians and Surgeons, Baltimore, 1907; died recently at his home in Tanta, Egypt.

Charles S. Kerr, M.D. University of Maryland, Baltimore, 1868; died at his home in Kerr, N. C., March 6, aged 65.

Albert G. DuPuy, M.D. Tulane University, 1878; died at his home in Tennessee Colony, Texas, March 11.

Medical Education and State Boards of
Registration

COMING EXAMINATIONS

ARIZONA: Phoenix, April 4-5. Sec., Dr. Anell Martin.
CALIFORNIA: San Francisco, April 5. Sec., Dr. Charles L. Tisdale, 929 Butler Building.
COLORADO: Denver, April 5. Sec., Dr. S. D. VanMeter, 1723 Tremont Place.
FLORIDA: Jacksonville, April 4-5. Sec., Dr. J. D. Fernandez.
IDAHO: Boise, April 5. Sec., Dr. O. J. Allen, Bellevue.
ILLINOIS: Chicago, April 14-16. Sec., Dr. J. A. Egan, Springfield.
MINNESOTA: State University, Minneapolis, April 5. Sec., Dr. W. S. Fullerton, 214 American Nat'l Bank Bldg., St. Paul.
MONTANA: The Capitol, Helena, April 5. Sec., Dr. W. C. Riddell.
NEW MEXICO: Santa Fe, April 11-12. Sec., Dr. J. A. Massie.
NORTH DAKOTA: Grand Forks, April 1-4. Sec., Dr. H. M. Wheeler.
OKLAHOMA: Ione Hotel, Guthrie, April 12. Sec., Dr. Frank P. Davis, Enid.
RHODE ISLAND: State House, Providence, April 7-8. Sec., Dr. Gardner T. Swarts, Room 315, State House.
WEST VIRGINIA: Wheeling, April 12-14. Sec., Dr. H. A. Barbee, Point Pleasant.

Washington July Report

Dr. J. Clinton McFadden, secretary of the Board of Medical Examiners of the State of Washington, reports the written examination held at Seattle, July 6-8, 1909. The number of subjects examined in was 11; total number of questions asked, 110; percentage required to pass, 60 in each branch. The total number of candidates examined was 296, of whom 262 passed, including 186 osteopaths, and 34 failed, including 3 osteopaths. The following colleges were represented:

College	PASSED	Year Grad.	Total No. Examined.
University of California	(1896) (1907) (1908)		3
College of Phys. and Surg., San Francisco	(1909)		1
Cooper Medical College	(1906) (2, 1909)		3
Denver College of Medicine	(1899)		1
Georgetown University	(1907)		1
Atlanta College of Physicians and Surgeons	(1899)		1
Hahnemann Med. Coll. and Hospital, Chicago	(1873)		1
Northwestern University Med. School	(1903) (1904)		2
Bennett Medical College	(1907) (1908) (1909)		5
Rush Medical College	(1901) (1902) (1903) (1904)		4
University of Iowa, College of Medicine	(1907) (1909)		6
University of Louisville	(1908) (1909)		2
University of Maryland	(1898)		1
Johns Hopkins University Medical School	(1905)		1
Harvard Medical School	(1906)		1
Tufts College Medical School	(1908)		1
University of Michigan, College of Medicine	(1887) (2, 1902) (1908) (2, 1909)		6
Saginaw Valley Medical College	(1899)		1
Hamline University	(1908)		1
University Med. College, Kansas City	(1901) (1909)		2
Kansas City Hahnemann Medical College	(1908)		1
Creighton Medical College	(1900) (1905) (2, 1909)		4
University of Buffalo	(1894)		1
Cleveland Homeopathic Medical College	(1906)		1
Cincinnati College of Medicine and Surgery	(1892)		1
Pulte Medical College	(1883)		1
Willamette University	(1906) (1909)		2
University of Oregon	(1897) (1909)		2
Jefferson Medical College	(1907) (1909)		2
Woman's Medical College of Pennsylvania	(1894)		1
Medico-Chirurgical College, Philadelphia	(1896)		1
University of Pennsylvania	(1897) (1908) (2, 1909)		4
Western Pennsylvania Medical College	(1894)		1
University of Tennessee	(1893)		1
University of Vermont	(1899)		1
Wisconsin College of Physicians and Surgeons	(1908)		1
Marquette University, Milwaukee	(1909)		1
McGill University, Quebec	(1902) (1907) (1908)		3
Univ. of Toronto, Ontario	(1905) (2, 1907) (1908)		4
University of Munich, Germany	(1904)		1
Queen's University, Kingston, Ontario	(1900) (1901)		2

College	PASSED	Year Grad.	Total No. Examined.
Denver College of Physicians and Surgeons	(1909)		1
College of Physicians and Surg., San Francisco	(1907)		1
College of Medicine and Surgery, Chicago	(1903)		1
Jenner Medical College	(1906)		1
Hospital College of Medicine, Louisville	(1905)		1
Northwestern University Medical School	(1903)		1
Rush Medical College	(1895)		1
Chicago College of Medicine and Surgery	(1906)		1
College of Physicians and Surgeons, Chicago	(2, 1909)		2
University of Iowa, College of Medicine	(1904)		1
Keokuk Medical College	(1900)		1
Kansas Medical College	(1906)		1
Tufts College Medical School	(1905)		1
Harvard Medical School	(1908)		1
Baltimore Medical College	(1899)		1
Michigan College of Medicine and Surgery	(1905)		1
Detroit Homeopathic College	(1906)		1
Detroit College of Medicine	(1907)		1
University of Michigan, College of Med.	(1883) (1900)		2
University of Minnesota	(1906)		1
Marion-Sims College of Medicine	(1897)		1
Kansas City Homeopathic Medical College	(1896)		1
Ensworth Central Medical College	(1906)		1
St. Louis College of Physicians and Surgeons	(1896)		1

Jefferson Medical College	(1909)	1
University and Bellevue Hospital Medical Coll.	(1899)	1
Vanderbilt University	(1908)	1
Willamette University	(1903)	1
University of Manitoba, Winnipeg	(1898)	1

Oklahoma October Report

Dr. Frank P. Davis, secretary of the Oklahoma State Board of Medical Examiners, reports the written examination held at Guthrie, Oct. 12-15, 1909. The number of subjects examined in was 22; total number of questions asked, 150; percentage required to pass, 70. The total number of candidates examined was 32, of whom 19 passed, including one osteopath and 13 failed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Northwestern University Medical School	(1909)		77
University of Louisville	(1908) 75; (1909)		75
Tulane University of Louisiana	(1909)		78
Maryland Medical College	(1905)		76
Ensworth Medical College	(1909)		78
St. Louis College of Physicians and Surgeons	(1909)		75
Marion-Sims College of Medicine	(1899)		81
Bellevue Hospital Medical College	(1896)		86
Albany Medical College	(1909)		81
Medical College of Ohio	(1889)		74
University of Nashville	(1908) 86; (1909)		73
Vanderbilt University	(1909)		83
Knoxville Medical College	(1908)		75
Meharry Medical College	(1901)		83
University of Texas	(1909)		84
University of Virginia	(1909)		78

College	FAILED	Year Grad.	Per Cent.
College of Physicians and Surgeons, Little Rock	(1909)		63
University of Arkansas	(1892)		*60
Chicago College of Medicine and Surgery	(1908)		†68
Keokuk Med. College, College of Phys. and Surg.	(1901)		69
University of Louisville	(1894)		44
University of Missouri	(1880)		*68
Beaumont Hospital Medical College	(1890) *72; (1900)		**57
St. Louis University	(1908)		**75
St. Louis College of Physicians and Surgeons	(1896)		*70
Leonard School of Medicine	(1909)		*74
Meharry Medical College	(1908)		69
University of Texas	(1896)		*78

* Fell below 50 per cent. in one or more branches.
** Second examination.
† Third examination.

Ohio December Report

Dr. George H. Matson, secretary of the State Medical Board of Ohio, reports the written examination held at Columbus, Dec. 7-9, 1909. The number of subjects examined in was 10; total number of questions asked, 100; percentage required to pass, 75. The total number of candidates examined was 25, of whom 22 passed and 3 failed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Georgetown University, Washington, D. C.	(1906)		77.7
Indiana University	(1909)		82.1
Physio-Medical College of Indiana	(1908)		78.5
University of Kansas	(1908)		82.2
Hospital College of Medicine, Louisville	(1902)		85.1
Kentucky School of Medicine	(1907)		78.2
Tulane University of Louisiana	(1909)		86.6
Harvard Medical School	(1905)		87.2
Columbia University, Coll. of Phys. and Surg.	(1898)		90.2
Toledo Medical College	(1909) 76.7, 77.2		83.1
Starling-Ohio Medical College	(1909)		76.3
Starling Medical College	(1901)*		
Miami Medical College	(1909) 77.8, 81.1		82.6
University of Pennsylvania	(1897)		87.3
Jefferson Medical Coll.	(1875) 78.9; (1908) 86.1; (1909)		87.8
Western University, London, Ontario	(1909)		77.2

College	FAILED	Year Grad.	Per Cent.
Eclectic Medical Institute	(1909)		**70
Starling-Ohio Medical College	(1909)		**73.5
Meharry Medical College	(1908)		†69.3

* No grade given.
** Second examination.
† Fourth examination.

Rhode Island January Report

Through an error, the wrong percentage figures were given in THE JOURNAL of Feb. 26, 1910, for the candidates who passed the examination held by the Rhode Island State Board of Health, Jan. 7-8, 1910. The correct figures are as follows:

College	PASSED	Year Grad.	Per Cent.
College of Physicians and Surgeons, Baltimore	(1903)		86.6
Harvard Medical School	(1907)		83.6
Dartmouth Medical School	(1908)		80
University of Vermont	(1909)		80

College	FAILED	Year Grad.	Per Cent.
Baltimore Medical School	(1907)		71.4
Atlantic Medical College, Baltimore	(1909)		61.9
Boston University	(1899)		63.4
Laval University, Canada	(1904) 61.4; (1909)		67.9

Book Notices

LA CURE RADICALE DE LA HERNIE INGUINALE: Leçons professées à l'Hôtel-Dieu. Par le Docteur Lucas-Champagnière, Chirurgien Honoraire de l'Hôtel-Dieu. Membre de l'Académie de Médecine. Paper. Pp. 192, with 53 illustrations. Price, 3.50 francs. Paris: G. Steinhell, Editeur, 2 Rue Casimir-Delavigne, 1909.

This volume represents the views of the author, and describes his method, but there is too much detail and much useless repetition. Twenty pages are devoted alone to a description of ligation of the omentum, the method being in short the application of a series of interlocking ligatures. There are three fundamental procedures involved in the cure of all hernias, namely: (1) Total ablation of the hernial sac; (2) proper repair of the abdominal wall; and (3) extirpation of the omentum. The author properly lays stress on the high ligation of the sac, and scrupulously avoids leaving any suggestion of an infundibulum behind, and there is no question that this simple maneuver makes for permanency of cure. Most hernias are admitted to be of congenital origin. Repair of the wall implies the employment of the imbrication principle, of which more later.

On the subject of ligation of the omentum the statement is made that no operation merits the name of radical operation which omits removal of the omentum. It is advised that one should remove all of the omentum, everything within reach, the entire organ if possible. Ligation *en masse* is rightly condemned. Catgut is the suture and ligature material employed. One fairly large size is used for all purposes and is prepared by immersion for six months in a 5 per cent. solution of carbolic acid in oil. Great caution is urged to secure absolute hemostasis, to which all surgeons would readily subscribe. Priority and superiority over Bassini is claimed.

The steps of the repair are described minutely, the essential feature being the imbrication of the external oblique fascia. The author differs radically from others practicing overlapping methods in that he applies mattress sutures in such a manner as to pull the lower flap of external oblique fascia under the upper. The upper flap is then laid down and sutured, the cord being placed between the two layers. Thus it appears that the internal oblique and transversalis muscles are not sutured to Poupart's ligament, an omission which makes the method inferior to the Andrews modification. In women the round ligament is removed.

Before suturing the skin the author irrigates the wound with a 5 per cent. solution of carbolic acid, and drains. Among 1,134 operations reported there were 4 deaths, one of them being from chloroform, the anesthetic which is used.

The author has never seen a case of early recurrence; however, in 28 years he estimates the recurrences at 4.1 per cent. He does not advise operation before the age of 5 or 7. Obesity he considers the strongest contraindication to operation. The patients are kept in bed three weeks.

The illustrations are good and clear, and the little volume makes pleasant reading, though it would gain by being boiled down and better systematized. The author's method never would find favor among American surgeons, agreeing as they do as to the excellence of the principle of imbrication.

SELECTED PAPERS ON HYSTERIA AND OTHER PSYCHONEUROSES. By Prof. Sigmund Freud, Vienna. Authorized Translation by A. A. Brill, Ph.D., M.D., Chief of Nervous Dispensary, Beth Israel Hospital. Paper. Pp. 200. New York: The Journal of Nervous and Mental Disease Publishing Co., 1909.

The work of Breuer, Freud, Jung, Ferenczi and their pupils has thrown a flood of light on the nature and treatment of hysteria and similar psychoneuroses. Indeed, even the pure psychoses are being attacked by the searching psycho-analytic methods of these untiring investigators.

Following the lines of the newer experimental psychology, and even adding to this psychology by his own investigations, Freud has given us a new and definite conception of hysteria, that *bête noire* of the general practitioner. It is decidedly reassuring to learn that hysterical symptoms are the symbolic expression of the realization of a repressed wish, which expression serves as a gratification for the patient, and that "the hysteric suffers mostly from reminiscences." In the two cases reported, illustrating the method of examination and physical analyses and the happy results of treatment along lines of well-defined and rational psychotherapy, the author

says, "the individual hysterical symptoms immediately disappeared without returning if we succeeded in thoroughly awakening the memories of the causal process with its accompanying affect, and if the patient circumstantially discussed the process, giving free play to the affect" (p. 4).

However convincing may be the many cases thus subjected to a rigid psycho-analysis and rational psychotherapy by Freud and his followers, we fear that their teachings will never become popular in the profession, for "the process is toilsome and wearisome for the physician and it presupposes a profound interest for psychologic incidents as well as a personal sympathy for the patient" (p. 84). Nevertheless, no one who pretends to practice scientific medicine can afford to neglect a careful study of the work of this group of earnest and practical psychologists.

Freud's views on what he calls the "anxiety neuroses" and on the prominent rôle of sexuality in the etiology of the neuroses are well elaborated in three of the essays. They have not met the same favor, however, as have his views on the psychic nature and treatment of hysteria.

Two of the essays, those on the general subject of psychotherapy, are particularly timely and deserving of special perusal because of the rational and scientific conservatism with which this much-maligned subject is handled. The difficulty with which the abstract reasonings of scientific psychology are followed is doubled in a language to which one is not born. Freud himself, moreover, is hard to read by reason of his close logic, somewhat original terminology and refined psychology. It is therefore a matter for self-congratulation on the part of the English-reading student to be given this excellent and clear translation by Dr. Brill, who is himself an active neurologist and knows the practical needs of the profession.

PULMONARY TUBERCULOSIS AND SANATORIUM TREATMENT. By C. Muth, M.D., M.R.C.S., L.R.C.P. Associate of King's College, London. Cloth. Pp. 201, with illustrations. Price, 3 shillings 6 pence net. London: Baillière, Tindall and Cox, 8 Henrietta Street, Covent Garden, London, 1910.

The author has had ten years' experience in open-air sanatorium treatment of the disease and writes with convictions and reason. The first chapters are devoted to the etiology of tuberculosis, with a brief account of symptoms and prognosis. The author elaborately considers the relatively great importance of predisposing conditions, insisting that the bacillus is not the whole or sole cause of the disease. Whether, as he believes, man became afflicted with tuberculosis only after he became a house-dweller cannot be proved, and whether the bacillus was first able to live outside animal bodies and gradually acquired a parasitic habit is also incapable of proof. But these views appeal to the imagination if they do not convince the reason.

The author's discussion of the early diagnosis of pulmonary tuberculosis is good, but too brief. Tuberculin tests he deprecates as often dangerous. The practical application of the opsonic index as a test he thinks is very limited. The Calmette reaction he thinks is uncertain and unreliable.

It is unfortunate that he did not consider the subject of prognosis more fully and practically. He says that it will depend "first on the strength of vital resistance" (but does not tell us how to estimate this), and second, on the way that resistance is used.

The second part of the book, on open-air sanatorium treatment, is good and deserves praise. The author recognizes the need of rest when a patient's temperature is 99 F. or over, but he also appreciates the need of exercise for every patient who can take it. The kinds which he commends are walking, breathing, singing, reading, manual training and tramping. These exercises and the indications and contraindications for them he describes fully. By tramping he means excursions during which one walks, camps and leads a simple outdoor life. It is of course adapted only to those who have nearly or quite made an apparent recovery. The utility of inhalation of formalin or mixtures of it, chloroform and aromatics is discussed at some length and advocated. The usefulness of static electricity is also considered and urged, not as a specific but an aid. Part 3 is an interesting consideration of the social and economic factors of tuberculosis, remedial and preventive measures.

THE PREVENTION AND TREATMENT OF ABORTION. By Frederick J. Taussig, A.B., M.D., Lecturer in Gynecology, Medical Department, Washington University. Cloth. Pp. 179, with 59 illustrations. Price, \$2. St. Louis: C. V. Mosby Co., 1910.

Taussig found in six hundred hospital patients that the ratio of abortion to confinement was 1 to 2.3. This frequency is greater than that found by most writers who generally state the frequency is as 1 to 5. The anatomy and pathology is clearly presented and illustrated by numerous cuts, many of them original. Under etiology a classification of the causes is given that is clear and satisfactory. Under exciting causes and especially death of (or injury to) the fetus by placental interference with nutrition should be included placenta prævia. In the chapter on symptoms and clinical course it is stated that fever is frequently present and due to the decomposition of decidua or placenta. The mistaken impression is left that this is something else than sapremia. The very important subject of diagnosis and differential diagnosis as also the short discussion on prognosis are excellently presented.

In Part 2, "Prevention of Abortion" prophylaxis is considered under the heads of prophylaxis before conception, during pregnancy, in threatened abortion and prevention of criminal abortion. The importance of the Wassermann reaction to determine syphilis in cases of habitual abortion is pointed out. In speaking on legislation as a means of preventing criminal abortion the author surprises us a little by suggesting that the Federal Government should control the matter of abortion and intimating that every abortion, no matter what the cause, should be officially reported. The difference between the registration of deaths where burial certificates can be required and the registration of abortion where the egg can be easily destroyed is so great that the suggestion impairs one's confidence in the author's practical judgment with this field of medicolegal practice.

The treatment of abortion is characterized by a wise but temperate conservatism. The operative technic including curettage is described fully. Curettage is rarely indicated in cases of sepsis. The chapter on perforation is very valuable. Chapters on missed abortion, mole pregnancy, threatened abortion and ergot and its preparations close the book.

The work can be highly commended as a concise, practical and timely presentation of an important and frequently neglected subject.

NEW AND NONOFFICIAL REMEDIES, 1910. Containing Descriptions of the Articles which have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association, prior to Jan. 1, 1910. Paper, 25 cents; Cloth, 50 cents. Pp. 256.

To the conscientious physician who wishes to go outside of the Pharmacopeia and the National Formulary preparations in his prescribing, this annual will prove valuable. It gives him within a brief space information as to the new non-official and especially proprietary drugs about which it would be almost impossible for him to obtain information, except from the manufacturers themselves. It is the only source from which the physician can obtain reliable information regarding them.

The 1910 edition has been revised and contains descriptions of such new drugs as seem worthy and which have been accepted by the Council on Pharmacy and Chemistry of the A. M. A., prior to Jan. 1, 1910. The most notable addition is that of serums and vaccines, and the importance this method of treatment is assuming makes a collation of information concerning them of the utmost value to the physician. Notes of caution properly have been added with reference to the antipyretics and intestinal antiseptics, and with reference also to the assertions of manufacturers that certain drugs are non-poisonous or non-irritating. The Annual follows the plan of the former one and should prove indispensable to the physician and the pharmacist who need reliable information on non-official and especially on proprietary drugs.

NERVOUS AND MENTAL DISEASES. Edited by Hugh T. Patrick, M.D., Professor of Neurology in the Chicago Polyclinic and Charles L. Mix, A.M., Professor of Physical Diagnosis in the Northwestern University Medical School. Vol. X of The Practical Medicine Series under the General Editorial Charge of Gustavus P. Head, M.D., Professor of Laryngology and Rhinology, Chicago Postgraduate Medical School. Cloth. Pp. 248, with illustrations. Price, \$1.25. Series 1909. Chicago: The Year-Book Publishers.

In this volume, covering the work of the year in nervous and mental diseases, several things stand out rather prominently.

One is a changing view in regard to hysteria, there being a distinct movement in the study of this disease to classify manifestations, to give each a more significant separate designation, to find a distinct pathology for it, and to ascribe a very large proportion of symptoms, such as sensitivosenes hemianesthesia, contraction of the visual field, monocular polyopia, dyschromatopsia, loss of pharyngeal reflex, hysterogenetic zones, etc., to unconscious suggestion, usually of medical origin. It may well be that with further study of the neuroses the term "hysteria" will become obsolete. Another suggestion that would seem to have a reasonable basis is that chorea is a symptom and not a separate disease and that the effort to attribute it to some specific infectious cause is not justified. Incoordinated muscular movements in the adult and the old are attributed to arteriosclerosis, faulty nutrition, toxemia, etc., causing lost action of the motor control cells. To many causes just as general may be attributed this incoordination in children. Almost unanimous testimony is given as to the distinct value of the Flexner-Jobling serum in meningitis. The serodiagnosis of syphilis has placed tabes and general paralysis of the insane more certainly among the so-called parasymphilitic diseases. Mental diseases are given very little space and there is little editorial comment throughout the book. An index of subjects and authors completes the book.

CONTRIBUTIONS TO THE STUDY OF RECTAL DISEASE. By F. Victor Milward, B.A., M.B., B.C., F.R.C.S., Assistant Surgeon to the General Hospital, Birmingham. Cloth. Pp. 92, with illustrations. Price, 2 shillings. Birmingham, England: Cornish Brothers, 1909.

This is a very imposing title for a little duodecimo brochure of some ninety pages. Eight chapters are devoted respectively to "Palliative Treatment of Hemorrhoids," "Significance and Recognition of Blood Passed Per Anum," "Stricture of the Rectum in its Relation to Disease," "Two Cases of Carcinoma Extirpated by the Vagino-Perineal Route," "Congenital Piles," "Obstipation and Its Relation to Constipation," "Pain of Anal Origin and Its Alleviation," and "The Sigmoidoscope as a Means of Diagnosis in Rectal Disease."

There is nothing especially novel in the treatment of any of these topics. For example, under the structure of the rectum, mention is made of cases of constipation without bowel action "for months." The circumference may be "immensely increased." The majority of these cases of constipation of months' duration are examples of Hirschsprung's disease in which the rectum is not involved, the dilatation stopping short at the commencement of the latter. We fear our late distinguished visitor, M. Thomas Jonnesco, will hardly recognize himself when reported as Jonowsky. Proctology must be at a rather low ebb in Great Britain when it is necessary to recommend the use of the sigmoidoscope. Altogether, there is no danger that this work will supplant those to which we are accustomed in this country.

THE MEDICAL COMPLICATIONS, ACCIDENTS AND SEQUELS OF TYPHOID FEVER AND THE OTHER EXANTHEMATA. By Hobart Amory Hare, M.D., B.Sc., Professor of Therapeutics in the Jefferson Medical College of Philadelphia, and E. J. G. Beardsley, M.D., L.R.C.P., Assistant Physician to the Out-Patient Department of the Jefferson Medical College Hospital. With a Special Chapter on the Mental Disturbances Following Typhoid Fever. By F. X. Dercum, M.D., Professor of Mental and Nervous Diseases in the Jefferson Medical College. Cloth. Pp. 391, with 26 illustrations. Price, \$3.25 net. Philadelphia: Lea & Febiger.

The present edition of this work is a full revision of the former edition of ten years ago, with a summary of the literature since that time, and the addition of five new chapters in the complications and sequelæ of variola, scarlet fever, measles, varicella and rubella. Nearly 300 pages are devoted to typhoid alone, and deal only with atypical, or unusual manifestations, and their differential diagnosis. The review of the literature is exhaustive and up to date, and full references, often in great profusion, are given at the bottom of each page. A valuable feature is the abundance of statistical information given throughout the volume. The treatment is left untouched. The reader will perhaps find it a little difficult to see just why the complications and sequelæ, alone, of the exanthemata should be included in a volume three-fourths of which is devoted to typhoid, and will perhaps feel a little regret that the whole volume was not devoted to typhoid alone, including treatment. The book is, notwithstanding, a valuable monograph on the subject with which it deals.

PRACTICAL HYDROTHERAPY. By CHURCH POPE, M.D., Professor of Physio-Therapy, University of Louisville Medical Department. Cloth. Pp. 646, with illustrations. Price, \$6. Cincinnati Medical Book Co., 1909.

This is a sane book on the subject, one free from the fads and freakishness so frequently found in works dealing with special methods of therapy. The author makes it plain at the outset that while thoroughly appreciating the value and advantages of hydrotherapy, he "fully realizes that it is not a cure-all," and he has written the book "with a full comprehension of the real value and the limitations of this agent." To this general standard the author in a great degree adheres. Not but that he is more enthusiastic and optimistic than most of the readers of his book will be over the possibilities of hydriatics; this is to be expected and—for the work to be of value—desired. Strictly speaking, the book deals not with hydrotherapy alone, but also with what the author terms the "associated procedures" of phototherapy and thermotherapy. Moreover, in the therapeutic portion of the book the use of water is in many cases recommended as entirely secondary to the medicinal, dietetic or hygienic treatment. The book is well prepared mechanically, and is rather freely illustrated. From a literary standpoint one criticism must be made: the author has a disconcerting habit of changing from the first to the third person even in the same paragraph.

CLINICAL STUDIES FOR NURSES. By Charlotte A. Aikens, formerly superintendent of Columbia Hospital, Pittsburg. Cloth. Pp. 510, with illustrations. Price, \$2 net. Philadelphia: W. B. Saunders Co., 1909.

This is a companion volume to "Primary Studies for Nurses," which we reviewed Aug. 7, 1909. The name, "Clinical Studies for Nurses," is rather misleading, as it suggests practice of medicine; the book, however, is devoted chiefly to definition and description of the various diseases, with enumeration of the symptoms, complications and sequelæ which it is essential that a nurse should be able to recognize. The author acknowledges that the book is a compilation, and that she has tried to take average statements, as many standard text-books differ in such things, for example, as the length of incubation periods. Considerable space is given to obstetric nursing. Miss Aikens believes that all nurses should be taught how to give massage, and Section IV is given up to "Physical Therapeutics, Massage, and Nursing in Nervous and Mental Diseases." There are six hundred questions for self-examination and review, the subjects of some of which are hardly within the province of a nurse. In appendices are hospital and invalid dietaries, diet-lists, notes on infant-feeding, methods of preparation of surgical materials, and formulas of solutions in use in most hospitals.

SKIN AND VENEREAL DISEASES: MISCELLANEOUS TOPICS. Edited by W. L. Baum, M.D., and Harold N. Moyer, M.D. Vol. IX of the Practical Medicine Series. Under the General Editorial Charge of Gustavus P. Head, M.D., Professor of Laryngology and Rhinology, Chicago Postgraduate Medical School. Cloth. Pp. 240, with illustrations. Price, \$1.25. Series 1909. Chicago: The Year-Book Publishers.

The literature of a great number of subjects is reviewed, but in a very interesting manner. In the department of skin and venereal diseases pellagra, now much to the fore, is given considerable space and our knowledge concerning it is very well summarized. Leprosy and what is called leprophobia, on account of a recent case in Washington and New York, are given considerable attention. The vaccine treatment of gonorrhea, syphilis and its serodiagnosis, and a group of diseases called syphiloid whose nosology is now looming up in the literature are treated interestingly. In the miscellaneous department are included the subjects of heredity, the autoprotective mechanism of the body according to the theory of Sajous (a most interesting one), alcoholism, longevity, necessity of autopsies, medicoethical and medicolegal questions, the birth-rate, matters concerning the profession at home and abroad, and many others, all going to make up an interesting summary of the year's work in the special department of skin and genito-urinary diseases and in the general field of medical literature.

PREVENTABLE DISEASES. By Woods Hutchinson, A.M., M.D., Author of "Studies in Human and Comparative Pathology," etc. Cloth. Pp. 442. Price, \$1.50. Boston: Houghton Mifflin Co., 1909.

Many of the chapters of this book have appeared as separate articles in lay magazines from time to time. Some of the subjects are: "Colds and How to Catch Them;" "Appendi-

citis, Nature's Remnant Sale;" "Diphtheria, The Modern Moloch: Offering up a Guinea-Pig for the Life of a Child." These indicate the attractive popular style of the author, which is clearly a considerable factor in making the book of service in the education of the public on medical and sanitary topics. The graphic portrayals of the vast benefits which the public is daily receiving through facts learned by means of animal experimentation should prove of great value in giving the public the truth on this subject.

It would be justifiable to criticize Dr. Hutchinson on the ground that he is too severe in his censure of some popular ideas, and that he does not leave room for the exceptions that modify all general rules. It would be ungracious, however, to dwell on the trivial faults of a work which, all must agree, has so much to commend it; it is supplying the public with much needed information about disease and health.

DISEASES OF THE STOMACH. By S. H. Habershon, M.A., M.D., F.R.G.P. Pp. 565, with 8 colored and 11 black-and-white plates. Price, \$2.50. Chicago: Chicago Medical Book Co., 1909.

Dr. Habershon has undertaken to produce a treatise of moderate size on diseases of the stomach, instead of attempting to bring his father's work on diseases of the abdomen up to date, as he has often been requested to do. The result is a satisfactory volume, which gives the essentials of the subject. Special attention is given to the symptomatology of stomach diseases, which are treated, each symptom separately, in two chapters disconnected from the description of the diseases in which they occur, and to the relation of the stomach to other organs. The laboratory methods of diagnosis are given with sufficient fulness for practical purposes.

VITAL ECONOMY. By John H. Clarke, M.D. Cloth. Pp. 119. Price, 50 cents net. New York: A. Wessels, Newold Publishing Co., 1909.

This small book is full of meat. It is a protest against the careless taking of general principles—even though those principles be excellent in most cases—as rules to be followed by every patient. In other words, it is a plea for exceptions as careful judgment indicates to the individual. Among the subjects treated in this iconoclastic way are exercise, bathing, outdoor sleeping, etc. The book is primarily written, however, to aid the near-strong and the near-well to remove some small defect in habit or environment which prevents the realization of the highest physical possibilities. The use of coffee, tea and other stimulants are set forth as full of harm.

DOCTOR RAST. By James Oppenheim, Author of "Monday Morning and Other Poems." Cloth. Pp. 321. Price, \$1.50. New York: Sturgis & Walton Co., 1909.

A series of stories, separate but with the same principal characters. The scenes are laid among the Jews of New York City, and the emotions and privations of these people are portrayed in vivid colors. The doctor—would that we all were of as noble stuff as he—shares their joys and sorrows and practices medicine more for the good that he does than for the money he gets out of it. The book is worth reading for pure pleasure, and considerable inspiration and sympathy are likely to be received in the process.

RECENT ADVANCES IN PHYSICAL AND INORGANIC CHEMISTRY. By A. W. Stewart, D.Sc., Lecturer on Organic Chemistry in the University of Belfast. Cloth. Pp. 250. Price, \$2.50. New York: Longmans, Green & Co., 1909.

This is a series of essays or short theses on selected chapters of physical chemistry, which contain the latest results of researches in the special fields taken up. The work covers both organic and inorganic physical chemical research. It is, in short, a compilation of the most advanced work in the several divisions of physical chemistry with the experimental details and calculations omitted, presenting only the ultimate findings, and making a survey which will instruct without tiring.

MILK AND ITS RELATION TO THE PUBLIC HEALTH. By Various Authors. Hygienic Laboratory Bulletin No. 56. (Revised and enlarged edition of Bulletin No. 41.) Paper. Pp. 829, with 66 illustrations. Washington: Government Printing Office, 1909.

This volume is the second and enlarged edition of Bulletin No. 41 of the Hygienic Laboratory. The first edition having been exhausted the work has been revised, some of the sections added and the new volume bids fair to be of greater value to the hygienist.

Medical Economics

THIS DEPARTMENT EMBODIES THE SUBJECTS OF ORGANIZATION, POSTGRADUATE WORK, CONTRACT PRACTICE, INSURANCE FEES, LEGISLATION, ETC.

County Society Acts on Ophthalmia Neonatorum

The Tippecanoe County (Ind.) Medical Society has sent out a circular letter to each county society in the state, calling attention to the fact that 35 per cent. of the blindness in Indiana is due to ophthalmia neonatorum and asking for the cooperation of the profession by county and district society action in hopes of abolishing the disease in the state. The special committee on this subject, appointed by the Tippecanoe County Society, recommends that the widest publicity be given the Credé method and that all societies cooperate to secure at the next legislature the passage of a law that will aid in stamping out this preventable disease. It is also recommended that each county society appoint a committee on ophthalmia neonatorum to take up the work in the county and that reports be sent in not later than May 15, in order that the Committee on Ophthalmia Neonatorum of the American Medical Association may be able to report at the St. Louis meeting. Such action is highly commendable. This propaganda should be taken up by each state society.

Contract Practice in Norway

A bill on the subject of compulsory insurance of wage earners is now before the legislature of Norway. Recent issues of the *Medicinsk Revue* contain several articles on the attitude to be taken by the profession in the matter. Loennecker denounces the evils of contract practice both from the standpoint of the physician and of the sick policy-holder, urging the advantages of payment for individual services and the free choice of a physician. Silvertsen extols the benefits that would follow the appointment of a district physician, on a living salary, for each 2,000 inhabitants. Thus for a town of 60,000 he would have 30 physicians who by their official position would be able more effectually to take the lead in large movements for hygiene, prevention of tuberculosis, etc., than is possible for physicians at present in their private capacity.

Legislative Notes

NATIONAL LEGISLATION

A bill has been introduced in the Senate (S. 6877) to amend the act incorporating the American National Red Cross, which became a law in 1905, by adding a section forbidding any person corporation or association other than the American National Red Cross and its employees and agents to use the emblem of the Greek red cross on white ground. Owners of trade-marks registered in the United States Patent Office prior to Jan. 5, 1905, are exempt.

WASHINGTON

The Washington legislature has adjourned. The Committee on Medical Legislation and Public Policy of the state medical association, had introduced into the senate of the state of Washington a bill requiring attending physicians or surgeons to testify as to the facts observed and excluding the testimony of physicians or surgeons on "opinions formed." Expert testimony is to be given by physicians or surgeons appointed by the court entirely independent of either side in the case. The bill aims to secure true expert testimony, without bias. This bill passed the senate and, it is stated, would have passed the house had it been introduced in time.

H. B. 114 was introduced at the request of the state medical association committee and passed by the legislature. This is a bill regulating the practice of medicine and providing for a single board composed of five members from the regular profession, two homeopaths and two osteopaths. All persons who treat the sick or afflicted are required to appear before this board for examination. Three forms of certificates are authorized: one allowing the holder to practice medicine and surgery; one allowing the holder to practice osteopathy, and one allowing the holder to practice any other system or mode of treating the sick not referred to in the section. Registration of certificates with the county clerk is required.

NEW YORK

Among bills that have passed the assembly is one establishing at Yorktown, Westchester county, the Mohansic State Hospital for the Insane and providing for a board of managers to be appointed by the governor within ten days after the bill became a law. This hospital is intended to relieve the congestion existing in the Manhattan and King's Park state hospitals. A bill has been introduced into the assembly to require that greater precautions be taken by sellers of cocaine and other drugs of the kind. A bill has been introduced to require the Board of Education to supply pupils with eyeglasses after the need has been determined. The board is authorized to raise \$15,000 a year for the purpose.

On February 23, Mrs. Diana Belais, head of the New York Antivivisection Society, Stephen Coleridge and the counsel for the society appeared at a joint hearing in the assembly chamber on the Brough-Murray antivivisection bill. Dr. Simon Flexner, Dr. James Ewing and Prof. Frederick S. Lee argued against the measure. The bill puts the practice of vivisection under the supervision of the State Board of Regents, provides for the inspection of laboratories where vivisection is conducted, by inspectors appointed by the regents at the suggestion of the humane societies, and for the licensing of operators.

OHIO

A number of bills of interest to the medical profession have been introduced into the Ohio legislature, as follows:

S. B. 24, to provide for the disinfection of the house and contents in which a person has had pulmonary tuberculosis; S. B. 44, to provide for special elementary schools for children afflicted with tuberculosis; S. B. 51, the usual optometry bill; S. B. 61, to authorize the Ohio State Board of Health to establish a bureau for the prevention of infectious and contagious diseases; S. B. 121, to provide that a certain proportion of the taxes shall be used for the maintenance of district tuberculosis hospitals; H. B. 111, to legalize the sterilization of confirmed criminals, idiots, imbeciles, epileptics, etc.; H. B. 116, to regulate the conduct of maternity houses and lying-in hospitals; H. B. 119, to regulate the care of dependent and neglected children; H. B. 173, to provide physical education in city and village school districts; H. B. 204, to regulate the sale of cocaine, heroin and eucain; H. B. 205, to amend the statute now in force giving jurisdiction to justices of the peace, police judges and mayors by adding a section authorizing them to hear cases regarding the sale of cocaine, heroin and eucain; H. B. 244, to add chicken-pox, measles and whooping-cough to the list of reportable diseases; H. B. 385, to regulate the itinerant vending of medicines, nostrums and appliances for the treatment of disease; H. B. 408, amending the statutes providing for the care of school children by providing that each child shall be annually examined for sight, hearing and obstructions to breathing, the examinations to be held under the control of the Ohio State Board of Health.

POSTGRADUATE COURSE FOR COUNTY SOCIETIES

DR. JOHN H. BLACKBURN, DIRECTOR
BOWLING GREEN, KENTUCKY

[The Director will be glad to furnish further information and literature to any county society desiring to take up the course.]

Eighth Month—Second Weekly Meeting

PHARMACOLOGIC AND THERAPEUTIC ACTIONS OF DRUGS (CONTINUED)

- II. DRUGS ACTING ON THE BLOOD: A. Drugs acting on the plasma. Alkalizers of the plasma, purgatives, diaphoretics and diuretics. B. Drugs acting on the red corpuscles. Direct and indirect hematinics. Drugs altering composition of hemoglobin, CO, coal-tar derivatives, etc. C. Drugs acting on white corpuscles.
- III. DRUGS ACTING ON THE CARDIAC MECHANISM: A. Drugs acting on the heart directly. Drugs which (a) increase force of contraction, (b) decrease force of contraction, (c) increase rate of heart beat, (d) decrease rate, (e) increase both force and rate, (f) decrease both force and rate. B. Drugs acting on vagus center. C. Drugs acting on accelerating center.

IV. DRUGS ACTING ON THE BLOOD-VESSELS: A. Drugs acting locally on vessels. 1. Dilators, irritants, rubefacients, vesicants, pustulants, escharotics. Counter-irritation. 2. Constrictors (a) contract muscular coat, (b) coagulate albuminous fluids around vessels. B. Drugs acting on vasomotor centers. 1. Vaso-dilators. 2. Vaso-constrictors. Astringents, styptics.

V. DRUGS ACTING ON THE SKIN: A. Diaphoretics. Drugs acting (a) peripherally, (b) centrally, (c) mode of action doubtful. B. Anhidrotics. (a) Drugs acting peripherally, (b) mode of action doubtful. C. Drugs producing a rash on skin when taken internally.

VI. DRUGS ACTING ON THE URINARY SYSTEM: A. Increase quantity of urine. 1. Raising arterial pressure (a) generally, by increased heart action or by general vascular contraction, or (b) locally in kidney, by contracting efferent vessels or dilating afferent vessels. 2. By acting on secreting nerves or renal cells, (a) increasing water, or (b) increasing water and solids excreted. B. Diminish quantity of urine. Toxic effects of certain drugs. C. Render urine acid, alkaline. D. Prevent decomposition of urine. E. Alter composition of urine, hematuria, changes in color and odor, increase of urea. F. Drugs acting on bladder and urethra.

Medicolegal

Validity and Construction of Statute Providing for Abatement by State Board of Premises and Occupations Menacing to Public Health

The Supreme Court of Minnesota had for decision, in *J. L. McMillan Company vs. State Board of Health*, the question of the constitutionality of section 2146 of the Revised Laws of Minnesota of 1905. Section 2143 provides that no person, without the written permission of the board of health of the town, village, or city, shall engage therein in any trade or employment which is hurtful to the inhabitants, or dangerous to the public health. Section 2145 is to the effect that an appeal may be taken from any order of the board to the district court of the county by giving notice and bond as in other cases; if the appeal is taken within twenty days before the time for holding a general term of the court it must be heard at such time and either party is entitled to a trial by jury, but if the appeal is taken more than twenty days before any such term the court shall appoint a time and place for hearing it, for which purpose a jury may be summoned; such appeals shall be tried as in other civil cases, but during their pendency the offense, trade or employment shall not be exercised contrary to the order appealed from, and, if so exercised, the appeal shall forthwith be dismissed. Section 2146 provides that, on written complaint made to the State Board that any person is occupying or using any building or premises within any town, village or city for the exercise of any such trade or employment, it shall appoint a time and place for hearing and give notice of not less than ten days to the complainant and the person complained of, and after such hearing, if, in its judgment, the public health or comfort and convenience require, it may order such person to cease from further carrying on such trade or employment in such building or premises; and after written notice of such order, any person thereafter exercising such trade or employment in said building or premises shall forfeit one hundred dollars for each day after the first to be recovered as provided in the preceding sections. Any person aggrieved by such order may appeal, and said appeal shall be taken and determined in the same manner as prescribed in section 2145. During its pendency such trade or employment shall not be exercised contrary to the orders of the State Board, and on the violation of any such order the appeal shall forthwith be dismissed.

The Supreme Court says that the statute in question is an exercise of the police power of the state, a sovereign power, for the protection of public health comfort and safety by

providing for the abatement of premises and occupations which are a menace to the same. It is clearly constitutional unless it is an arbitrary and unnecessarily oppressive use of the power. The company contended that it is an arbitrary and oppressive exercise of the right in that it deprives the parties of their property without due process of law and denies them the right to obtain justice freely. Two specifications were made: The first one was that the statute does not prescribe any proper or just procedure or machinery for taking an appeal, in that there is no provision as to where or in what manner the notice of appeal shall be given, or for a return to the district court, or for framing issues therein. The second, was that the statute arbitrarily so burdens the right of appeal with oppressive and unnecessary conditions as to deprive the party appealing of its property without due process of law, and of its right to obtain justice freely. The court does not concur in this view, but holds the law constitutional.

The procedure provided by the statute is not as impotent as claimed, for it is reasonably adequate. It provides that any aggrieved party may appeal within five days after written notice of the making of the order by giving notice of appeal as in other cases. The usual and well-understood method of giving notice of appeal in such other cases is by serving a written notice of appeal, stating that the party appeals from the order, describing it, on the adverse party or his attorney. In case of an appeal under the statute here in question the adverse party is the Board of Health, the agent of the state, and the notice of appeal, as in other analogous cases, should be served on the president of the board or its secretary and on the attorney general, the chief law officer of the state. If, after an appeal is taken, the board should fail or refuse on proper demand to make return of its proceedings, the district court on due application would compel a return as in other cases. When the appeal is perfected the matter is to be tried and determined on its merits by the court with a jury if either party so demands. It necessarily follows that if the case is of such a character that it is necessary to frame issues for the jury the court may do so in the exercise of its inherent and general powers in accordance with the usual practice in other cases.

A sufficient answer to the argument about the right of appeal being arbitrarily burdened with oppressive and unnecessary conditions is that the right of appeal is neither a natural nor a constitutional right, but a statutory one which the legislature may give or not in its discretion, and if it gives the right it may do so on such conditions as it deems proper. But the claim that the right of appeal given by this statute is burdened with unnecessary and oppressive conditions is not justified by the provisions of the statute. Whether the condition that the nuisance shall not be continued pending the appeal is a reasonable one must not be considered alone from the viewpoint of the dollar mark, but from the viewpoint of public interests as well. It is evident from the language of the statute that the legislature considered the interests both of the individual and the public. The statute does not authorize any interference with the place or occupation which is charged to be a nuisance menacing the public health, until it is determined to be such after ample notice and full hearing. In giving the right of appeal from such determination the legislature was confronted with the fact that to permit the nuisance to continue pending the appeal would be hazardous to the public health, perchance to human lives. In this situation consideration of public health and safety rightly prevailed, but to make the condition of appeal as favorable as practicable the statute made provision for a prompt hearing and determination of the appeal by providing for a special term of court to hear it if necessary.

Application of Statute of Limitations to Action for Malpractice

The Supreme Court of Rhode Island says that what is termed the plaintiff's declaration, in the case of *Griffin vs. Woodhead* (74 Atl. R., 417), alleged, in substance, that the defendant, a physician whom the plaintiff had employed, so unskillfully and negligently conducted himself in the caring of a broken hip that permanent shortening of her leg had

resulted. The defense was that the cause of action, if any, was more than two years old, and hence barred by the Rhode Island statute of limitations. This provides, in section 248, that: "Actions for injuries to the person shall be commenced and sued within two years next after the cause of action shall accrue, and not after." Section 249: "Actions of trespass, except for injuries to the person, shall be commenced and sued within four years next after the cause of action shall accrue, and not after." Section 250: "All actions of account, . . . of the case except for words spoken and for injuries to the person, all actions of debt founded upon any contract . . . shall be commenced and sued within six years," etc. The plaintiff claimed that her declaration was based on a contract, and that the period of six years given by section 250 was therefore available for her. But the court takes the view of the defendant, affirming a judgment in his favor, for the reason that it is of the opinion that the provisions of section 248 are so explicit as to the period of limitations for all actions for injuries to the person, whatever may be their form, as to remove any question. For one thing, no exception as to the form of action is made by the section, and, lest it should be supposed that the period of four years allowed in section 249 as to other actions of trespass should be supposed to be inconsistent with section 248, "injuries to the person" are expressly excepted from it. So, too, in section 250. Nor does the court agree with the contention that the statute refers to injuries that result from traumatism. It finds no such limitations therein expressed, and it has decided that there are many other classes of injuries to the person than those caused by the application of force to the body. Furthermore, to hold that injuries to the person, when caused by a breach of contract, may be sued within six years, would be to create arbitrarily a longer period of liability in certain exceptional cases, such as this case and the case of common carriers, than is established for other cases.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

New York Medical Journal

March 12

- 1 Dementia Præcox. S. E. Jelliffe, New York.
- 2 *Brain Storm. F. Woodbury, Philadelphia.
- 3 Cerebrospinal Meningitis. C. Bagley, Baltimore.
- 4 *The Scope of Office Gynecology. J. A. McGlinn, Philadelphia.
- 5 Beriberi as Seen in the Far East. C. S. Braddock, Haddonfield, N. J.
- 6 Iconoclastic Revision of a Classical Case of Diverticulum of the Esophagus. C. D. Spivak, Denver.
- 7 Abstraction of Calcium Salts from the Mother by the Fetus: Cause of Fatty Infiltration of the Liver Cells of the Former. J. G. Drennan, Baltimore.
- 8 *Tuberculous Ulcers of the Stomach. A. G. Ellis, Philadelphia.
- 9 Enormous Ascites. S. M. deLoffre, Fort Bliss, Tex.

2. **Brain Storm.**—The term brain storm, which is a popular, and not a scientific one, is a phrase, Woodbury states, familiarly used to describe brief states of mental emotional perturbation without reference to their cause. Such attacks, he asserts, may be influenced by atmospheric and climatic conditions to an extent not usually known or suspected. The presumed proximate causes in such cases are only incidental. The real causes lie deeper. Emotional, confusional conditions may occur in apparently normal persons, but are encountered more frequently among the insane. Brain storms, so-called, will be observed more frequently in persons who are neurasthenic and in a depressed vital condition. They are frequently epileptic, or epileptiform. Brain storms as a rule indicate pathologic conditions of the body or mind, but they are symptomatic of general conditions, and are not of specific significance. Violent outbursts of rage or emotion, therefore, have medical importance, and when of frequent occurrence, should be investigated by a physician skilled in mental disorder. In medicolegal cases the phrase brain storm is popularly understood to imply temporary loss of will power, and consequently diminished responsibility on the part of the individual, which is the very point at issue when a case is brought before the court. Woodbury regards the use of fig-

urative and unscientific language by medical witnesses objectionable, since it tends to influence unduly the minds of the jury in weighing the culpability of a prisoner under trial.

4. **Office Gynecology.**—According to McGlinn, there is one field in office gynecology which is being sadly neglected, and that is in the treatment of retrodisplacement of the uterus by the use of the pessary. Here the judgment of the physician is put to the test in selecting the type of displacement which should receive such treatment. In old cases, or those associated with adhesions or gross pelvic lesions the pessary has no place, but in the postpuerperal cases which are not complicated and in which there is a good perineum, the intelligent use of the pessary will result in a cure in many cases. McGlinn does not believe in the office introduction of a stem pessary for the cure of dysmenorrhea, sterility or antelexion.

8. **Tuberculous Ulcers of Stomach.**—The two cases of tuberculous ulcers of the stomach, reported by Ellis, were both secondary to well-marked lesions elsewhere, and illustrate two types of extension of the tuberculous process to that organ. The first case was evidently due to the ingestion of bacilli derived from a pulmonary lesion, the second to extension of the process from the continuous peritoneum. A woman, aged 85, had extensive ulcerative tuberculosis of both lungs and numerous tuberculous ulcers of the ileum and colon. In the stomach, on the greater curvature, about midway between the pylorus and the cardia, was a row of eight ulcers, a few of them exceeding one centimeter in diameter. They were all shallow, with slight or no elevation of the margins. In the floor of most of them were gray or yellow tubercles. In addition to these ulcers there were four large conglomerate tubercles that appeared on the verge of ulcer formation. Spreads made from the scrapings of one of the ulcers contained many tubercle bacilli. Sections from one ulcer showed absence of the mucosa and a thickened submucosa, in which were numerous more or less perfect histologic tubercles. Giant cells were occasionally seen but were very few in number. Caseation necrosis was prominent.

A man, aged 25, had chronic adhesive tuberculous peritonitis and multiple tuberculous fistulas in the left inguinal and trochanteric regions. On the greater curvature of the stomach slightly nearer the cardiac end, was an indolent ulcer, 3.5 by 5 cm. Four and six centimeters respectively from the cardia were two ulcers, 1.5 and 2 cm. respectively, in diameter, that perforated when adhesions to surrounding structures were separated. On the posterior wall, eight centimeters from the cardia, was an ovoidal, elevated mass, 1.5 cm. in diameter, that was cyst-like in consistency. Puncture through the overlying mucosa showed the content to be a thick, yellowish fluid, in stained smears of which were numerous tubercle bacilli. On the serous surface of the stomach, opposite to each of the lesions described, as well as scattered irregularly over the entire organ, were numerous tubercles of various sizes. The omentum, mesentery, pancreas and spleen were adherent to the stomach, and the coils of intestines were matted into an inseparable mass.

Medical Record, New York

March 12

- 10 Tuberculosis of the Kidney. H. H. Morton, Brooklyn.
- 11 *Chauffeur's Fracture. W. S. Thomas, New York.
- 12 Recently Described Symptoms in Spinal Cord Tumors. P. Bailey, New York.
- 13 Is Medicine Faithfully Mirrored in Molière. W. B. Konkle, Montoursville, Pa.
- 14 Chronic Constipation. J. R. Verbruycke, Washington, D. C.
- 15 Pilocarpin. H. H. Redfield, Chicago.
- 16 *Letter to a Neurologist. J. Collins, New York.

11. Abstracted in THE JOURNAL, Feb. 26, 1910, p. 733.

16. **Letter to a Neurologist.**—Collins describes the letter of a mother whose son has disappointed her and his father, by becoming the victim of the periodic drink habit. He has reached the age of 35 without being cured or having any absorbing interest in life. The neurologist tries to show the mother that she must give her son some interest in life sufficient to fill his mind and prevent him from desiring the solace of the cup that inebriates. He shows that the condition is one of a lack of education in ambition, and a desire to do something worth while in the world.

Boston Medical and Surgical Journal

March 10

- 17 *Uses of Fear in Preventive Medicine. M. J. Rosenau, Boston.
18 Non-Tuberculous Renal Infections. E. L. Keyes, New York.
19 The Health of Young Persons in Massachusetts Factories. W. C. Hanson, Boston.
20 Submucous Fibroids. P. E. Truesdale, Fall River, Mass.

17. Fear in Preventive Medicine.—Reasonable fear saves many lives and prevents much sickness, says Rosenau. It is one of the greatest forces for good in preventive medicine, and at times it is the most useful instrument in the hands of the sanitarian. It is often the fear of a disease that gives the health officer the ways and means to combat it. Because we fear cholera, we have none of it in the breadth and length of the United States; we have no fear of typhoid and that is why it is endemic. A case of cholera in any of our cities to-day would at once be placed *incommunicado*, under the strictest quarantine. The sick room would be screened against flies, the dejecta would be disinfected, the nurse and the physician would be isolated, or they would be required to take most exacting precautions, gallons of germicides would be spilled and fumigants burned galore to proclaim the energy of the sanitary department. The neighborhood would be searched for secondary cases to nip them in the bud. Finally, the convalescents would not be given their liberty until the danger of bacillus carrying had passed. By strange contrast, little attention is paid to a case of typhoid in the neighborhood, or even in the same house. Still less regard is ordinarily given to the dangers of typhoid infection on a dairy farm, or in a butcher's shop or bakery, or other places where foodstuffs are handled. It is the lack of fear of yellow fever that permits it to smolder in an endemic focus, just as the lack of fear of typhoid permits it to smolder in Boston, Philadelphia, Washington and other American cities. A sharp epidemic of typhoid is a good life saver. The fear it instills builds filter plants, spends money, and awakens energy for other necessary and expensive sanitary improvements. It is the fear of tuberculosis rather than the pity of it all that prompts legislatures to build sanatoria and establish clinics and to appropriate large sums of the people's money for the control of this disease of defective civilization.

Lancet-Clinic, Cincinnati

February 26

- 21 *Prophylaxis of Pellagra. C. H. Lavinder, Washington, D. C.
22 Efficacy of Various Glass in the Prescribing of Spectacles. J. S. Wyler, Cincinnati.
23 The Cincinnati Academy of Medicine. R. B. Hall, Cincinnati.

21. Abstracted in Society Proceedings, THE JOURNAL, Nov. 20, 1909, p. 1770, and also published in *Atlanta Journal-Record of Medicine*, January, 1910.

Kentucky Medical Journal, Bowling Green

February 15

- 24 Surgical Diseases of the Lower Jaw. J. G. Sherrill, Louisville.
25 Diagnostic Aids in Blood Examinations. B. J. O'Connor, Louisville.
26 A Case of Pulmonary Tuberculosis. J. R. Morrison, Louisville.
27 Advancements in Proctology. J. M. Mathews, Louisville.

Illinois Medical Journal, Springfield

February

- 28 Treatment of Compound Fractures. E. H. Ochsner, Chicago.
29 *The New Pure Food Catsup: or, when is a Chemical not a Chemical? J. A. Wesener, Chicago.
30 *Preservation of Meats in Cold Storage. H. S. Grindley, Champaign.
31 Enactment of Food Laws, their Enforcement and Effect. T. E. Lamm, Chicago.
32 Flour Bleaching: Its Relation to Bread Production and Nutrition. G. L. Teller, Chicago.
33 Malarial Fever. G. C. Kasdorf, Robinson.
34 Acute General Peritonitis. C. E. Beecher, Gilson.
35 Dangers of Prolonged Anesthesia. C. A. Finley, Galesburg.

29. New Pure Food Catsup.—Wesener sums up his paper as follows:

1. Sodium benzoate and benzoic acid are medicinally less active than the other substances used in the preservation of food, and the benzoate is less active than the preservatives now used in making the pure food catsup, which it has been stated may be made without the use of chemicals.

2. By the use of sodium benzoate and benzoic acid, the flavor of the article preserved is not lost nor can any inferiority of the product be disguised.

3. The flavor produced by vinegar and spices is wholly artificial and does not retain much of the natural flavor of the product that is preserved. By this means it is easy to cover up inferiority and thereby deceive the consumer.

4. Changed conditions in economies have made it imperative for the manufacturer to prepare his food to reach the consumer in a sweet, wholesome and palatable state.

5. Sodium benzoate and benzoic acid for catsup do this far better and in a less injurious manner than the products that are now used and so extensively advertised in the manufacture of pure food catsup.

30. Published in the *Chicago Medical Recorder*, December, 1909, and abstracted in THE JOURNAL, Jan. 29, 1910, p. 410.

Southern Medical Journal, Nashville

February

- 36 Some Acute Abdominal Conditions Occurring in Very Young Infants. R. Winslow, Baltimore.
37 Transfusion in Pellagra: Report of Cases. H. P. Cole and G. J. Winthrop, Mobile, Ala.
38 Treatment of Pellagra. J. M. Kling, Nashville.
39 Treatment of Surgical Anemia. R. W. Billington, Nashville.
40 Pathology of Uncinariasis. S. Evans, Nashville.
41 Influence of Improper Training and False Teaching in the Evolution of a Neurosis. E. M. Hummel, New Orleans.
42 *Early Diagnosis of Gall-Stone Disease. J. E. Cannaday, Charleston, W. Va.
43 Syphilis. W. F. Glenn, Nashville.
44 General Surgical Anesthesia. L. W. Banman, Nashville.
45 So-called R. H. Reflex Neurotic Symptoms, and the Psychic Factor. T. A. Williams, Washington, D. C.
46 Protection to the Perineum in Forceps Cases. E. B. Anderson, Chattanooga.

42. Published in the *Journal of the South Carolina Medical Association*, January, 1910.

Annals of Surgery, Philadelphia

February

- 47 Results of "Specific" Remedies in Diseased States Accompanied by Hypertrophy of the Thyroid. J. Rogers, New York.
48 *Operative Correction of Syphilitic and other Deformities of the Nose. J. R. Roberts, Philadelphia.
49 Rhinoplasty by Means of one of the Fingers. S. H. Watts, Charlottesville, Va.
50 Traumatic Lesions of the Atlas and Axis. S. J. Mixer and R. B. Osgood, Boston.
51 Atlo-Axoid Fracture Dislocation. L. S. Pitcher, Brooklyn.
52 Malignant Degeneration of Benign Diseases of the Breast. J. Speese, Philadelphia.
53 Acute Intussusception of the Ileum with Volvulus. C. L. Scudder, Boston.
54 *Method of Anastomosis between Sigmoid and Rectum. D. C. Balfour, Rochester, Minn.
55 *Excision of the Rectum for Cancer by the Perineal Route. C. H. Peck, New York.
56 *Treatment of Gangrene of the Foot by Arteriovenous Anastomosis. G. P. Muller, Philadelphia.

48. Abstracted in THE JOURNAL, July 31, 1909, p. 409.

54. Anastomosis Between Sigmoid and Rectum.—The procedure employed by Balfour may be described as follows:

1. The patient is placed in a high Trendelenburg position and a long median incision made between the umbilicus and pubes.

2. The intestines are carefully packed off above, leaving only the lower sigmoid exposed in the pelvis.

3. The affected portion of the bowel is liberated by lateral incisions through the peritoneum, especially through the outer leaf of the sigmoid, and a semilunar incision is made along base of bladder connecting the two lateral incisions.

4. Careful dissection is made of all the fat and glands as high as the abdominal aorta, the hollow of the sacrum being swept clean.

5. The inferior mesenteric and middle sacral arteries are ligated at proper points.

6. Two pairs of forceps are clamped on the bowel at a suitable distance below the tumor and two on the proximal side; the necessary amount of sigmoid with the tumor is excised, and the cut ends are sterilized.

A three-quarter inch rubber tube is passed into the lower segment of bowel until the end protrudes through the anus; the upper end with lateral eye is inserted into the proximal end of the sigmoid to a distance of some three inches. It is here secured by a transverse catgut stitch one-half inch above the cut end of the intestine.

8. Traction is made by an assistant on the end of tube projecting from the rectum, until the cut ends of the bowel meet, and the anastomosis is made by interrupted through-and-through chronic catgut sutures with careful coaptation of the mucous membranes.

9. Traction is again made on the tube sufficient to accomplish a half-inch intussusception, this being aided by a few forceps on the distal fragment to steady it, and a second row of sero-muscular sutures is inserted.

10. The defect in the peritoneum behind, is remedied by sliding peritoneum and suturing, and finally the omentum is drawn down over the anastomosis, and if necessary secured by a catgut suture.

11. The abdominal wound is closed in the usual way. The rubber rectal tube remains in position about six days, or until the catgut suture is absorbed.

55. Excision of Rectum.—Peck claims that the perineal operation is considerably shorter and less severe than the combined operation and is applicable to a large number of low-lying growths. By leaving the bowel closed for from 2 to 5 days or even longer, healing without infection of at least the greater part of the wound can be obtained in many cases. Clean healing, by preventing inflammatory infiltration of the tissues about the sphincter, is probably a great aid in preserving a fair degree of control. The splitting of the anal segment posteriorly enables one to leave the anterior attachments of the sphincter undisturbed, and thus to protect at least a part of its nerve supply.

56. **Arteriovenous Anastomosis.**—Muller's patient had a gangrenous fifth toe, and gangrenous patches on the remaining toes. Under spinal anesthesia, end-to-end anastomosis was effected, by the Carel method, of the femoral artery and vein at the apex of Scarpa's triangle below the origin of the profunda femoris. Complete reversal was not attempted. The artery was moderately sclerosed. When the clamps were removed the vein was seen actively pulsating and continued to do so during the closure of the wound with catgut for the deeper tissues, silkworm gut for the skin. The leg and foot became warm, the leg red and the foot reddish purple in color. No visible pulsation of the veins was observed.

In 48 hours the foot was cold to the ankle, the leg being warm. On the third day a line of demarcation began to appear at the tibiotarsal joint. This became more marked in a few days and amputation at the middle third of the leg was advised, but the patient refused to have it done. For days the patient was absorbing toxin from the gangrenous foot and was gradually getting weaker. Then he became delirious and, permission being obtained from his relatives, the leg was amputated 4 inches below the knee. At this time, the posterior tibial and peroneal veins showed feeble but distinct spurts of blood. There were many unusually sharp oozers. The anterior tibial artery did not bleed. All the arteries and the external saphenous vein were thrombosed. The internal saphenous vein was patent. The flaps were loosely sutured together and drainage provided. There was much suppuration in the flaps, and despite energetic systemic stimulation, death occurred, apparently from exhaustion, nine weeks after the first operation.

Journal South Carolina Medical Association, Florence

January

- 57 Subcutaneous Plastic Surgery of the Nose. W. P. Porcher, Charleston.
- 58 Requisites for the Treatment of Psychoneuroses: Psychopathologic Ignorance and Misuse of Psychotherapy by the Novice. T. A. Williams, Washington, D. C.
- 59 Infantile Syphilis. W. P. Cornell, Charleston.
- 60 Nephritis. B. W. Hunter, Charleston.
- 61 Diagnosis of Typhoid. D. B. Frontis, Ridge Springs.
- 62 Prevention of Typhoid. J. Lyon, Greenwood.
- 63 Temperature in Typhoid. G. A. Neuffer, Abbeville.
- 64 Antiseptic and Eliminative Treatment of Typhoid. W. G. Houseal, Newberry.
- 65 Diet in Typhoid. R. E. Hughes, Laurens.
- 66 The Business Side of Medicine. T. H. Dreher, St. Matthews.
- 67 *Early Diagnosis of Gall-Stone Disease. J. E. Cannaday, Charleston, W. Va.

67. Published also in the *Southern Medical Journal*, February, 1910.

Journal of the Michigan State Medical Society, Detroit

February

- 68 Prognosis in Cardiac Insufficiencies. H. A. Freund, Detroit.
- 69 *Uterine Fibroids. R. R. Smith, Grand Rapids.
- 70 Urinary Infections, Treatment by Inoculations. W. T. Dodge, Big Rapids.
- 71 Mixed Toxins in Treatment of Sarcoma. F. W. Robbins, Detroit.
- 72 *The Cigar vs. the Cigarette. F. C. Kinsey, Three Rivers.
- 73 Specialism in Surgery. L. J. Hirschman, Detroit.
- 74 Senile Hypertrophy of the Prostate. D. Loree, Ann Arbor.

69. Abstracted in THE JOURNAL, Oct. 9, 1909, p. 1224.

72. **Cigar vs. Cigarette.**—Briefly, the results of eight experiments conducted by Kinsey showed no arsenic in cigarette papers, no opiates in cigarettes, and the smoke was found to be less toxic than that from cigars containing the same amount of nicotine.

Journal Tennessee State Medical Association, Nashville

February

- 75 Dissemination of Typhoid. R. L. Jones, Nashville.
- 76 Prognosis and Treatment of Typhoid. T. E. Abernathy, Chattanooga.
- 77 Treatment of Pelvic Inflammations. E. M. Sanders, Nashville.
- 78 Trachoma. C. B. Wylie, Chattanooga.
- 79 Eclampsia. C. L. Goodrich, Fayetteville.
- 80 Death from Ether Anesthesia. W. M. McCabe, Nashville.

Archives of Pediatrics, New York

February

- 81 *Medical Work of the Juvenile Court of Cook County, Chicago. F. S. Churchill and J. A. Britton, Chicago.
- 82 Experimental Epidemic Poliomyelitis. S. Flexner and P. A. Lewis, New York.
- 83 The Dwarf Tapeworm (*Hymenolepis Nana*) as an Intestinal Parasite of Children. O. M. Schloss, New York.
- 84 Infantile Atrophy. E. C. Jones, Philadelphia.

- 85 So-called Casein Masses in Infants' Stools. L. F. Meyer and J. S. Leopold, New York.
- 86 Apparatus for Collection of Feces and Urine from Infant Girls. H. J. Gerstenberger, Cleveland, Ohio.
- 87 Traumatic Esophageal Stricture in a Two-Year-Old Child. G. W. Ross, Port Ewen, N. Y.

81. **Work of the Chicago Juvenile Court.**—The main points in Churchill and Britton's paper are, briefly, the following: The children brought before the Chicago Juvenile Court, in the early years of their dependency, differ little in their physique from children living under more favorable conditions. The boys, as a rule, are taller, but less well-nourished and of smaller chest capacity. The girls are inferior in height, weight and chest capacity. The boys, in the latter half of their dependency, *e. g.*, from 9 to 12 years of age, and throughout their delinquency, are inferior in all respects, and their inferiority is more marked after the age of puberty. The same comment holds true for the girls during these same periods, until they reach 16, when they are equally as tall as, and far heavier than, their more fortunately surrounded mates, which superiority in physique, by its very attractiveness, is one of the main factors in causing their delinquency. All the children of both groups are remarkably free from organic disease. Considerable numbers present drawbacks to perfect physical health in the shape of enlarged tonsils, and probably adenoids, carious teeth, enlarged cervical glands and diseases of the ear. A small proportion, about one-sixth, have trouble with the eyes. This defective vision and the deafness resulting from enlarged tonsils, adenoid growths and ear disease, are defects more or less predisposing to delinquency by rendering school work more difficult, and the street life with its attendant evils, more easy and more attractive. The frequency of gonococcus disease among the older girls is merely an index of the prevalence of this infection among this particular class as a whole. The generally lowered tone of the delinquents, as manifested by diminished height, weight and chest capacity, probably plays no part in the production of delinquency, but is rather a result of the general life led by these children, the result of common causes leading also to mischievous, delinquent conduct, *viz.*: bad air, poor food, bad surroundings, smoking, drinking, etc.

Journal of Cutaneous Diseases, New York

February

- 88 The Lichen Group of Skin Diseases: A Histologic Study. J. A. Fordyce, New York.
- 89 *Grain Itch (Acaro-Dermatitis Urticarioides): Study of a New Disease in This Country. J. F. Schamberg, Philadelphia.

89. Abstracted in THE JOURNAL, Aug. 14, 1909, p. 573, and published in the *Southern California Practitioner*, August, 1909.

Detroit Medical Journal

February

- 90 Sepsis of the Temporal Bone. D. M. Campbell, Detroit.
- 91 Two Cases with Protruding Lateral Sinus. E. Amberg, Detroit.
- 92 Echinococcus Cyst of the Liver. W. A. Hackett and E. J. Panzner, Detroit.

Archives of Diagnosis, New York

January

- 93 Diagnosis of Duodenal and Gastric Ulcers. J. B. Deaver, Philadelphia.
- 94 Five Diagnostic Methods of John B. Murphy, of Chicago. G. G. Dowdall, Chicago.
- 95 *New Posture Facilitating the Recognition of Tricuspid Disease. H. Stern, New York.
- 96 *Diagnostic Value of the Hemolytic Test in Cancer and Tuberculosis. F. Smithies, Ann Arbor.
- 97 Diagnosis of Disorders of the Cerebellar Apparatus. T. A. Williams, Washington, D. C.
- 98 Chancre Diagnosis. W. S. Gottheil, New York.
- 99 Laboratory Diagnosis of Syphilis with Demonstration of the Noguchi Modification of the Wassermann Reaction. F. A. Hulst and T. H. Dexter, Brooklyn.
- 100 *Simplified Method for Obtaining and Preparing Specimens of *Spirochaeta Pallida*. B. G. R. Williams, Paris, Ill.
- 101 *Metallic Tinkling in Hydropneumothorax. J. H. Barach, Pittsburg.
- 102 Modification of the Method of Making Wright's Blood Stain. R. Kilduffe, Philadelphia.

95. **Recognition of Tricuspid Disease.**—Stern is of the opinion that many instances of organic disease of the segments as well as of muscular or relative incompetence of the tricuspid valve are overlooked. When a patient is on his back and there is any tendency of distention of the jugular veins it will be evinced there and then. By lowering the head of the patient while he is still on his back, the jugular

veins become more distended, as a rule, and may begin to pulsate. Distention of the vein, or its pulsation, will increase in direct ratio to the lowering of the head, but when a certain point is reached, which is dependent on individual factors, the pulsation diminishes more or less and the engorgement may also recede. This lowering of the head, which in reality is but an extension, a stretching of the muscles of the neck, the veins, etc., is reflected in the tricuspid area, where murmurs are now noticed that were not perceptible before or which have been quite indistinct. The murmurs elicited while the patient is in this posture may be determined in accordance with the point of maximum intensity and the direction of transmission.

The examiner should stand behind the patient somewhat to the right of the head of the latter when an examining table is utilized. In case the examination is made in bed, the physician should be sitting at the right side of the head of the patient, who has been placed across the bed. In both cases the head of the patient should be supported by either the left hand of the examiner, or in advanced cases by both hands of an attendant. It should not be dropped at once over the edge of the examining table or bed, but should be brought down very gradually and be immediately elevated as soon as the dyspnea and the venous engorgement become excessive.

96. Hemolytic Test in Cancer and Tuberculosis.—It seems that in the blood serum of some cases of malignant disease—those generally associated with anemia and loss of weight—there exists a hemolytic property for alien red cells. It also appears that while this fact is interesting and may be of value in certain individual cases, similar manifestations are possible from the sera of patients non-cancerous. Smithies calls attention to this manifestation in cases of tuberculosis, syphilis and other disease conditions. It is noted, however, that the conditions in which this direct hemolysis is obtained are those frequently associated with anemia, loss of weight and cachexia. He has not noted that the reaction of reverse hemolysis mentioned by Crile as occurring in 92 per cent. of cases of tuberculosis is characteristic. It occurs occasionally, but is by no means characteristic, inasmuch as it also occurs in malignant disease, syphilis and other diseases. Smithies' work also shows that the transfusion of blood from one individual to another in cases of emergency is a dangerous procedure unless previously the hemolytic reactions of the two sera have been noted. In conclusion, he emphasizes that while the main mass of data is at present against the hemolytic reactions being characteristic for any single class of disease, yet the large number of cancer cases showing this reaction should urge us to seek modifications of the method in the hope that study of various sera along other lines will lead to the firm establishment of a specific reaction for cancer and other disease conditions which seem to have specific pathology.

100. Examination of Spirochæta Pallida.—The method described by Williams depends on two principles: First, that there are many spirochetes on the surface of every syphilitic ulcer, and second, that these show a preference for liquids, exhibiting a tendency to leave their host with the drawing off of certain liquids, properly applied. Williams first teases off the surface of a mucous patch or cutaneous ulcer with a toothpick, or if he is dealing with a papule or chancre he scrapes it gently with a sharp scalpel. The fluid, a warm physiologic salt solution, is quickly dropped on the surface and as quickly withdrawn for examination. If the spirochetes are to be examined in motion, the salt solution should be warm when the suspension is made and examination done at once. This technic carried out in detail has enabled Williams to find dozens of spirochetes in one field. He is usually able to make a diagnosis in six minutes.

101. Metallic Tinkling in Hydropneumothorax.—In the light of experiments performed, Barach says that metallic tinkling in hydropneumothorax is produced most typically, and in all probability most frequently, by the escape of a bubble of air from the fistulous opening of a diseased lung, below or at the level of the liquid. When metallic tinkling is heard as the result of a bubble of air coming up through the effusion, the sound is not produced at the bursting of the bubble on the

surface of the effusion, but with the separation of the bubble from the fistulous opening of the lung. Metallic tinkling can be produced by a bubble arising from the moist surface of a perforated lung above the level of the liquid, if the bubble is expelled with sufficient force. The characteristic qualities of the tinkling sound are determined by the density and size of the ring forming the fistulous opening, the expulsive force behind the bubble, the proportion of air and liquid in the chamber, the size and directness of the avenue of communication between the resonating chamber and the external atmosphere. Judging by the results of these experiments, Barach believes that the first three are the most potent factors in the production of typical metallic tinkling in hydropneumothorax. Metallic tinkling as heard in the chest is probably never caused by falling drops, an explanation which to the present has received the widest endorsement.

Medical Herald, St. Joseph

February

- 103 Dementia. G. H. Hill, Des Moines, Iowa.
104 *Splenectomy for Traumatic Rupture of the Spleen. W. B. Deffenbaugh, St. Joseph.
105 *Surgical Suggestions for Treatment of Chronic Appendicitis. A. I. McKinnon, Lincoln, Neb.
106 *Unrecognized Gall-Stone Disease. D. Morton, St. Joseph.

104. Abstracted in THE JOURNAL, Sept. 25, 1909, p. 1049.

105, 106. Abstracted in THE JOURNAL, Oct. 2, 1909, pp. 1125, 1127.

Journal of Advanced Therapeutics, New York

February

- 107 Effect of High-Frequency Currents in Diagnosis of Diabetes Mellitus. F. deKraft, New York.
108 Treatment by Electricity of Stiffened Joints. F. H. Humphris, London, England.
109 Relation of Physical Agents to Prophylactic Treatment. W. D. McFee, Haverhill, Mass.

St. Louis Medical Review

February

- 110 *Effect of Venereal Diseases on Women and Children. F. L. Bishop, St. Louis.
111 Effect of Venereal Diseases on Men. B. Lewis, St. Louis.
112 *Influence of Venereal Diseases on Conception and Heredity. F. J. Taussig, St. Louis.
113 Venereal Diseases and Blindness. J. Green, St. Louis.
114 *Physician's Relation to the Family in Prevention of Venereal Diseases. C. J. Luyties, St. Louis.
115 Venereal Diseases and the Social Evil. H. J. Scherck, St. Louis.

110. Effect of Venereal Diseases on Women and Children.—According to Bishop, 75 per cent. of all special and surgical operations performed on women are necessary because of gonorrheal infections. Thousands of women are not included in these figures because they do not come under surgical care, yet drag out a living death. Gonorrhea is credited with 80 per cent. of all inflammatory diseases peculiar to women. Of women infected by gonorrhea, 50 per cent. are rendered absolutely sterile; many others with gonorrheal infection are rendered sterile after birth of the first child—"one-child sterility." Sterile marriages are more often the result of incapacity than of choice. Syphilis has slain its thousands; 70 per cent. of children born of syphilitic parents died either before or shortly after puberty. Those who survive are often physical weaklings. The economic factors involved in the loss of health, of life, which these few but telling and undoubtedly conservative figures indicate, are items to be considered. The enormous outlay for medical and hospital care, the inability of women to be true homemakers because of impaired health, the discontent and discouragement because of sterility, the passing of domestic happiness, divorce—the real reason of which in many cases is the social disease—all indicate that these contagious and therefore preventable diseases should be studied both by the medical profession and the laity, and included in all public health education work.

112. Influence of Venereal Diseases on Conception and Heredity.—Taussig calls attention to one point often overlooked. Many of these women who are not infected at once, have one child and then become sterile. In fact, this "one-child sterility" as it is called, is considered by many to be characteristic of gonorrheal infection.

114. Physician's Relation to Family in Prevention of Venereal Disease.—The family physician as medical adviser, holds

a position of the greatest trust and honor. The various members of the family, young and old, confide in him as they would in their dearest friends, and often ask his advice and counsel concerning matters not pertaining to medicine. His long acquaintance with them grants him the privilege of introducing subjects which otherwise could hardly be mentioned. He, therefore, can call attention to these so-called social diseases and the dangerous infections incident to them. He can also discuss the most effective means of preventing them or of limiting and circumscribing their spread. This duty which has for its object protection of the innocent is one which realizes the highest ideals of preventive medicine. Instruction by the family physician should not be confined to the younger set alone. The people at large should be taught more and more about the extent of these diseases, about the ease with which they may be acquired, about the difficulty of curing them and the terrible results which may follow many years after infection. Education is the saving hope of the situation.

Bulletin American Academy of Medicine, Easton, Pa.

February

- 116 *Lowell vs. Faxon and Hawkes. A Celebrated Malpractice Suit in Maine. J. A. Spalding, Portland, Me.
- 117 Conference on Prevention of Infant Mortality. J. H. M. Knox, Baltimore.
- 118 *Relation of Alcohol to Infant Mortality. J. H. M. Knox, Baltimore.
- 119 The Waste of Infant Life. E. T. Devine, New York.
- 120 Institutional Prevention of Infant Mortality. H. Folks, New York.
- 121 Infant Mortality in Obstetric Practice. A. W. Tallant, Philadelphia.
- 122 *Relation of Tuberculosis to Infant Mortality. C. von Pirquet, Baltimore.
- 123 *Relation of Infant Mortality to Occupation and Long Hours of Work for Women. C. Hedger, Chicago.

116. Abstracted in THE JOURNAL, July 17, 1909, p. 224.

118, 122, 123. Abstracted in THE JOURNAL, Dec. 11, 1909, pp. 2027, 2028.

The Ophthalmic Record, Chicago

February

- 124 Extraction of Cataract in the Capsule. H. Smith, Jullundur Pnnjab, India.
- 125 Malronez's Operation for Extraction of Cataract. H. Chaud, Amritsur, Punjab, India.
- 126 Cataract Extraction in the Capsule—The Jullundur Patient. D. T. Vail, Cincinnati.
- 127 Extraction of Cataract in the Capsule. R. Jamison, Belfast, Ireland.
- 128 Cataract and Jullundur Smith. W. E. McKenzie, Etawah, India.
- 129 Extraction of the Lens in its Capsule. G. T. Birdwood, Cambridge, England.
- 130 Smith Operation—Toilette and After-Treatment. D. W. Green, Dayton.
- 131 Attitude of the Profession toward the New Operation for Extraction of Cataract in the Capsule. C. F. Clark, Columbus, Ohio.

Yale Medical Journal, New Haven

February

- 132 *Efficiency of the Positive Pressure Method in Thoracic Surgery, with Description of New Apparatus. J. M. Flint, New Haven.
- 133 Diarrheal Diseases. K. C. Mead, Middletown, Conn.
- 134 The Specialist and the General Practitioner. E. T. Bradstreet, Meriden, Conn.
- 135 Compensatory Hypertrophy of the Small Intestine Following Resection of the Large Portions of the Jejunum and Ileum. J. M. Flint, New Haven, Conn.
- 136 Practical Points in Administration of Anesthetics. R. F. Rand, New Haven, Conn.

132. **Positive Pressure in Thoracic Surgery.**—Flint has made some extensive experimental observations with regard to the value of the positive pressure method in thoracic surgery. It is his opinion that the positive pressure method of maintaining the normal pressure difference is the practical as well as the physiologic equivalent of the negative pressure method in thoracic surgery. Total pneumectomies in dogs may be done as successfully by the positive pressure as by the negative pressure method, provided that the intercostal incision is closed in such a way as to prevent a pressure pneumothorax. This can be accomplished by the use of an equalizing tube which is withdrawn in expiration after raising the intrapulmonic pressure. By the use of an aspirating apparatus with a water valve regulator, any desired degree of negative pressure can be restored to the thorax after operations carried out by the plus differential method or the Meltzer-Auer procedure. This converts, in effect, any positive pressure

apparatus into a negative pressure apparatus. More than half the lung tissue in dogs may be removed; bilateral lobectomies can be done in two sittings. Opening the pleura does not have any regular influence on the respiratory or cardiac rhythm. Ligation of the root or removal of the lobes tends either to reduce the rate of both pulse and respiration, or else to show no effect whatever in the majority of instances. Closure of the pleura causes an increase in the rate of both pulse and respiration in the majority of cases. The danger of vomiting is minimal and should not deter a surgeon from using a face mask for thoracic operations if he desires.

Chicago Medical Recorder

February

- 137 Responsibility of the Medical Profession. H. B. Favill, Chicago.
- 138 Puerperal Infection: Report of Case. T. J. Watkins, Chicago.
- 139 Visiting Nurses in Chicago. H. E. Fulmer, Chicago.
- 140 Treatment of Prolapsus Uteri. W. M. Thompson, Chicago.
- 141 Physiologic Therapeutics: Especially in Private Practice. W. S. Sadler, Chicago.
- 142 Acute Anterior Poliomyelitis. P. J. Peel, Chicago.
- 143 Management of Tetany and the Spasmophilic Diathesis as Observed in Berlin. A. H. Roler, Chicago.

Old Dominion Journal of Medicine and Surgery, Richmond

February

- 144 Ambroise Paré and his Times (1510-1590). T. Abbe, Washington, D. C.
- 145 A Message to Nurses. J. Collins, New York.
- 146 Pellagra. W. F. Drewry, Petersburg, Va.
- 147 X-Ray Work—Report of Cases. A. L. Gray, Richmond, Va.
- 148 Treatment of Pneumonia. W. K. Vance, Bristol, Va.
- 149 *Death from Lumbricoid Worms. C. M. Hazen, Bon Air, Va.
- 150 Vincent's Angina. G. A. Ezekiel, Richmond.

149. **Death from Lumbricoid Worms.**—A girl, 8 years old, was "sickly" and "thin" from her infancy, and always had a voracious appetite. Suddenly she became unwell, and within a few hours she passed into a coma, from which she never roused, except partially, death occurring five days later. During the first two days she had deficient kidney secretion. On the second day she passed two large worms after a dosage of calomel and normal saline by rectum. In the absence of diagnosis as to the exact cause of coma, treatment was eliminative and supporting, with normal saline solution every three hours by bowel, and strychnin from time to time when most needed. After several saline treatments worms of large and small size were thrown off in astonishing quantities. At times abdominal pain seemed to be severe and to be relieved by these discharges. The total evacuation must, from description, have been enormous as compared with the bodily weight of the poorly developed child. On the fourth day worms were discharged by mouth also. Death was due probably to toxemia from products of the parasites. No anthelmintic drugs were given, because of the intoxication and depression; the saline was probably active in this respect.

Woman's Medical Journal, Cincinnati

February

- 151 The Personal Equation as Related to Diseases of the Skin. L. D. Bulkley, New York.
- 152 Care of Infants who Must be Separated from their Mothers Because of Some Special Need on the Part of the Child. E. L. Coolidge, New York.
- 153 Cause and Prevention of Ordinary Colds. I. D. Kerr, Boston.

New York State Journal of Medicine, New York

February

- 154 *What can we do to Improve the Situation? C. G. Stockton, Buffalo.
- 155 *Effects of Alcohol as Observed in Dermatology. L. D. Bulkley, New York.
- 156 *Anemia. C. O. Boswell, Rochester.
- 157 *Spleno-medullary Leucemia. H. E. Smith, Norwich, and L. A. Van Wagner, Sherburne.
- 158 *The United States Pharmacopeia. E. H. Long, Buffalo.
- 159 Treatment of Failing Compensation in Chronic Valvular Disease of the Heart. W. M. Gibson, Utica.
- 160 Treatment of Cataract. T. H. Farrell, Utica.
- 161 Injuries to the Patella, with their Surgical Treatment. J. H. Mitchell, Cohoes.
- 162 Care of the Sick and Injured. J. C. Young, Cuba.
- 163 Cancer of the Uterus. A. B. Miller, Syracuse.

154, 157. Abstracted in THE JOURNAL, Feb. 12, 1910, pp. 557, 558.

155. Abstracted in THE JOURNAL, Feb. 26, 1910, p. 731.

156, 158. Abstracted in THE JOURNAL, Feb. 19, 1910, p. 643.

Western Medical Review, Omaha

February

- 164 Management of Appendicitis. B. B. Davis, Omaha.
165 Hall County Medical Society. J. L. Sutherland, Grand Island.

Journal of Infectious Diseases, Chicago

March

- 166 *Venom Hemolysis. P. Kyes, Chicago.
167 *Morphology of Malarial Plasmodia after Administration of Quinin, in Intracorpuseular Conjugation. C. F. Craig, U. S. Army.
168 *Distribution of Antibodies and their Formation by the Blood. L. Hektoen and A. J. Carlson, Chicago.

166. **Venom Hemolysis.**—Kyes emphasizes the following points: There is present in all venoms a hemolysin existing as one of a number of distinct toxins; this hemotoxin affects hemolysis only in conjunction with a so-called complementing substance which, however, may be found within the erythrocytes; so far as at present recognized the activating substances are lecithins. The reaction between the hemotoxins and lecithin is essentially a chemical reaction resulting in the formation of a complete lysin, and this complete lysin is a true toxin in that it stimulates the production of a specific antitoxin.

167. **Malaria and Intracorpuseular Conjugation.**—The importance of intracorpuseular conjugation, aside from biologic interest, lies in its relation to prophylaxis, because if the conjugating organisms are the cause of relapse, it is necessary that treatment be instituted promptly and hence that infection be recognized as early as possible. The early recognition of malarial infection rests on microscopic examination of the blood, which should never be neglected in any patient suffering from fever. The prophylaxis of malaria especially in regions in which this disease is rare, usually rests with the attending physician, because the early recognition of the disease and the prompt institution of proper treatment will effectually stop its spread so far as that patient is concerned. A false diagnosis or improper treatment will result in the patient becoming a source of infection to the community in which he resides.

168. A summary of the chief results in this article was given in a similar article by the same authors in THE JOURNAL, Jan. 8, 1910, p. 130.

Colorado Medicine, Denver

February

- 169 Medical Aspects of Blood Pressure. O. M. Gilbert, Boulder.
170 Blood Pressure in Surgery. H. M. Cohen, Denver.
171 Blood Pressure from the Standpoint of the Ophthalmologist. E. Jackson, Denver.
172 Blood Pressure from the Neurologic Standpoint. G. E. Neuhaus, Denver.

Montreal Medical Journal

February

- 173 Spinal Anesthesia. W. W. Chipman, Montreal.
174 *An Apparatus for Rectal Anesthesia. E. M. von Eberts, Montreal.
175 The Tuberculosis Dispensary as an Economic Factor. J. H. Burland, Montreal.
176 Organization of the Board of Health of Montreal in Regard to Contagious Diseases. J. E. Laberge, Montreal.
177 *Peculiar Course of a Stab Wound of the Liver. J. C. Fyshe, Bangkok, Siam.
178 Extreme Malocclusion of the Teeth with Description of the Measures Taken for its Relief. J. S. Ibbotson, Montreal.

174. **Apparatus for Rectal Anesthesia.**—The apparatus devised by von Eberts consists of an outer jar (in this case a galvanic cell) containing an ether bottle, the space between the cell and the bottle being filled with water at a temperature of 90° F. Through the rubber cork in the bottle is passed a long glass tube connecting with an ordinary cautery bulb, while the second perforation in the cork is occupied by a short tube which provides for the exit of ether vapor. Between the bottle and the rectal tube is introduced a T-tube for the rapid relief of tension within the bowel or the attachment of an oxygen supply. Should the ether tend to rise in the bulb tube through back pressure, a pair of hemostatic forceps should be applied between the bulb and the bottle. The metal ring placed in the bottom of the jar not only holds the ether bottle in position but diminishes the chances of breakage when hot water is passed into the jacket. The metal cap provides passage on one side for the thermometer and on the other for a funnel when the addition of hot water is found necessary.

177. **Stab Wounds of Liver.**—In this case there were two parallel stab wounds just internal to the right nipple. They were two inches long and extended from the lower margin of the fourth rib down and inward in the direction of the external intercostal muscle. On reflecting the pectorals the fifth rib was found cut through twice, just internal to the costo-chondral junction. One cut was $\frac{1}{4}$ inch internal to the other and a small wedge of cartilage was cut out cleanly *in situ*. In the right pleura was a small amount of fluid blood. The right lung was healthy, slightly collapsed and showed no injury of any kind. The other thoracic viscera were normal. The diaphragm on the right side showed about the middle and corresponding in direction with the external wounds, an incision 2 inches long, the lower angle of which was $3\frac{1}{2}$ inches away from the costo-phrenic junction in a straight line. In the abdomen was fluid and clotted blood. The right lobe of the liver was found to be stabbed right through from the diaphragmatic to the inferior aspect. The wound on the inferior surface was $1\frac{1}{2}$ inches long and was situated just to the right of the foramen of Winslow. The cystic duct was nicked at the inner end of the wound. There was no damage to any part of the abdomen. The points of special interest are: (1) That the knife should have completely missed the right lung; (2) that a knife which made a wound $1\frac{1}{2}$ inches long on the inferior surface of the right lobe of the liver in the position above detailed should have done no harm to the duodenum or upper pole of the kidney.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

Lancet, London

February 26

- 1 *The Streptotrichoses and Tuberculosis. A. G. R. Foulerton.
- 2 Pulmonary Tuberculosis in Family Practice. H. B. Shaw.
- 3 Cases of Mental Disorder. C. A. Mercier.
- 4 *Pericardial Effusion: Its Diagnosis and Treatment. S. West.
- 5 *Singular Combination of Fractures of the Leg. W. A. Lane.
- 6 *Patent Urachus and Encysted Urinary Calculi. C. Dykes.
- 7 *Obstruction of the Small Intestine Caused by a Meckel's Diverticulum. G. H. Makins.
- 8 Sudden Deafness Occurring During Eclampsia. M. Yearsley.
- 9 *Cocain Poisoning. A. G. Gibson.
- 10 *Influence of Narcotics on Phagocytosis. L. Reynolds.
- 11 The Circulatory System (continued). H. Campbell.

1. **Streptotrichoses and Tuberculosis.**—After considering in some detail the general characteristics of the streptotriches and the pathology of the infections which they cause, Foulerton deals with the evidence which is available in support of these two propositions: (1) That under the name of "tuberculosis" there are commonly included infections caused by more than one species of parasite; and (2) that the parasites, generally reputed to be bacilli, which are the cause of tuberculosis, belong in reality to a higher group of organisms and should as streptotriches be included with the hyphomycetes, or mould fungi. This class of infections has a wider interest because of the apparent affinity between certain undoubted species of streptotriches and the parasite, or parasites, of tuberculosis. Foulerton's investigations into the pathology of streptothrix infections, together with much work bearing on the subject which has been carried out elsewhere, have led directly to a very definite conclusion as to the relationship, amounting to actual generic affinity, between this class of infections and those recognized under the name of tuberculosis. And further, systematic comparison of the biologic characteristics of the recognized streptothrix organisms on the one hand and of different "strains" of the parasite of tuberculosis on the other, he says, leaves no doubt as to the correctness of the opinion held by certain earlier pathologists who, within a few years of Koch's announcement of his discovery of the cause of tuberculosis, maintained that the reputed bacillus was not a fission fungus at all, but rather belonged to a higher group of mould fungi.

4. **Treatment of Serous Pericardial Effusion.**—West holds that paracentesis is rarely necessary, for serous effusions in the course of rheumatic fever usually disappear spontaneously, and often produce no urgent symptoms. Absorption, when it

once begins is rapid, more rapid than in the pleura. The effusion is, no doubt, removed in the same way, by the lymphatic pump, worked by the respiratory movements on the one side and by the cardiac on the other. Exploratory punctures may be made in any place if the physical signs suggest it. In an ordinary case, when the diagnosis is clear and there is choice of place given, the sites selected and advocated have been four: 1. In Sibson's notch—*i. e.*, in the third left intercostal space near the sternum—a dangerous place on account of the proximity of the left auricle. 2. In Rotch's angle, in the fifth right intercostal space, to the right of the sternum—another risky place, because the right auricle cannot be far away, even if the effusion be of large size. 3. The fifth space to the left of the sternum. This spot is advocated because the puncture is made in the spot which is not covered with lung, and so the pleura is not perforated. Though this may be a good place for trephining the thorax with a view to incising the pericardium, it is not the best place for paracentesis. Nor need the risk of puncturing the pleura with the needle or with a fairly large trocar and cannula be seriously considered. In paracentesis the mere perforation of the pleura on the way to the pericardium does no harm. 4. The safest place is the fifth or sixth intercostal space outside the left nipple line, but well within the area of the dulness, for here, owing to the displacement of the heart upward and the distention of the pericardium outward, is the widest space between the heart and the seat of puncture. All the fluid that can be obtained should be removed. Often it does not reaccumulate, but if it should a second and third paracentesis may be performed or as many as necessary.

5. **Singular Combination of Fractures of the Leg.**—The case reported by Lane illustrates the association in the same subject of an abduction fracture of the ankle-joint, or, as it is more commonly called, Pott's fracture, with a spiral or torsion fracture of the tibia. The patient, in an athletic mood, arranged to jump over a flower-bed. He slipped, twisting his foot very painfully as he approached it, and apparently leaping off the normal leg landed on the damaged one which he felt break with his weight. Lane regards it as being clear that the spiral fracture of the lower end of the fibula was broken by the excessive abduction of the foot, while the tibia yielded to the torsion to which it was exposed when he landed on the foot already over-abducted because of the fracture of the fibula.

6. **Patent Urachus and Encysted Urinary Calculi.**—The patient was apparently healthy apart from his urinary complaint, which dated back some five years or more. Several small concretions lay free on the base of the bladder but on commencing to crush the first, the beak of the lithotrite impinged on what appeared to be a much larger calculus occupying a position at the apex of the half-distended bladder. After the first stone had been crushed the projecting portion of this larger calculus was easily seized between the blades of the lithotrite, but was found to be fixed to the bladder wall. To crush this calculus *in situ* appeared dangerous, if not impossible, so Dykes performed lateral lithotomy, and the forefinger passed into the bladder. The calculus was now found just within reach of the finger. With the forefinger on the tip of the calculus, and the other hand on the abdominal wall it was estimated to be of considerable size, and its upper portion seemed very close under the examining hand beneath the abdominal wall in the middle line. It was evidently an hour-glass stone, the deeper half being considerably larger than the projecting portion felt by the finger. The projecting portion being steadied in the grasp of lithotomy forceps the perforated end of a long probe was insinuated alongside the neck and gradually maneuvered round the whole circumference, loosening the retaining tissues till by gentle traction and rotation of the forceps an "hour-glass" calculus was safely delivered. A second calculus immediately dropped from the same pocket into the bladder cavity. It, together with the three small concretions, the presence of which on the bladder floor had already been detected, was now removed, and the debris of the small stone first crushed, washed out. In case other concretions might still be lying in the pocket, its recesses were explored by a probe. Nothing further was

found, but the probe passed up in the middle line, easily palpable through the abdominal wall to a point two inches below the umbilicus. At the upper end the pocket seemed to be contracted to a mere sinus. Convalescence was rapid and uncomplicated.

7. **Obstruction of Small Intestine.**—This case is of some interest from the points of view of diagnosis and pathology. The history provided none of the special features of obstruction from a Meckel's diverticulum, except the obviously mild nature of the constriction, since flatus was passed throughout. On the other hand, the history of the initial pain and malaise, continuing for two days, followed by the development of vomiting and constipation, suggested an attack of perforated appendicitis, while this theory was supported by the character of the abdominal distention, the tenderness beneath the left rectus, and the fulness in Douglas' pouch, all of which suggested that the obstruction was symptomatic and depended on the presence of pus in the pelvis. The pathologic interest Makins believes lies in the fact that the condition forms another link in the chain of resemblance between the possible accidents to which both Meckel's diverticulum and the appendix are alike liable.

9. **Cocain Poisoning.**—In this case the symptoms of poisoning manifested themselves after two applications of a 2 per cent. solution of cocain to the throat and tonsils made within an hour.

10. **Influence of Narcotics on Phagocytosis.**—From experiments performed by him, Reynolds concludes that morphin exerts a marked influence on the leucocytes. Not only does it check diapedesis, but phagocytosis is diminished in a marked degree. The growth of bacteria, on the other hand, is not appreciably affected. What bearing has this on the practice of medicine and surgery? It is probable that in most surgical operations a certain number of pathogenic organisms gain entrance to the wound, however carefully asepsis be observed. The further history of the case turns on this point. Will the phagocytes be able to destroy these bacteria before the latter have multiplied sufficiently to gain the upper hand? If morphin temporarily paralyzes the activity of the phagocytes, if this drug be given time is lost during which the bacteria multiply. When the narcosis passes off the phagocytes may be unable to destroy the bacteria on account of their number and the paralyzing effect of the toxins produced by them; in fact by giving the morphin the chances of sepsis have been increased.

British Medical Journal, London

February 26

- 12 *Conditions which Simulate Dyspepsia. R. Hutchinson.
- 13 *Medical Treatment of the Poor. J. C. McVail.
- 14 Vaccination in India. A. Buchanan.
- 15 *Afebrile Erysipelas. W. C. Macaulay.
- 16 Operation for Elephantiasis of the Scrotum. F. A. Baldwin.
- 17 *The Intestinal Stitch. E. K. Herring.
- 18 The Cerebellum and its Diseases. J. S. R. Russell.

12. **Conditions Simulating Dyspepsia.**—Hutchinson describes cases in which the patients are believed to be suffering from gastric disorder when they are either not so at all or only secondarily, the gastric symptoms being due to some other disease, proving that when a patient complains of gastric symptoms, the other organs must also be investigated.

13. **Medical Treatment of the Poor.**—The proper feeding and rearing of pauper children, the control of boy labor, the decasualization of labor, labor bureaus, unemployment insurance, detention colonies for the vicious and the lazy, and for weak-willed ne'er-do-wells, the safeguarding of imbecile or feeble-minded young women by similar detention, the enforcement of every practical check on alcoholic indulgence—all these and other agencies have to be thought of as part of any sufficient plan of reform. Improvement in the general conditions of life and work resulting from such measures would quickly add to the numbers who would be in a position to become paying members of provident institutions. So long as human nature remains what it is, no panacea for all its defects can be found, but the simultaneous operations of agencies regarding whose value there is practically unanimous agreement, will do much in the desired direction. One of

these agencies will be better preventive and curative medical treatment of the poor, and in whatever way that be achieved, consistently with the preservation of individual responsibility, it will play an important part in the advancement of the national welfare.

15. **Afebrile Erysipelas.**—The two cases reported by Macaulay appear anomalous in that in both the temperature was for the most part subnormal and in both the cerebral symptoms were early and profound. The latter manifestation was perhaps due to the fact that there was very little effort on the part of either patient to combat the disease—the one being an elderly man of enfeebled constitution, and the other an infant 3 weeks old. The diarrhea in one case also appears unusual, constipation being the rule. It probably indicated a profoundly toxic condition.

17. **The Intestinal Stitch.**—Herring attempts to show that the Lambert, Cushing and Halstead intestinal stitches are theoretically at fault. Experience teaches that they will each make a good union, but that is not the point. These faulty methods, he declares, should be banished or else put quietly into the background and some stitch more nearly approaching the ideal given the place of honor. He lays down four fundamental principles which must be carried out in every method of stitching which aims at the ideal: (1) The stitches must not tear through; (2) broad surfaces of union must be brought together evenly; (3) the stitches must be buried; (4) the application must be simple. He pictures such a stitch.

Medical Press and Circular, London

February 23

- 19 *Diseases of the Larynx; Especially Hoarseness and Loss of Voice. H. W. Fitzgerald.
20 *The Cerebellum and Its Diseases. J. S. R. Russell.
21 Operative Technic of Fractures of Femur. R. L. Joynt.
22 Modern Methods of Delivery in Contracted Pelvis. E. H. Tweedy.

19. **Diseases of the Larynx.**—The following formulas for nose douches are used frequently at the Throat Hospital, Golden Square, London:

	gm. or c.c.	
Bicarbonate of soda.		
Biborate of soda, āā.....	20	or gr. iii
Phenol	06	gr. i
White sugar	25	gr. iv
Water	30	3i

This is used two or three times daily. Or:

Bicarbonate of soda.		
Biborate of soda.		
Chlorid of soda, āā.....	15	or gr. ii
White sugar	30	gr. v
Water	30	3i

Or, insufflation, such as:

Menthol	50	or gr. viii
Iodol	5 30	gr. lxxx
Boric acid in fine powder	15 30	gr. cc
White sugar	30	3i

Gargles, such as:

Chlorate of potash	65	or gr. x
Alum	25	gr. iv
Glycerin	65	gr. x
Water	30	3i

To spray or gargle the throat three or four times daily. Or:

Borax	1 6	or gr. xxiv
Glycerin,		
Tincture of myrrh, āā.....	1 6	m. xxiv
Water	30	3i

Mild alkaline astringent.

20. Published in *British Medical Journal*, Feb. 26, 1910.

Clinical Journal, London

February 23

- 23 Acute Poliomyelomyelitis. F. E. Batten.
24 Practical Hints for Consumptives. M. Paterson and F. C. Shrubbsall.

Journal of Tropical Medicine and Hygiene, London

February 15

- 25 Relationship of *Microfilaria Diurna* to *Filaria Loa*. D. Burrows.

- 26 Filariasis in the Ikotekpen District, Southern Nigeria. P. F. Foran.
27 Account of Some of the Helminths Occurring Among South African Natives (continued). G. A. Turner.

Journal of Obstetrics and Gynecology of British Empire, London

February

- 28 Ovarian Tumor Complicating Pregnancy, Labor, and the Puerperium; Eight Recent Cases; Special Reference to Treatment. G. B. Marshall.
29 Histologic Changes Associated with Early Abortion; Special Reference to Vessels of the Decidua. B. P. Watson and H. Wade.
30 Wertheim's Operation, Followed by Prolaps. A. Donald.

Intercolonial Medical Journal, Melbourne

December

- 31 Necessity for Organization in the Medical Profession. R. Worrall.
32 Tubal Pregnancy. G. Horne.
33 Estimation of Cranial Cubic Capacity and the Correlation of Size of Head to Intellect. J. H. Anderson.
34 Application of Craniology to Clinical Medicine. J. W. Barrett and W. P. Ore.

Bulletin de l'Académie de Médecine, Paris

February 15, LXXIII, No. 6, pp. 137-184

- 35 *Superheated Air in Treatment of Gangrene. M. Dienlaffoy.
35. See abstract No. 43 below.

Bulletins de la Société de Pédiatrie, Paris

January, XII, No. 1, pp. 1-82

- 36 *Test of Time Required for Passage of Food through Infant's Gastrointestinal Canal. (Passage du carmin à travers le tube digestif des nourrissons.) Nobécourt and P. Merklen.
37 *Pseudoachondroplasia. A. Mouchet and Séguinot.
38 Favorable Outcome of Plastic Operation on the Pylorus in Young Infant. (Résultat éloigné d'une pyloroplastie pour sténose hypertrophique du pylore chez un nourrisson de deux mois.) H. Dufour and P. Frédet.
39 *Lymphosarcoma of Glands and Testicles. P. Lereboullet and A. P. Marcorelles.
40 Two New Cases of Bacterial Meningitis without Cellular Reaction. E. Lesné and L. G. Simon.
41 *Alkaline, Neutral and Acid Reactions of the Stools and their Importance in Infant Pathology. H. Triboulet and Troussseau.
42 *Ulceration of Iliac Artery in Contact with a Drain. (Nouveaux cas d'ulcération des vaisseaux iliaques externes au contact des drains.) Savariaud.

36. **Time Required for Passage of Food Through Infant's Gastrointestinal Tract.**—About 1 grain of pulverized carmin was given to the infants as they were nursing, and the time of the appearance and disappearance of the stain in the stools was recorded. The infants were between 4 days and nearly 3 months old and were breast-fed and normal. The stools may show the stain in from 3 to 10 hours, and the stain may persist for a variable time; it never lasted longer than 21 hours in 8 of the 10 tests reported. The method is valuable for marking the stools from a certain feeding.

37. **Pseudoachondroplasia.**—The girl of 14 in the case reported presented a malformation with certain points in common with and others differing from true achondroplasia, dysplasia of the bones and what is called fetal rachitis.

39. **Lymphosarcoma of the Glands and Testicles.**—Lereboullet reviews the clinical data and autopsy findings in the case of a boy of 14 with malignant degeneration of both testicles, the histologic features of which do not concord with any known species of cancer. The inflammatory and sclerous elements associated with the neoplastic tendency, the prevalence of giant cells and the positive response to the cutaneous and intradermal tuberculin tests, suggest that tuberculosis may have been the primal cause of the lymphosarcoma in this case. The localization of the lymphosarcoma in the testicles and dura mater induced a special and deceptive syndrome, the numerous timefied glands and spasmodic paraplegia suggesting an unmistakable tuberculous affection at first until microscopic examination of an excised gland threw doubt on its tuberculous character. The case was finally classed as an instance of the neoplastic reaction of the tissues to the tubercle bacilli to which Gougerot has recently called attention in his work on non-follicular bacillotuberculosis. Tollemier has reported a case of lymphosarcomatosis starting in the tonsils in a girl of 9, which terminated fatally in 2 months, but with nothing to incriminate the tubercle bacillus.

41. **Diagnostic Importance of Alkaline and Acid Reactions of Infants' Stools.**—Triboulet has been testing the reaction of

infants' stools in a large number of cases, and has found that the stool of the normal breast-fed infant gives an acid reaction; a neutral or an alkaline reaction should be regarded as an index of pathologic conditions. The stool of the bottle-fed infant, on the other hand, is alkaline. A neutral or acid reaction with a bottle-fed infant, he asserts, indicates defective digestion. The digestive disturbances may be of various kinds, but the liver functioning is generally more or less at fault. It is this insidious insufficiency on the part of the liver, he says, which is responsible for so much of the acute disturbance in the serious toxi-infectious diseases, typhoid, pneumonia, etc. Reviewing the experiences at the clinic with measles in infants during the last year, he found an abnormal reaction in 91 per cent. of the fatal cases of measles; in 64 per cent. of the serious cases terminating in recovery, but in only 10 per cent. of cases of the mild forms of the disease. The predominance of an alkaline or acid reaction in the stools, corresponding to breast or bottle feeding, can thus yield important information in regard to the prognosis, etc. The tests are made with litmus paper.

42. Ulceration of Iliac Vessels in Contact with a Drain Tube.—Savariand adds 7 new cases to one he has found on record in which the iliac artery or vein or both ulcerated in consequence of contact with a drain. Fatal hemorrhage resulted in some of the cases. Even a soft drain resting lightly on the vessels is liable to do harm.

Presse Médicale, Paris

February 16, XVIII, No. 14, pp. 121-128

43 *Superheated Air in Treatment of Gangrene. (Gangrène du pied et de la jambe chez un homme âgé et diabétique.—Artérites oblitérantes.—Heureux résultats des applications de douches d'air surchauffé à très haute température.—Appareil aéro-thermogénérateur.) M. Dieulafoy.

February 19, No. 15, pp. 129-136

44 Acute Chorea and Psychic Disturbances. Rémond and Voivenel.
45 Galvano-Ionic Medication. J. Larat.

43. Superheated Air in Treatment of Gangrene.—In one case reported, the patient was a man of 64, diabetic for 20 years, and the gangrene of the leg was evidently the result of obliterating arteritis. As the urine contained 27.45 gm. of sugar and 13.92 gm. of acetone to the liter, and the pulse was weak and at 140, amputation was out of the question. The patient's strength was kept up by yolks of eggs in bouillon, given by the spoonful, with other suitable measures, alkalines, etc., and a jet of superheated air was played on the gangrenous limb. The aero-thermo-generator, as Dieulafoy calls the apparatus devised for the purpose, is attached to the electric light wire. It can heat the air to 700° C. and force it out in a strong jet. After a week's application of the hot air douches, with the air at 300° C. on the gangrenous parts and 80 to 100° on the sound parts, each daily sitting lasting from 30 to 45 minutes, conditions began to improve and by the end of the third month the local and general improvement had reached a point when amputation could be successfully done. The hot air practically cooked the tissues, keeping the gangrene dry and the tissues mummified. The applications were not very painful, the patient standing them well. In a second similar case not treated with the hot air, the gangrene was oozing and the process became infected, causing threatening complications. The hot air treatment, the author asserts, prevents such secondary mishaps. The lesions of obliterating arteritis and senile changes seemed to be identical in both cases.

Revue de Chirurgie, Paris

February 10, XXX, No. 2, pp. 135-326

46 *Technic of Colopexy for Prolapse of the Rectum. E. Quénu and P. Duval.
47 *Echinococcus Disease in the Lung. (Kystes hydatiques du poumon.) Tuffier and J. Martin. Commenced in No. 1.
48 *Hematoma in the Mesentery. (Les kystes sanguins du mésentère.) L. Timbal. Commenced in No. 1.
49 *Modern Treatment of Popliteal Aneurisms. (Revue critique sur le traitement moderne des anévrysmes poplités.) E. Quénu and C. Muret.

46. Colopexy for Rectal Prolapse.—Quénu and Duval give an illustrated description of the technic they have applied in 3 cases with satisfactory outcome, urging the superiority of colopexy over other means of correcting prolapse of the

rectum of abdominal, congenital origin. When the prolapse is of perineal origin, suture of the levator muscles, combined with recto-syndesmopexy, according to the technic previously described by Quénu, answers the purpose. With the colopexy the pouch of Douglas is obliterated and then a row of sutures is applied to fasten the pelvic colon to the rear aspect of the bladder, to the left pelvic peritoneum and the iliac peritoneum.

47. Echinococcus Disease of the Lung.—Tuffier and Martin present data to demonstrate that echinococcus disease of the lung may present itself under the guise of tuberculosis, pleurisy or pneumonia; there is no pathognomonic sign but presumptive evidence is afforded by polycythemia with from 5,800,000 to 6,890,000 reds and 10,000 or 15,000 whites—polynuclears with eosinophilia of 4 or 8 per cent. Roentgen-ray examination confirms the presumption of a hydatid cyst as also fixation of complement in the hemolytic test. Without operative intervention fully half the cases of echinococcus disease of the lung terminate fatally, and the proportion of fatalities is even larger in the cases in which puncture is the sole reliance. The most favorable results may be counted on when the cyst is still closed. The authors have been unable to find on record any cases in which pneumotomy was required a second time for a hydatid cyst of the lung. They give brief details of 35 cases in which pneumotomy was done, including Steck's case reported in THE JOURNAL in 1898. There are only 2 deaths in the list and in one of these cases the cyst was not found; the patient in the other case succumbed to hemoptysis two months after pneumotomy for a suppurating cyst in the base of the right lung.

48. Mesenteric Blood Cysts.—Timbal concludes his article on this subject by extolling the method of opening the cyst and suturing the lips to the wound—marsupialization. He compares the results obtained by puncture, extirpation and marsupialization and reviews the symptoms and course. The tumor frequently may be the first sign of the development of the cyst; in other cases digestive disturbances may occur and then subside, only to return later with greater intensity—colics, vomiting and constipation—the attacks recurring at irregular intervals. A number of the patients were treated for dysentery, liver trouble, etc., years passing before the cyst was diagnosed and the patient cured at once by its removal. Pain was not experienced in 5 of the cases on record, but in 26 others it was severe, paroxysmal or continuous, indicating compression of organs or nerves, with resulting functional disturbances. The genital functions are frequently disturbed, menstruation becoming painful and irregular or being suppressed altogether. The cyst is generally median and in the region of the umbilicus and extremely movable. A spontaneous cure is recorded only in 2 of the total 32 cases he reviews.

49. Treatment of Popliteal Aneurism.—Quénu and Muret analyze the recent literature on the subject of surgical treatment of aneurism, comparing the various technics. Their conclusion is that for the majority of cases Matas' endo-aneurismorrhaphy, described in THE JOURNAL, Sept. 29, 1906, p. 990, and Nov. 14, 1908, p. 1667, is the superior technic as this permits individualization of measures to suit the special conditions exposed when the vessel is opened. Goyanes' method may possibly have a future, they say; this makes a double anastomosis between the artery and vein, possibly excising or isolating the aneurism pocket.

Semaine Médicale, Paris

February 23, XXX, No. 8, pp. 85-96

50 Glandular Canceroid in the Breast, Affecting only the Skin, of Thirty Years' Growth. (Un épithélioma du sein à marche extrêmement lente, végétant depuis longtemps dans la peau, peut-il perdre ses caractères au point de simuler un cancer malpighien?) G. Caussade and L. Cotoni.
51 *Formaldehyd Sterilization by Slow Combustion of Straw. (Désinfection en surface de certains locaux par la combustion incomplète de la paille.) A. Trillat.

51. Formaldehyd Sterilization by Slow Combustion of Straw.—Trillat explains the mechanism by which the aldehyd and polyphenol substances generated in slowly burning straw result from oxidation of the gases of combustion acting on the hot straw charcoal. In his experiments he found polymerized formic aldehyd in the proportion of 0.2 to 2 gm. per kilogram of the straw by weight. The polyphenols generated

at the same time add their disinfecting action; other important factors in the sterilization are the high temperature and the presence of pyroligneous acid. All antiseptics, and especially formaldehyd, have a more powerful action in an acid atmosphere and at higher temperatures. He advises plugging all crevices and piling the straw in layers of dry straw alternating with damp layers. The temperature of the enclosure should be 87 F. at least, and it is best to set several of the straw fires at work at once. In a cellar of 140 cubic meters, 18 kilograms of straw were burnt thus and objects contaminated with diphtheria and colon bacilli were rendered sterile in less than two days and all but 1 in 12 tests with typhoid bacilli and 5 in 12 tests with anthrax spores. This method of sterilization is only adapted for cellars, sewers, tunnels, stables, etc., as the walls are slightly smoked. The sterilization is only superficial.

Archiv für Verdauungs-Krankheiten, Berlin

February, XVI, No. 1, pp. 1-120

- 52 *Dilatation of the Esophagus. (Erweiterungen der Speiseröhre.) F. Umber.
- 53 *Importance for Diagnosis and Treatment of Schmidt's Test Diet in Intestinal Disease. (Wert der Schmidtschen Probekost bei Darinkrankheiten.) W. Robin.
- 54 *Recurrences after Operative Removal of Gall-Stones. (Ueber Rezidive nach operativer Behandlung von Gallensteinen.) S. Mintz.
- 55 *Gall-Stone Colic with Movable Gall-Bladder. (Neue Form von Gallensteinikolik bei beweglicher Gallenblase.) M. Buch.
- 56 *Local Eosinophilia and Intestinal Disease Accompanied with Eosinophilia. J. Komarowsky.

52. **Dilatation of the Esophagus.**—Umber reports a typical example of the "pulsion" diverticulum and of diffuse dilatation in the upper and lower part of the esophagus. In the first case the father of the patient had a similar affection, confirming the congenital tendency to special weakness of the muscle at the junction of the pharynx and esophagus. The physiologic internal pressure in the esophagus, to propel the food along, causes protrusion of this part of the wall, with formation of a diverticulum in time. As it is due to the propulsion of the food, it is called a "pulsion" diverticulum. The disturbance in swallowing, regurgitation, tumor in the neck and murmur suggested the diagnosis, which was confirmed by Roentgen-ray examination. The case of diffuse dilatation illustrates, he states, that high degrees of ectasia may develop without primary stenosis, exclusively on the basis of a primary congenital atony of the wall of the esophagus.

53. **The Schmidt Test Diet for Diagnosis and Treatment of Intestinal Disturbances.**—Robin has been systematically applying Schmidt's diet in 42 cases during the last three years, and is convinced of its great importance for proper differentiation and treatment of chronic bowel trouble. He gives the details of six cases, each a type of various conditions, in which this method of testing the functioning gave useful information, leading to a complete cure of conditions which had previously resisted all kinds of treatment applied haphazard. Examination of the stools during the test ration supplied the clue to the disturbances, revealing the special elements in the food which the patient was unable to digest properly.

54. **Recurrence After Operative Treatment of Gall-Stones.**—Mintz reports two cases of unmistakable recurrence of gall-stones after removal of the gall-bladder and drainage of the ducts. He is convinced that surgical intervention should be limited to cases of gall-stones with suppurative inflammation of the gall-bladder and chronic obstruction of the common bile duct, and, under certain conditions, chronic serous cholecystitis.

55. **Gall-Stone Colic with Movable Gall-Bladder.**—Buch gives an illustrated description of a case in which two large stones filled the gall-bladder. The latter was movable and its movements were evidently responsible for changes in the position of the stones, their movements causing the severe colic.

56. **Local Eosinophilia and Eosinophilia with Intestinal Diseases.**—Komarowsky reviews recent research in this line, of which a large amount has been done in Russia, and reports two cases of amebic enteritis with local eosinophilia without general eosinophilia and without Charcot-Leyden crystals. In both cases the stools contained a little blood. In two other

cases there was local eosinophilia accompanying severe colitis, the eosinophilic cells forming the main mass of the leucocytes in the intestinal mucopurulent secretion, but there were no Charcot-Leyden crystals. His conclusions are that the hemolytic processes and phagocytosis occurring in the intestine are sufficient to explain the intestinal eosinophilia. This throws light on the eosinophilia observed with parasitic affections. One of his cases may be regarded as belonging to the type of exudative eosinophilic proctitis, no actual ulcers developing.

Berliner klinische Wochenschrift

February 7, XLVII, No. 6, pp. 229-276

- 57 Congenital Defect in the Heart. (Fall von congenitalem Vitium.) F. Kraus.
- 58 *Antidiabetic Foods on the Market. (Ueber Diabetiker-Gebäcke des Handels.) A. Magnus-Levy.
- 59 *Early Syphilitic Jaundice. (Zur Kenntnis des Icterus syphiliticus præcox.) A. Buschke.
- 60 Origin of Emphysema of the Lung. (Entstehung des Lungenemphysems.) O. Bruns.
- 61 The Hufeland Centennial. (Hufeland und die Hufelandische Gesellschaft.) D. v. Hansemann. (Hufeland als Balneologe.) L. Brieger. (Hufeland und das Rettungswesen.) G. Meyer.

February 7, No. 7, pp. 277-324

- 62 *Rheumatic Polyserositis. (Ueber Polyserositis rheumatica.) E. Mosler.
- 63 *Prognosis of Carcinoma. L. Brieger.
- 64 Roentgen-Ray Examination of Motor Functioning of Stomach. (Zur Motilitätsprüfung des Magens mittels Röntgenstrahlen.) E. Schlesinger.
- 65 Seroreaction in Syphilis. (Mitteilungen zur Wassermann'schen Reaktion.) R. Ehrmann and H. Stern.
- 66 Prevention of Prolapse of Iris after Cataract Operations. (Zur Verhütung des Irisprolapses nach der Staroperation ohne Iridektomie.) F. Geis.
- 67 *Action of Radium Emanations on Man. (Wirkung der Radiumemanation auf den Menschen. IV.) Loewenthal.
- 68 Action of Hydrochloric Acid on Albuminoids. (Weitere Beiträge zur Wirkung der Salzsäure auf die Arteigenheit der Eiweissstoffe.) J. Kentzler.
- 69 Advantages of Iodin for Surgical Sterilization. (Desinfektion der Haut mit Jodtinktur.) Federmann.
- 70 Prophylaxis of Typhoid. (Einiges über Typhus.) M. Klehmet.
- 71 Microscopic Determination of Acidosis in Infants. (Zur Frage des mikroskopischen Nachweises der Säuglingsacidose.) G. Tugendreich.

58. **Antidiabetic Foods.**—Magnus-Levy has examined nearly four dozen different foods on the market advertised for diabetics, and he found that they frequently failed to conform to the alleged standard. He urges manufacturers to use greater care in insuring uniformity in their products. He advocates two kinds of bread as enough for all practical purposes: one with a maximal content of 30 per cent. starch, the other with 5 or 10 per cent. starch. Other ingredients should be proportionately 16—20 per cent. albumin; 12—14 per cent. fat; 2 or 3 per cent. ash (salt), with 1 to 3 per cent. cellulose and 30 per cent. starch.

59. **Syphilitic Jaundice.**—Bruns found leucin and tyrosin in the urine in a case of mild jaundice in the early phase of syphilis. This finding is characteristic of acute yellow atrophy of the liver, but the mild course of the jaundice in this case shows that a parenchymatous inflammation of the liver may occur and retrogress without leaving serious traces. It is possible, however, that the liver may prove less resistant thereafter. All Bruns' patients with syphilitic jaundice in the last two years have been examined for tyrosin and leucin, but this, with two infants with inherited syphilis, were the only ones giving a positive response.

62. **Acute Rheumatic Polyserositis.**—Mosler has encountered 15 cases during the last 18 months in which the serous membranes showed signs of inflammation in the course of an acute articular rheumatism, or the polyserositis developed with only slight involvement of the joints. In both forms the disease has a sudden onset, the pleurisy and pericarditis developing together and abruptly. The violent dyspnea and other symptoms observed are evidently the work of the pericarditis without effusion; the pleura generally has a bilateral effusion. In some of the cases the pleuritis and pericarditis are complicated with endocarditis developing with the others or not long after them. The pleurisy in these cases does not require tapping as the effusion generally subsides spontaneously and without production of linear adhesions, as also occurs with the pericarditis, but the inevitable myocarditis takes a longer time for its retrogression and usually entails mitral insufficiency. The prognosis is the more favorable the

longer the interval since puberty, the heart of the young feeling the deleterious influence of the inflammation more intensely. His patients were between 14 and 49; the 4 left with valvular incompetency were 14, 15, 20 and 34 years old. One patient, a boy of 16, died.

63. Prognosis of Cancer.—Brieger cites an example to show the valuable information to be derived from estimation of the antitryptic power of the blood serum in regard to the prognosis of cancer. In the case described it was 1 to 7 at first but dropped to the normal proportion, 1 to 4, after removal of the cancer. A few months later, however, the proportion rose to 1 to 8, testifying to the development of metastases, which soon became manifest on palpation. It was thus possible to detect the metastases by the antitryptic ferment test before any other signs revealed their presence. The principles and technic of the antitryptic test were given in *THE JOURNAL*, July 4, 1908, page 83.

67. Action of Radium on Man.—Loewenthal concludes from his observation and experimental research that the biologic action of radium and radium emanations is evidenced in an activation of the ferments in the body; he was unable to discover anything suggesting an antitoxic or similar influence.

Centralblatt für die Grenzgebiete der Med. und Chir., Jena

February 14, XIII, No. 2, pp. 49-80

- 72 Anatomic Anomalies in the Mesentery and Intestines. (In Sachen des Mesenterium commune und der Darmvarietäten überhaupt.) W. Koch. Commenced in No. 1.

Deutsche medizinische Wochenschrift, Berlin

February 17, XXXV, No. 7, pp. 297-344

- 73 Transfusion and Venesection. (Transfusion und Aderlass.) P. Morawitz. Commenced in No. 6.
74 *Successful Treatment of Nevus with Light and Radium in Forty Cases. (Behandlung der roten Muttermale mit Licht und Radium.) Kromayer.
75 Cobra Venom Hemolytic Test in the Insane. (Ergebnisse und neuere Untersuchungen über die Hemmungsreaktion im Blute von Geisteskranken.) W. Geissler.
76 *Angina Abdominis. S. Kreuzfuchs.
77 Benzidin Test for Blood in Forensic Cases. (Ueber die Verwendung des Benzidins für den Blutnachweis, im besonderen über seine Anwendungsweise in der gerichtsarztlichen Praxis.) E. Walter.
78 Spectrum of the Guaiac Test for Blood. (Spektrum der Guajakprobe.) K. Csepai.
79 Treatment of Arms Crushed between Rollers; Four Cases. (Walzenverletzungen.) Schmidt.
80 Cesarean Section in the Home. (Der Kaiserschnitt in der Praxis.) K. E. Laubenburg.
81 Serodiagnosis of Syphilis in Official Regulation of Prostitutes. (Die Serodiagnose im Rahmen der Prostituierten-Kontrolle.) H. Hecht.
82 Blood-Pressure-Raising Properties of the Serum in Beriberi. (Ueber adrenalinähnliche Wirkung des Bluteserums von Beriberikranken auf das Frosehauge.) J. Shimazono.

74. Treatment of Nevus with Mercury Quartz Lamp and Radium.—Kromayer reports 40 cases treated with one or both of these measures, the results showing that small, red arterial nevi respond favorably to radium treatment as its action is deeper than that of the lamp. But the latter is effectual for extensive reddish and purple nevi if they are superficial and are mainly the result of dilatation of the capillaries with slight involvement of the arteries. Moderately large, mixed nevi, the class which forms the majority of cases, require the combination of the light and radium treatment. He has never obtained any durable benefit from Roentgen-ray treatment, the difference between the radium and Roentgen rays being mainly in their various action on the vessels. The complete cures in a large number of his cases indicate that the quartz lamp and radium combination is a decided progress. Only a few of the 40 patients were not benefited by the treatment. He never makes more than 4 or 5 exposures with the mercury lamp nor more than 2 or 3 with the radium, never over an hour in length.

76. Angina Abdominis.—Kreuzfuchs describes the symptoms of abdominal arteriosclerosis as paroxysmal pains in the stomach region or elsewhere in the abdomen, especially around the umbilicus and tympany. The syndrome may be that of arteriosclerotic epigastralgia or true angina abdominis. In differentiation it is important that the attacks occur independent of the intake of food but are elicited by the factors which experience has shown induce symptoms in heart and vascular affections. Another point is that the abdominal angina is most liable to develop when the patient reclines. It

is more common in men than in women, and most of the patients are over 40 or 50 years old. The diagnosis is confirmed by discovery of some other arteriosclerotic disturbance, or by the success of measures directed against arteriosclerosis. Intestinal hemorrhage and constipation are frequently observed; 4 of his 6 patients were great smokers. Ortner and Basch were able to induce spasmodic contraction of the intestines in animals by injection of nicotin. The prognosis of severe intestinal dyspragia is grave as it usually is the last link in a long arteriosclerotic chain. In one case the patient seemed to be much improved after a long series of cardiac symptoms when an attack of angina abdominis came on and death soon followed. The aim in treatment is to reduce the spasmodic contraction in the intestinal vessels; moist heat, hot drinks and physical measures are useful, but the sovereign measure is morphin. As there is danger of collapse as the spasm is relieved, he combines camphor with the morphin; there is little danger of morphin addiction as the prognosis of the affection is so grave in itself. The patients must guard against effort, "catching cold," and dietetic errors, and the bowels must be kept open, but laxatives and an anticonstipation diet must be given with caution as they are liable to bring on an attack; enemas must be the main reliance for this. The heart must be kept working well and physical measures are useful here, rather than haphazard digitalis medication. His experience, he states, confirms the benefits from cautious abdominal massage in regulating the conditions in the circulation in the intestines.

Deutsche Zeitschrift für Chirurgie, Leipzig

January, CIII, Nos. 3-6, pp. 203-624

- 83 Experimental and Literary Research on Mode and Routes of Propagation of Urogenital Tuberculosis. S. Sawamura.
84 *Experimental Production of Goiter. (Zur experimentellen Erzeugung der Struma, zugleich ein Beitrag zu deren Histogenese.) E. Bireher.
85 Primary Carcinoma in the Appendix. G. E. Konjetzny.
86 *Choice of Operation in Nephrolithiasis. M. Makkas.
87 Acute Hemorrhagic Cholecystitis. A. Brüning.
88 *Practical Importance of Indigo-Carmine Test of Kidney Functioning. (Die Indigokarminprobe in ihrer praktischen Bedeutung für die funktionelle Nierendiagnostik.) W. Baetzner.
89 *Roentgen-Ray Treatment of Surgical Tuberculosis. (Behandlung der Knochen- und Gelenkstuberkulose mit Röntgenlicht.) H. Iselin.
90 Pathology and Surgical Treatment of Alveolar Emphysema of the Lung. D. G. Zesas.
91 Subtotal and Total Excision of the Scapula, with and without Retention of Arm. (Zur Kasuistik der Exstirpation des Schulterblattes.) K. Kawamura.
92 Successful Removal of Fibrosarcoma in Cauda Equina. M. Rosenfeld.
93 *Serotherapy of Suppurative Processes. (Die Serumbehandlung eitriger Prozesse.) E. Gergö.
94 Technic of Appendectomy. (Neuerungen aus dem Gebiet der chirurgischen Appendicitisbehandlung.) A. Ebner.
95 Stenosis of Large Intestine from Pericolic Adhesions. (Ueber Dickdarmstenosen durch perikolitische Adhäsionen.) E. Hagenbach.

84. Experimental Production of Goiter.—This communication from Wilms' surgical service at Basel relates extensive experimental research which has confirmed the assumption that the drinking water in certain geological formations contains the substance which produces both goiter and cretinism. The experiments were made with dogs, rats, guinea-pigs and monkeys, and enlargement of the thyroid followed ingestion of water from certain springs in regions where goiter is endemic; goiter also developed in the animals when the residuum after filtration of such water was added to water from springs in other regions free from goiter. The fact that the thyroid is the one gland affected by this element in the water confirms the assumption that the element in question here is a poison rather than a microorganism. The special geological formations involved seem to be determined by this research.

86. Operative Treatment of Nephrolithiasis.—Makkas concludes from the experiences at Garre's surgical service at Bonn that pyelotomy is the preferable operation in case of kidney stones, and that the wound heals without a fistula if certain precautions are taken, such as he enumerates.

88. Chromocystoscopy.—The indigocarmine test of kidney functioning was described in *THE JOURNAL*, Jan. 2, 1904, page 69. Its extensive use in Bier's surgical service at Berlin is here reviewed, the clinical history, operative findings and ultimate outcome in fifty cases being presented in detail. The

final conclusions are that the test is an essential and valuable acquisition for obtaining information in regard to the actual functional condition of the kidney in certain circumstances. It is the more valuable on account of the simplicity of the technic.

89. Roentgen-Ray Treatment of Surgical Tuberculosis.—This is the detailed report of the work in this line done by Wilms and under his direction, mentioned recently in *THE JOURNAL*, page 1014, abstract 74.

93. Direct Serum Treatment of Suppurative Processes.—Gergö describes the experiences in Dollinger's surgical service at Budapest with the injection of serum—Müller's antiferment treatment—in 160 cases. The principles and technic were mentioned in *THE JOURNAL*, Aug. 28, 1909, page 751. This physiologic treatment is said to have proved satisfactory in nearly every instance, and Gergö regards the method as destined to a brilliant future when further perfected. Its special field is for abscesses unless they are unusually extensive and deep or the patient much debilitated, in which case incision is necessary. Otherwise all that is necessary is to paint the outside with iodine, aspirate the contents of the abscess with a puncture needle and then inject pure serum, thus rinsing out the cavity, after which serum to an amount representing one-third or one-half the amount of abscess contents withdrawn is injected, and a scrap of gauze is laid over the puncture hole and held in place with a strip of plaster. An abscess containing from 1 to 5 c.c. of pus heals in 3 days; larger ones, containing from 20 to 50 c.c. of pus heal in about 11 days. The absence of a scar is one of the great advantages of the method, and the functional result is always better, as conditions are more physiologic. He has never encountered any signs of anaphylaxis and the abscess never progressed except in a single instance, in a very debilitated patient. The benefit is apparent only when there is decided abscess formation.

Medizinische Klinik, Berlin

February 13, VI, No. 7, pp. 249-292

- 96 *Scleroma. P. Gerber.
97 *Psychoneuroses: their Psychic Roots and Treatment. (Zwangszustände, ihre psychischen Wurzeln und ihre Heilung.) W. Stekel. Commenced in No. 5.
98 Protection of the Eyes Against the Ultraviolet Rays Unnecessary. (Ist Schutz der Augen vor ultraviolettem Licht notwendig?) Best.
99 *Diagnosis of Hysteria. S. Meyer.
100 Action of Nascent Carbonic Acid and Oxygen Baths in Nervous Conditions. (Wirkungen künstlicher Kohlensäure- und Sauerstoff-Bäder bei Nervenkranken.) F. Munk.
101 Syphilis in Rabbits. (Neue Untersuchungen über die Syphilis des Kaninchens.) M. Truffi.

96. Scleroma.—Gerber regards scleroma as an infectious granuloma, with the connective-tissue shriveling following directly on the granuloma without an intervening stage of ulceration. He gives a number of illustrations of the different types which it may assume in the upper air passages, mouth and nose, urging a combination of surgical and physical measures, Roentgen-ray and radium exposures, etc. The absence of ulceration helps to differentiate the scleroma from syphilis. It is most liable to be confounded with tuberculosis but the tissues are harder and the aspect is not that of a typical tuberculous process. No means are known, he declares, by which scleroma can be arrested, but repeated palliative measures may allow years of freedom from discomfort.

97. Psychoneuroses.—Stekel enumerates a number of typical cases of psychoneurotic obsessions which are liable to drive the victims to despair but which can be cured, he says, by study of the individual conditions, the trouble being always some conflict in the psychoemotional sphere, logical, but subconscious. By winning the patient's confidence, the physician can trace out the underlying bases for the obsession, and, once discovered, the cure is soon complete. He agrees with Freud that the underlying basis is of sexual origin, and even goes so far as to state that in this category should be included all the cases now labeled neurasthenia. Nothing more rejoices the soul of the physician, he declares, than to be able by appropriate treatment to restore to normal life and the joy of existence the victims of these "anguish neuroses." He suggests the term "parapathy" for all that we have hitherto called neuroses and neurasthenia, remarking

that a new science and a new conception of ideas demand a new terminology. The nerves, as such, have nothing to do with neuroses. The constitution may pave the way for the development of neuroses, but certain conditions in the environment are the main factor.

99. Differential Diagnosis of Hysteria.—Meyer insists that it is impossible to exclude all organic affections, as the textbooks advise, in striving to differentiate hysteria. Attention should be directed to the features which distinguish the hysterical manifestations from those of like nature of organic origin. In recurring disturbances, a strict periodicity speaks strongly in favor of hysteria, as also a strictly regular rhythm. The influencing of the symptoms by emotions should not be regarded as a criterion of hysteria, as many organic affections are powerfully modified by emotions. The effect of medical measures is an important aid in differentiation but of still greater import is the absence of the ordinary influence of drugs. When a pain is not materially modified by antipyretics or morphin, its hysterical origin is more than probable. He urges the necessity for refraining from physical examination of patients suspected of hysteria; the stigmata are frequently suggested to the patient by the physician's examination. It is impossible to examine thoroughly all the organs of any living human being and unnecessary inspection and manipulations should be avoided, especially on suspicion of hysteria.

Münchener medizinische Wochenschrift

February 15, LVII, No. 7, pp. 337-392

- 102 *Hyperemic Treatment of Carbuncle on the Face. (Behandlung der malignen Gesichtsfurunkel.) W. Keppler. Concluded in No. 8.
103 Ergograph Tests for Detection of Simulation or Aggravation of Paresis. H. Stursberg.
104 Photographic Registration of the Pulse. R. Ohm.
105 *Silver Carbonate Test for Uricacidemia. (Eine klinische Methode der quantitativen Bestimmung der Harnsäure im Blutserum.) P. Roethlisberger.
106 Nature of Virus of Acute Poliomyelitis. (Zur Natur des Virus der epidemischen Kinderlähmung.) P. H. Römer and K. Joseph.
107 *Habitual Torsion of Movable Cecum. H. Klose.
108 Thiosinamin Poisoning. (Ueber Thiosinaminvergiftung.) F. Hayn.
109 Tests for Levulosuria and Pentosuria. A. Jolles.
110 Two Cases of Miliary Tuberculosis Following Abortion. F. Weil.
111 Advantages of Exclusion of Sugar in Feeding Infants with Digestive Disturbances. (Behandlung von ernährungs-gestörten Säuglingen mit zuckerfreier Kost.) P. Grosser.
112 Treatment of Whooping Cough with Quinin Salve applied to the Nasal Mucosa. (Zur Therapie des Stiekinstens.) L. Berliner.
113 Technic of Intravenous General Anesthesia. L. Burkhardt.

102. Congestive Hyperemia in Treatment of Carbuncle on the Face.—Keppler reports further experiences with active hyperemia applied to lesions on the head, his further experience confirming the good results obtained four years ago, as mentioned in *THE JOURNAL* at the time, Feb. 10, 1906, p. 473, where his technic was also described. He has not modified the technic since, but declares that the benefit of constriction applied to the neck in treatment of lesions above makes necessary a revision of all previous therapeutic views in this field. Instead of mutilating surgical measures, all that is necessary is to remove the cap of the pustule, leaving the necrotic plugs until unmistakably loosened. Great care is taken not to injure the tissues, carefully avoiding squeezing out the pus. The carbuncle rapidly softens under the influence of the elastic band applied to the neck, but the most remarkable effect of the latter is the prompt subsidence of pain. The constricting band is worn 20 or 22 of the 24 hours, and even after the symptoms have subsided he keeps up the constriction for a few hours every day. The dread that some physicians have of applying constriction to the neck he regards as unfounded; extremely mild constriction answers the desired purpose, the vessels in the neck being so large in comparison with the muscles, that the conditions thus differ materially from conditions in the limbs. He retracts nothing from his first commendation of the method, but is even more emphatic. He applies the constricting band also for carbuncles on the back of the neck when they are located high enough to permit. The results were good in his 4 cases of the kind.

105. Simple Test for Uric Acid in the Blood.—Roethlisberger describes a method of determining the proportion of uric acid in the blood, which he states is extremely sensitive,

simple and reliable. It is based on the fact that uric acid reduces a solution of silver carbonate. To facilitate the test he uses a reagent paper, a silver carbonate paper, on which a drop of a 15 per cent. solution of sodium carbonate is placed and as soon as this has all been soaked up by the paper, a single drop of blood serum is placed in the center of the moist spot on the silver paper. After two minutes the paper is rinsed and then placed for five minutes in a solution of 1 part pure ammonia in 2 or 3 parts distilled water. The paper is then rinsed again, when it can be examined. After lying in the water-bath for a few hours, the paper can be dried and kept indefinitely. The only drawback to the test is that the whole procedure must be done in a dark room with red light or an electric 10-candle light at a yard distance, as the sensitized paper must be kept from contact with daylight. He gives illustrations of the reaction to show the scale. There is no trace of the spot in the absence of uric acid, but a faint spot is seen with 0.04 per thousand uric acid; the spot is more distinct with 0.08 per thousand, and quite a blotch with 0.12 per thousand. Only a few drops of blood from the finger tip are necessary; the serum separates on standing without centrifuging.

107. Habitual Torsion of the Elongated Cecum.—Klose distinguishes between the disturbances with an abnormally long movable cecum with chronic inflammatory conditions responsible for the stretching of the connective tissue, and that due to anomalies in development. This latter variety is much more frequent but has received little attention, and yet its non-recognition may lead to serious and possibly fatal trouble. The victim usually applies to one physician after the other, and finally comes to be regarded as a chronic neurasthenic or hysterical individual. An abnormally long cecum causes no disturbance in the majority of cases, but in others there are severe symptoms which Wilms ascribes to the length of the cecum but which Klose explains as a periodical or a constant relative or absolute torsion. These cases probably include all those in which the disturbances persist after appendicectomy for supposed chronic appendicitis. Klose has examined the records of operations for chronic appendicitis in which the report allows a suspicion of a movable cecum as a possible factor, and found many instances of persistence of the severe attacks of pain after the operation, just as before. In fully 25 per cent. of all cases of alleged chronic appendicitis the trouble in reality, he reiterates, is habitual torsion of an abnormally long, movable cecum. In the milder cases, not yet complicated by secondary adhesions, a tumor-like resistance can be felt, during the attack, in the region of the cecum, which can be pushed across the median line; the tumor may then disappear under pressure. Gurgling and rumbling noises can be heard on auscultation. This tumefaction, in connection with the lack of fever during the attack of pain, is the most important feature for differentiation. The severe cases are generally diagnosed as some form of stenosis, but Roentgen-ray examination has permitted the correct diagnosis in all his numerous cases in the last year. The main features of the attack are the colics with distention of the cecum, increased peristalsis, sounds on palpation, obstipation followed by diarrhea, and the pain from the tugging and distention with partial stiffness of the intestine, blood and mucus in the stool, with fermentation of carbohydrates, or ileus. He found the condition in children in about 13 per cent. of his total material and calls the attention of pediatricists to this fact, reporting two typical cases. The children are those suffering from constitutional or infectious injuries, or, as only children, held aloof from the healthy and strengthening exercises of normal childhood. Treatment should be intraperitoneal fixation of the cecum, fastening it to the peritoneum of the iliac fossa and the posterior lateral abdominal wall with silk button sutures of the serous surface. He regards Wilms' plastic operation as unnecessary. Wilms forms a pocket in which the cecum is placed by loosening a triangular portion of the peritoneum from the crest of the ilium. Simple intraperitoneal cecopexy, which Klose prefers, has the advantages of putting an end to the further torsion while preventing infection of the suture. In all operations on the appendix, he declares, an abnormally movable cecum should be fastened to hold it in place. The article is illustrated.

Therapeutische Monatshefte, Berlin

February, XXIV, No. 2, pp. 57-112

- 114 Arsacetin in Treatment of Pseudoleucemie Glandular Disease. (Ueber die Behandlung [Heilung?] pseudoleukämischer Drüsenaffektionen mit Arsacetin.) Naegeli.
- 115 *Glycerin in Treatment of Intestinal Nematode Parasites. (Das Glycerin in der Behandlung der Anguillulose.) L. Preti.
- 116 Importance of New Aids in Diagnosis and Treatment of Syphilis. (Bedeutung der neueren Hilfsmittel für Diagnostik und Therapie der Syphilis.) L. Halberstaedter.
- 117 A Chemical Cause of the Clinical Action of Thiosinamin. E. Starkenstein.
- 118 Elimination of Bromin in Urine. (Ueber die Ausscheidung von anorganischen und organisch gebundenem Brom durch den Urin nach Einfuhr organischer Brompräparate.) L. Bilinkis.
- 119 ***"Extension Dressings" in Treatment of Fractures. (Ueber die Behandlung der Extremitäten-Frakturen mit besonderer Berücksichtigung der Extensions-Verbände.) P. Bockenheimer. Commenced in No. 1.
- 120 Shoulder Arthritis Responsible for Neuralgiform Pain in Arm. (Omarthritis mit Brachialgie und ihre Behandlung.) A. Müller and Herzog.
- 121 Mercury Oxycyanid in Syphilis. (Zur Injektionsbehandlung der Syphilis.) Jessner.

115. Glycerin in Treatment of Helminthiasis.—Preti reports 3 cases in which the ordinary vermifuges entirely failed to relieve the patients of the *Anguillula intestinalis*. He finally succeeded in expelling the parasites by giving glycerin freely. The patients took 25 gm. of pure glycerin and the same amount in capsules, with 30 gm. by the rectum two hours later. Two days later the same procedure was repeated, and for the first time in years the stools were free from the larvae. In one case, complicated with uncinariasis, the latter was cured by the ordinary treatment with male fern but the anguillula did not seem to be affected by it.

119. Extension Dressings in Treatment of Fractures.—Bockenheimer's article is accompanied by twelve illustrations showing the various types of dressings arranged to induce extension of the fractured limb while leaving the joints free. In the simpler cases the extension can be applied in the home by the family physician. Owing to the constantly increasing use of machinery, the greater devotion to sports, roller skating, automobilism, etc., fractures are becoming more common while better functional results are demanded than formerly were acceptable. For this, extension and early massage are almost indispensable, and the combination of extension with the dressings is proving very useful. In fracture of the upper arm, for instance, he applies a lengthwise strip of adhesive plaster on each side of the arm, extending below the elbow, the lower ends fastened each with an elastic band to a wooden crosspiece several inches below the elbow, which in turn is fastened to two wooden splints extending from the shoulder to several inches below the elbow, the hand resting in a sling. The upper arm is thus stretched constantly but with elastic force. Ideal retention without the slightest impairment of function is possible only with extension, he declares. He also insists that the patient must refrain from bearing weight on the leg in case of fracture of the thigh for at least 12 weeks and for 7 weeks in case of fracture below the knee. He also emphasizes the importance of having the patient wear a flat-foot insole for a year after any fracture of the leg below the upper third of the femur.

Wiener klinische Wochenschrift, Vienna

February 17, XXIII, No. 7, pp. 233-272

- 122 Virus of Acute Poliomyelitis and Preventive Inoculation. (Ueber das Virus der Poliomyelitis acuta, zugleich ein Beitrag zur Frage der Schutzimpfung.) R. Kraus.
- 123 *Coagulation of Blood During Menstruation. (Ueber Blutgerinnung während der Menstruation.) G. M. Cristea and W. Denk.
- 124 *Menstrual Changes in the Blood. (Ueber menstruelle Veränderungen des Blutbefundes.) A. Pölzl.
- 125 *Blood Findings with Abnormal Spleen. (Blutbefunde bei Milzerkrankungen.) L. Hess.
- 126 Experimental Research on Drainage. S. Boxer and J. Novak.
- 127 Dislocation of Ulnar Nerve. R. Porges and M. Jerusalem.

123-124. Study of the Blood of Menstruating Women.—The investigations of Cristea and Denk seem to have demonstrated that the blood undergoes no change in respect to its coagulating properties during menstruation, but that the uterine mucosa has the property of holding back the fibrin ferment. This renders the blood passing through this mucosa incapable of normal coagulation. Pölzl gives curves to show the regular increase in the numbers of red corpuscles a few days before the menses, the numbers diminishing again just before the

onset of the menstrual hemorrhage. This may have something to do with the functioning of the ovaries, and the numbers of reds at this time may thus serve as an index of ovarian functioning. In examining the blood of menstruating women, the date of the examination, in connection with the menstrual period, should be borne in mind. It is possible that with the increased functioning of the ovaries just preceding menstruation, other organs, including the bone marrow, may feel a stimulus to more active functioning.

125. Blood Findings with Chronic Enlargement of the Spleen.—Hess gives the details of a number of cases of various affections of the spleen as observed at von Noorden's clinic at Vienna. He found unusually small numbers of leucocytes with enlargement of the spleen accompanying a primary neoplasm in the spleen, acquired syphilis, chlorosis and severe anemia, as also in Banti's disease. On the other hand, he says, the proportion of leucocytes was constantly normal in inherited syphilis, chronic malaria, chronic congestion of the spleen, splenic cirrhosis, polycythemia, wandering spleen, amyloid degeneration, tuberculosis of the spleen and metastatic tumors.

Zentralblatt für Chirurgie, Leipsic

February 19, XXXVII, No. 8, pp. 273-312

- 128 *Tannin Sterilization of the Skin. (Zur Hautdesinfektionsfrage.) A. Zabłudowski.
129 *Hemostasis in Trephining. (Zur Technik der Blutstillung bei Trepanationen des Schädels.) Vorschütz.

128. Tannin for Surgical Sterilization.—Zabłudowski comments on the yellow discoloration from the benzin-iodin method of disinfecting the hands and field of operation, which is its great drawback. The hands are liable to be irritated, besides. The acetone method or iodine alone is only for the field of operation and not for the hands. He proposes tannin for effectual sterilization, commending its vigorous and permanent action, while it is not irritating and water does not impair the effect. He uses the tannin in a 5 per cent. alcohol solution, and reports faultless results when the hands and field of operation were cleansed for two minutes with gauze dipped in this solution. In 32 major operations in which this technique was used, bacteriologic tests of the hands during and even 40 minutes after the operation showed that they were as clean as at first.

129. Hemostasis in Trephining.—The needle is passed through the tissues between the periosteum and the bone at the point that is to be the base of the flap; an attached contrivance fastens the tissues down to the needle, like a safety-pin clamp. This shuts off the blood supply to the flap. As the incision is carried further the soft parts are seized with special broad clamps, the row of clamps entirely encircling the incision. As the handles lie away from the wound they do not interfere with the operation. The article is illustrated.

Zentralblatt für Gynäkologie, Leipsic

February 19, XXXIV, No. 8, pp. 273-304

- 130 *Prophylaxis of Puerperal Fever. O. Pankow.
131 Differentiating Culture Medium for Streptococci. (Bemerkungen zu Fromme's Differenzierungsverfahren der Streptokokken mittels Lezithinbouillon.) A. Hamm.

130. Prophylaxis of Puerperal Fever.—Pankow reports disappointing experiences with nuclein injected to induce hyperleucocytosis after childbirth, also with injections of anti-streptococcus serum.

Gazzetta degli Ospedali e delle Cliniche, Milan

February 1, XXXI, No. 14, pp. 145-152

- 132 *Primary Abscess in the Spleen. (Due casi di ascesso primitivo della milza.) G. Belloni and C. Moschini.

February 8, No. 17, pp. 177-184

- 133 *Practical Applications of Iodoform-Glycerin in Surgical Lesions. D. Vandini.

February 10, No. 18, pp. 185-192

- 134 Examination of the Heart in Anemia. (Esame funzionale del cuore. Soffi anorganici e dilatazione cardiaca.) F. Pedrazzini.

February 13, No. 19, pp. 193-208

- 135 *Impossibility of Eradicating Malaria by Medical Means. (Sulla non guaribilità etiologica della infezione malarica.) S. Mircoli.

February 15, No. 20, pp. 209-216

- 136 Unreliability of Skin Reaction in Typhoid. (Ricerche sulla cutirreazione nella febbre tifoide.) P. Ciuffini.

132. Primary Abscess in the Spleen.—Belloni and Moschini report the favorable result of prompt operative intervention in a case of primary abscess in the spleen. The first symptoms were low fever, headache and pain under the seventh rib, radiating to the shoulder. In the course of two months increasing fever and chills compelled intervention and rapid recovery followed resection of two ribs to permit evacuation of pus from between the lobes of the lung, after evacuation of the pus in the spleen. In the other case, no operation was attempted, although subphrenic suppuration was suspected; autopsy revealed merely a small primary abscess in the spleen with abundant pleural effusion. Both patients were young men.

133. Iodoform-Glycerin in Surgical Lesions.—Vandini reports satisfactory results in treatment of all kinds of acute and chronic abscesses, tuberculous peritonitis, phlegmons, mastitis, and various medical affections with effusion. Extensive experience, he states, has confirmed the advantages of this simple treatment which renders mutilating operations unnecessary as a rule. He uses a mixture of 10 parts iodoform in 100 parts glycerin, which he injects through a wide puncture needle after he has withdrawn some or all of the contents of the abscess or other process. He has never found it necessary to make more than three or four injections; one is generally sufficient, as he shows by a number of examples reported. The method has also proved effective in his hands in inflammatory processes in the knee, in acute peritonitis, polyserositis, and in pleurisy with effusion.

135. Impossibility of Freeing the Body from Malarial Parasites.—Mircoli declares that the recurrences of malarial symptoms after 5 or 10, or even 20 years, in connection with other facts that he has observed, have convinced him that the present drug treatment of malaria is unable to free the system completely of the malarial parasites. They linger in some form and recurrences after 20 years are not very rare, nor even after 40. There are absolutely no data, he says, on which to base the assertion that the malaria germs can be totally eradicated. Like syphilis, trypanosomiasis and kala azar, malaria, according to Mircoli, is "etiologically incurable." According to the place and the individual, prophylaxis against eventual recurrence should be by systematic arsenic medication, and this applies as well to non-malarial as to malarial regions. Among the facts cited to sustain these assertions is the case of a youth with malarial infantilism whose much enlarged spleen was removed. Not a trace of malarial parasites could be detected in the spleen, but the next day they were found in the blood. They must have been present in the spleen in some amorphous, invisible form. The possibility of the existence of the parasites in some form which escapes present means of investigation has been demonstrated by Marchiafava in cases of primary malarial infection in which the blood marrow failed to show the least trace of the parasites. Enlargement of the spleen indicates inevitably active malaria, Mircoli declares. The absence of demonstrable protozoa, however, is no evidence against their existence in some germinal stage or against their habitual, although possibly silent, revivification.

Policlinico, Rome

February 20, XVII, No. 8, pp. 227-258

- 137 High Fixation of Testicle in Treatment of Varicocele. (Nuovo metodo di cura chirurgica del varicocele.) M. Volpe.

Riforma Medica, Naples

January 31, XXVI, No. 5, pp. 113-140

- 138 Differentiation of Febrile Diseases. G. Lucibelli.
139 Arrow Poisons in the Congo. (Contributo alla conoscenza dei veleni delle frecce dell'Africa.) G. Vipci.
140 Asymmetry of the Breasts and Areolae Early Sign of Pulmonary Tuberculosis. (La disuguaglianza della mammella ed asimmetria nella tubercolosi polmonare.) E. Cartolari and U. Gasparini.

February 7, No. 6, pp. 141-168

- 141 Pyloric Stenosis. A. D'Antona.
142 Advantages of Iodin in Surgical Sterilization of the Skin. (Sulla disinfezione della cute con la tintura di jodo alla Grossich negli interventi chirurgici.) U. Noferi.
143 Experimental Research on Syphilis in Rabbits. (Sifilide nel coniglio.) M. Truffi.
144 Modifications in Blood and Blood-Producing Organs during Experimental Typhoid. (Modificazioni subite dal sangue e dagli organi ematopoietici per azione della tossina tifica.) C. Lavatelli.

February 14, No. 7, pp. 169-196

- 145 Ischuria from Movable Kidney. (Su di un caso d'ischuria da rene mobile.) A. Vetri.
146 *Diagnosis of Syphilis by Staining Reaction. (La cromoreazione di Schürmann per la diagnosi della sifilide.) V. Chirivino.

146. Staining Reaction in Diagnosis of Syphilis.—Chirivino relates the results of application of Schürmann's staining technic in 80 persons with unmistakable syphilis and in 17 free from a history of syphilitic infection. The reaction was positive in 64 of the 80 syphilitics, including 6 with very old syphilis. Of the 17 free from a history of syphilis only one presented a positive reaction, and this patient had an infectious ulcerative process. The Wassermann reaction gave parallel findings with the staining test with a single exception. In one case, a medical student presented a lesion on the genitals which had the aspect of a primary syphilitic sore, but no spirochetes could be found in it and the stain reaction was negative; the further course of the case confirmed the negative diagnosis. Chirivino declares that the staining test is far simpler than the search for spirochetes and the Wassermann reaction, and therefore he commends it to the general practitioner as a simple and easy means of throwing light on the case in question, confident that it will prove reliable in at least 80 per cent. of the cases. The technic for the staining reaction was given in THE JOURNAL, May 15, 1909, page 1629. Chirivino summarizes it as follows: One drop of perhydrol is added to 0.1 c.c. of the serum mixed with 3 or 4 c.c. of physiologic salt solution. When this is all well mixed he adds 0.5 c.c. of the freshly made special reagent (0.5 parts phenol with 0.62 parts of a 5 per cent. solution of ferric chlorid and 34.5 parts of distilled water). With normal serum the fluid turns greenish and then bluish, but remains constantly clear. If the serum is from a syphilitic, the fluid turns a dark, opaque brown. The addition of another drop of perhydrol sometimes turns a dubious into a pronounced positive reaction. The reaction occurs within a few minutes; after 10 or 15 minutes even with a negative reaction the fluid assumes a brownish tint although still constantly transparent.

Hospitalstidende, Copenhagen

January 12, LIII, No. 2, pp. 41-80

- 147 Effect on the Insufficient Heart of Long-Continued Small Doses of Digitalis. (Om kontinuerlig Digitalispaavirkning af det insufficente Hjerte.) V. Rubow. Commenced in No. 1.
148 Importance of Suturing Technic for Asepsis. (Bemærkninger om Sutureteknikens Betydning for Saaraseptiken.) C. F. Heerfordt.

January 19, No. 3, pp. 81-104

- 149 The Granular Non-Acid-fast Form of Tubercle Bacilli. (Om den ikke-syrefaste Form af Tuberkulosevirus.) G. E. Permin.

January 26, No. 4, pp. 105-136

- 150 Analysis of Seven Cases of Lesions Involving the Lower Part of the Spinal Cord. (Lidelser i Rygmarvens nederste Afsnit.) A. Wimmer. Commenced in No. 3.

Hygiea, Stockholm

January, LXXII, No. 1, pp. 1-96

- 151 *Laws Regulating Digestion and Absorption of Food. (Lagbundenheter vid matsmältning och resorption.) Svante Arrhenius.
152 *Tumors in the Cerebello-Pontine Recess. (Om acusticus-tumorer.) F. Henschen.

151. Laws Regulating Digestion and Absorption of Food.—Arrhenius states that some of the investigators at Pawlow's laboratory, including London, appealed to him to study the results of their research on dogs with a Pawlow fistula to ascertain if there were not some special laws governing the phenomena observed. He gives the details of his methods of research and states that the data presented suggest a suspicion of certain simple mathematical laws to which all the phenomena observed seem to conform as he describes in detail, giving the formulas to embrace the factors of amount of ingesta, time of digestion, proportion absorbed, amount of gastric secretion, etc.

152. Tumors in the Auditory Nerve.—This comprehensive article is a sequel to one on the same subject published in the *Hygiea Festband* in 1908. Henschen here gives 11 tables, each with 35 columns, citing the minutest details in regard to the clinical data and autopsy findings in 140 cases of tumors found in the recess between the cerebellum, medulla and pons. The list includes 11 cases in which these tumors were merely one manifestation of a general neurofibromatosis. He gives

a number of points useful for differentiation, calling attention especially to the sequence in which symptoms develop. Headache is generally the initial symptom, but disturbances in hearing, vertigo or difficulty in walking may be the first symptoms, less often, disturbances in vision occur. Examination of the ear is of great importance for determining the side on which the lesion is located. In 5 of the 25 cases in which the tumor was removed the results have been excellent. Even an early palliative operation has a beneficial action. It is remarkable that no well-authenticated case of a solitary tumor originating in any other of the cranial nerves except the auditory nerve is on record; the explanation for this, he thinks, is probably in the embryonal development. The auditory nerve tumors originate in the connective tissue in the fundus of the internal auditory meatus in or around the vestibular division of the auditory nerve. As they grow they extend into the space between cerebellum and pons and develop as true intracranial tumors. But this recess may also be the seat of tumors originating in other regions near by. The tumors are generally more or less spherical and easily shelled out, of a fibroid nature, and more or less benign growths.

Ugeskrift for Læger, Copenhagen

February 10, LXXII, No. 6, pp. 143-178

- 153 Treatment of Acute Otitis Media. (Behandlingen af den akute Mellemøresuppuration.) H. Mygind.

February 17, No. 7, pp. 179-198

- 154 Infant Mortality in Rural Districts. (Et Hjælpemiddel i Kampen mod Børnedødeligheden paa Landet.) A. Johansen.

Books Received

All books received are acknowledged in this column and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender. A selection will be made for review in the interests of our readers and as space permits.

THEORETICAL PRINCIPLES OF METHODS OF ANALYTICAL CHEMISTRY BASED ON CHEMICAL REACTIONS. By M. G. Chesneau, Ingénieur en Chef des Mines. Authorized Translation by Azariah T. Lincoln, Ph.D., Assistant Professor of Chemistry, Rensselaer Polytechnic Institute, and David H. Carnahan, Ph.D., Associate Professor of Romance Languages, University of Illinois. Cloth. Price, \$1.75 net. Pp. 184. New York: The Macmillan Company, 1910.

PROGRESSIVE TAXATION IN THEORY AND PRACTICE. By Edwin R. A. Seligman, McVickar Professor of Political Economy, Columbia University. Second Edition. Price, \$1.25. Paper. Pp. 334. (American Economic Association Quarterly. Third Series, Vol. IX, No. 4. Price, \$4 per Year.) Princeton: American Economic Association, December, 1908.

THE CONQUEST OF CONSUMPTION. By Woods Hutchinson, M.D., Author of "Studies in Human and Comparative Pathology," etc., and Clinical Professor of Medicine, New York Polyclinic, etc. Cloth. Price, \$1 net. Pp. 138, with illustrations. Boston: Houghton Mifflin Company, 1910.

EMERGENCY SURGERY. For the General Practitioner. By John W. Shuss, M.D., Professor of Anatomy, Indiana University School of Medicine. Second Edition. Flexible Leather. Price, \$3.50 net. Pp. 747, with 605 illustrations. Philadelphia: P. Blakiston's Son & Co., 1910.

ATLAS UND GRUNDRISSE DER ZAHNÄRZTLICHEN ORTHOPÄDIE. Von Zahnarzt Emil Herbst, D.D.S., in Berlin. Lehmanns Medizinischen Handatanten, Band XXVI. Cloth. Price, 14 marks. Pp. 395, with 438 illustrations. Munich: J. F. Lehmann's Verlag, 1910.

ANNUAL REPORT OF THE SURGEON-GENERAL OF THE PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE OF THE UNITED STATES FOR THE FISCAL YEAR 1909. Cloth. Pp. 274. Washington [Superintendent of Documents]: Government Printing Office, 1910.

JOURNAL AND PROCEEDINGS OF THE ROYAL SOCIETY OF NEW SOUTH WALES FOR 1908. (Incorporated 1881.) Vol. XLII. Edited by the Honorary Secretaries. Paper. Pp. 466. London: G. Robertson & Co., 17 Warwick Square, Paternoster Row, 1908.

SCIENTIFIC AND INDUSTRIAL BULLETIN OF ROURE-BERTRAND FILS of Grasse. October, 1909. Series 2, No. 10. Paper. Pp. 145, with illustrations. [E. H. Burr, Manager American Branch, 18 Cedar Street, N. Y.]

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PROGRESSIVE THERAPEUTICS

NOVOCAIN IN LOCAL ANESTHESIA

By W. S. SCHLEY, M.D., Surgeon Trinity Hospital; Asst. Surgeon St. Luke's Hospital, New York.

(New York State Journal of Medicine, December, 1907)

Novocain, the latest synthetic product of Einhorn and Ulfelder, appears to be the best substitute so far produced. It is a white crystalline synthetic salt soluble in one to one part of water, and can be boiled repeatedly without decomposition. It is incompatible with alkalies.

Biberfeld, in a study of its physiological action, found novocain exerted the same action on the peripheral nerves as cocain, and a 1/4 per cent. solution rendered the sciatic of the rabbit insensitive in ten minutes. In the cornea much stronger solutions were required and the action was not so prompt or powerful as cocain. The internal muscles of the eye were not affected by a 5 per cent. solution. Circulation and respiration were unaffected except in excessive high dosage (2 to 3 grains injected into rabbits resulted in only slight kymographic alterations.) Intravenous injections of the same amounts showed temporary slowing of pulse and respiration. He found the fatal doses per kilo of body weight to be as follows:

	Cocain.	Stovain.	Novocain.
Rabbits .....	.05 to .1 gm.	.15 to .17	.35 to .4
Dogs .....	.05 to .07 gm.	.15	.25

(Novocain did not kill.)

Spinal Injections:

	Cocain.	Stovain.	Novocain
Cats .....	.018	.025 to .05	.15

Showing Novocain to be about 1 to 6 as toxic as cocain and 1 to 2 to 1 to 3 as toxic as stovain.

Among the most important results noted by Biberfeld was the absence of effect of novocain on the peripheral blood vessels.

Braun and Bier have shown a rather remarkable action of novocain when combined with suprarenin; the wide diffusion and resulting anesthesia from the point of injection, suprarenalin appearing to greatly enhance the action of the novocain both in area of anesthesia and duration.

Very dilute solutions of novocain do not compare with equally dilute solutions of cocain, but after 2 per cent. strength the difference is much less marked hypodermically. Braun and Heinze experimented with dilute solutions of cocain and novocain, as did Heineke and Lawen at Trendelenburg's Clinic in confirming Biberfeld's work. They found the same enhancing action of suprarenalin even in dilute novocain solutions, and that a 0.25 per cent. novocain solution with suprarenalin was twice as powerful as the 1 to 500 Schleich cocain solution. From 0.5 per cent. up the solutions with adrenalin added were of the same potency practically as cocain. Isotonic solutions worked best, and dilute solutions are best made up in 0.9 per cent. sodium chlorid solution. The osmotic tension of novocain solutions agrees with cocain solutions; a 5.8 per cent. solution novocain is isotonic with human fluids and a 5.8 per cent. cocain solution. The anesthetic potency of novocain solutions alone (without adrenalin) is not as great as with cocain solutions of the same strength and the duration not so long. The results of Heineke and Lawen in forty cases of conduction anesthesia on the fingers and toes are instructive. Experimentally the first phalanx of the left middle finger was injected around with 2 c.c. of a 1 per cent. novocain suprarenalin solution and the whole finger to the tip became anesthetic in eight minutes and remained so for two hours. In injection and ligation with 0.5 per cent. solution the anesthesia persisted during ligation and sensation returned sixteen minutes after removal of ligature. Anesthetization of localized portions of skin by Hackenbruchs' method is easily done with the novocain suprarenalin solutions.

Sonnenburg reports three hundred cases of spinal anesthesia, and considers the novocain suprarenalin combination the ideal one for this work. Hermes, from Sonnenburg's clinic, reports 367 cases of spinal anesthesia, 162 with novocain, and 150 of these successful.

Lucke reports good results in urethral and bladder work with novocain—results that I have not been able to get on

mucous surfaces. In tissue injections the novocain suprarenalin solution excelled all other local anesthetics.

Opitz reports twenty-five cases of spinal anesthesia in gynecological work with seventeen laparotomies.

It was my privilege last year and the year before to see in such representative European clinics as those of Koehler, Sonnenburg, Israel, Hildebrand, the late Mosetig-Moorhoof and other many cases of anesthesia with various of these drugs used both hypodermically and by subdural method for all classes of operations. Being somewhat impressed by the comparatively low toxicity of novocain and the apparent excellent anesthesia in subcutaneous use, I determined before trying this agent in large doses to undertake some animal experiments in the pathological department of St. Luke's Hospital, to determine for myself the toxicity as compared with cocain. A number of animals were used.

Its toxicity appears to be almost exactly 1 to 6 that of cocain (given hypodermically). A paralyzing dose of novocain when given with adrenalin chlorid solution (1 to 1,000), 5 or 10 parts to 1, has but slight effect on the animal. The toxic action of novocain (produced by a large dose) seems more prolonged than that due to cocain, but slower in production. Concentration of the drug showed no influence in toxic action, and maximum toxicity can be produced by 1 per cent. solutions.

Five minims of a 4 per cent. solution of cocain hydrochlorate produced in a 400 gm. guinea-pig paralysis of voluntary muscles and partial respiratory paralysis.

Fifteen minims of a 4 per cent. solution of novocain produced in another 360 gm. pig no appreciable effect beyond moderate quieting of the animal.

Forty-five minims of a 4 per cent. novocain solution injected subcutaneously in divided doses in 520 gm. pig (over space of thirty minutes) produced only very slight weakness in hind legs.

Fifty minims of 4 per cent. novocain solution with six minims of adrenalin chlorid 1 to 1,000 solution added and injected in one dose in 515 gm. pig produced only moderate quieting of the animal and very slight loss of power in the hind legs.

I have now used novocain subcutaneously and usually in 4 per cent. solution in over sixty cases for both major and minor operations, and have used as much as eighty minims of the plain 4 per cent. solution at one time without observing any appreciable ill effect, and with seemingly as satisfactory anesthesia as with cocain. With adrenalin added the diffusion is great from the site of injection, the anesthesia prolonged beyond the limit of cocain of equal strengths, the field of operation comparatively dry and capable of much greater extension.

The following conclusions, I believe, are warranted:

In novocain we have a local anesthetic of low toxicity and of potency nearly the equal of cocain in the higher strengths (2 to 4 per cent.) when used subcutaneously.

In these strengths, when combined with adrenalin solution, 1 to 1,000 in the proportion of 5 to 10 of novocain to 1 of adrenalin, we have a very safe local anesthetic of rather remarkable power and diffusion. Subsequent hemorrhage is not nearly so apt to occur as with cocain or cocain suprarenalin, as novocain has no action on the blood vessels. The wounds have remained dry and primary union has not been interfered with through secondary hemorrhage.

The chief advantages of novocain are the perfect sterilizability of the solutions by boiling, the excellent keeping qualities of the solutions, the very low toxicity of the drug (of value in using large amounts), and the remarkable diffusive action of the combination of novocain and active suprarenalin solution. This combination had best be made up just before using by adding sufficient of the 1 to 1,000 solution to the novocain solution.

Fifty minims of 4 per cent. solution novocain injected subcutaneously in one dose in 515 gm. pig produced the symptoms of five minims of cocain, but did not kill.

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DIABETES MELLITUS: TRYPSOGEN TREATMENT

After several negative experiments in the treatment of diabetes with subcutaneous injections of extracts of commercial pancreatin, Zuelzer finally succeeded in removing sugar, acetone and diacetic acid by using an extract obtained from living animals at the height of digestion. An abstract of his paper appeared in the *American Journal of Medical Sciences* under the title, "A Specific Ferment Therapy for Diabetes."

Diabetes has long been considered "an incurable malady," and treatment for this reason has been aimed at symptoms rather than at the real cause of the trouble. The work done by recent investigators in this field has entirely changed our views as to the cause of diabetes, and has made physiological therapy the most logical and, as clinical results prove, the most successful treatment.

Diabetes is termed by Pavy the result of a faulty carbohydrate metabolism, and by Osler a disorder of nutrition. Prof. Oliver T. Osborne says: "Though often accompanied or perhaps caused by pathological conditions, diabetes is really a disturbance of metabolism rather than an actual disease, as we understand that term."



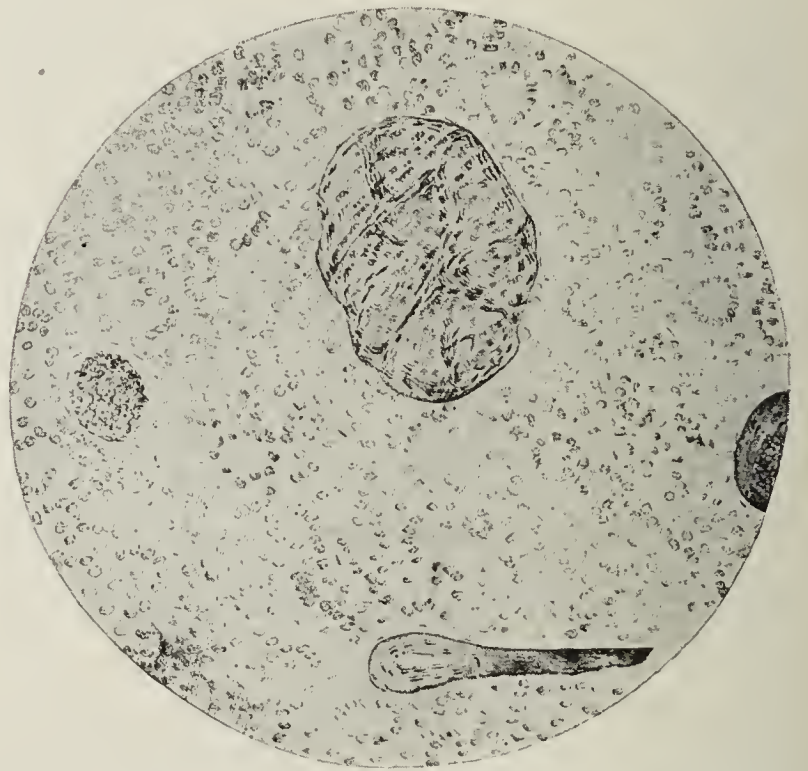
In the centre of field there is an island of Langerhans. The section is from a normal human pancreas.

These drawings were made by Miss E. Wagner at the Laboratory of Clinical Observation and Assistance, 616 Madison Ave., New York, from specimens furnished by the laboratory.

Now, if diabetes is not really a disease, but a disturbance of nutrition, then it should be amenable to treatment, either by removing the cause or by supplying the missing ferments, the absence of which causes the trouble. That it is most rational to attempt to do this will be shown by numerous quotations from leading investigators in this field, and that it has actually been done with Trypsogen in many stubborn cases will be shown by clinical reports.

The latest accepted pathological findings make the pancreas the seat of the disease, the particular structure involved being the islands of Langerhans, which are glands that furnish their internal secretion ferments to the blood. Diabetes may be due to lesions in these islands or to loss of function, each of which results in a decreased supply of the blood ferments.

The pancreas elaborates the most important digestive ferments of the body. It contains two kinds of secreting cells; the acini, which secrete the ferments with which we are most familiar, discharge their secretions into the intestinal canal. The islands of Langerhans, which are not connected with the intestinal tract, supply their ferments to the blood. They belong to a group of glands, including the thyroid and adrenals, which are believed to be intimately connected in their functions, and which furnish what are known as the "internal secretions." Practically all authorities now agree as to the existence of the internal secretions of the pancreas, and that they complete in the lymph and blood streams the metabolism of food and its elaboration into protoplasm, and that the absence of the internal secretion ferments of the pancreas is the immediate cause of diabetes.



Near the centre of field there is an island of Langerhans surrounded by a sclerotic capsule of connective tissue and showing sclerotic and degenerative changes. Section is from a diabetic subject.

Conclusive proof of this is furnished by recent investigation of workers in three different fields of experimental research.

1. Diabetes produced by the removal of the pancreas.
2. Diabetes produced by injections of adrenalin and its prevention by previous or simultaneous injections of the ferments of the islands of Langerhans.
3. The removal of sugar, diacetic acid and acetone from the urine of diabetic patients by subcutaneous injections of an extract from the pancreas.

DIABETES PRODUCED BY THE REMOVAL OF THE PANCREAS

The investigations of von Mering and Minkowski, founded on fifty-five experiments made on dogs, established the fact that after complete removal of the pancreas, if the animal survives the operation, diabetes, persisting until death, never fails to appear. If one-fourth or one-fifth of the gland remains, diabetes does not follow; or if a portion of the pancreas containing the islands and still attached to its arterial supply is first transplanted under the skin and all the remainder of the pancreas is removed, no glycosuria is produced, but the removal of the transplanted portion is followed by glycosuria.

In this latter experiment, as the digestive secretions of the pancreas are not discharged into the intestinal tract, it proves that it is not the digestion of the food in the intestines, nor injury to nerve structures, which is at fault, but that it is due to lack of an internal secretion from the islands of Langerhans.

Minkowski has recently repeated his experiments with great care. (a). He first removed, for later convenience, the splenic portion of the pancreas and made a gastro-jejunosomy; from this operation the dog recovered and gained 1,450 gm. in the following month. The second part of the operation was then performed, at which the stomach was divided two centimeters from the pylorus and sutured, the pancreas divided at a distance of two or three centimeters from its head. The duodenum with the head of the pancreas was then removed, and a cholecystenterostomy performed. Recovery was complete and the dog remained in good health, showing sugar in the urine for only two days after the operation. At the end of four weeks after the operation the dog was still sugar free, even though fifty grams of sugar and fifty to one hundred grams of rice soup formed a part of the daily diet. The remaining piece of pancreas was then extirpated, and at noon the same day 100 c.c. of urine was excreted containing 9% of sugar.

A similar experiment was performed upon another dog, but in this instance the remaining piece of pancreas was sewed under the skin of the abdomen, yet the pancreas under the skin was sufficient to prevent diabetes.

In a paper read at the last meeting of the American Gastro-enterological Association (*The Johns Hopkins Hospital Bulletin*, vol. xx, No. 222, September, 1909) Dr. W. G. MacCallum, of Baltimore, said it had been for some time a disputed question as to whether the islands of Langerhans alone or the whole tissue of the pancreas was to be looked on as controlling carbohydrate metabolism, and in order to determine this, if possible, the following experiment was carried out: A portion of the pancreas of a dog was separated from the rest and its duct ligated. Under such circumstances the ligated portion underwent atrophy, presumably only the islands

of Langerhans escaping the injurious effects of the ligation. Six months later this part of the pancreas was found to be scarcely visible in the mesentery, and at that operation all of the intact portion was removed. The dog then had no secreting pancreas and was limited to the small fragment presumably containing only islands of Langerhans, and remote from the intestine. After temporary glycosuria and steatorrhea, the dog became able to assimilate fats and carbohydrates nearly as well as a normal dog. The small remnant was then removed and *there immediately resulted an intense glycosuria*. On section, this remnant was found to consist of distorted tissue, apparently identical with the tissue of the islands of Langerhans, although the masses were increased in bulk beyond that seen in the normal pancreas. The experiment was intended as a demonstration of the specific control of carbohydrate metabolism by the islands of Langerhans.

DIABETES PRODUCED BY INJECTIONS OF ADRENALIN AND ITS PREVENTION BY PREVIOUS OR SIMULTANEOUS INJECTIONS OF THE FERMENTS OF THE ISLANDS OF LANGERHANS

It has been proved that the injection of adrenalin can produce glycosuria, that such glycosuria may also be produced by painting the pancreas with adrenalin or by massaging the adrenals, and that the adrenalin glycosuria is accompanied by a hyperglykemia.

Frugoni's experiments (b) show that adrenalin glycosuria may be prevented by a simultaneous or by a previous injection of an active extract of the pancreas. The latter is best injected intraperitoneally two hours before the adrenalin is used. In the test tube the pancreas extract changes the properties of the adrenalin if kept in long contact with it, the toxic property leading to the appearance of diabetes, being lost by the latter substance.

The above experiments are interpreted as proving that the adrenal secretion is normally neutralized by the internal secretion of the islands of Langerhans; but when the internal secretion is deficient, the secretion of the adrenal gland not being neutralized, acts on the organism in full force and produces diabetes.

THE REMOVAL OF SUGAR, DIACETIC ACID AND ACETONE FROM THE URINE OF DIABETIC PATIENTS BY SUB-CUTANEOUS INJECTIONS OF AN EXTRACT FROM THE PANCREAS

Zuelzer (*Ztschr. f. exp. Path. u. Therap.*, 1908, v. 306) showed in a previous paper that in experimental animals injection of a pancreatic extract prevents the production of adrenalin diabetes. His earlier experiments on diabetes in man were not successful, because, using the commercial extract and being necessarily limited in the amount he could inject, he was unable to obtain an extract of sufficient strength. In this com-

(a) Recent Progress in Diabetes, by Elliot P. Joslin and Harry W. Goodall, M.D. Boston Medical and Surgical Journal, May 21, 1908. This contains a very complete bibliography.

(b) Frugoni, Berliner Klinische Wochenschrift, Aug. 24 and 31, 1908.

munication Zuelzer gives the results obtained by the injection of the extract in experimental diabetes due to extirpation of the pancreas and in diabetes in man. The extract was prepared from pancreatic glands taken from living animals at the height of digestion.

In six diabetics, between six and sixty-five years of age, injections of extract from the pancreas were tried, and in all the results were uniform and constant (except in a few instances in which inactive extract was demonstrated), the glucose always being diminished and usually entirely absent from the urine in two or three days after injection, the same also holding good with acetone and diacetic acid. In all the experiments no change was made in the diet of the patients after the injections. His conclusion is that it is possible to cause sugar, diacetic acid and acetone to disappear from the urine of diabetics by the injection of pancreatic extracts.

This is a confirmation of the theory on which the Trypsogen formula was based, five years before Zuelzer's experiments were made. Of course, it would not be possible for the general practitioner to make use of this treatment in the way Zuelzer did, because of the difficulty of obtaining active ferments from living animals and the general objection to hypodermic administration. But this is not necessary, as the Trypsogen* treatment is essentially the same as Zuelzer's, excepting that the ferments are taken into the stomach, whereby a much larger dose can be given than when subcutaneously administered.

Von Leyden set himself to prove that when trypsin was given by the mouth a certain quantity of it actually passed into the blood. He proved with certainty that trypsin given by the mouth could to some extent be recovered in the urine, and he came to the conclusion that by mouth administration it is possible to bring much larger amounts of trypsin into the circulation than by subcutaneous injection.

TRYPSOGEN has been tested very thoroughly in hospital and private practice both at home and abroad, and is to-day the most rational and successful treatment of diabetes and kindred disorders of metabolism at the command of the medical profession.

In diabetes mellitus Trypsogen rapidly improves the general nutrition, as shown by an increase of weight and strength. Digestive disturbances are controlled and nervous symptoms are dissipated, and glycosuria is lessened or overcome.

Trypsogen is very successful in the hands of those physicians who appreciate the conditions and the obstinate, persistent character of the diabetic condition as it often presents itself. In the hands of the doubtful, half-hearted prescriber, who gives small dosage and for a short time, it is often a disappointment.

DIET.—While administering Trypsogen the hygienic

condition of the patient, including regulation of the bowels, habits, etc., must be given proper attention, and while extreme restriction of the diet is not essential or desirable, it should be regulated in a reasonable manner. Thorough mastication of all food and thorough cooking of starchy foods is of great importance.

If the views of Sajous, Bosanquet and others, that diabetes is caused by toxic albuminoids, which the deficient trypsin of the internal secretions does not properly reduce, then a restriction of the amount of meat consumed would be very logical.

Every effort should be made to place the patient in an optimistic frame of mind. One of the greatest objections to a marked restriction in diet is the depressing effect which it has on the patient at meal time, when he should be free from such suggestions.

A patient taking liberal dosage of Trypsogen can digest and assimilate more starches than otherwise, because of the ferments it contains.

DOSAGE.—Because of the usual history of protracted malnutrition in diabetes, the dosage of Trypsogen should be pushed, especially in stubborn cases to insure the introduction of as large quantities of the urgently needed enzymes as possible. The following method of administering Trypsogen is recommended:

Begin with two tablets three times a day after each meal, and after the third day increase the dose by one tablet daily until a marked improvement in symptoms is noted. The usual maximum dose is 6 or 8 tablets, taken during or after each meal, but 10 or 15 tablets are often taken at a dose. Where an especial idiosyncrasy exists to the enzymes or the minute dose of arsenic bromide present, it is well to work up the dose gradually, decreasing slightly when the patient shows any nausea or other untoward symptoms. If unable to show improvement in such cases because of too small dosage, Trypsogen without the gold and arsenic bromides may be used in addition.

Instructions to patient should be definite and imperative as to dosage and time of taking, and a bottle of 500 or 1,000 should be prescribed in preference to a smaller amount. Generally speaking, opium and its alkaloids are contraindicated when using Trypsogen, because of its tendency to look up the secretions.

Should the response to Trypsogen not be as prompt as expected, it is well to look for underlying complications—rheumatism, syphilis, etc.—which may require appropriate treatment to render Trypsogen effective.

Trypsogen is for sale by druggists, in tablet form only, in bottles of 100, 500 and 1,000—5-gr. tablets.

Prices \$1.25, \$4.50 and \$8.00.

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Complete literature on request.

This subject will be continued on March 12, 1910, and a few clinical reports on Trypsogen treatment of diabetes will be given.

G. W. CARRICK CO.,

28 Sullivan St., New York.

* See New and Nonofficial Remedies, p. 134; also reports on Trypsogen by laboratories of British Medical Association Journal, Nov. 7, 1908, p. 1441, and London Lancet, Nov. 8, 1907.

PROGRESSIVE THERAPEUTICS

VALYL

By DR. A. AMMELBERG

Aerztlicher Central-Anzeiger Nr. 16, 1905.

The valerian preparations have been prized by physicians since antiquity. While formerly they were given for all possible affections, this preference in the last decade has abated visibly. Results obtained are uncertain, and the action of the remedy inconstant. Kochmann has shown that the reason for these variations lies in the great tendency of all the older valerian preparations to decompose. Infusions, even when fresh, and likewise the various tinctures, dialysates and extracts of valerian root lose after a short time their original neutral reaction and become acid, as may be shown numerically by titration.

What is the significance of this acid reaction? The vehicles of the activity in the root is ethereal oil of valerian; and in this again, as Kionka has shown, the ester of valerianic acid is to be designated, the activities of which come the nearest to a specific valerian action.

But such esters of the fatty acids, as has long been known, are readily oxidized or split respectively into the corresponding acids; and the presence of water can alone bring about hydrolytic cleavage. The fatty acids which thus arise, especially valerianic acid, are, however, as good as inert pharmacologically, as Harrass has shown. The acidulation of the valerian preparations goes hand in hand therefore with a lowering of their therapeutic value. Therefore, the wish is justified, that the old unstable and inconstantly acting preparations be replaced by something with greater stability.

The esters of valerianic acid are not suitable for the purpose, for they decompose readily. They may be split hydrolytically by water alone. The introduction of bornylesters would therefore be a failure in practice. Similarly but little can be expected in this direction from the valerianate of menthol ester. The active principle here is menthol.

There is, however, a series of derivatives of valerianic acid which give the picture of valerianic action and are not as readily decomposed. There are the amids of valerianic acid. Among these the valerianate of diethyl amid has, according to the investigations of Kionka and Liebrecht, shown itself to be by far the most active. This has been introduced into practice under the name Valyl.

Kionka recognized the following activities as specific of valerian:

1. Has an exciting action on the psyche.
2. Excites the central nervous system when given in small doses.
3. After large doses causes a central motor and sensory paralysis and abolition of reflex activity. The latter was noted at times after small doses.
4. Small doses cause an increase of blood pressure, conditioned on one side by action on vasomotion (narrowing of peripheral vessels) and on the other by excitation of cardiac activity.
5. Large doses lower the blood pressure partly through vasomotor paralysis and partly by direct injury of the heart.
6. After small doses even transitory lowering of the blood pressure occurs at regular intervals. This is due to momentary dilatation of the peripheral vessels.

The chief indications naturally are those of all valerianic preparations, viz., hysteria in its manifold symptoms, cases of high degree, also hysteria in the male react always with success, as shown in the first investigation of Valyl in the Breslau University Clinic and Hospital.

Professor Binswanger states that hysterical attacks of fright and anxiety are greatly benefited by doses of 2 or 3 capsules each containing 0.125 gm. Valyl, with intervals of half an hour.

Not less favorable for exhibition are neurasthenia and hypochondria as well as neurosis; also forms of neuralgia, as shown by the investigations of Bardet, Meyer, Goldman and others. Valyl comes especially into consideration, as Klemperer has noted, in cardiac neurosis and other purely nervous cardiac affections. The use of tincture of valerian as a house-

hold remedy for the restlessness which prevents falling asleep, may be replaced with great advantage by that of Valyl.

Dr. Dornbluth recommends Valyl in doses of 2 or 3 capsules as a quieting agent and indirect hypnotic. In many cases in which neurasthenics are unable to fall asleep as a result of restlessness, the remedy works excellently in the recommended dose.

Other nervous ailments for which Valyl is adapted are certain forms of neuralgia and hemicrania. Severe, long persisting cases of scintillating scotoma are certainly curable with Valyl.

Dr. Knopf used Valyl for symptomatic tinnitus aurium and reports thereon as follows:

Valyl appears to be the best known remedy for symptomatic tinnitus aurium. It is recommended that further researches be made in this field (dose, 3 to 9 capsules daily, each containing 0.125 gm). It appears to act quickly or not at all. After the expiration of 8 days without results, it appears useless to give it further.

A further very large field for the administration of Valyl is afforded by the manifold disturbances of menstruation and of the climacteric; also those of the gravid state. Fritsch and especially Freudenberg have recognized the high value of this medication. In menstrual disturbance Valyl diminishes the hot flushes and abdominal pains, and also removes for the most part the persistent headaches; also lessens the menorrhagia when this is present. The flushing, circulatory disturbances and palpitation of the heart which appear, especially at the menopause, are removed by Valyl, even when menstruation is normal.

It is seen that all these indications are derived from the pharmacological investigation of the "valerian-action" of Valyl. Even the fifth activity, viz., the lowering of blood pressure by large doses of Valyl may be utilized therapeutically (Alter). It is of value in combating the condition of excitement in periodic mania. Measurements with the tonometer show that this condition is associated regularly with increase of blood pressure. The remedy was given in rapidly increasing doses. The use of the tonometer while the patient was under the Valyl medication showed the presence of a gradually but satisfactorily developing fall of the blood pressure; simultaneously the psychical excitement abated.

In the various nervous affections the practitioner will do well to begin with the average dose and then increase either gradually or rapidly according to the case. Hence for scintillating scotoma one pearl or capsule may be given 2 or 3 times daily during the free interval, but when an attack is impending the dose may be increased to 8, 10 or 12 capsules daily.

For nervous insomnia 2 or 3 pearls may be taken with a glass of milk upon going to bed.

In the treatment of non-periodic flushing, etc., of the climacteric, and the disturbances of pregnancy, we should be guided as to dosage by the state of the individual case. For the Valyl treatment of dysmenorrhea we should begin 3 days before the expected period to give 1 or 2 pearls or capsules 3 times daily. After the menses appear 2 or 3 should be given at a dose. As the discharge begins to abate, the dose is reduced to a single pearl 3 times daily to be kept up for 3 or 4 days. It is not advisable to give Valyl during the intervals.

Each pearl contains 0.125 gm. Valyl without addition, the dosage being the same as that of the capsules (2 or 3 pearls 2 or 3 times daily).

The gelatine coating of the pearls is but slightly hardened according to a new process. Pharmacological studies show that the pearls are not dissolved in the stomach but only when they reach the intestine. Hence, belching, etc., often present in the sensitive after taking valerian preparations is completely prevented.

The pearls resist the action of the gastric juice for 5 hours. If they are placed in a pancreatic solution after 1 or 2 hours' exposure to gastric juice the pearls are opened in 5-7 minutes, and after 20 minutes every trace of gelatin is in solution. Hence we have every reason to believe that clinically the pearls escape solution in the stomach and are dissolved in the intestine.

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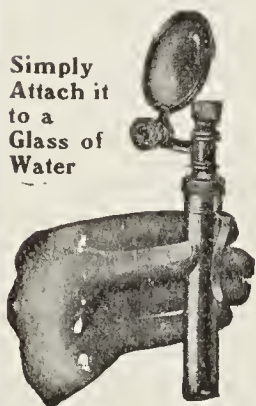
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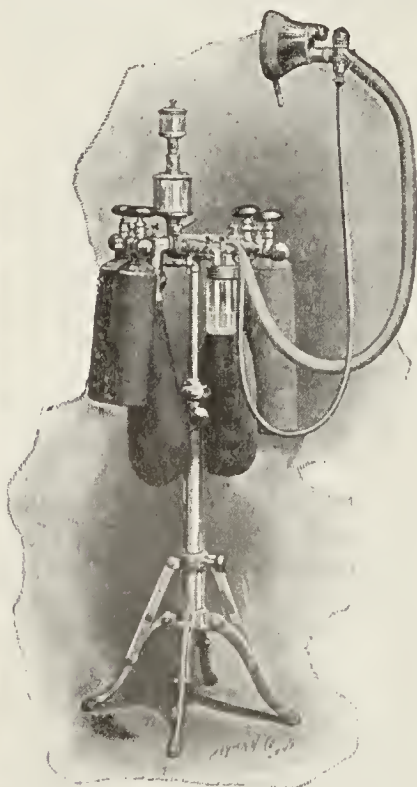
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PROGRESSIVE THERAPEUTICS

THE TREATMENT OF ACUTE AND SUBACUTE ANTERIOR GONORRHEA BY RETROGRADE INJECTIONS OF STRONGER SOLUTIONS OF SILVER*

By HERMANN G. KLOTZ, M.D., New York

(Abstract)

Dr. Hermann G. Klotz has an article as above in the New York and Philadelphia Medical Journal, November 21st and 28th, and December 5th, 1903, giving in detail the use of this treatment during a number of years past.

"The number of silver preparations introduced has increased rapidly since the pioneer Argonin, all looking to the securing of a remedy which would not irritate the mucous membrane, coagulate in the presence of chlorids or albuminates as when silver nitrate is used. He has had experience with numerous organic silver products, notably with Argonin, Protargol and Albargin. Albargin he did not find as irritating as some had claimed. He has used it since 1901, and is very well satisfied with results, later experience having confirmed his opinion previously published. With few exceptions it acts mildly and is clean to handle. He uses it in from 1 to 5 per cent. solutions. The quantity of silver claimed to be in the various organic silver preparations he thinks of less value than other features which help to determine its efficiency. The inflammation, whether spontaneous, due to the introduction of the cocci, or artificial—due to the treatment—should be removed or restricted as much and as early as possible, in view of the fact that the gonococci are liable to rapidly penetrate into the deeper layers of the epithelium. Hence gonococcicide injections should be used only at stated intervals to avoid cumulative irritation, and in the interval, astringent and antiseptic solutions in the conventional way to combat the inflammation. He prefers, as a rule, injections that form sediments which act as a protective covering, separating opposite surfaces of the mucous membrane and to some extent retarding the propagation of the cocci. His favorite prescription is:

Boric acid	1.5 grm. (24 grs.)
Acetate of lead	{ each, 75 ctgrm. (12 grs.)
Sulfate of zinc	
Glycerin	4.0 (1 drm.)
Water	120.0 (4 ozs.)

Which he briefly designates as the B. P. Z. injection.

"When a patient presents himself for treatment on the appearance of the first symptoms, say from four to seven days after infection in primary cases, from thirty-six hours to three or four days in reinfected ones, the inflammation has rarely produced any more severe symptoms than itching or slight burning during micturition, moderate redness and swelling of the meatus, and some clear or slightly tinged discharge. Under such conditions, after the bladder has been emptied, an injection of some silver solution is immediately made in the concentration of 1 per cent. Albargin, etc. The fluid is deposited from three to four inches from the meatus. A second injection is made of a slightly stronger solution if the first one does not cause much burning. After removal of the syringe the meatus is kept closed for several minutes, during which the fluid is distributed as much as possible over the mucous membrane by compression and manipulation of the penis, and is then allowed to ooze out, some absorbent cotton being placed before the orifice. When the glans is covered by the prepuce, the entire surface should be wiped out with the silver lotion, and the preputial cavity should be kept clean to prevent the entrance of gonococci from without. If the patient calls in the morning, he is advised to make an injection of the B. P. Z. solution before his evening meal, and once more before going to bed, but not the next morning; he receives a second silver injection, in the forenoon, usually of a stronger concentration than on the first day, and also on

the third day, the B. P. Z. injections being repeated as on the first day; on the fourth day only the astringent injections are repeated three times; on the fifth day follows a silver injection, then the B. P. Z. injections are continued for forty-eight hours; and on the eighth day, after twenty-four hours omission of all treatment, another silver injection is made, usually of a less concentrated solution. Usually, the discharge ceases after the second or third day, nevertheless, I consider it advisable to continue the treatment to the eighth day. Should the symptoms continue beyond the seventh or eighth day the silver injections are repeated at intervals of three to four days as in the subacute cases; in the later stages I prefer silver nitrate to the organic silver preparations. If the conditions are not materially changed after from two to three weeks, some local affections of the mucous membrane, mostly remnants of former infections must be suspected, and an endoscopic examination is made as soon as possible, to ascertain the cause of the delayed improvement. The continuance of the treatment for eight days seems judicious, even if all the symptoms have disappeared for several days, as a relapse involves a repetition and prolongation of the treatment. However, several patients, who considered themselves cured and stayed away after two injections, apparently remained well after continuing the astringent injections for some time; in several instances I would confirm the absence of all symptoms at a later period. Among fifteen cases of reinfection, taken without selection, which came under observation within twenty to thirty-six hours after the appearance of suspicious symptoms, eleven patients were discharged as cured within eight days, without any further treatment. The average number of (double) injections was four; one patient received only two; two only three, five had four, three had five. After the first day's injections ten were made on the second, ten on the third, one on the fourth, six on the fifth, two on the sixth, and three on the eighth day. In the other four cases, really acute symptoms never appeared or were quickly removed, but they required longer treatment, partly combined with sounds or endoscopic applications, on account of local changes of the mucous membrane.

"If the patient does not come under observation until four or five days after the outbreak of symptoms, I do not attempt to obtain an immediate cure, but am satisfied to ease and reduce the symptoms to a moderate degree, or to maintain them in such a state that the patient has but little inconvenience from the disease and escapes the danger of further extension of the process. For this purpose the silver injections are not made oftener than every third or fourth day, while astringent solutions are administered by the patient, sometimes combined with oil of santal and other internal medicines. Under such circumstances milder solutions are usually resorted to: Albargin 1 per cent.; silver nitrate, $\frac{1}{8}$ to $\frac{1}{4}$ per cent. It is remarkable how well these solutions are often borne, without the slightest disagreeable consequences, while in others they are most irritating. Ordinarily after three or four days the symptoms begin to increase again, so that another silver injection, probably slightly stronger, is required, so that the treatment soon becomes identical with that of subacute cases.

"I am well aware that many prominent urologists are still adverse to any local treatment, and strongly advise against injections and against all efforts at checking the disease in the early stages. I cannot agree with these gentlemen on principle. I need not say before you that gonorrhea is not a trifling affection, from the standpoint either of the physician or of the patient. It is undoubtedly an infection, but merely a local one in the early stage. We can surely avoid most of the immediate and remote dangers of the disease if we remove or destroy the irritant and infecting microbe during this period. There is no good reason why this should not be possible without injury to the organ which is the seat of the disease. This we must try to accomplish, and must not desist in our efforts until we do so."

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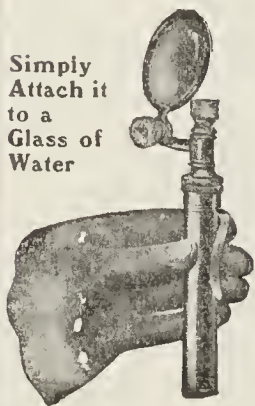
* Read before the Section on Genitourinary Surgery, of the Academy of Medicine, New York, April 15, 1903.



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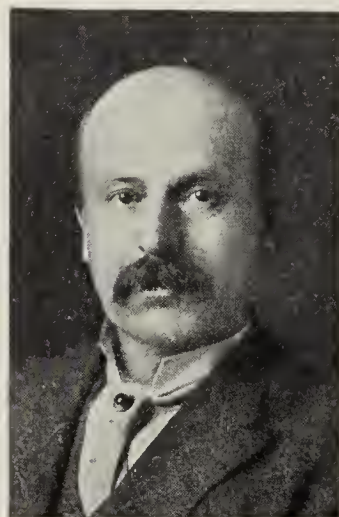
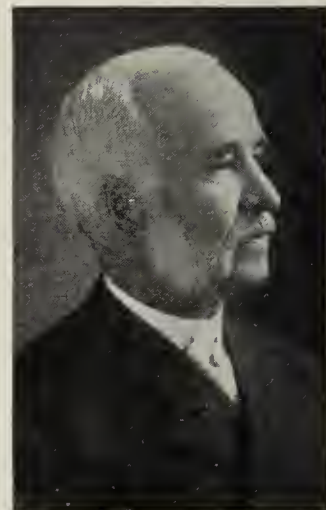
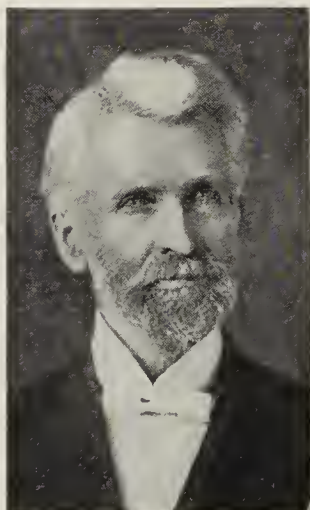
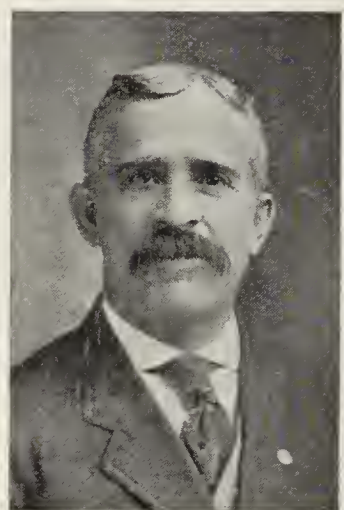
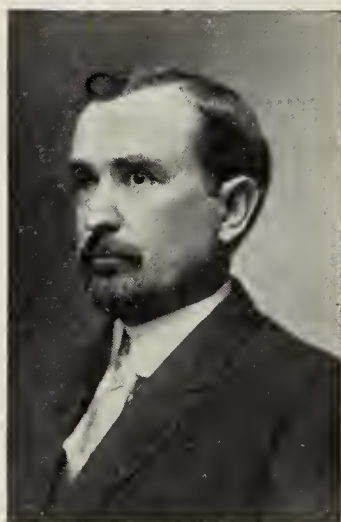
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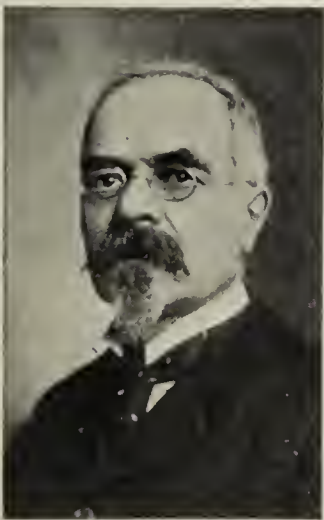
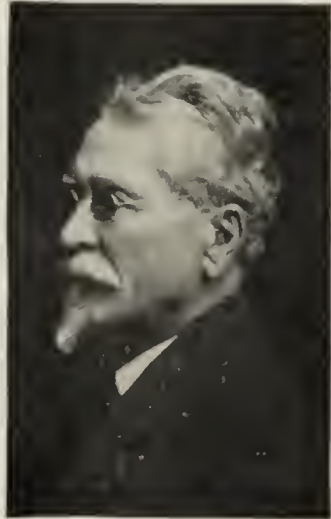
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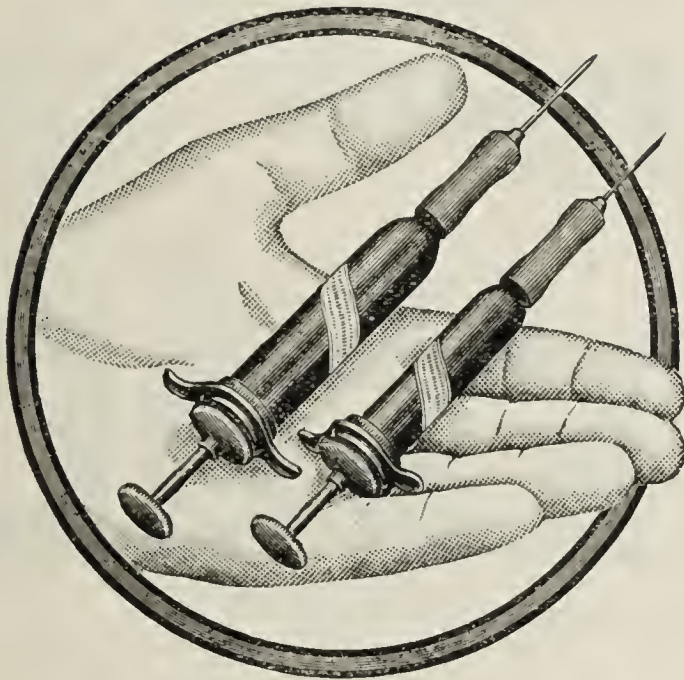
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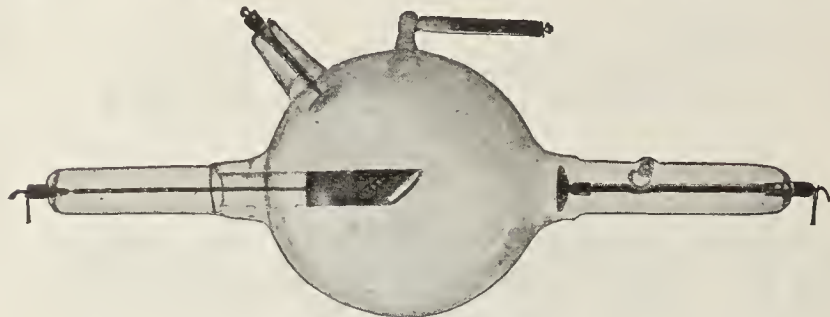


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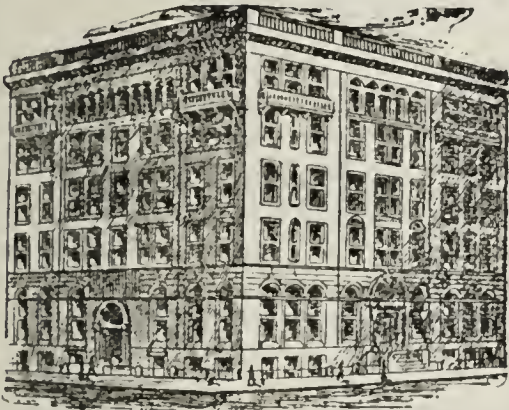
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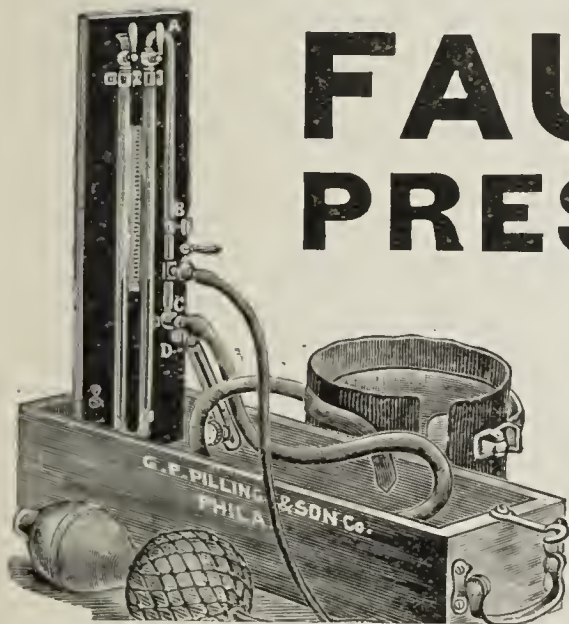
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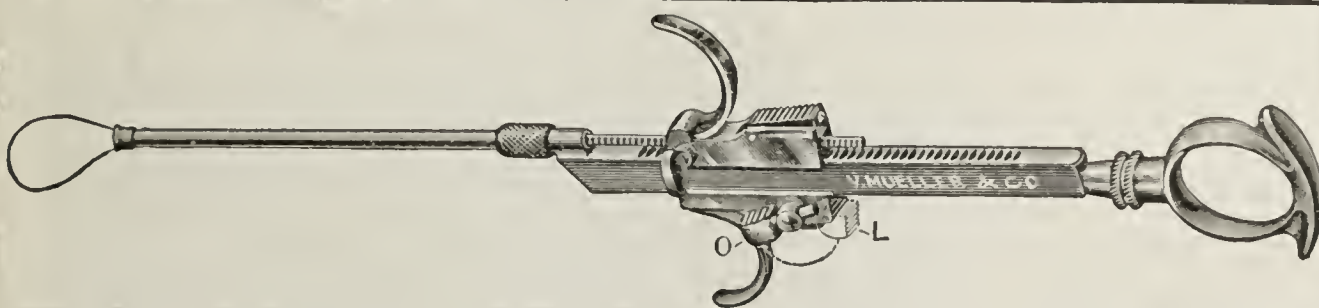
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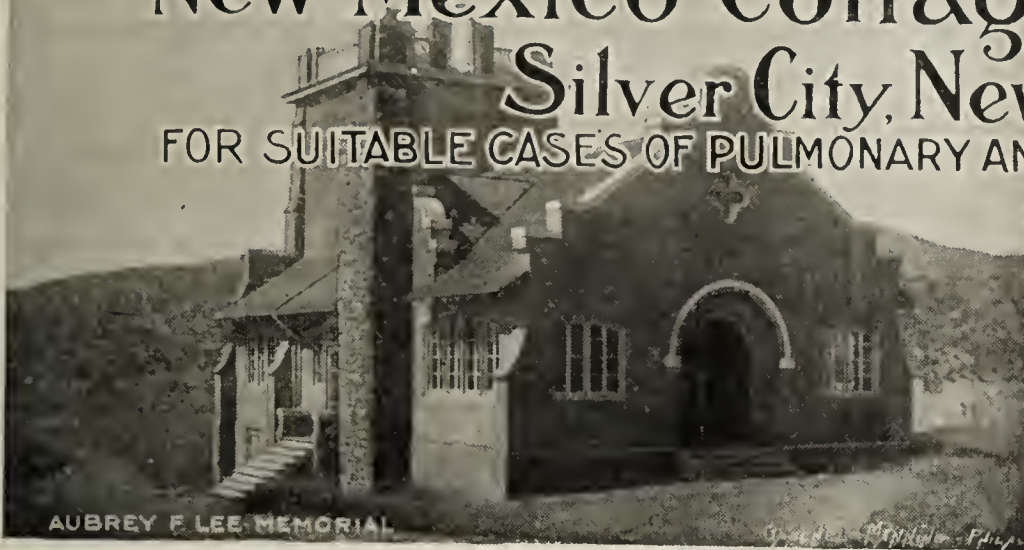
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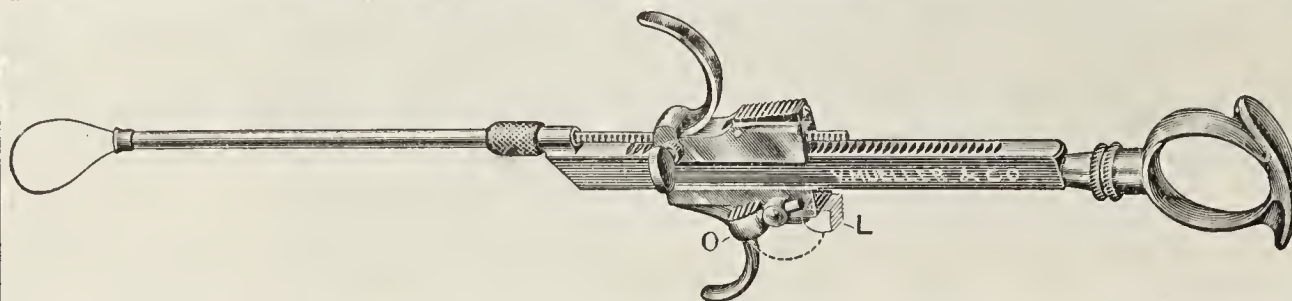
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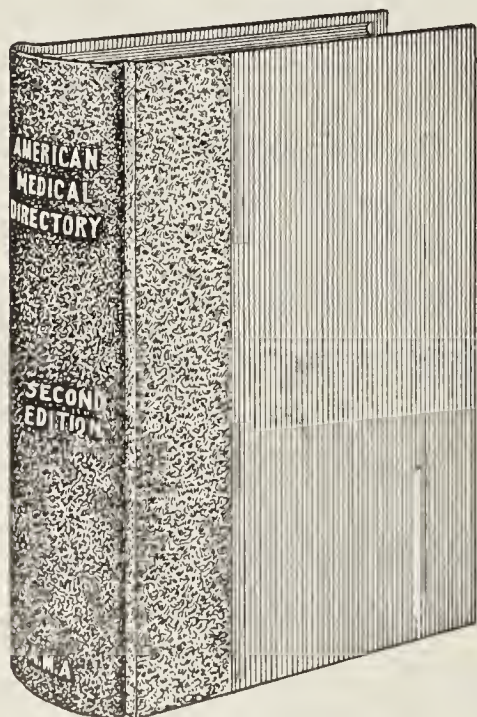
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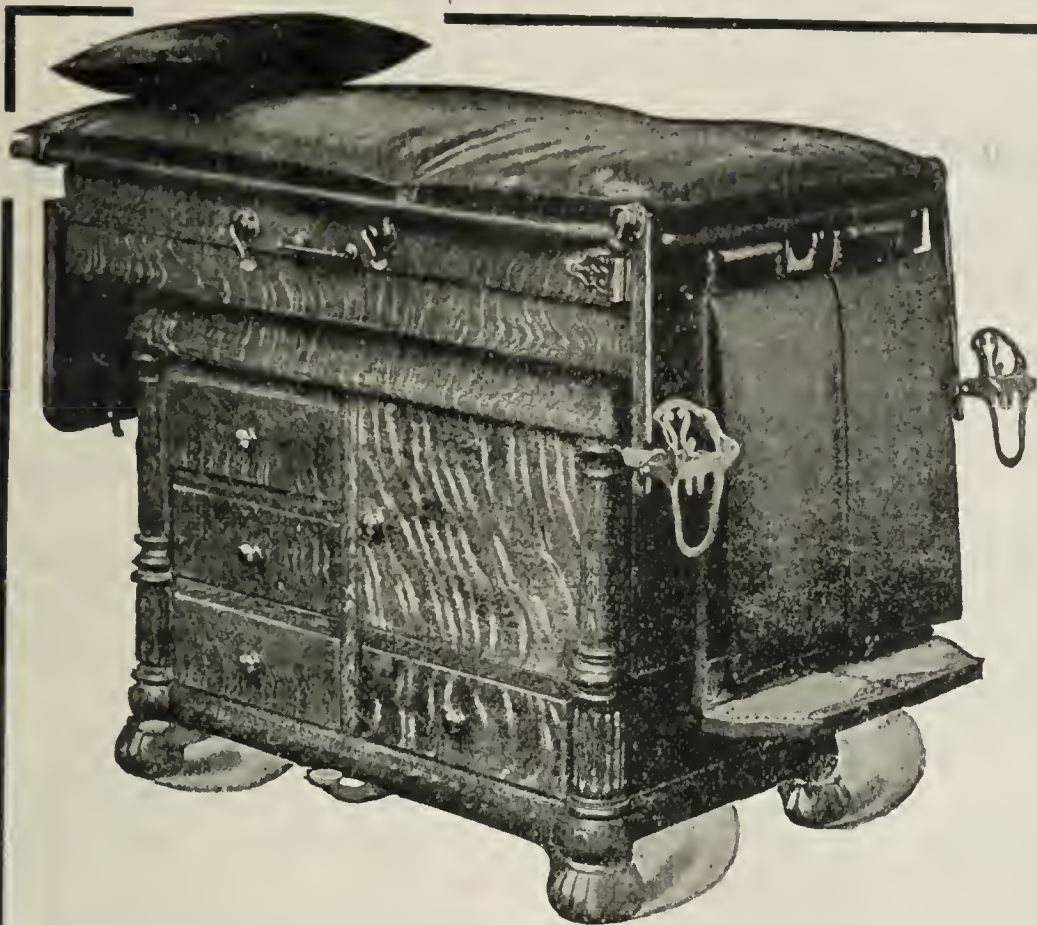
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- (3) The Alphabetical Index to the book gives the name of every physician in alphabetical order, with city and state where located. This index alone comprises about 421 pages.
- (4) The names of all physicians legally qualified to practice in the United States are given. It includes also Canada, Porto Rico, Hawaii, Canal Zone, Philippine Islands, Alaska, etc.
- (5) The list of Hospitals and Sanitaria contains 5446 names. Information is given as to date of establishment of each institution, number of beds and names of physicians in charge or director.
- (6) It contains the following information concerning each physician so far as obtainable; name in full, year of birth, medical college and year of graduation, date of state license, school of practice, membership in county, state and American Medical Association, residence address, office address, office hours, professorships held in medical colleges and specialty followed.
- (7) It is the only book which gives the names of the members of the American Medical Association; also names of members of County and State Societies. These data are taken from the official records of the Association. The present edition, therefore, combines the features of a general medical directory and society blue book.
- (8) The names of all National and Special Medical Societies are given; also names and addresses of officers.
- (9) Names of the medical officers of the Government Services, with college and year of graduation and date of present commission.
- (10) Names of officers of all National, State and County Societies are enumerated in the present edition.
- (11) List of Health Officers in cities of from 200 population or over.

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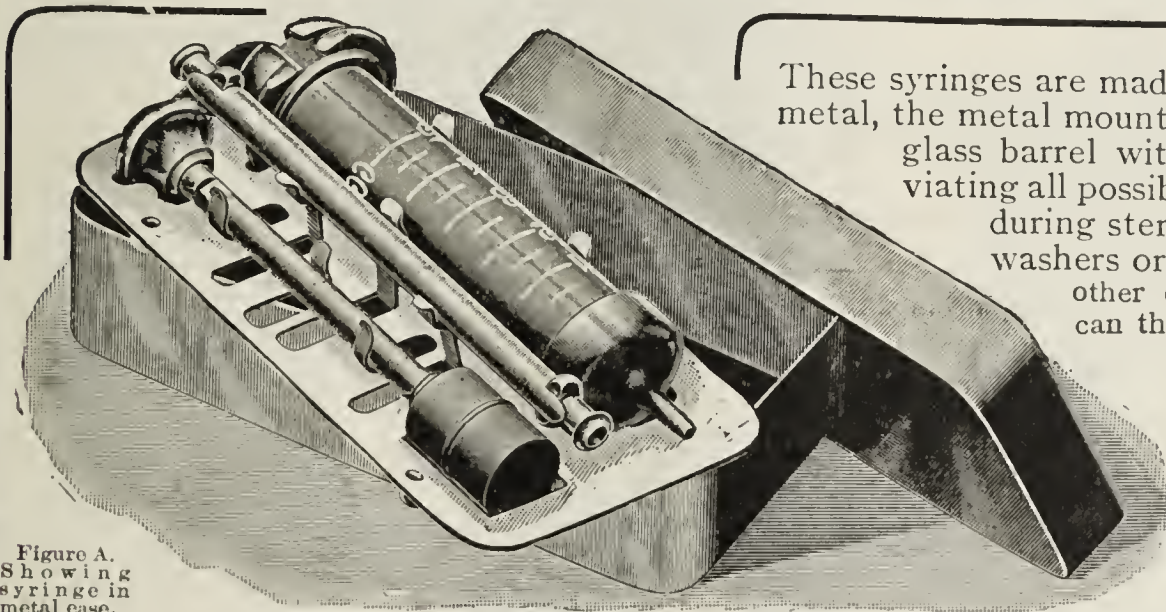


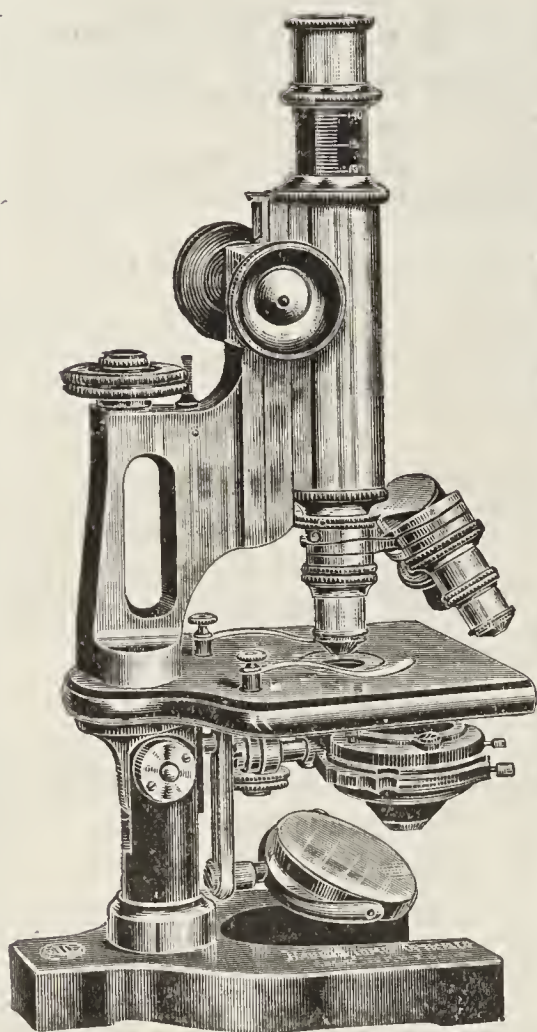
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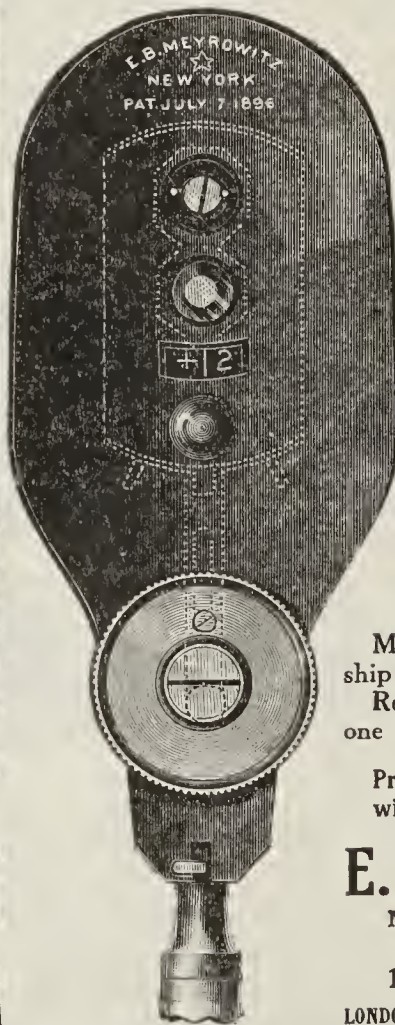
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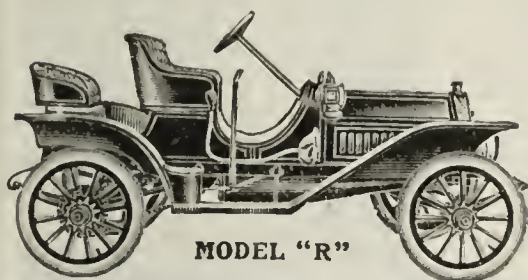
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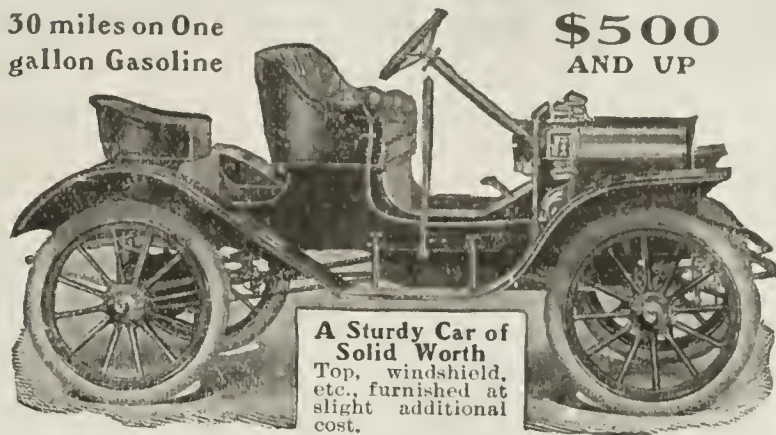
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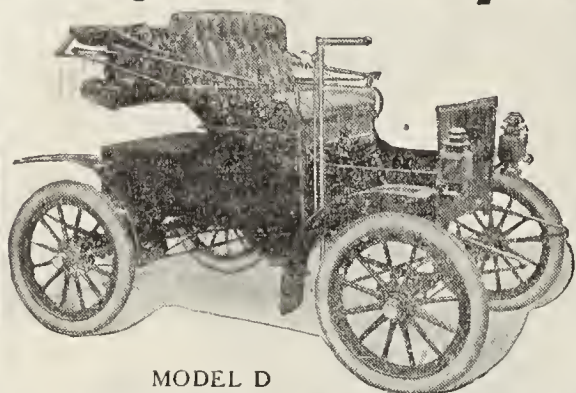
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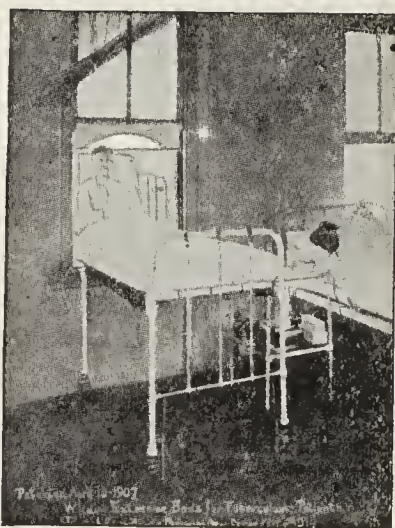
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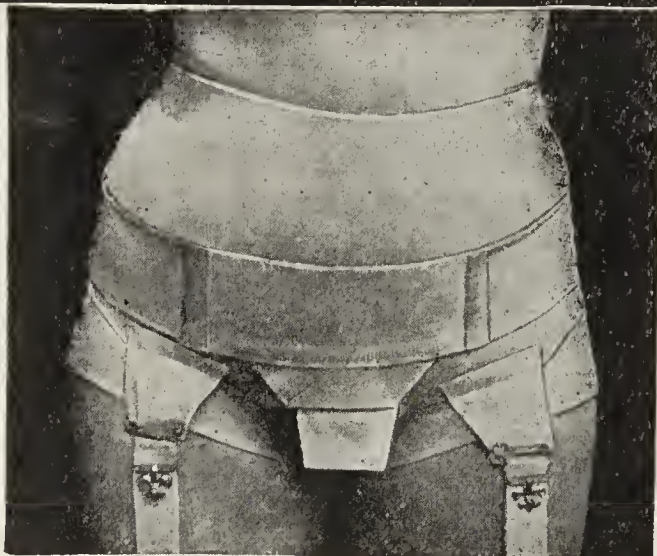
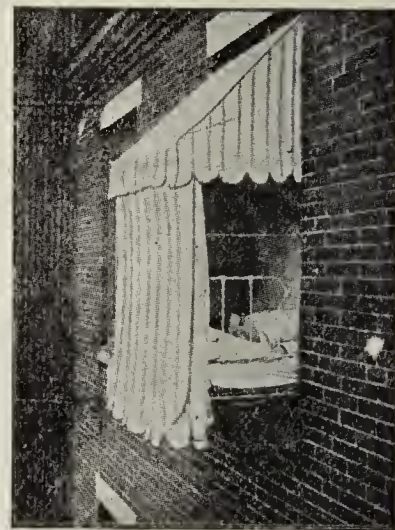
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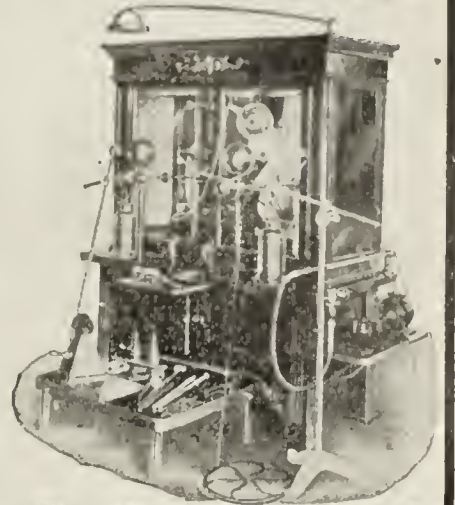


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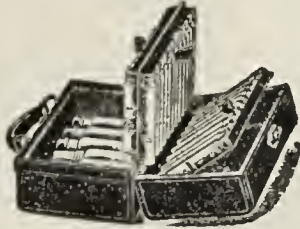


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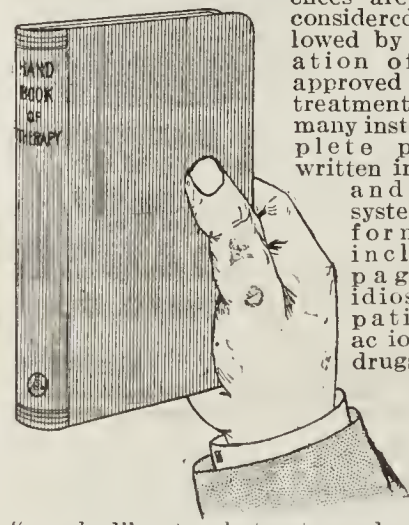
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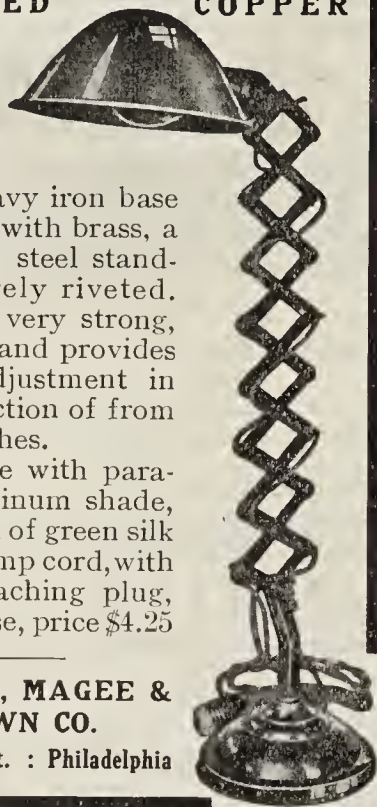
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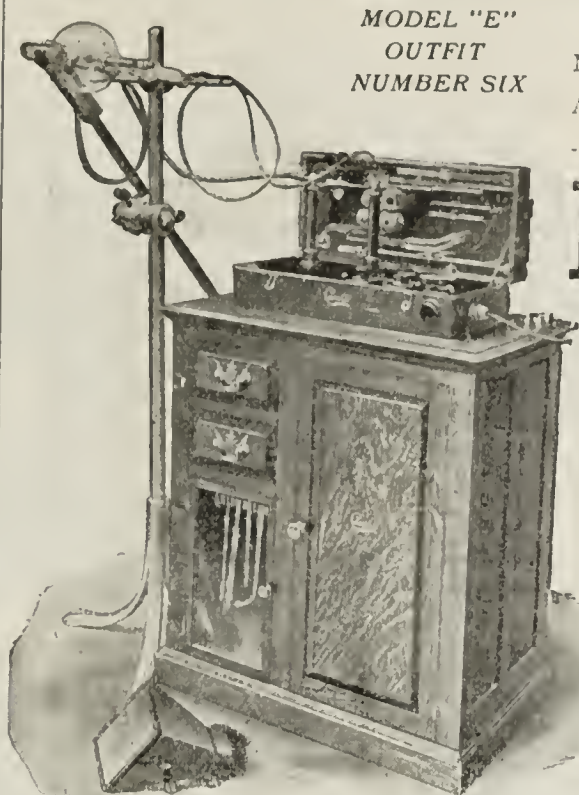
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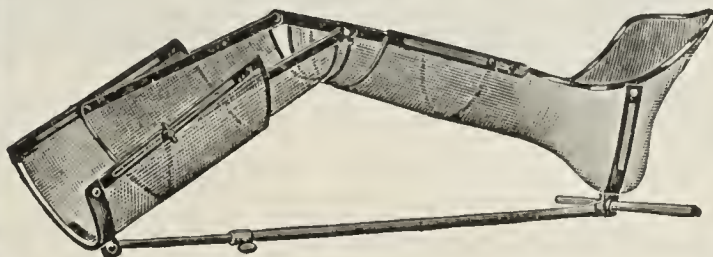
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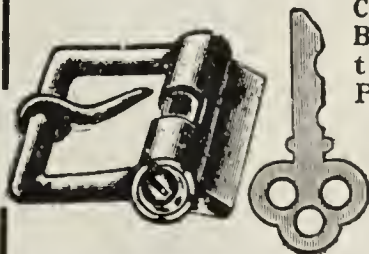
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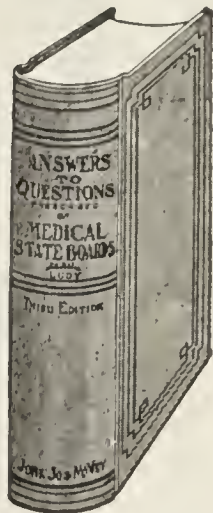
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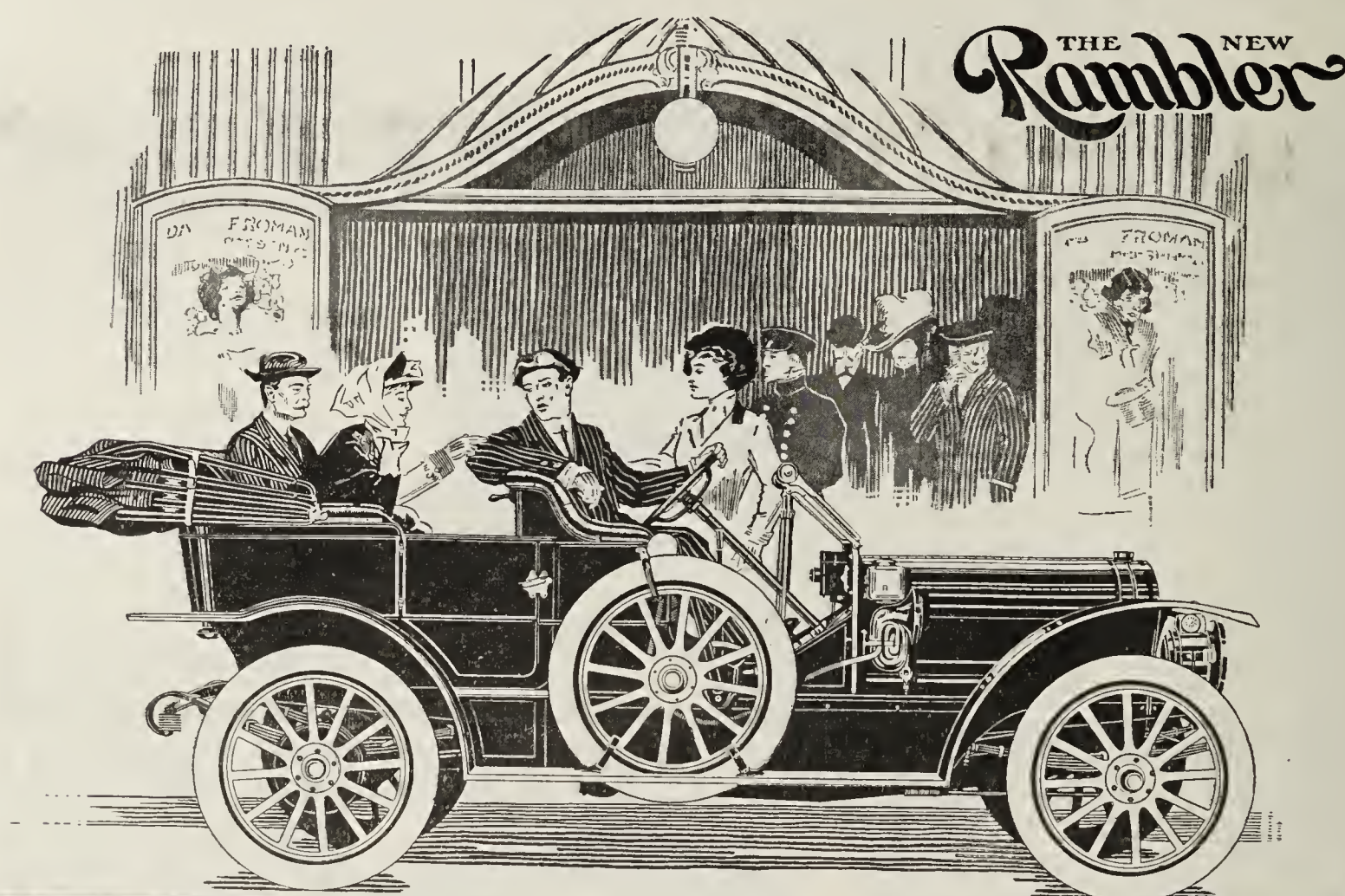
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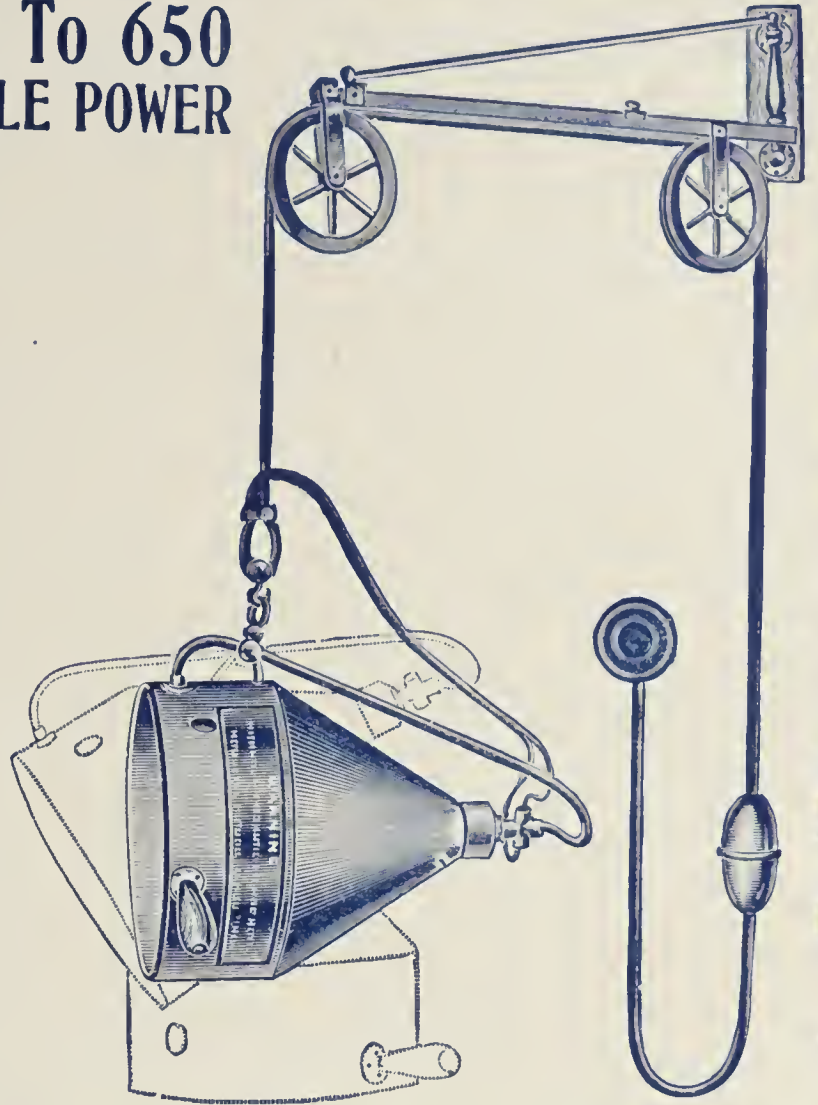
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